



Governance of Oil and Gas Sector in Nigeria: Implications for Biodiversity and Ecosystem Services in the Niger Delta Region



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Dedication

To the Almighty God, the only Impartial Potentiate that commenced, sponsored, supported, and perfected everything regarding the PhD programme. He alone is the Unchangeable Changer that transforms nobody to somebody.

To my wife, My Only Queen (MOQ) as she is fondly called, Oluwayinka that gave me the best children in the whole world in the persons of Yomadeoluwa, Yomolaoluwa and Yosoreoluwa that came shortly after the commencement of this research.

To the memory of my late father, Pa Shadrach Elaboma Ogele and my beloved mother, Mrs. Marian Abiodun Ogele for given me the privilege to discover the mysteries of books and taught me to work while it is day, for night comes when no man can work.

To the unprotected people in the coastal communities of the Niger Delta Region who for no cause of their own continue to suffer and bear the impacts of oil and gas activities in Nigeria.

Abstract

Given the persistence of environmental problems that characterise the oil producing communities (OPC) of Nigeria, often referred to as the Niger Delta region (NDR), this thesis examines the implication of the governance of oil and gas sector on the biodiversity and ecosystem services (BES) in the region. The NDR is a coastal area that is most endowed in terms of BES and hosts exploration and production of oil and gas activities. However, the continued exploration and production of oil and gas is having deleterious impacts on BES which transcends government and oil and gas companies' efforts to address them. This state of affair has been an issue of great concern nationally, calls therefore for the examination of the governance of the oil and gas sector with regards to conservation of BES.

Informed by a review of academic literature, this thesis advances an interactive governance framework that promotes recognition and involvement of the various relevant actors/stakeholders, including local citizens in the governance of the sector. The study was conducted in two OPC in Nigeria and primary data was collected through a total of four focus group discussions, one workshop and 21 in-depth interviews, including at least one representative each from 11 government agencies, one representative each from three environmental NGOs, one representative each from both a Community-based Organisation and Hybrid organisation.

Analysis of the data revealed that the governance of oil and gas sector has contributed to BES loss and degradation, which has ultimately exacerbated the conditions of living of the coastal communities. The empirical evidence equally suggests that BES degradation persists, because of bad leadership, corruption and the locals in the OPC whose values, norms and principles are supposed to be considered in policies and decision-making are not fully involved in the governance process. Additionally, the governing actors also lack the requisite capacity to perform. The study developed a schematic framework and concluded that interactive governance framework is a good antidote to illuminate the governance challenges as well as the various environmental problems including the degradation of BES that characterised the oil and gas sector in Nigeria.

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List of Abbreviations

AGG	African Good Governance
AGM	Annual General Meeting
AICECUM	Actual Indigenous Concessional Eight-United Core Ultimate Major
AIS	Alien Invasive Species
ANEEJ	Africa Network for Environment and Economic Justice
AQO	Air Quality Objectives
BAP	Biodiversity Action Plan
BES	Biodiversity and Ecosystem Services
CA	Community Assistance
CBD	Convention on Biological Diversity
CBO	Community-Based Organisation
CD	Community Development
CDBs	Community Development Boards
CEAA	Canadian Environmental Assessment Agency
CEDA	Centre for Environment and Development in Africa
CIA	Central Intelligence Agency
CNL	Chevron Nigeria Limited
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COFRN	Constitution of the Federal Republic of Nigeria
CSR	Corporate Social Responsibility
CTs	Community Trusts
DBP	Diastolic Blood Pressure
DEA	Department of Environmental Assessment
DEFRA	Department for Environment, Food and Rural Affairs
DNA	Deoxyribonucleic Acid
DPR	Department for Petroleum Resources
EA	Energy Agency
EC	European Commission
ECC	European Economic Community
EDF	Environmental Defense Fund
EGASPIN	Environmental Guidelines and Standards for Petroleum Industry in Nigeria
EGCDF	Egbema-Gbaramatu Community Development Foundation
EIA	Environmental Impact Assessment
EPNL	Elf Petroleum Nigeria Limited
EITI	Extractive Industries Transparency Initiative
EP	Environmental Permits
ERA/FoE	Environmental Rights Action/Friends of the Earth
ES	Ecosystem Services
ESHIA	Environmental, Social, Health Impact Assessment
FAO	Food and Agriculture Organisation of the United Nations
FEPA	Federal Environmental Protection Agency
FGD	Focus Group Discussion

FGN	Federal Government of Nigeria
FMENV	Federal Ministry of Environment
FMNDA	Federal Ministry of Niger Delta Affairs
FOI	Freedom of Information Bill
GEMI	Global Environmental Management Initiative
GCC	Grassroots Consultative Committee
GCLME	Guinea Current Large Marine Ecosystem
GDP	Gross Domestic Product
GG	Good Governance
GGFR	Global Gas Flaring Reduction
GHGs	Greenhouse Gases
GI	Governing Interactions
GIS	Geographic Information System
GMOU	Global Memorandum of Understanding
GS	Governing System
GSFV	Global Standard for Flaring and Venting
HDI	Human Development Index
HSE	Health, Safety and Environment
IADB	Inter-American Development Bank
IEA	International Energy Agency
ILO	International Labour Organisation
IG	Interactive Governance
IGA	Interactive Governance Approach
IGF	Interactive Governance Framework
IGT	Interactive Governance Theory
ILGA	Ilaje Local Government Area
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
IPIECA	International Petroleum Industry Environmental Conservation Association
IRDC	Ilaje Regional Development Council
ITDG	Intermediate Technology Development Group
IUCN	International Union for Conservation of Nature
JVCs	Joint Ventures Agreements
LENF	Living Earth Nigeria Foundation
LFN	Laws of Federation of Nigeria
LGO	Local Government Official
LNG	Liquefied Natural Gas
LOCs	Local Oil Companies
LUA	Land Use Act
MAP	Mean Arterial Blood Pressure
MDAs	Ministries, Departments and Agencies
MDGs	Millennium Development Goals
MEA	Millennium Ecosystems Assessment
MNEs	Multinational Enterprises
MNOCs	Multinational Oil Companies
MOU	Memorandum of Understanding

NAPIMS	National Petroleum Investment Management Services
NCF	Nigerian Conservation Foundation
NDBEST	Niger Delta Biodiversity and Ecosystem Services Trust
NDES	Niger Delta Environmental Survey
NDDC	Niger Delta Development Commission
NDR	Niger Delta Region
NESREA	National Environmental Standards and Regulations Enforcement Agency
NFRC	Nigeria Flare Reduction Committee
NGO	Non-Governmental Organisation
NIHL	Noise-Induced Hearing Loss
NIMASA	Nigerian Maritime Administration and Safety Agency
NIMET	Nigerian Metrological Agency
NIOMR	Nigerian Institute for Oceanography and Marine Research
NNOC	Nigerian National Oil Company
NNPC	Nigerian National Petroleum Corporation
NOSDRA	National Oil Spill Detection and Response Agency
NO _x	Nitrogen Oxides
NPC	National Population Commission
OECD	Organisation for Economic Cooperation Development
OFEPA	Organisation for Environmental Protection in Advancement
OGP	International Association of Oil and Gas Producers (now IOGP)
OPC	Oil Producing Communities
OPDC	Oil Producing Developing Countries
OPEC	Organisation of Petroleum Exporting Countries
OPL	Oil Prospecting License
OPPG	Operational Policy and Procedure Guidelines
OSMENV	Ondo State Ministry of Environment
OSOPADEC	Ondo State Oil Producing Areas Development Commission
PIB	Petroleum Industrial Bill
PPCD	Participatory Partnerships for Community Development
PPMC	Pipelines and Product Marketing Company
PTDF	Petroleum Technology Development Fund
RDBs	Regional Development Boards
RDCs	Regional Development Councils
RENA	Remediation by Enhanced Natural Attenuation
RIIA	Royal Institute of International Affairs
SBP	Systolic Blood Pressure
SCBD	Secretariat for the Convention on Biological Diversity
SCD	Sustainable Community Development
SEA	Strategic Environmental Assessment
SG	System-to-be-governed
SLA	Sustainable Livelihoods Assessment
SNEPCo	Shell Nigeria Exploration and Production Company Limited
SO ₂	Sulphur Dioxide
SPDC	Shell Petroleum Development Company

SSA	Sub-Saharan Africa
SVOCs	Semi-Volatile Organic Compounds
TEEB	The Economics of Ecosystems and Biodiversity
TNC	Transnational Corporations
TOPCON	Texaco Overseas Petroleum Company of Nigeria Unlimited
TOR	Terms of Reference
TPH	Total Petroleum Hydrocarbon
UDHR	Universal Declaration of Human Rights
UK	United Kingdom
UNEP	United Nations Environment Programme
UNEP-WCMC	United Nations Environment Programme's World Conservation Monitoring Centre
UN	United Nations
UNDP	United Nations Development Programme
UNECE	United Nations
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNGC	United Nations Global Compact
UNIDO	United Nations Industrial Development Organisation
UNSD	United Nations Statistics Division
USA	United States of America
USAID	United States Agency for International Development
USEIA	United States Energy Information Administration
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WCED	World Commission on Environment and Development
WDCGG	World Data Centre for Greenhouse Gases
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature

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Chapter 1. Protecting the Unprotected: Biodiversity Loss and Ecosystem Services Degradation

1.1 Introduction and Background to the Study

According to Basedau and Mähler (2011), in 2008 oil represented one third of global energy consumption ahead of other energy resources like natural gas, coal and uranium thereby making oil the most essential resource in world economy and politics. Despite the quests for alternative sources of energy, the rising demand for oil and gas as a major source of energy across the globe has continued unabated. The demand has and will continue to put extraordinary pressure on the world's poorest countries like Nigeria. Oil and gas exploitation confronts developing countries with risks like habitat depletion, atmospheric emissions, community health and safety as well as loss of livelihood among others and great opportunities such as provision of employment and infrastructural development. For example, Obi (2011) noted that shrinking or unstable supplies and the entry of oil companies from emerging Asian powers such as China and India into the African oil scene, demand for oil from Africa has been boosted. This has made Africa rebound in the geo-strategic and security calculations of the world's dominant powers since late 1990's and particularly after the 9/11 attacks on the United States (Ibid) highlighted a singular dependence on Middle East supplies.

There is a growing recognition across the globe that humans and businesses are not only intrinsically dependent on biodiversity and ecosystem services (BES) but also the effective performance of businesses in producing goods and services they provide to the economy is contingent directly or indirectly on ecosystem services (ES) (Crossland *et al.*, 2005; MEA, 2005; MEA, 2005a; Houdet *et al.*, 2009; TEEB, 2010; Wattage, 2011; Houdet *et al.*, 2012; IADB, 2012; IPIECA and OGP, 2012; UNEP-WCMC *et al.*, 2012; UNGC and IUCN, 2012; Winn and Pogutz, 2013; D'Amato *et al.*, 2014). There is also an increasing understanding within the business community globally of the reliance and impacts of their businesses on BES as they interact in two significant ways including the use of services and contribution to ecosystem change (Ibid).

All businesses, notwithstanding size and sector, depend upon and impact on BES (UNGC and IUCN, 2012). The widespread recognition of the linkage between oil and gas as a business/economic development activities and BES by the oil and gas industry has also been documented (Crossland *et al.*, 2005; IPIECA and OGP, 2012). The study of Crossland *et al.*, (2005) bolsters the assertion that the interaction of oil and gas activities with ecosystems has potential negative impacts on coastal BES, particularly if not well managed. Despite these

recognitions, biodiversity loss has continued (Costanza and Kubiszewski, 2012) and is now regarded as the “central environmental challenge of our time” (MEA, 2005).

This thesis is situated within the field of oil and gas governance, which can be conceptualised as a subset of environmental governance. It is based on the perspectives that: (a) oil and gas activities are a complex issue with profound implications for BES; and (b) looks at society’s response to oil and gas activities according to models of ‘governance’. In recognition of this particular starting point, this chapter provides the foundation on which this research is constructed.

The next section introduces critical empirical issues and information about the place of oil and gas in the Nigerian state and this is followed by evolution of oil and gas activities in Nigeria. The subsequent section provides information about the research setting and how oil and gas activities have changed the environmental landscape of the oil production region including contributing to the loss of biodiversity and degradation of ES. The section that follows then presents a statement of the problem of this research including issues about the governments and oil companies’ efforts to mitigate further degradation of BES and interactions among relevant stakeholders. The justification for the study is thereafter presented, followed by the theoretical contribution of the study to knowledge and the research aim and questions. The final section introduces the structure of this thesis and summarises the chapters.

1.2 The Place of Nigeria’s Oil and Gas in the World Economy

Nigeria’s endowment in oil and gas reserves in both on and offshore including deep-waters, has strategically position the nation within West and Central Africa’s Gulf of Guinea, regarded as the premier oil frontier within an energy-hungry and oil reliant post-cold war world (Obi, 2011). Nigeria’s economy is dominated by oil and gas production for export, in contrast to most countries across the globe that relies profoundly on importation of oil and gas to meet their energy needs.

As shown in **Table 1.1** and **Figure 1.1**, Nigeria is the largest oil producing country among the Sub-Saharan Africa (SSA) oil production countries (USEIA, 2013; Katsouris, Undated). The excellent quality of the Nigerian sweet oil in terms of its low sulphur content when compared with oil from most other countries (Frynas, 2000; Watts, 2008) makes it to be well sought after across the globe. Nigeria’s oil is exported mainly to the US and Western Europe as demonstrated by USEIA (2011) in **Figure 1.2**.

Table 1.1: Sub-Saharan Africa Oil Production by Country ('000b/d)

('000 b/d)	2000	2005	2010
Angola	746	1,405	1,851
Cameroon	100	82	64
Chad	0	173	122
Congo-B	254	245	292
Congo-K	n/a	20	22
Cote D'Ivoire	n/a	*63	45
Equatorial Guinea	91	358	274
Gabon	327	234	245
Mauritania	0	0	7
Nigeria	2,155	2,499	2,402
Sudan	180	294	475

Source: BP Statistical review, Energy Intelligence and govt. Estimates; *2006

Source: Katsouris (Undated, p. 08)

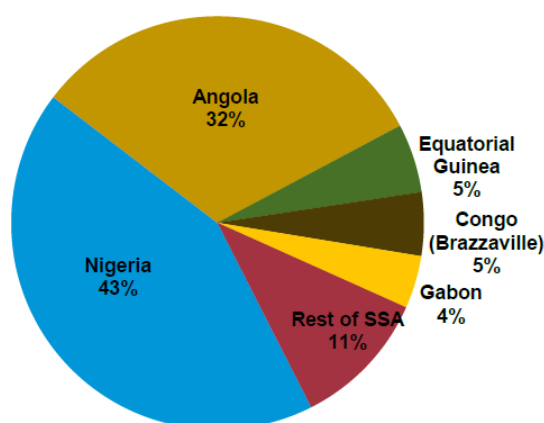


Figure 1.1: Top SSA Oil Producers in 2012

Source: USEIA (2013, p. 06) as obtained from EIA, International Energy Statistics

Although **Figure 1.2** showed that the biggest percentage of oil production from Nigeria goes to the US, recent development has however revealed that the trend has changed gradually since 2012 as US changed to the 10th largest importer in 2014 (USEIA, 2015), possibly due to the exploration of shale oil in US. The US shale oil revolution has resulted in the pullback in US crude imports with producers like Nigeria, Angola and Algeria being the worst affected (Faucon *et al.*, 2013; Fattouh, 2014), falling 41% in 2012 from 2011 (Faucon *et al.* 2013). According to Hou *et al.* (2014, p. 27), “the total effects of the reduction in oil imports from African countries to US “amounts to US\$32 billion (of which US\$14 billion in Nigeria, US\$6 billion in Angola and US\$5 billion in Algeria); we have already observed a decline in African oil exports to the US of US\$23 billion between 2011 and 2012 (or US\$27 billion 2007-12)”. The reduction in the oil imports from Nigeria by US is expected to have serious implications on Nigerian economy given its dependent on oil revenue. Declan (Undated) noted it has made Nigeria fall from 5th to

6th in the list of countries the US imports oil from, falling behind Canada, Saudi Arabia, Mexico, Venezuela and Russia. The various problems afflicting Nigeria such as corruption, human rights infractions, crisis in the NDR as well as the similarity between US shale oil and the Nigerian oil in terms of low level sulphur compounds might have contributed to the decreased import from Nigeria (Ibid).

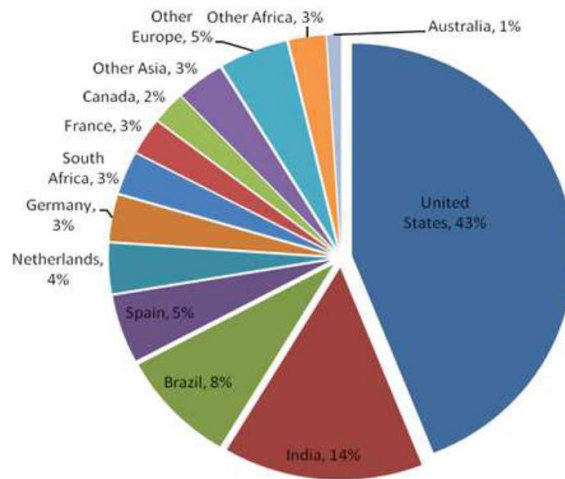


Figure 1.2: Nigerian Crude Oil Exports by Destination
Source: USEIA (2011).

Notwithstanding Nigeria’s loss of US markets, it has been reported that India has overtaken US as Nigeria’s biggest oil buyer (The Times of India, 2013 cited in Declan, Undated). As demonstrated in **Figures 1.3** and **1.4**, Nigeria is the largest source of EU oil imports among the SSA countries, accounting for just over half of their imports. This possibly explains why oil and gas has remained the economic mainstay of the Nigerian state (Aghalino and Eyinla, 2009; USEIA, 2012). Despite the nation’s endowment in terms of various oil reserves and largest natural gas reserves in Africa, the nation suffers limited oil and gas infrastructure to develop the sector (USEIA, 2012). The following section presents the evolution of oil and gas activities in Nigeria.

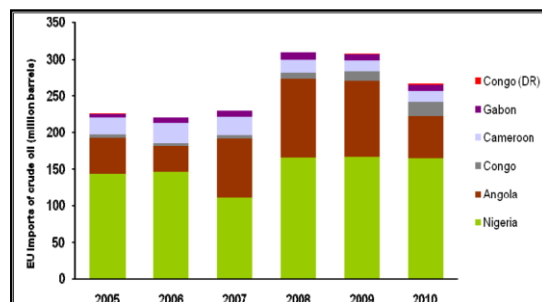


Figure 1.3: Oil imports to EU25/27 from selected SSA countries
Source: EC (2011a).

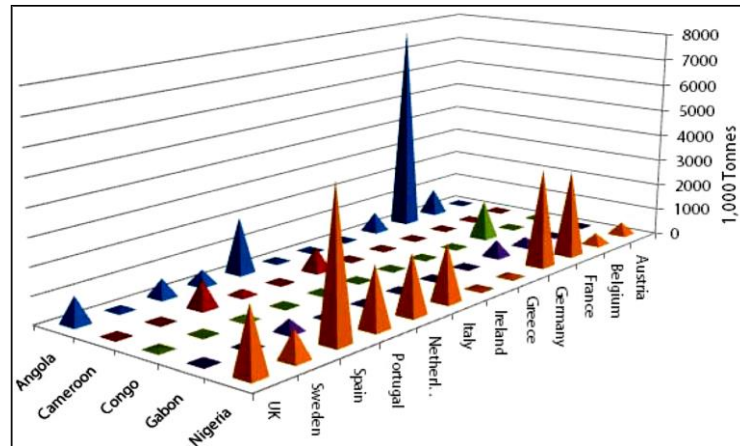


Figure 1.4: Exports of crude oil from selected African countries (2009)
 Source: IEA (2011 cited in Baumüller et al., 2011)

1.3 Evolution of Oil and Gas Activities in Nigeria

The discovery of oil and its exploitation began in Nigeria in 1908 at Araromi, in the present-day Ondo state, by Nigerian Bitumen Corporation, a German company. But this search ended abruptly because of the First World War (1914-1918) (Coastal News, 2010; Chinweze *et al.*, 2012; NNPC, 2012). Frantic search for oil and gas commenced again in 1937 and interrupted by the Second World War (1939-1945) (NNPC, 2012). Prior to the commencement of the war in 1914, the British colonial government enacted Oil Mineral Ordinance no. 17, which empowered the state to determine oil prospecting rights; however, the regulation stipulates that oil prospecting licences or mining leases would only be granted to companies registered in Britain. This regulation gave Shell D'Archy which later became Shell Petroleum Development Company (SPDC) an edge over other companies as they utilised the opportunity to monopolise rights to prospect for oil and gas in the entire Niger Delta Region (NDR) between 1908 and 1959, before the emergence of other oil companies (Chinweze *et al.*, 2012; NNPC, 2012). In 1956 when oil was discovered in commercial quantity at Oloibiri, the present-day Bayelsa state, which culminated in 1958 in full scale commercial oil exploitation and exportation (Ibid).

Following the discovery of oil at Oloibiri, four other multinational oil companies (MNOCs) were issued licences and began operations from 1960-1966, expanding the scale of oil and gas exploration and production activities in the nation (Atsegbua, 1999). The entrance of more MNOCs into the exploration activities at the time triggered a relative competition in the oil and gas industry that resulted to the granting of the first sets of offshore licences for oil prospecting. New entrants joined the industry in Nigeria, namely Texaco and Gulf Oil (now Chevron) in 1961; and Safrap (now TotalFinaElf) and Agip in 1962 (NNPC, 2012). This steadily increased the production outputs from 5,000 barrels at discovery to 400,000 and one million barrels per

day by 1966 and 1970 respectively (Ibid) with a commensurate increase in oil and gas infrastructures in the country.

From the significant inception of oil exploitation in Nigeria in 1956 up to 1970, the MNOCs were the dominant players in the exploration and production of oil and gas activities with Nigeria only collecting Royalty and Tax from the MNOCs (NNPC, 2012). However in 1971, Nigeria joined the Organisation of Petroleum Exporting Countries (OPEC) and in the same year, the Nigerian National Oil Company (NNOC), replaced in 1977 by Nigerian National Petroleum Corporation (NNPC), was created following OPECs' directive that member countries should establish national oil companies (Omoregbe, 2003). At that time, NNPC's primary function was to oversee the regulation of the Nigerian oil industry, with secondary responsibilities for upstream and downstream developments (USEIA, 2012). Since then, Nigeria has become one of the major players in the international oil and gas market, and one of the net exporters of crude oil. Similarly, the Federal Government of Nigeria in 1971 invoked the first participation agreement and acquired a 35 per cent equity interest in all the oil and gas companies operating in the form of Joint Ventures Agreements (JVAs). Nigeria's equity interest increased to 55 per cent in 1974 following OPEC's directive that member countries should acquire majority participating interests in oil and gas ventures in all member countries (Ibid).

Although Nigeria is richly endowed with numerous natural resources, it relies solely on oil and gas industry for development of the nation and this possibly explains why the nation is regarded today as one of the rentier nations in the world (CIA, 2012). From a humble start, the oil and gas industry in Nigeria has risen to being the sixth largest in the world. Similarly, Nigeria's oil and gas sector has evolved into an extensive domestic industrial infrastructure, encompassing over 300 oil fields, 5,284 wells, over 7,000 kilometres of pipeline, ten export terminals, 22 petroleum storage depots, 275 flow stations, 10 gas plants, four refineries and a massive liquefied natural gas (LNG) project (Ekwo, 2011b; Achebe *et al.*, 2012), predominantly situated in the oil production region often referred to as the NDR.

It is important to mention that prior to the discovery of oil, agriculture was the mainstay of the nation's economy in Nigeria and until that point the nation had relied absolutely on agricultural production for food and agro-industrial raw materials for foreign exchange earnings through the commodity trade (NPC and ICF International, 2014). During the nation's independence in 1960, agriculture provided gainful employment and satisfactory livelihood to over 90% of the populace, but over the years the agricultural sector has been taken over by the oil and gas sector (Ibid; Anyahie and Areji, 2015). Oil and gas resources have become the backbone sustaining

the Nigerian state since its discovery, and its role in the actualisation of the nation's developmental objective cannot be overemphasized. As elsewhere in the world, oil and gas remains a dominant source of energy and its use is widespread, providing fuel for industrial, residential and transportation sectors. Oil and gas in Nigeria has been playing a crucial role in financing the nation's economic development and fuelling power and social transformation. The sector has been the engine of development since 1958 and has dominated the nation's economy since 1973 (Okoji, 2000; Twumasi and Merem, 2006; UNEP, 2011; Chinweze *et al.*, 2012; OPEC, 2012; USEIA, 2012; Chinweze *et al.*, 2015). According to Chinweze *et al.* (2015), the sector provides about 95% of the nation's total export revenue, 80% of Federal government revenue and 40% of the nation's gross domestic product (GDP) between 2001 and 2013.

1.4 Research Setting

The Niger Delta Region (NDR)¹ is the hub of oil and gas exploration and production in Nigeria, encompassing nine states: Abia, Akwa-Ibom, Bayelsa, Cross-River, Delta, Edo, Imo, Ondo and Rivers (Figure 1.5). The region is criss-crossed with oil and gas pipelines and other various infrastructures and this probably explains why Watts (2008) noted that for over 40 years the NDR has been an El Dorado of oil and gas exploitation that produces excellent quality oil named Bonny Light at an attractive price.

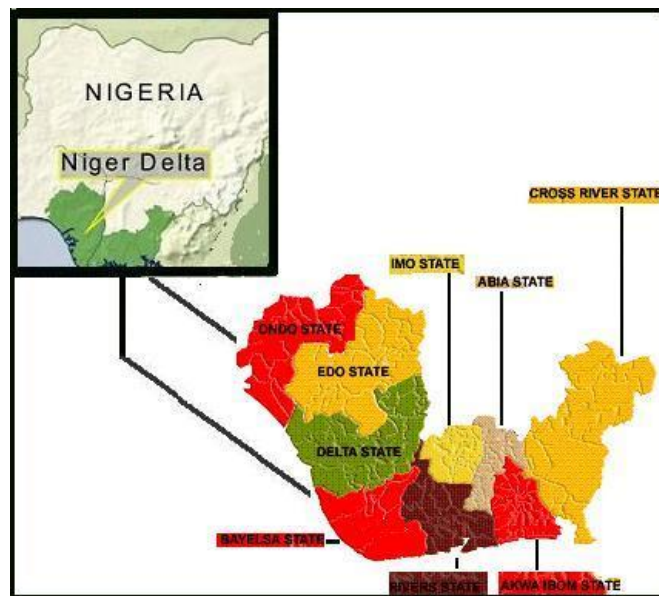


Figure 1.5: Map of Nigeria Showing the Nine States in NDR
Source: Agbu (2012)

¹ The region covers only nine out of the 36 states and 185 out of the 774 local government areas of the Nigerian federation. For the purposes of this study, the NDR is defined as the area of the seven coastal oil producing states in Nigeria: Akwa Ibom, Bayelsa, Cross Rivers, Delta, Edo, Ondo and Rivers.

The region is also a repository of globally important biodiversity that harbours all of the nation's endemic or near-endemic mammal species, including six IUCN Red List mammals² (Blench and Dendo, 2007; Schwitzer *et al.*, 2014; Luiselli *et al.*, 2015), and some endemic and threatened species of flora and fauna, making the region globally recognised as one of the highest conservation priorities of the west coast of Africa (IUCN, Undated cited in Isoun, 2006). Seven states in this region form part of the coastal zone and harbours approximately 60-80% of all plant and animal species found in the country including the locally and globally endangered species.

The region is not only home to biotic elements but also to abiotic elements such as water bodies that serve as fishing grounds and drinking water for many inhabitants of the region. However, the biodiversity of this region is being reduced by different human perturbations, including oil and gas activities (Ezenwaka and Akinsola, 2006; Isoun, 2006; Ekwo, 2011b; Ogwu, 2012; UNIDO, Undated). As documented by Isoun (2006), part of the hydrologic changes in the NDR associated with activities of oil and gas are occurring as a result of coastal flooding and erosion. To Isoun, hydrologic changes that will manifest in coastal erosion and recession may be orchestrated by the construction of canals, breakwaters and jetties; dredging of rivers and estuaries, land reclamation, oil, gas and water abstraction, and removal of vegetation particularly in the mangrove for firewood and other domestic purposes.

According to Chinweze *et al.* (2012), the food security of the nation is undergoing serious threat as the problem of oil spill has rendered fishing and agriculture unproductive with food now being imported even in the NDR which was once known as the food-basket of the nation. For example, Ogunleye (2008) reveals that over 200 species of coastal and brackish water fish and shellfishes have been identified to be susceptible to the impacts of pollution along the coastal area of Nigeria.

Cicin-Sain and Knecht (2008) noted that the marine environment has four main attributes: (i) It contains habitats and ecosystems (such as estuaries, deltas and mangroves) which provides goods (such as fish, oil and gas) and services (for example, natural protection from storms and tidal waves) to coastal communities. (ii) Competitions for land and sea resources and space among various actors/stakeholders that often lead to severe conflicts and deleterious impact on

² The six IUCN Red List mammals in NDR include Crested Genet (*Genetta cristata*), Three-cusped pangolin (*Manis tricuspis*), Long-tailed pangolin (*Uromanis tetradactyla*), African manatee (*Trichechus senegalensis*), African forest elephant (*Loxodonta cyclotis*) and Hippopotamus (*Hippopotamus amphibius*) (Luiselli *et al.*, 2015).

the functional integrity of the resource system. (iii) The environment functions as the major source of the national economy of the coastal states as notable number of the gross national product relies on oil and gas exploitation and production. (iv) The area is thickly populated and centre for industrialisation (similar to the array of oil and gas activities in the NDR). The NDR is the most important ecological zone of economic and international significance in Nigeria.

The NDR has a rich biodiversity and the ecosystem supports numerous species of economic and ecological importance. As noted by MEA (2005), the ecosystems in this region provide provisioning, regulating, cultural and supporting services for the well-being of the coastal communities. Given the presence of oil and gas activities, the region enjoys the status of being an important economic hub in Nigeria.

The NDR possesses a wide variety of places whose history, culture, landscape, and ecology have the potential for generating a vibrant tourism industry which can be explored for economic development of the region (NDDC, 2006). These include areas such as Ogoni land in Rivers State, and Kaiama and Odi in Bayelsa State, which epitomize the 'Niger Delta cause'³ worldwide. There are numerous sites in the region that are famous for their cultural, historical and ecological features (Ibid). The tourism sector in the region, if developed would have provided wealth of employment opportunities for some of the unemployed youths and possibly open up other sectors for development. However, it is apropos to state that the development of the sector has not received adequate government attention due to the revenue accruing to the region from oil and gas. Moreover, there is the likelihood that even if the sector was developed, it will not enjoy much patronage because of fear of insecurity that characterises the region (Okey, 2003; Adora, 2010; Ajayi, 2012), which is a result of oil and gas activities (Ojakorotu, 2010). This suggests that the cultural ecosystem services of the region have not been fully maximised or it's a trade-off.

The specific locations of this research are Awoye and Ojumole which fall under Ilaje Local Government Area (ILGA) (**Figure 1.6**) that is situated at the southern edge of Ondo state in the NDR of Nigeria. ILGA is one of the 18 local government areas in Ondo State and it abuts the Atlantic Ocean in the southern part of the State. The State was created in 1976 from the former Ondo Province of the old Western Region and is the only oil producing state in the south-west of Nigeria. The coastal communities in Ondo State like the rest of the NDR are not only living

³ Struggle for self determination

in swampy areas without basic infrastructural facilities like good drinking water, electricity, health care services, they are also poor and there is problem of insecurity (though very minimal in Ondo State compared to other States in the region) (UNDP, 2006). The communities therefore depend on the rich biodiversity and ecosystems for their needs including fishing, farming, drinking water, hunting and trading among others (UNDP, 2006; Babatunde, 2009; Babatunde, 2010; UNIDO, Undated).



Figure 1.6: Map of ILGA showing the coastal communities
Source: OSOPADEC (2008)

The NDR is endowed with all the eight different types of mangrove that exist in West Africa (UNEP, 2007) and they play significant roles in the wellbeing of the people in the region. The people in the coastal communities in Ondo State utilise the mangrove mostly the red mangroves (*Rhizophora racemosa*) and white mangroves (*Laguncularia racemosa*) for various purposes including building construction, boat construction, wooden bridges, medicinal purposes, dye and household equipment among others (UNIDO Undated). However, the oil and gas pollutants have in no small measure been contributing towards the degradation of these resources. For example air, water and land pollution from oil and gas activities, is well documented (UNDP, 2006; Babatunde, 2010; Ibaba, 2010; Ogwu, 2012) and they are having grave impacts on the BES that the communities depend on. This impact is the subject of the next section.

1.5 Statement of the Problem

1.5.1 Oil and Gas Activities: Negative Economic Externality

Whereas oil and gas activities have contributed immensely to the economic fortune of Nigerian state, the socio-economic loss and costs to the nation and the host communities in the NDR respectively cannot be glossed over. While the positive impacts of oil and gas to the Nigerian state has been stated above, it must also be borne in mind that there are also negative economic externalities of the resource to the nation. For example, authors like Sala-i-Martin and Subramain (2003), ANEEJ (2004), UNDP (2006) and Karl, (2007) evidenced some disagreements about the unparalleled contribution of oil and gas to the Nigerian economy. Sala-i-Martin and Subramanian (2003) noted that despite the huge revenue from oil and gas, Nigeria's GDP per capita in 2000 was roughly the same as in 1970 and the proportion of the population living on less than a dollar a day went from 36% to 70% over the same period. However, between 1965 and 2000, the per capita oil revenue increased from US \$33 to US \$325. In 1970, the top 2% of income earners made as much as the bottom 17%; in 2000 the income of this top 2% was equivalent to the income of the bottom 55% combined.

Karl (2007, p. 664) observes that oil revenues have not changed things for better but rather increased poverty. In his words:

“Despite the fact that over \$300 billion in oil profits has been generated over the past 25 years, the proportion of households living below the United Nation's absolute poverty line of \$1 per day has grown from 27% in 1980 to 66% in 1996. Income disparities are shocking: the richest 10% controls 40% of the country's wealth and its poorest 20% has a share of just 4.4%.”

Similarly, human capital development of the nation has not improved as shown in the nation's Human Development Index (HDI) value⁴ for 2011 that stands at 0.459 which places Nigeria in the 156th position out of 187 countries and territories (UNDP, 2011). It is also worth mentioning at this juncture that despite the nation's endowment in natural resources such as oil and gas resources, the country has not performed in key areas such as providing basic infrastructures (education and health) for the people which border on human development. Moreover, the concern expressed above about Nigerian state and oil is not strange but has been established in the dominant context that they exemplify a classic paradox of the “resource curse” in developing countries (Auty, 1993; Ross, 1999; Collier and Hoeffler, 2002; Ross, 2003; Sala-i-Martin and Subramanian, 2003; Collier, 2007). According to Sachs and Warner (1995), economies with abundant natural resources have tended to grow less rapidly than

⁴ The Human Development Index (HDI) value includes three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living.

natural-resource-scarce economies. In effect, wealth in natural resources, combined with a weak economy and poor governance, turns into what has been called the “resource curse”: an extensive destruction of economic, social, and political structures, including the undermining of a country’s institutional setup, leading to poverty rather than development. But natural resources wrecks much havoc than economic stagnation: it also inhibits democracy (Ross, 1999), for instance by enhancing distributive influence of an elite (Vincent, 2005 cited in Okpanachi 2011), failure to invest adequately in education and human capital (Gylfason, 2001), and worsening corporate transparency (Durnev and Guriev, 2009). This suggests that the revenue from oil and gas does not translate to meaningful development in the entire nation, let alone in the NDR where the locals bear the brunt of oil and gas externality beyond what is being experienced generally in the nation.

One of the major issues associated with the presence of abundant natural resources, is the possible negative impacts that they can have on the rest of the economy. As Dobrynskaya and Turkisch (2010) point out, a notable decrease in the manufacturing productivity can be observed as a direct outcome of the increased importance of resource exploitation in a nation’s exports. This impact is noticeable in emerging markets that depend on the development of their natural resource sectors. For example, this impact was conspicuously noted in Netherlands after the discovery of natural gas deposits off its shores in the 1950s and 60s, resulting in the development of the concept of ‘Dutch Disease’ (Powell, 2008). This is also true about Nigeria’s economy as shown in some recent studies that given Nigeria’s over-reliance on proceeds from oil, diversification of the economy and development of other sectors such as exploitation of abundant solid minerals, agriculture, manufacturing industries and service industries has not been possible (Okeagu et al., 2006; Popoola, 2012; Anyahie and Areji, 2015). According to Anyahie and Areji (2015, p. 89), the failure of the nation to diversify the economy has subjected it to “economic instability occasioned by the vagaries of international oil markets, gross unemployment, poverty in the face of plenty, and a passive political leadership that is lukewarm in articulating and embarking on viable economic policies”.

In a related discussion, ANEEJ (2004) and UNDP (2006) found that since 1970 oil revenues from the NDR had contributed US \$350 billion to the nation’s economy and they regretted that the region where the money came from remained one of the most impoverished parts of the nation. The implication of this finding is that the level of development achieved in the country is not commensurate with the huge revenue the country had generated from oil and gas, just as the country and its citizens remained poor. The situation is worse and worrisome particularly

in the NDR where despite the region's endowment in natural resources masses in the midst of plenty are poor and suffering from long years of neglect, disintegrating infrastructure and services, high unemployment, social deprivation, abject poverty, filth and squalor and endemic conflict (UNDP, 2006).

1.5.2 Oil and Gas Activities: Biodiversity Loss and Ecosystem Services Degradation

In Nigeria and as in the rest of SSA negative impacts of the oil and gas industry are a major concern threatening not only the health of local communities, but also their livelihoods (Baumuller et al., 2011). The various stages in the oil and gas supply chain including the pre-production stage, production stage, and the decommissioning stage portend grave danger to BES. For example, major activities during the pre-production stage include seismic activities and laying of pipelines which in most cases require clearing of lands or construction of canals and these activities have the tendency of destroying biodiversity and altering the ecosystems. Further, many risks are associated with the process of production, refining of petroleum products and transportation/distribution of the resource through pipelines, barges and ships (Ite et al., 2013). The main risks that characterized this stage in the oil and gas supply cycle across the globe are oil spill and gas flaring where they create problems of ecosystem despoliation, contamination of soil, contamination of underground water, air pollution among others (Ibid). For example, due to the extensive oil and gas activities taking place in the NDR on daily basis, the region remains the most spill-vulnerable area in Nigeria and this possibly justifies why Baumuller et al., (2011) observe that of all Sub-Saharan African countries, Nigeria is probably the most notorious for oil and gas production and oil company related problems. The NDR is not spared from this problem.

The post-production stage which is otherwise known as the decommissioning and rehabilitation or restoration stage is also not free from environmental and health risks. Studies have revealed the failure of the oil and gas companies in the NDR to restore sites back to their previous state after exploration and production (Ogwu, 2011; UNEP, 2011). Both authors reported the abandonment of oilfield infrastructure in the NDR by oil and gas companies at various sites after exploration and production even when it was obvious the infrastructures are no longer in use.

Healthy ecosystems provide a variety of vital goods and services that contribute directly or indirectly to human well-being. The global ecosystems services have an immense but underestimated economic value, estimated to USD 16-54 trillion in 1997 (FAO, 2012).

Data on the quantity of oil spilled in Nigeria is highly contested or missing. According to Baumüller *et al.* (2011), the worst-case figures put daily average loss of oil at 712 barrels per day and the lowest official figures put the loss at 93.9 barrels per day. Oil spills can impact on ecosystems in various ways. In some of the coastal communities in the NDR, the original ecosystems of the places have been permanently modified and this has hindered the ecosystems from performing its various services which in turn has generated countless economic, social, environmental and health problems for the people.

Another issue of concern is the gas being flared in the course of oil exploration and production. This has continued to be a common praxis in Africa and particularly problematic in Nigeria's NDR (see **Table 1.2**) where much of the production happens onshore, with estimates of the share of gas being flared ranging from 20% to 76% compared to a worldwide average of 4.8% (Baumüller *et al.*, 2011). Notwithstanding the huge economic benefits that a nation supposed to derive from harnessing this globally-sought after resource (Madueme, 2010; Buzcu-Guven and Harriss, 2012), venting and flaring of gas is still very high in the NDR of Nigeria. Campbell (2004 cited in Ite and Ibok, 2013), reports that 2.5 billion cubic feet of gas were flared everyday by the oil and gas companies in Nigeria with an estimated economic loss of \$2.5 billion annually. Another recent study revealed that economic loss to the nation due to gas flaring was estimated to be \$17 billion annually (Anomohanran, 2012). Apart from its contribution to greenhouse emissions, it has negative impacts on the human health and their livelihoods. Communities in the NDR have reported a number of illnesses associated with the pollution, including gastrointestinal problems, skin diseases, cancers and respiratory ailments (Baumüller *et al.*, 2011; Ite and Ibok, 2013; Chinweze *et al.*, 2012).

Table 1.2: Extent of gas flaring in SSA countries (1995–2010)
(In billion cubic metres)

	1995	2000	2005	2010
Angola	4.51	5.94	4.72	4.08
Cameroon	1.15	1.19	0.97	0.92
Chad	0.00	0.00	0.09	0.05
Congo	1.08	2.02	1.79	1.88
Côte d'Ivoire	0.06	0.09	0.04	0.09
DRC	0.53	0.43	0.44	0.39
Eq. Guinea	0.61	1.21	1.36	0.39
Ghana	0.00	0.00	0.01	0.02
Gabon	2.15	2.54	2.36	1.68
Nigeria	27.09	27.19	21.25	15.18
South Africa	0.06	0.13	0.14	0.10
Global	154.97	164.90	171.65	133.90

Source: NOAA (2011 cited in Baumüller *et al.*, 2011).

Poverty remains widespread, in spite of oil and gas being a high-stakes sector for many African oil producers. The lack of transparency in oil and gas revenues makes it difficult to hold governments to account and to fully understand the potential economic benefit of the sector for national economies. Nigeria has made progress in this regard and has been judged compliant with the Extractive Industries Transparency Initiative (EITI), though the tangible benefits this process has had for communities has been called to question (Baumuller et al., 2011). Oil and gas companies have also been blamed for giving rise to conflicts and social unrest in the areas where they operate as communities vent their anger about limited employment opportunities in the oil and gas industry, inequitable sharing of oil and gas revenues, environmental degradation and threats to (BES) local farming and fishing livelihoods (Ibid; Karl, 2007).

It is now a globally accepted that biodiversity is fundamental for the sustainability of the present and future human livelihoods (MEA, 2005). Human-dominated coastal ecosystems are experiencing accelerating loss of populations and species, with largely unknown consequences. The continued business as usual approach to the governance of oil and gas sector in Nigeria with regards to the conservation of BES portends serious danger for the present and future generations at both the global and national level. The continued destruction of biodiversity would presage serious threats to global food security, and ecosystem stability, affecting current and future generations (Worm *et al.*, 2006).

Some of the human-induced changes such as logging, hydrologic changes, water availability and quality, development projects, and pollution that have consequential impact on the region's biodiversity and ecosystems could be managed (Isoun, 2006). Aguilera et al., (2010) found that follow-up health assessments of major oil spills typically show acute effects to be reversible and to decline over time. This is only possible where there are adequate basic amenities such as clean water, electricity and good health care facilities among others to cushion the effects of ES degradation and cater for the wellbeing of the people. Conversely, in the NDR where it has been established that the people are languishing in poverty and basic infrastructures are lacking (UNDP, 2006), the people would be subjected to more long term impacts of oil and gas activities as long as business as usual approach in the governance of the sector is maintained.

The continued environmental degradation due to oil and gas activities has devastated the BES that support the well-being and livelihood of the people in the coastal communities in Ondo State and as in the rest of the NDR and their conditions of living have been exacerbated by the

poverty in the region. This parlous state in the region has attracted local and international concern, leading to series of efforts aimed at mitigating the problems and improving living conditions within the communities. However, in spite of the application of the extant policies/regulations and the oil and gas companies' efforts there is still much to desire and many aspects of this challenge remain substantially under-researched.

The question therefore is: Will oil and gas activities in the NDR continue to degrade the BES that the residents of the coastal communities in the region depend on for livelihoods? Which possible solution exists at domestic, regional and international level that can assist the conservation of BES from further degradation from oil and gas activities? These are the major questions the contributions in this study seek to answer.

1.5.3 Governance of Oil and Gas Sector in Nigeria

A recent governance assessment of 58 countries producing 85% of the world's oil and gas placed Nigeria 40th in the overall global ranking (Okafor 2013). The report noted that the poor ranking of Nigeria in the governance of oil and gas sector is a reflection of opaque praxes, lack of accountability on revenues and the government's incomplete revenue disclosure policies that transcends public access to information (Ibid). As Reuters in an article in November, 2012 stated that oil in Africa tends to rely on three "Big G's" of geology, geography and governance (Stoddard, 2012). In Nigeria, the geology and geography have been favourable for oil and gas activities but mostly the governance not. The governance issue within the oil and gas sector in Nigeria was further buttressed by (Chinweze *et al.*, 2015, p. 3) that the sector "has always been run in a slipshod manner, with inefficient and weak entities, that precipitated monumental waste/grafits which is embedded in social exclusion". It is against this backdrop, this study aims to assess the implications of the governance of the oil and gas sector with regards to conservation of BES on the socio-economic activities and environment of the NDR of Nigeria. Moreover, recent studies in the region corroborated the fact that the absence of effective governance framework for the management of oil and gas with regards to conservation of biodiversity has created a void within which the above problems are multiplying (UNEP, 2011; UNDP *et al.*, 2012).

1.5.4 Oil and Gas Policies and Regulations

Inadequate policies and regulations that support and provide an enabling environment to assist businesses carve opportunities from BES maintenance emerges as a significant hindrance to continued sustainable growth (IADB, 2012). The Nigerian government in its bid to address the

extensive problems associated with oil and gas pollution and to protect the environment including conservation of BES has promulgated various policies and regulations starting from the nation's constitution. These policies and regulations are presented in **Table 5.2** and reviewed in Chapter Seven.

Notwithstanding the plethora of environmental policies/regulations to mitigate the impacts of oil and gas activities on the fragile ecosystems of the NDR, environmental problems has remained a recurrent issue that has not only attracted the attention of environmentalists within and outside the country but has continued to give the policy makers so much concern. While the persistency of the oil and gas environmental problems including biodiversity loss and ES degradation in the NDR is a function of many factors, weakness of the institutional settings which is an issue in most developing countries (Grindle, 2004; Roll, 2011b) that can often determine the success or failure of a policy response (MEA, 2005) could be a factor. This is just as O'Connor (2008) noted that many market-based incentive mechanisms for biodiversity conservation have resulted from the recognition of weak government and institutional capacity in developing countries.

A number of initiatives are being implemented to mitigate some of these impacts, including government regulations in oil/gas producing and importing countries, community engagement, and international standards and initiatives. Regarding regulations in oil/gas producing countries, many feel that implementation and enforcement are the main constraints rather than the regulations themselves (Baumuller et al., 2011). Dealing with environmental and health impacts is also complicated by the strong position of petroleum ministries vis-à-vis other government departments due to issues such as overlap in responsibilities and conflict of interests among government institutions. In addition to national laws, oil/gas companies are also subject to joint-venture or production-sharing agreements with the host government, which provide opportunities to impose additional requirements, but also leave the details to the discretion of the government rather than enshrining them in law (Ibid). For example, in the event of acquisition and clearing of land or construction of canal for pipeline installations for oil/gas purposes and during oil spill incidents, section 44 of the Nigerian constitution stipulates that compensation must be paid to human beings, for plants and animals whose rights over such immovable property must have been violated (COFRN, 1999). The fact that the people are not adequately compensated (Babatunde, 2009; 2010; Ogwu, 2012) is indicative of an infringement on the fundamental human right of the people to a healthy environment which Ogwu (2012) described as environmental injustice.

DPR-EGASPIN (2002) is the guideline/standard that the Department of Petroleum Resources (DPR) uses to regulate the impacts of oil and gas activities on the environment including biodiversity and ecosystems. Part VIII (Section A 1.4.3) of this guideline/standard stipulates that an Environmental Impact Assessment Report is compulsory for some activities like drilling operations, construction of crude oil production facilities, tank farms and terminal facilities, oil and gas pipelines (in excess of 50km), hydrocarbon processing facilities and product processing. The EIA process in Nigeria encompasses three areas of impacts namely, the bio-physical, the socio-economic and health impacts (Nnah and Owei, 2005) but these are not always fully considered in the event of oil and gas impacts. For instance, prior to the enactment of the Land Use Decree Act (1978) which is one of the policies employed in the governance of oil and gas activities in Nigeria, NNPC at its inception in 1977 paid compensation to host communities for portions of land acquired for its projects. While the decree only provided for compensation for economically productive trees and structures, it excluded compensation for land acquired for oil and gas projects including infrastructures. This has often provoked agitation in oil producing communities particularly among the truculent youths, often leading to pipelines vandalism and other oil and gas installations (Essien, 2004). Baumüller *et al.* (2011) observe that the issue of money and compensation has come to dominate the oil spill agenda in Nigeria, which presupposes that clean-up has become less of a priority than establishing who is responsible for the spill and how compensation could be maximised.

Generally, in oil and gas producing countries, the main challenges relate to the lack of political will and capacity to implement and enforce national regulations for the conservation of the environment, highlighting underlying governance challenges that need to be addressed. There is need for increased cooperation and coordination to mitigate negative impacts of oil and gas industry activity among all stakeholders. Governments, oil and gas companies, civil society and communities must positively engage and work closely together (Baumüller *et al.*, 2011). This further underscores the significance of this study in investigating how the oil and gas sector in Nigeria is governed.

1.5.5 Oil and Gas Companies' Efforts

According to Roll (2011), since the late 1990s companies that are involved in the extraction and exportation of natural resources such as oil and gas have come under increasing international pressure. The companies' recognition of the impacts of their activities in the host communities and adoption of the corporate social responsibility (CSR) approach in which some

of their large profits were used for the provision of infrastructure and services to the communities were the corollary to the international pressure (Ibid). This approach has been heavily condemned because of its inadequacy to expiate for the massive structural, particularly environmental and economic damages done to the residents of the host communities. Moreover, a large number of the CSR activities were found to be mainly PR activities for the respective companies (Roll, 2011).

Under the banner of CSR, MNOCs invest substantial amounts of money in community projects, though often with limited sustainable impacts. In response to increasing violence from the truculent youths in the NDR, companies are increasingly moving towards engaging local communities in partnerships. However, why the oil and gas companies can play a significant role in terms of assisting in development of the region, they run the risk of filling the role of the state in terms of service provision. In some areas in the NDR, oil companies are even seen as having taken over the role of government through extensive infrastructure provision (Idemudia, 2008). Critics have also noted that CSR only addresses some of the symptoms of poverty, but ignores underlying development challenges. Impact is determined by the capacity and ability of actors as well as their responsiveness and the sustainability of their actions. The government of Nigeria has a critical role to play in mitigating negative impacts of the oil and gas sector on BES in the nation but as noted by Baumüller et al., (2011) external efforts to ensure better environmental and social performance by oil companies will be undermined if there is no political will and improvements in governance.

In the past decade, the way that oil and gas corporations chose to engage with local communities through development projects caused inter-community conflicts in the NDR between communities participating in such projects and those that did not because the legal framework did not make provision for stakeholder engagement (Baumüller *et al.*, 2011; Aaron, 2012; Chinweze *et al.*, 2015). Aligning business practices with societal needs and expectations that would help to drive long-term sustainability and stakeholders' value therefore become problematic. This research aims to investigate the governance of oil and gas sector in Nigeria with regards to conservation of BES in the NDR and the feasibility of developing an effective oil and gas governance framework that is all inclusive and has the capability of addressing the social, economic, health and environmental challenges associated with BES loss and degradation in the region.

1.6 But Why Research on Governance of Oil and Gas and Implications for Biodiversity and Ecosystem Services?

The 2011 report submitted to the European Parliament shows that despite some advances, negative impacts from oil and gas sector remain a vital issue of concern in Sub-Saharan Africa (SSA) where it threatens not only the health of local communities but also their source of livelihood (Baumuller *et al.*, 2011). The research aims to investigate how the governance of oil and gas sector in Nigeria contributes to BES loss and degradation in NDR, Nigeria. It is expected the findings will contribute towards recognition of the various relevant actors/stakeholders and encouraging them to be involved in the governance process with a hope of improving governance approaches in the future.

The major challenge globally even in democratic systems is that the people most adversely beleaguered by environmental degradation are often the worst off and least empowered as policy priorities do not reflect their interests and needs (UNDP, 2011). Ajakaiye (2008) observes that mostly when oil spills occurs the losers are the most vulnerable while the winners tend to be less vulnerable and possess the economic and privileged political power to influence institutions and the decision making process. Following the Deep Water oil spill in the Gulf of Mexico in 2010, Aguilera *et al.* (2010) found that the most vulnerable to the acute effects associated with oil spills are the clean-up personnel, who often include volunteers. The implication of this in the context of this study and as in the rest of the NDR where the people are predominantly rural, uninformed (UNDP, 2006) and unprotected, it is the occupational groups such as fishermen, farmers and artisans whose livelihood is dependent on the coastal BES that will suffer disproportionately of the effects of oil spills.

The striking and main distinction between the developed and developing world is the presence, and persistence, of levels of poverty. The poor are often viewed as forced to exploit their surrounding environmental base for instant and short-term survival (Hartter and Boston, 2007). They are also the ones that are presumed to be most vulnerable to, and affected by, natural resource degradation (WCED, 1987; Casey *et al.*, 2008). Almost 70% of the overall population in developing countries live in subsistence-based rural communities and this has resulted to heavy pressures being mounted on the natural resources in the region with resultant resource degradation (World Bank, 2004 cited in Hatter and Boston 2007). In SSA for example, 58% of the labour force is linked with agricultural activities (UN Human Development Report, 07-08 cited in Teelucksingh and Nunes 2010). Given the rate of biodiversity loss and ecosystem services degradation across the globe (MEA, 2005; Worm *et al.*, 2006; Costanza and

Kubiszewski, 2007) and from the impacts of oil and gas activities in the NDR which the government and oil companies' efforts have not been able to address, a study on the governance of the sector is not only innovative but necessary.

Although, environmental degradation from the impacts of oil and gas pollution in the NDR has been a subject of intense analysis for about two decades and several studies have been conducted in this regard (see for example Akinwunmi *et al.*, 2001; Onwuka, 2005; UNDP, 2006; Ibeanu, 2008; Babatunde, 2010; Babatunde, 2010b; Olujimi *et al.*, 2011; UNEP, 2011; Ite and Ibok, 2013; Ite *et al.*, 2013). For decades most of the studies conducted in the region focused generally on the environmental and socio-economic aspects of the impacts of oil and gas with little studies on health impacts but this has been changing in recent times (see Gobo *et al.*, 2009; Egwurugwu *et al.*, 2013). The study of Ugochukwu and Ertel (2008) which is the closest study to this research only discussed the negative impacts of oil exploration on biodiversity but did not consider the interrelationship of governance of the sector and ES. Other important studies conducted in the region include that of (Ekwo, 2011b) and Ogwu (2012). While the former centres on collaborative management approach to address the problems of vandalism of oil and gas pipelines, the latter canvases for environmental justice as framework to address problems associated with impacts from oil and gas activities particularly from pipeline vandalism. Apparently, none of the previous studies has specifically considered the implications of the governance of the sector with regards to BES loss and degradation on coastal communities in Ondo State and NDR. Furthermore, there has not been more emphasis on the implications of the oil and gas activities on the BES that the oil and gas industry and people in host communities depends on. Moreover, what the past studies overlook is the fact that it is the BES that underpins the environmental, social, economic and health impacts in the region. This presupposes that there would not have been discourse on environmental, economic, social and health benefits or impacts without the BES. Just as Palumbi (2001) noted that the decline of populations, extinction of species, and habitat transformation require urgent action, this study seeks to bridge this lacuna by providing implications for the BES in NDR and the nation.

Another major justification for this study is the need to bridge the gap in the dearth of academic activities on BES loss and degradation in Nigeria contrary to what obtains in some of the other African countries and other continents like Europe and America. For example, following the publications of the Millennium Ecosystems Assessment (MEA) that drew the attention of the world to the rate of BES loss and degradation in 2005, there has been series of publications on BES across the globe including Africa but only South Africa has been leading the way on

research on ES (see Costanza and Kubiszewski, 2012). A review of spatial indicators used for mapping ES across the globe by Egoh et al. (2012b) as demonstrated in **Figure 1.7** revealed that approximately 20% of 67 studies on ES were from Africa with most of African studies conducted in South Africa. Egoh and colleagues further found that in addition to South Africa, case studies were also carried out in Kenya, Namibia and Tanzania (**Table 1.3**) (Ibid), while none was carried out in Nigeria. Furthermore, a review of first author's affiliation also shown that most of the authors of studies in Africa were based in South African institutions (8) with the rest in the USA (5) and UK (1). This study is therefore set to provide information on the analysis of the contribution of oil and gas activities to BES loss and degradation in Nigeria.

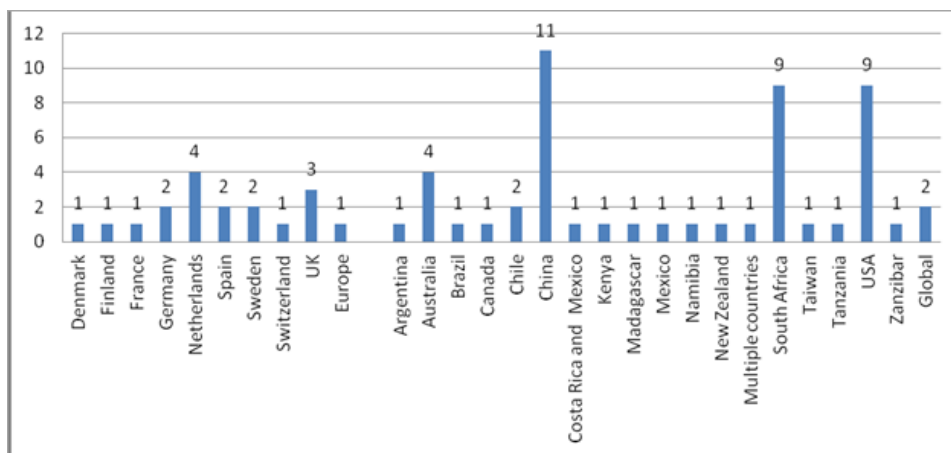


Figure 1.7: Number of studies that have mapped ES per country
Source: Egoh *et al.* (2012b, p. 41).

Table 1.3: Studies that have mapped ES in Africa and their main theme

Lead author	Year	Country of study	Extent of study area	Country of affiliation	Theme
van Jaarsveld Albert	2005	South Africa	Local	South Africa	Scenarios analysis
Egoh Benis	2008	South Africa	National	South Africa	Biophysical mapping and congruence
Van Wilgen Brian	2008	South Africa	National	South Africa	Effect of invasive species
Egoh Benis	2009	South Africa	National	South Africa	Congruence with biodiversity
Lange Glenn-Marie	2009	Zanzibar	National	USA	Economic valuation
Reyers Belinda	2009	South Africa	Local	South Africa	Biophysical mapping and trends
Swetnam Ruth D.	2009	Tanzania	Local	UK	Scenarios analysis
Chisholm Ryan A.	2010	South Africa	Local	USA	Trade off analysis
Egoh Benis	2010	South Africa	Local	South Africa	Congruence with biodiversity and Trade offs
Wendland Kelly J.	2010	Madagascar	National	USA	Economic valuation
Egoh Benis	2011	South Africa	Local	South Africa	Identifying priority areas for managing ecosystem services
Naidoo Robin	2011	Namibia	National	USA	Economic valuation
O'Farrell Patrick	2011	South Africa	Local	South Africa	Biophysical mapping and valuation
Simonit Silvio	2011	Kenya	Local	USA	Economic valuation

Source: Excerpt from Egoh *et al.* (2012b, pp. 48-69).

Furthermore, this thesis will support the global evolution of governance methodologies and mitigation approaches for managing development impact on BES and associated processes to engender and facilitate implementation. In the report published following the 1992 conference it was contended that humanity was “confronted with ... the continuing degradation of the ecosystems on which we depend for our well-being” (UNSD, 1992, p. 3). Faced with this mounting degradation it was suggested that the world was at a “defining moment in history”

(Ibid) which required joint effort by governments, NGOs, citizens and other social actors. Some nine years later, just prior to the World Summit in Johannesburg in 2001, Kofi Annan, the UN Secretary General, resonated this call indicating that: “if we are to maintain a viable global environment there is no choice but for governments, United Nations entities, the private sector and civil society to work together” UNEP (2001, p. 3). Similarly, Wattage (2011) established that there is a global consensus on the need to implement stakeholder management methods for food security, poverty reduction and the conservation of ecosystems utilising coastal resources. This further underscores the significance of this study.

Apart from Nigeria’s loss of US market in the export of its oil as noted in section 1.2 which is partly a governance issue (Declan, Undated), another challenge again to the Nigeria oil and gas sector is the fact that in recent time oil has been discovered in commercial quantity in some non-oil producing countries in Africa including Uganda, Kenya and Tanzania. With these countries coming on board in the exploration and production of oil and gas activities, there is every tendency that the demands for oil and gas from Nigeria may further reduce and this would have grave implications for the economy that is oil-dependent and Nigeria cannot afford to continue to depend on the resource alone. For example, due to Nigeria’s overdependence on oil and gas coupled with the vagaries in global oil prices in recent times the different tiers of government in Nigeria cannot pay their workers talk less of embarking on any meaningful developmental project (Anyahie and Areji, 2015). A study on the governance of the oil and gas sector with a view to mitigating BES loss and degradation is therefore not only necessary but desirable. This would assist in the discovery of other untapped solid minerals such as bitumen, gypsum, limestone, magnesite, glass sand and rock-salt among others that are of national economic importance within the NDR that may be affected as a result of continued degradation of coastal BES from oil and gas activities. According to Gabriel (2015), Nigeria’s failure to tap the benefits of its solid minerals has rendered the nation poor.

1.7 Theoretical Contribution

The cardinal interest in this study concerns the interactions that exist among the disparate governing actors that are involved in the governance of the oil and gas sectors whose actions or inactions have contributed to the BES loss and degradation in the NDR of Nigeria. System theory which has metamorphosed from its original organismic biology into humanities and social sciences is being used as a platform to study human behaviours (Laszlo and Krippner, 1998). The authors further contended that the emergence and increase of systems theory has been supported by societal pressures on science demanding for the development of theories

capable of interdisciplinary application. The different conceptual frameworks of the systems approach and associated areas have much to provide for the construction of an holistic methodology for perceptual enquiry (Ibid). This is the basis from which Kooiman (2008) builds his work on the three fold dimensions (system-to-be-governed, governing system and governing interactions) of interactive governance framework (IGF). In applying this approach to the research, the study explores how the issues of system-to-be-governed, governing system (GS) and the interactions between the two systems can contribute to the conservation of BES from the impacts of oil and gas activities.

Based on preliminary readings and the literature reviewed, this study first refined the concept of Interactive Governance for oil and gas sector to embrace all aspects of sustainability in the conservation of BES and propounded a rationale for stakeholder involvement in the governance process. Interactive governance of oil and gas sector is about harnessing all contending interests through interactions within the system-to-be-governed (natural and socio-economic systems) and the GS in the oil and gas sector with a view to facilitating consensual efforts towards the conservation of BES and open up other opportunities for all stakeholders. The study particularly made theoretical contribution to knowledge.

This study advances five theoretical arguments. Firstly, it argues the need for regular interaction in the framework for governance of oil and gas sector that will recognise and involve all relevant stakeholders in the conservation of BES including the local communities. In this sense, it contends that attempts to restrict the involvement of any stakeholder in the governance framework will bias the concept of IGF.

The second argument developed is that CSR can find expression in interactive governance with the goal of sustainable development and, particularly, within the purview of Agenda 21. This would operate to mitigate the harsh socio-economic and environmental conditions that underpin the myriads of problems in oil and gas producing communities. The third argument is about mainstreaming BES into Environmental Impact Assessments (EIA) of oil and gas companies before licences are issued to them. This is important because EIA is a major governance instrument being used to mitigate human perturbations on the environment but evidence abounds that adequate consideration has not been given to the aspects of BES in EIA reports of oil and gas activities in Nigeria.

Due to the inadequacies of EIA in addressing a regional problem like the one being witnessed in the NDR, the fourth argument developed is the need to introduce Strategic Environmental Assessment (SEA) into the operations of oil and gas activities in Nigeria because of its wider coverage to address issues than EIA. The fifth argument concerns the question of whose values, norms and principles benefits from the IGF, where it is contended that a fundamental feature is the recognition of the values, norms and principles of all relevant stakeholders within an all-inclusive framework which would guarantee justice for all interests. The values and the principles should be made explicit and deliberated upon rather than being implicit as this would foster a win-win situation among all stakeholders and would provide environmental justice for all, though trade-offs cannot be ruled out.

1.8 Research Aim and Questions

The cardinal interest in this study concerns the interactions that exist among the disparate governing actors that are involved in the governance of the oil and gas sectors whose actions or inactions have contributed to the BES loss and degradation in the NDR of Nigeria. System theory which has metamorphosed from its original organismic biology into humanities and social sciences is being used as a platform to study human behaviours (Laszlo and Krippner, 1998). The authors further contended that the emergence and increase of systems theory has been supported by societal pressures on science demanding for the development of theories capable of interdisciplinary application. The different conceptual frameworks of the systems approach and associated areas have much to provide for the construction of an holistic methodology for perceptual enquiry (Ibid). This is the basis from which Kooiman (2008) builds his work on the three fold dimensions (system-to-be-governed, governing system and governing interactions) of interactive governance framework (IGF). In applying this approach to the research, the study explores how the issues of system-to-be-governed, governing system (GS) and the interactions between the two systems can contribute to the conservation of BES from the impacts of oil and gas activities.

Based on preliminary readings and the literature reviewed, this study first refined the concept of Interactive Governance for oil and gas sector to embrace all aspects of sustainability in the conservation of BES and propounded a rationale for stakeholder involvement in the governance process. Interactive governance of oil and gas sector is about harnessing all contending interests through interactions within the system-to-be-governed (natural and socio-economic systems) and the GS in the oil and gas sector with a view to facilitating consensual efforts towards the

conservation of BES and open up other opportunities for all stakeholders. The study particularly made theoretical contribution to knowledge.

This study advances five theoretical arguments. Firstly, it argues the need for regular interaction in the framework for governance of oil and gas sector that will recognise and involve all relevant stakeholders in the conservation of BES including the local communities. In this sense, it contends that attempts to restrict the involvement of any stakeholder in the governance framework will bias the concept of IGF.

The second argument developed is that CSR can find expression in interactive governance with the goal of sustainable development and, particularly, within the purview of Agenda 21. This would operate to mitigate the harsh socio-economic and environmental conditions that underpin the myriads of problems in oil and gas producing communities. The third argument is about mainstreaming BES into Environmental Impact Assessments (EIA) of oil and gas companies before licences are issued to them. This is important because EIA is a major governance instrument being used to mitigate human perturbations on the environment but evidence abounds that adequate consideration has not been given to the aspects of BES in EIA reports of oil and gas activities in Nigeria.

Due to the inadequacies of EIA in addressing a regional problem like the one being witnessed in the NDR, the fourth argument developed is the need to introduce Strategic Environmental Assessment (SEA) into the operations of oil and gas activities in Nigeria because of its wider coverage to address issues than EIA. The fifth argument concerns the question of whose values, norms and principles benefits from the IGF, where it is contended that a fundamental feature is the recognition of the values, norms and principles of all relevant stakeholders within an all-inclusive framework which would guarantee justice for all interests. The values and the principles should be made explicit and deliberated upon rather than being implicit as this would foster a win-win situation among all stakeholders and would provide environmental justice for all, though trade-offs cannot be ruled out.

1.9 Methodology

One of the intended outcomes of this study is the development of an inclusive and responsive framework (interactive governance) for the oil and gas sector in Nigeria to support conservation of BES and guarantee the well-being of the coastal communities in the NDR. To address the research questions, qualitative methods are utilised within a case study framework. Specifically,

the research employs in-depth interviews and focus group discussions to elicit information from disparate governing actors/stakeholders encompassing the host communities, government departments and agencies, oil company staff, non-governmental organisations, and academia. The data generated from the stakeholders was corroborated by direct observations in the two case-study communities chosen within the coastal communities of Ondo State.

1.10 Structure of Thesis

The thesis is made up of ten chapters as shown in **Figure 1.8**. This first chapter has described the general background of the research context, the rationale for the study, its aim and research questions. Chapter two considers global perspective on the problem of BES loss and degradation while Chapter three provides detailed review of relevant extant literature on the current discourses in which this study is embedded, ranging across issues of good governance, interactive governance and political ecology. Chapter Four summarises the design and method adopted for data collection in the study. A detailed context for the research setting is presented in chapter Five. In Chapters Six, Seven and Eight the data collected is presented, analysed and discussed the findings qualitatively. Chapter Nine discusses the relevance of IGF for the governance of oil and gas sector in Nigeria with regards to conservation of BES while Chapter Ten, the concluding chapter, summarises the findings and recommendations.

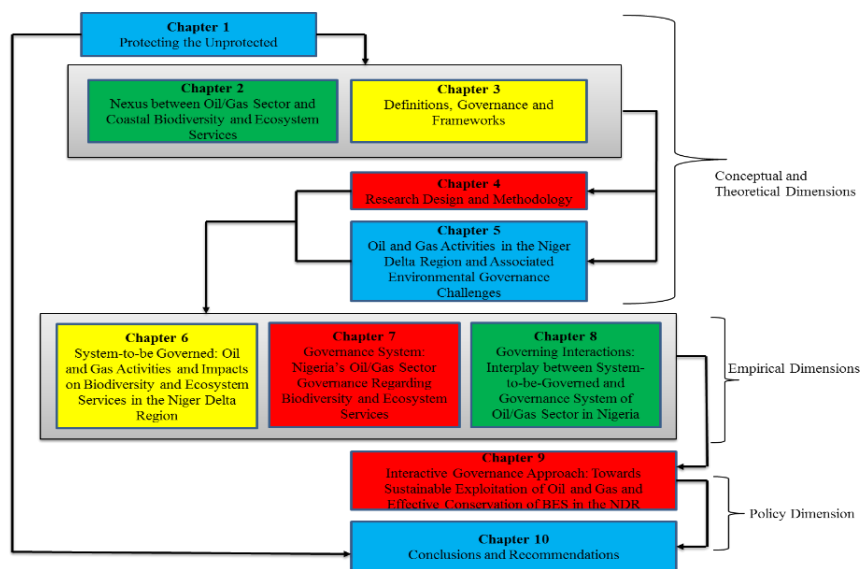


Figure 1.8: Research Design in Relation to Structure of Thesis

Chapter 2. Nexus between Oil/Gas Sector and Coastal Biodiversity and Ecosystem Services

2.1 Introduction

This research seeks to investigate the governance of oil and gas sector with regards to BES. Consequently, this chapter reviews extant and relevant literature on oil and gas, BES and how the challenges of BES degradation from the impacts of oil and gas can be mitigated. The review starts by defining oil and gas, BES and coastal areas. It thereafter considers the nexus between oil and gas BES in a coastal environment while the governance literature is presented in chapter three.

2.2 Definitions

2.2.1 Oil and Gas

Oil and gas is one of the prime sources of energy and the world's most vital resource that has been playing a dominant role in development across the globe by contributing immensely towards meeting the global energy demand. Oil and gas, though non-renewable and finite has been described as “the common natural heritage of a country and the motor of global industrialisation” (Karl, 2007, p. 03), and the most sought-after and vital resource in world economy and politics (Basedau and Mähler, 2011). Moreover, it was observed that given different sources of energy, oil constituted one third of energy consumed globally in 2008 (Ibid).

Similarly, the significance of oil and gas to global development was further established in the 1973-2011 world energy statistics as shown in **Figures 2.1** and **2.2** respectively. The statistics revealed that in the global energy supply oil and gas constitutes 62% and 52.8 % in 1973 and 2011 respectively and similarly the resource in terms of global energy consumption constitutes 62.1% and 56.3% for 1973 and 2011 respectively (IEA, 2013). The implication of this is that for a period of 38 years in spite of advancement in technology and discovery of series of alternative sources of energy, oil and gas still played a dominant role in the global energy demands. Evidently, the contribution of this resource to the world economy cannot be overstressed particularly in the developed countries where it was established that the economy cannot survive without oil and gas (Basedau and Mahler, 2011).

Furthermore, the oil-rich developing countries with capital constraints and whose economy is not only dependent primarily on revenue from oil and gas but also see the resource as a fast means of capital accumulation (ANEEJ, 2004), cannot do without the resource. Apparently, both developed and developing countries across the world rely on this globally-traded

commodity, though on different scale, for electricity, heating, transportation and for other industrial activities. This underscores its significance across the globe and possibly explains the reason for its insatiable demand throughout the world today.

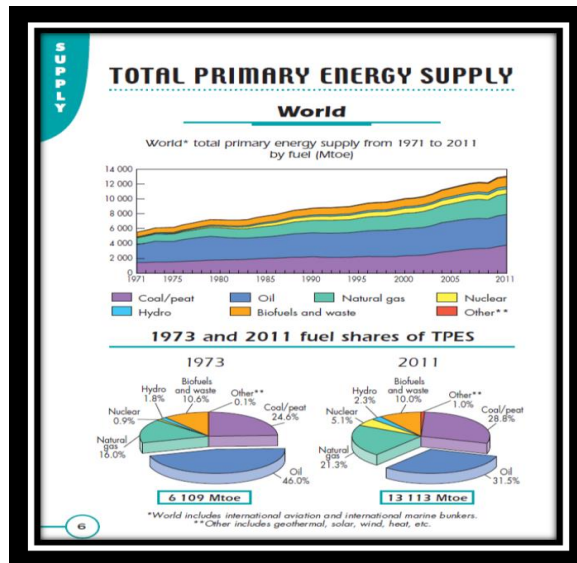


Figure 2.1: World Energy Supply from 1973 to 2011
Source: IEA (2013, p. 6).

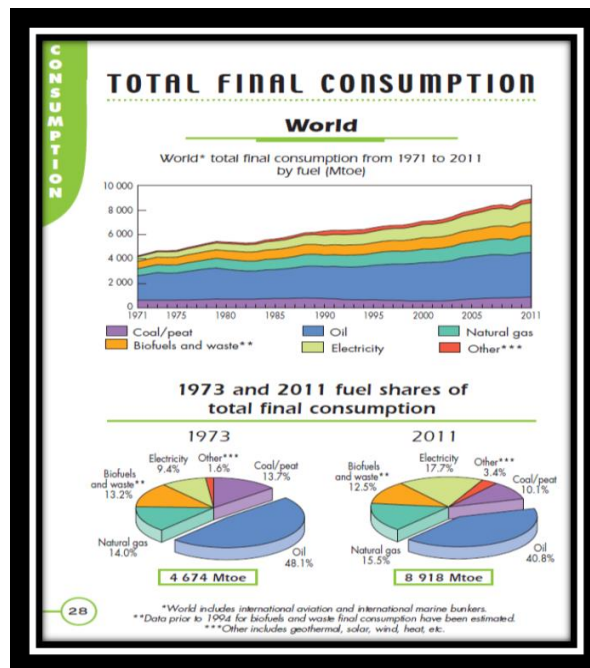


Figure 2.2: World Energy Consumption from 1973 to 2011
Source: IEA (2013, p. 28).

It is worth underlining the fact that despite the tremendous global benefits of oil and gas, it carries along negative impacts. Globally, there is a growing awareness of the pernicious impacts of oil and gas activities and this has resulted in the adoption of many international and national

measures to circumvent the problems (Basedau and Mähler, 2011). However, in spite of the efforts both at national and international levels the problems still persist particularly in many developing countries with low level of technology to cope with the inimical effects of the resource.

The deleterious impact of oil and gas on the developing countries was corroborated by Karl's observation that the role oil and gas played in the development of countries like USA, Canada and Australia in the late 19th and early 20th centuries is markedly different from the experience in most developing countries (Karl, 2007). In addition to the environmental and social impacts of oil and gas that constitute the focus of this study, other impacts such as "resource curse", "Dutch disease", "corruption" among others have been documented in literature (Karl, 2007; Munilla, 2010).

Each stage in the oil and gas production chain/cycle⁵ is beset with negative impacts on the environment and by extension on the people that live and work within the vicinity of oil and gas activities (Mariano and La Rovere, 2008; OSPAR Commission, 2009; IPIECA and OGP, 2011). The most prevalent and threatening impact of oil and gas on the environment is pollution and it may be at different levels including air, water, soil, and as well as all humans on the planet (Mariano and La Rovere, 2008).

The pollution can occur as a result of oil being discharged during routine operations, the use and discharge of chemicals, accidental spills, drill cuttings, atmospheric emissions, low level naturally occurring radioactive material, noise, and partly due to the placement of installations and pipelines on the sea bed (OSPAR Commission, 2009). The oil/gas sector activities can either be upstream or downstream, but both have the potential for a diversity of negative impacts on the environment (Mariano and La Rovere, 2008; OSPAR Commission, 2009; IPIECA and OGP, 2011).

While the upstream activities includes exploration and transfer of oil and gas to refining or processing facilities, the downstream activities include the production (including refining), distribution and sale of refined hydrocarbon products. Moreover, oil and gas projects can take place onshore (terrestrial) or offshore (marine) or at times the combination of both. Recent development in the oil and gas sector have gravitated towards the deepwater.

⁵ The oil and gas production cycle includes the initial exploratory stage, production/refining stage, transportation and final decommissioning.

Generally these impacts are orchestrated through emission of some volatile organic compounds (VOCs) such as carcinogen, benzene, toluene, ethyl benzene, and xylenes and semi-volatile organic compounds (SVOCs) (Stier, 2010; USEPA, 2010), when oil is spilled into the environment accidentally due to mechanical failure during exploration, refining, transportation through pipeline or through sabotage.

The VOCs which produce a “gas-like odour” on the one hand when emitted in the air may result to increases in ground-level ozone while the SOVCs on the other hand that have “tar-like” or “oily” odour, are the leftovers that remained in “weathered oil” after VOCs have evaporated during burning of fossil fuels (USEPA, 2010). Other chemical substances that have been associated with oil and gas activities with grave consequences on human health and the environment include Hydrogen sulphide (H₂S), Sulphur dioxides (SO₂), Nitrogen oxides (NO_x), particulates matter (PM₁₀ and PM_{2.5}), carbon monoxide (CO), and hydrocarbons (Stier, 2010; Chinweze *et al.*, 2012; USEPA, 2013).

Further on the detrimental effects of oil and gas, the IEA report on world energy statistics established that the energy sector including oil and gas is the single largest source of climate-changing greenhouse-gas emissions across the globe and reducing these remained an essential centre of action (IEA, 2013). The IEA report bolsters the report on negative impacts of oil and gas sector on the SSA, which have been a serious issue of concern as the sector contributes to greenhouse gas emissions that threatens the health of the producing communities as well as their source of livelihoods (Baumuller *et al.*, 2011). The effects of greenhouse gas emissions transcend the geography of a given nation or region but rather are global.

Additionally, the sector has also been blamed for the growing number of conflicts and social turmoil that have characterised the most OPC due to paucity of employment opportunities in the sector, discriminatory share of oil and gas proceeds, environmental degradation and threats to community subsistence farming and fishing (Ibid). Furthermore, there other issues such as corruption and inequality that have also been attributed to the impacts of oil and gas. In spite of the mammoth impacts associated with oil and gas activities throughout the world and the concern about global warming that led to the adoption of various international treaties such as Kyoto Protocol to stem the emission of greenhouse gasses, it has been predicted that production and consumption of oil and gas will rise significantly (IEA, 2014).

IEA (2014) further notes that despite high prices and new policies that gradually restrict the overall consumption of oil global demands will rise from 90 million barrels per day (mb/d) in

2013 to 104 mb/d in 2040. The implication of this is that while the rising demand for oil and gas as a major source of energy across the globe has and will continue unabated in spite of other alternatives, it will continue to put extraordinary pressure on the world's poorest countries being the supply side, as Obi (2011) observes that production has already plummeted in many developed countries. Oil and gas exploitation thus confronts developing countries with disconcerting risks and great opportunities. As the reliance of developing countries on the non-renewable resource of oil and gas and demands for the resource from developed countries is likely to continue for some time in view of the present state of things across the globe, this must not be at the expense of other valued and renewable resources such as BES. While oil and gas will remain indispensable to sustainable global economic development and prosperity for decades to come, it is important to harmonise the security of energy supply and environmental protection (IPIECA and OGP, 2012).

2.2.2 Biodiversity and Ecosystem Services (BES)

The issue of BES is increasingly taken the front burner of global environmental agenda. There is a growing recognition across the globe that humans and businesses are intrinsically dependent on BES (MEA, 2005; MEA, 2005a; TEEB, 2010; Wattage, 2011; IADB, 2012; IPIECA and OGP, 2012; UNGC and IUCN, 2012) and this is evident in some of the definitions of ES provided later in this section. Biological diversity, often referred to as biodiversity is a life-supporting natural capital that has been defined as “the diversity of genes, populations, species, communities and ecosystems that underlies all ecosystem processes” (UNGC and IUCN, 2012, p. 23).

According to TEEB (2010), biodiversity mirrors the categorisation of increasing levels of organisation and complexity in ecological systems; encompassing the level of genes, individuals, populations, species, communities, ecosystems and biomes. Although, it varies from ecosystem to ecosystem, biodiversity transcends the macro fauna and macro flora that draw the attention of the conservationists (Perrings, 2010). Drawing from the definitions above, biodiversity in this thesis is defined as the variety of complex interactions between and among genes, species and ecosystems including human communities in a given milieu.

In the last decade, the significance of the ES to human well-being and their economic values has been frequently highlighted through different fora by the international community. Although, there were various studies on ES that pre and post-dated the publications of

Millennium Ecosystem Assessment (MEA)⁶ in 2005 and The Economics of Ecosystems and Biodiversity (TEEB)⁷ in 2010, these two have specifically acted as milestones for emphasising the reliance of humans on ES. The concept of ES otherwise known as “nature’s services”, “environmental services” or “ecological services” has emerged about three decades ago with notable importance because of its focus on measuring environmental benefits and costs. Studies by Westman (1977) and Ehrlich and Mooney (1983) on “nature’s services” and “ecosystem services” respectively are traceable to the provenance of studies on ES. However as pointed out by Greiber and Schiele (2011), because ES are less obvious and humans are ignorant of their economic values, society did not understand the worth of the work of these pioneering authors until recently.

To understand the concept of ES, it is important one defines the term ecosystem. An ecosystem is a dynamic complex of plant, animal and micro-organism communities and their non-living environment (MEA, 2005a), acting as a functional unit through provision of a wide diversity of useful goods and services for businesses, people and communities as shown in **Figure 2.3**. A brief survey of the definition of ES revealed that there are diverse and competing meanings among scholars.

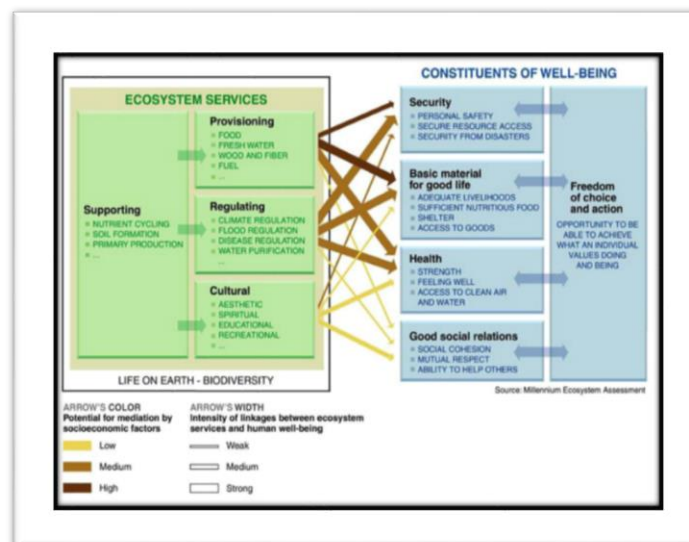


Figure 2.3: Links between ES and Human Well-being
Source: MEA (2005, p. 04)

⁶ It was a UN project that spanned four years between 2001 and 2005 which incorporated 1,360 experts to conduct studies on ecosystem services in 95 countries across the globe (MEA, 2005a). The reports from this project popularised the concept of ES.

⁷ This is another global initiative similar to the MEA that focused on drawing attention to the economic benefits of biodiversity including the growing cost of biodiversity loss and ecosystem degradation.

Some of the highly cited definitions of ES include that of Costanza *et al.* (1997); Daily (1997); and MEA (2005). Other scholars like Boyd and Banzhaf (2007); Wallace (2007); and Fisher *et al.*, (2009) among others have equally contributed to the discourse on ES. The latter authors have been chosen because they notably differed from the MEA.

While Costanza *et al.* (1997, p. 253) conceptualised ES as “the benefits human populations derive, directly or indirectly, from ecosystem functions”, Daily (1997, p. 03) on the other hand viewed it as “the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfil human life”. According to MEA (2005, p. 03), ES are “the benefits humans obtain from ecosystems”, however, Boyd and Banzhaf (2007, p. 619) defined ES as “components of nature, directly enjoyed, or used to yield human well-being. Similar to Boyd and Banzhaf’s stance, Fisher *et al.* (2009, p. 645) perceived ES as “the aspects of ecosystems utilised (actively or passively) to produce human well-being”, while TEEB (2010, p. 19) sees it as “the direct and indirect contributions of ecosystems to human well-being”.

The definition and classification of the typology of ES provided by MEA, (2005a) and Costanza *et al.* (1997), has been criticised for being ambiguous and the inherent problems it will pose for policy makers for its failure to distinguish between services and benefits (Boyd and Banzhaf, 2007; Wallace, 2007; Fisher and Turner, 2008; Fisher *et al.*, 2009). The latter authors therefore advocated for framework that provides clearer distinctions between functions, services and benefits for decisions in natural resource management. Boyd and Banzhaf (2007) developed a framework that helps in measuring directly consumed ecological components such as forests, lakes and fish (bass) populations, while Wallace (2007) draws substantially on the definition provided by MEA and regroups the services in a way that can easily be managed by landscape managers. For Fisher and Turner (2008) and Fisher *et al.* (2009), who partly followed Boyd and Banzhaf’s approach and in reaction to Wallace asserted that service is not a benefit but something capable of changing the level of human well-being. Fisher and colleagues contended further that ecosystem functions can be regarded as services if only humans can benefit from them and hence should be considered simply as “intermediate services”.

In a swift reaction to Wallace (2007), Costanza (2008) whose stance tallies with the MEA definition of services as benefits maintained that any attempt to plan a single, all-inclusive typology with rigid definitions will be tantamount to total simplism of the world. He therefore suggested that multiple classification systems, aimed at achieving different objectives can be considered. Added to this, is his proposition of the classification of ES according to their spatial

attributes (Ibid). Although, the definition and classification provided by MEA is not meant to be applicable in all contexts, it can be adapted; its sterling significance has been acknowledged in literature even among critics (see Boyd and Banzhaf, 2007; Wallace, 2007; Norgaard, 2008; Fisher *et al.*, 2009; TEEB, 2010; Egoh *et al.*, 2012a; Egoh *et al.*, 2012b). It is also apparent from the discourse on the definition and classification of ES that the MEA's stance on the concept is broader and all-encompassing. Norgaard (2008) observes that it enhances shared learning and understanding of the complexity and sensitivity of the nexus between humans and nature among scientists compared to the sectoral approach advocated by the other authors (e.g Boyd and Banzhaf, 2007; Wallace, 2007; Fisher and Turner, 2008; Fisher *et al.*, 2009). The sectoral approach championed by the latter authors is equally good particularly for most developed countries that have developed BES sustainability strategies while the MEA's concept which is generic in nature is germane to developed and most developing nations that have not taken the issue of conservation of BES seriously.

The MEA definition and viewpoints on the concept of ES will be followed in this study for its valuable role in drawing global attention to the state of the art in ES, for showing the path for a sustainable use and conservation of ES, and for setting the basis for further studies. Moreover, the concept enhances participation among various stakeholders which is akin to the objective of this study, as (Norgaard, 2008, p. 07) noted that "the MEA demonstrates that at least scientists can adapt deliberative and democratic approaches in order to learn together and develop shared understanding of complex systems". The MEA's publication provided four typologies of ES as shown in **Figure 2.4**, and a comprehensive framework for their integrated assessment and valuation. MEA (2005), established that changes in ES that contribute importantly to employment and economic activity across the globe will cause a significant harm and have multiplier effects on human beings, including the basic material needs for a good life, health, good social relations, security, and freedom of choice of action. As noted by Palumbi (2004) and Egoh *et al.* (2012b), there is an urgent need to safeguard biodiversity that underpins the services provided by ecosystems from further degradation.

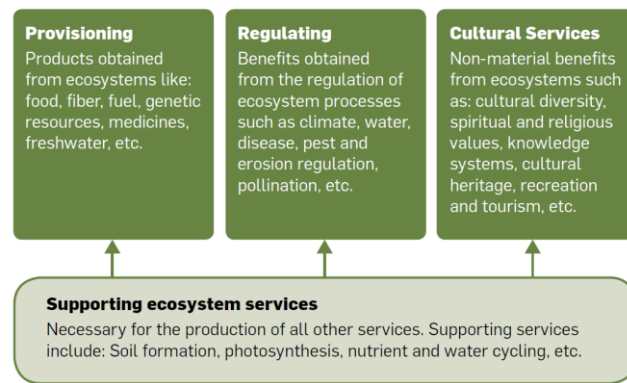


Figure 2.4: Types of Ecosystem Services. Source: MEA (2005)

2.3 Coastal Areas and BES

The coastal area of any nation is a very important part of the nation's heritage and territorial boundary. It accommodates diverse activities such as agriculture, fisheries, aquaculture, navigation, communication, military, commerce, tourism and mining of mineral resources such as oil and gas. Additionally, the coastal area provides barriers against natural disasters such as coastal erosion, flooding, cyclones, and tsunamis among others. The coastal zone is the interface between the land and the sea and its boundaries.

According to NOAA (2005, p. 04), coastal zone is defined as “the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines of the several coastal states, and includes islands, transitional and intertidal areas, salt marshes, wetlands, and beaches”. Coastal zone is integral to the socio-economic life of many nations and it also harbours some of the earth’s abundant biodiversity and most generative ecosystems reserves that assist most human populations globally (UNEP, 2006a). Apparently, the oil and gas activities that has been contributing very significantly to the economies of OPDCs like Nigeria and which is one of the key subject of this study is being undertaken mainly along the coastal and marine environment of the region. This activity within the coastal zone is usually accompanied with concomitant ecosystem impacts (Crossland *et al.*, 2005).

In addition to the various natural resources and opportunities that abound generally in coastal areas, UNEP (2006) found that in West Africa (including Nigeria), the coastal waters are home to endangered species such as marine turtles, inshore cetaceans and West African manatee. The beneficiaries of the services provided by ecosystems cut across local, regional, and/or global and including future generations (Hanson *et al.*, 2012). Several studies have however reported that the human-dominated coastal ecosystems are experiencing accelerating loss of populations and species, with largely hidden and unimaginable consequences (Crossland *et al.*, 2005; MEA,

2005b; UNEP, 2006; Enger and Smith, 2010). Similarly, the scientific study conducted by Worm *et al.* (2006) that examines the impacts of biodiversity loss on ocean ES across temporal and spatial scale found that rates of resource collapse increased and recovery potential, stability, and water quality decreased greatly with shrinking biodiversity.

Worm *et al.* (2006) further contend that the continuous destruction of biodiversity presage grave threats to global food security, and ecosystem stability, that will affect current and future generations. Reflecting on the complexity associated with the functionality of ES, Egoh *et al.* (2007) and Fisher *et al.* (2008) noted that notwithstanding the recent, swift increase in the amount of publications on ES, there are significant issues that require clarifications.

In contrast to other forms of ecosystems, human impacts on coastal ecosystems cannot easily be estimated. However, based on four of the most prevalent land-based impacts on coastal ecosystems: nutrient input; organic and inorganic pollution; and the direct impact of coastal human populations, (Halpern *et al.*, 2009) found that 60% of coastline across the globe experience low to high impact from land-based anthropogenic activities. The services will be discussed in the following section.

2.3.1 Typology of Ecosystem Services: Why are they Important?

According to MEA (2005b) and as demonstrated in **Figure 2.5**, there are different types of ecosystems performing varied services that support human wellbeing and have both direct and indirect impacts on each other. The various services performed by ecosystems as conceived by MEA are considered in this section.

Supporting Services in Coastal Areas

The supporting services are the range of functions carried out by ecosystems. Though not of direct benefit to humans but crucial to the performance of ecosystems, they indirectly help sustain and enable the maintenance and delivery of other services (MEA, 2005; CBD, 2010).

Provisioning Services in Coastal Areas

According to MEA (2005) and CBD (2010), provisioning services are the goods that are of direct benefit to humans which have a clear monetary value. They include the raw materials, food, energy, wood and fibre, fuel, medicines, and genetic resources. African continent is endowed with variety of natural resources including plants and animals that provide direct benefits to the people. For example, the study of Egoh *et al.* (2012b) noted that Africa is reputed

to be accustomed to the use of medicinal plants for healing purposes due to paucity of hospitals and medical facilities. People resort to natural plants, as they are considered a free alternative. The medicinal plants that are being used for healing are what some rural poor are depending on as a means of livelihoods by harvesting them on large scale and selling to others. This corroborates the finding of Crossland *et al.* (2005) which reported that apart from natural disasters, poverty and the perturbations of economic development at local to global scales contribute to the degradation of coastal ecosystems. Egoh *et al.* (2012b) further observed that there are other provisioning services such as foods derived from agriculture including collection of wild fruits, animals and foods, fuel-wood for energy, and freshwater among others.

The authors further established that the rural communities rely on subsistence agriculture for livelihoods by cultivating crops like maize, millet and rice using primitive inputs (Ibid). Utilising such primitive methods make farmers to depend absolutely on ES connecting to soil fertility, water supply and regulation, erosion stoppage and pest control. Such ecosystems are of great importance for cash crops like coffee and cocoa (Egoh *et al.*, 2012b).

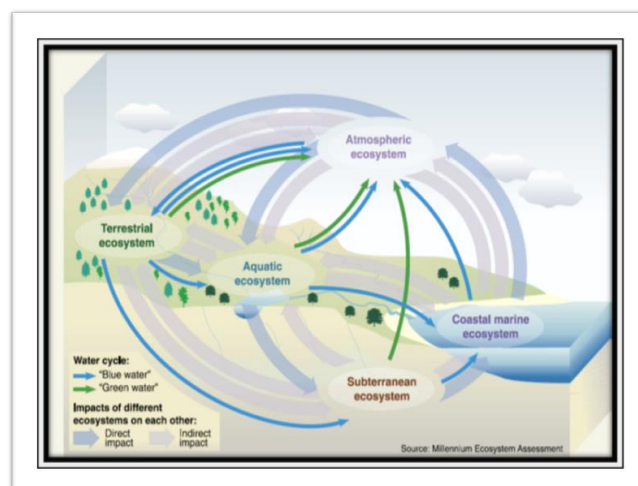


Figure 2.5: Interrelationships among different Ecosystems
Source: MEA (2005b, p. 35).

However, in the coastal area of Africa where artisanal fisheries remains the economic bastion of the coastal communities and which the region's marine and coastal resources have conventionally supported their livelihoods through subsistence fisheries, agriculture and trading have currently been converted to be the hub of urban and industrial growth, oil and gas development⁸, industrial-scale fisheries and tourism (UNEP, 2006). This implies that the sudden development of these activities will have profound impacts on the BES providing the

⁸ The oil/gas development include most refineries and gas liquefaction plants as well as terminal facilities for tankers and undersea pipelines, and bases for offshore engineering services are located within the coastal areas.

goods that benefit humans and this will ultimately affect the livelihoods of the denizens of the coastal communities and compound things for the people.

Regulating Services in Coastal Areas

Regulating services are the various functions performed by ecosystems that are of significant values and benefits (MEA, 2005; CBD, 2010) but generally without monetary value (CBD, 2010). The benefits are derived from the natural regulation of ecosystem processes and natural cycles like climate, flood, disease, water, pest and erosion, and pollination (MEA, 2005). According to Egoh *et al.* (2012b), the regulating services that are of significant benefits to Africa are mainly connected to agricultural production including water regulation among others. With the pace of biodiversity loss and ecosystem degradation the problem of climate change in developing countries is likely to be compounded as TEEB (2010) asserts that climate change threatens to increase susceptibilities, destroy hard-won gains, and earnestly threaten prospects for development for developing countries. Just as MEA (2005) and TEEB (2010) observed, this problem undermines a safe and enduring future beyond 2015 in such countries and thereby making the attainment of the MDGs more difficult and infeasible.

Cultural Services in Coastal Areas

Cultural services are the non-material benefits provided by ecosystems but have been contributing extensively towards meeting the societal necessities and aspirations (MEA, 2005; CBD, 2010), which has necessitated people's willingness to pay for conservation (CBD, 2010). The cultural services are connected with experiences of natural environments (ecosystems) such as aesthetic, cultural diversity, spiritual and religious values, knowledge (educational) systems, cultural heritage, recreational, and tourism among others. Culturally, Africa is very rich; Egoh *et al.* (2012b) noted the region's ecosystems support activities like tourism, leisure sites, natural heritage sites, and the use of natural environment for rituals and spiritual nourishment as well as for educational enrichment.

Just as UNEP (2006a) observed that the coastal environment in Africa is becoming a progressively appealing destination for global tourism, Egoh *et al.* (2012b) found that the tourism development in the region is more concentrated and well developed in the northern, southern and eastern Africa where it has been contributing as a major source of income to the countries' development. However, most coastal countries in West Africa have not developed their tourism sector possibly because they are oil-rich, with countries like Cameroun, Garbon and Nigeria as net exporters (see **Table 1.1**). Another angle to the issue of tourism development

in West Africa is that even if country like Nigeria decided to develop the sector better than what it is presently, the security challenges such as incessant killing and kidnapping of people by the Islamic group in the north (Boko Haram) and militants in the NDR of the country will not encourage most foreign tourists to visit the country.

2.3.2 Biodiversity Loss and Ecosystem Services Degradation

Biodiversity loss is becoming a scathing issue that is seriously threatening human survival across the globe. The findings of Hooper *et al.* (2012) reveal that the impact of biodiversity loss on human societies will be more intense than initially anticipated. Biodiversity is not considered as an ES itself, but instead as a precondition needed for the functionality of each of the services (CBD, 2010). Accordingly, a change in biodiversity affects the flow of ES. The exact connection between the fact of biodiversity and the capability of an ecosystem to supply services is a complicated one, and an area that science is still evolving (CBD 2010). However, the scientific study conducted by Worm *et al.* (2006) found that there is a positive relationship between biodiversity and ecosystem functions and services as marine/coastal biodiversity loss is contributing significantly to the decline of ecosystems ability to supply services like food, maintain water quality, and recover from pressures.

According to Enger and Smith (2010), and as evidenced in **Figures 2.6** and **2.7** respectively, these services are the product of the complex interactions between and among the existing coastal biotic and abiotic resources. Every ES relies on some synthesis of species (Perrings, 2010). The quantity and variety of species connected with specific services differs extensively, but in almost all cases greater species variety presupposes that the supply of ES may be maintained over a broader range of conditions (Perrings, 2010). This shows that any action that will impede or threaten the interactions between and among the biotic and abiotic resources or species will have grave consequences on the services provided by the ecosystems.

However, notwithstanding the growing recognition of the enormous benefits and significance of BES to human well-being, though with under-estimated economy value worth USD 16-54 trillion in 1997 (Costanza *et al.*, 1997; FAO, 2012), its degradation has continued on a large scale (Costanza *et al.*, 1997; MEA, 2005; TEEB, 2010; Costanza and Kubiszewski, 2012). Reflecting on the continued loss and degradation of BES, MEA (2005) concluded that it is the major environmental challenge of our time and the EC (2011) on the other hand, described it as the most deprecatory global environmental threat beside climate change.

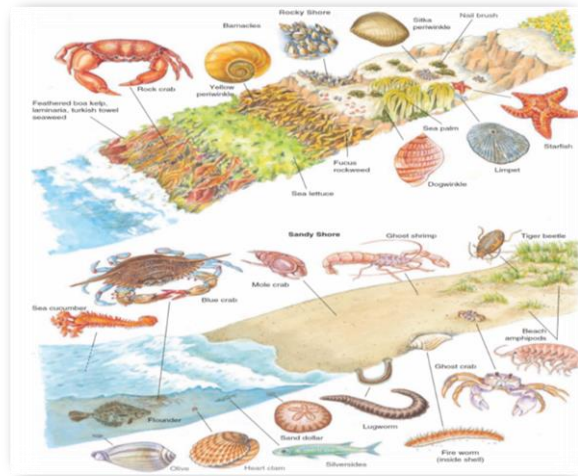


Figure 2.6: Types of shore showing biotic and abiotic components
 Source: Adopted from Enger and Smith (2010, p. 132).

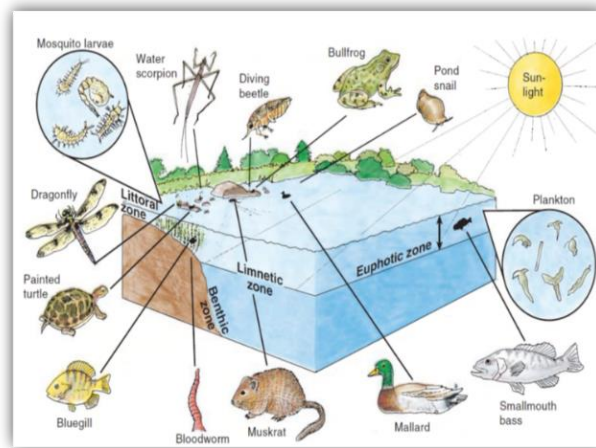


Figure 2.7: Lake Ecosystem showing interactions of biotic and abiotic components
 Source: Adopted from Enger and Smith (2010, p. 135).

The existence of the various activities and other opportunities that abound in the coastal areas remains a strong centripetal force drawing people to the region. According to Wattage (2011), the increase in human populations has contributed to more competition for the limited resources in the coastal region and which had ultimately resulted to the diversion of wetlands for economic activities worldwide. The implication of the diversion of wetlands for economic activities on BES is immeasurable.

The coastal ecosystems are areas of unique environmental formation that was created as a result of the interface between land and water, and is endowed with diversity and flow of energy as well as providing extensive assemblage of goods and services to humans (UNEP, 2006; Wattage, 2011).

For instance, UNEP (2006) noted that coral reefs and their related seagrass meadows and mangrove forests, and other coastal wetlands, supply nursery areas and shelter for a horde of animals including marine and terrestrial in addition to conservation against overflow and erosion from marine storm surges and extreme waves. UNEP further contends that mangrove forests did not only function as chemical disinfecting buffers, absorbing land-generated pollutants, but also have cultural and medicinal values, as well as beaches and dune systems that supply coast conservation and sites for nesting and breeding (2006). Such areas which include mangrove swamps, salt marshes, wetlands, estuaries and bays that accommodate various species of plants and animals are susceptible to changes in the environment and there is concern that some areas are now struggling to maintain their diversity due to anthropogenic activity (Wattage, 2011). This further buttresses the earlier supposition of Koch *et al.* (2009) that problems such as biological invasions, dwindling water quality, and reduced coastal protection from flooding and storm events being witnessed around the world may have been occasioned by the loss of biodiversity, ecosystem functions, and coastal vegetation in coastal ecosystems.

According to Enger and Smith (2010), the ocean is extended up to 70% of the earth's surface and this makes it difficult to envisage that human activities can have any significant impact on the marine environment but contended that humans are markedly impacting on the marine environment. Similarly, Wattage (2011), observed that as at 2007 the oceans cover about 71% of the earth's surface and provides the need of 44% of people living within 93 miles. This shows human interactions with the ocean and it further accentuates the indispensability of coastal ecosystems to the world and more importantly in sustaining and supporting the livelihood of people particularly in developing countries that depend on the resources from the coast. As pointed out by Indigenous Design (2012) and demonstrated in **Figure 2.8** human life is intrinsically connected to the various services provided by ecosystems and human activities also have impacts on these services provided by ecosystems.

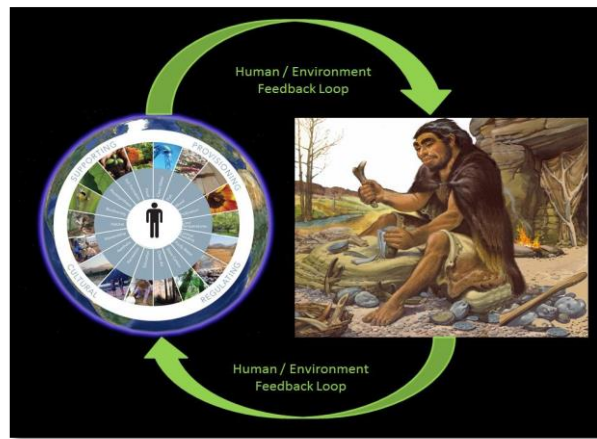


Figure 2.8: Humans/environment feedback loop

Source: Indigenous Design (2012, p. 04).

Greiber and Schiele (2011), shed more light on the interrelation between ES, human well-being and the degradation of ES in developing countries. As shown in **Figure 2.9**, the authors contend that on the one hand a degradation of ES results to declining human well-being and on the other hand decreasing human well-being will result to increased reliance on ES. Additionally, the authors assert that increasing demand for ES can stimulate their degradation. This underscores the need for conservation of biodiversity so that ES can be improved.

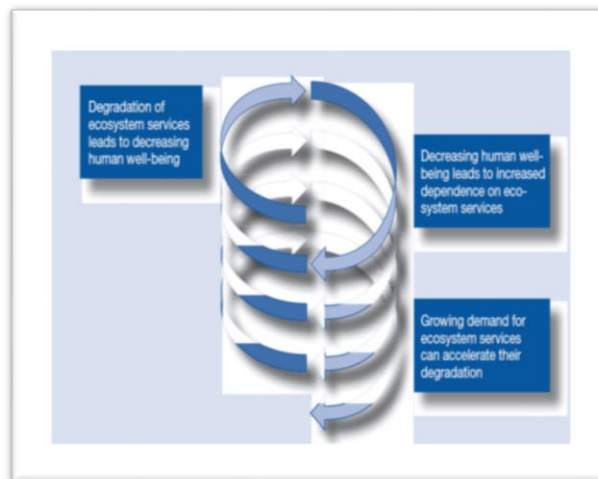


Figure 2.9: Interrelation of human well-being and ES in Developing Countries

Source: Greiber and Schiele (2011, p. 02).

The loss of biodiversity and ES degradation in the coastal areas is well documented in literature. For example, the MEA (2005a) specifically noted that about 60% have been impaired over the past 50years, more so, the cost of the loss and impairment is considerable and escalating. Similarly, there is enormous agreement among many scientists on biodiversity loss. A study conducted by Rudd (2011) attest to the unanimous consensus from a diverse cross-section of

scientists on the loss of key biodiversity. The findings provided some astonishing revelations on the loss of biodiversity across the globe. There was 99.5% consensus among respondents that a major loss of biodiversity is either ‘likely’, ‘very likely’, or ‘virtually certain’.

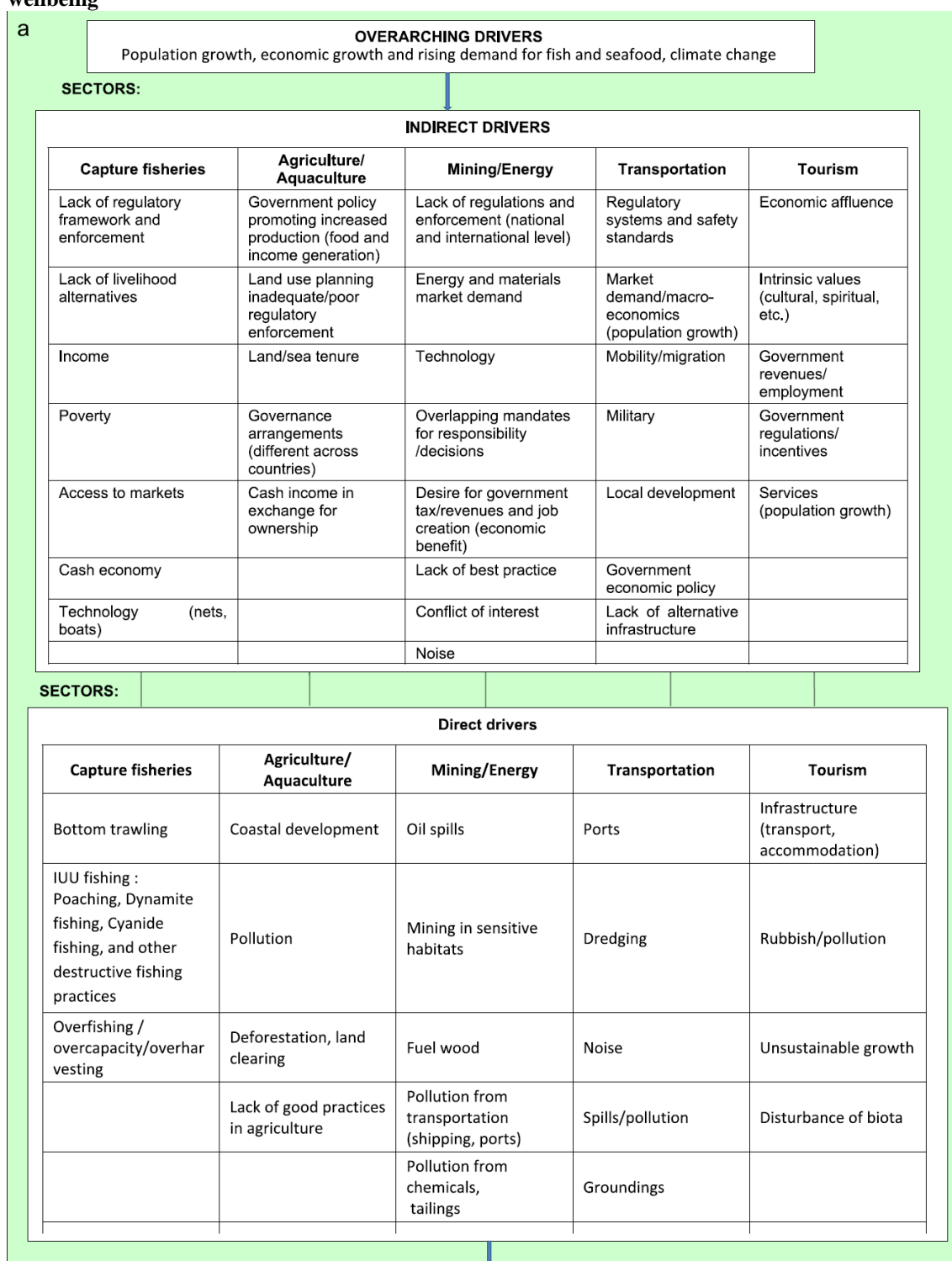
Additionally, it has been established that the coastal ecosystems are the mainly populated landscapes (Wattage, 2011); some of the most productive and severely used, yet endangered natural systems worldwide (MEA, 2005; Lotze *et al.*, 2006; Worm *et al.*, 2006; Halpern *et al.*, 2008; Wattage, 2011) and their degradation has become increasingly severe within the past 50 years (MEA, 2005a; Crossland *et al.*, 2005).

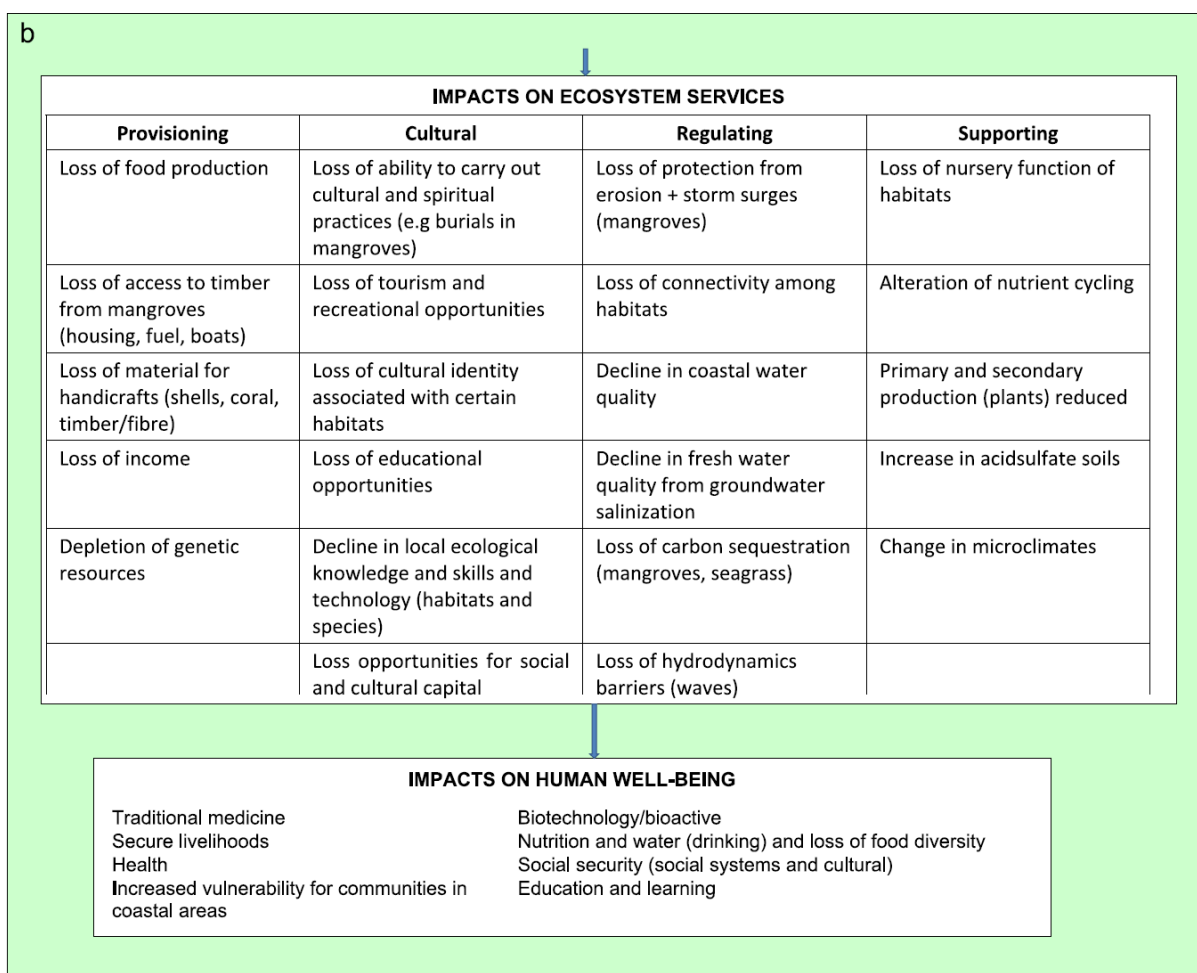
2.3.3 Drivers of Biodiversity Loss and Ecosystem Services Degradation

There are diversity of global environmental changes that are contributing to the rates of species extinction that significantly surpass background rates in the fossil record (Sala *et al.*, 2000; MEA, 2005c). Coastal communities across the globe are grappling with many environmental challenges that are intensely impacting negatively on the socio-economic activities of the coastal populations.

Most of these challenges are orchestrated by the loss and degradation of BES that has both direct and indirect drivers. While the drivers of ES degradation have been debated among scholars and documented in literature, Tengberg *et al.* (2012) (based on the findings from the study on Arafura-Timor Seas) noted that the all-embracing drivers include population growth, economic growth and rising demand for fish and seafood, and climate change. As shown in **Table 2.1**, the authors provided a copious explanation of the direct and indirect drivers of ES degradation of which mining/energy [oil/gas] featured in both.

Table 2.1: Drivers of degradation and loss of coastal and marine habitats and impacts on ES and human-wellbeing





Source: Adapted from Tengberg *et al.* (2012, pp. 23-24).

Another driver of ecosystems degradation in coastal areas is alien invasive species (AIS) such as *Nypa* palm (Crossland *et al.*, 2005) and according to IPIECA and OGP (2010) every stage in the oil and gas production cycle in both upstream and downstream activities can create direct and indirect pathways for AIS if appropriate measures are not taken. Modifications of river flows to the coast through damming and irrigation, and pollution from land, marine and atmospheric sources constitute another contributor to the loss and degradation of BES (Crossland *et al.* 2005). This may as well be connected to oil and gas activities.

UNEP (2006), for example established that the principal concerns in West Africa are the degradation of their coastal habitats and biodiversity through pollution, saline intrusion and erosion, and the overexploitation of their fisheries resources. The other drivers of this degradation include perturbations from the growing coastal populations, urbanisation and industrial development such as coastal and offshore oil and gas resources due to its proximity to port facilities (Ibid). Similarly, GCLME (2006) found that the fast-growing population in the

coastal zone of the Guinea Current Large Marine Ecosystem (GCLME)⁹ member countries has led to the pollution of social values and culture, socio-economic dislocations and conflicts, coupled with extensive environmental degradation.

As in the other parts of the world many of the region's poor occupied the coastal areas for subsistence socio-economic activities such as fishing, farming, sand mining and production of charcoal in the mangrove areas. Furthermore, in tandem with the earlier stance of UNEP (2006) on the concentration of industries along the coastal areas of Africa, GCLME (2006) found that over 60% of the existing industries in the sub-region are located in the coastal areas and to some extent; this concentration has become a major issue contributing to the pollution of the air with an average of 0.52 metric tons of carbon dioxide per capita. Consequently, the region has been recording one of the highest incidences of air pollution in the world (Ibid). All these activities have been contributing profoundly to the loss of BES and degradation in the region.

The deterioration of coastal ecosystems is a function of complex variety of human and natural-induced pressures. Wattage (2011), noted that in addition to human activities that have contributed to degradation of coastal ecosystems, natural drivers have contributed notably through displacement of marine and other wildlife, draining food supplies, and interrupting the balance of coastal ecosystem. The GCLME (2006) also found this to be true in Africa particularly in the Guinea Current Large Marine Ecosystems member countries where the loss of BES due to both human and natural activities have led to habitat deterioration, alteration and coastal erosion.

2.4 Interactions between Coastal BES and Oil and Gas Sector

There is an increasing understanding within the business community across the globe of the impacts and reliance of their businesses on BES (MEA, 2005; TEEB, 2010; Wattage, 2011; IADB, 2012; IPIECA and OGP, 2012; UNEP-WCMC *et al.*, 2012; UNGC and IUCN, 2012). Furthermore, there is a growing awareness that effective performance of businesses in producing goods and services is contingent directly or indirectly on ES (Ibid). The widespread recognition of the linkage between oil and gas as a business and BES has been documented (Crossland *et al.*, 2005; IPIECA and OGP, 2012).

⁹ The GCLME comprises 16 member countries including Angola, Benin, Cameroun, Congo, Cote d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Gabon, Ghana, Guinea, Guinea Bissau, Liberia, Nigeria, Sao Tome e Principe, Sierra Leone, and Togo. The member countries are committed to mitigating and controlling land-based sources of pollution in tandem with the principles of the Abidjan convention on conservation and development of coastal and marine environment in West and Central Africa TEOE (2011) 'Guinea Current large marine ecosystem.', in *The Encyclopedia of Earth* [Online]. Available at: <http://eoeearth.org/view/article/153182> (Accessed: 06 December, 2013).

The assertion that oil and gas sector is one of the economic development activities whose interactions with ecosystems has potential significant impact on coastal BES was bolstered by the study of Crossland *et al.* (2005) and demonstrated in **Figure 2.10**, particularly if not well managed.

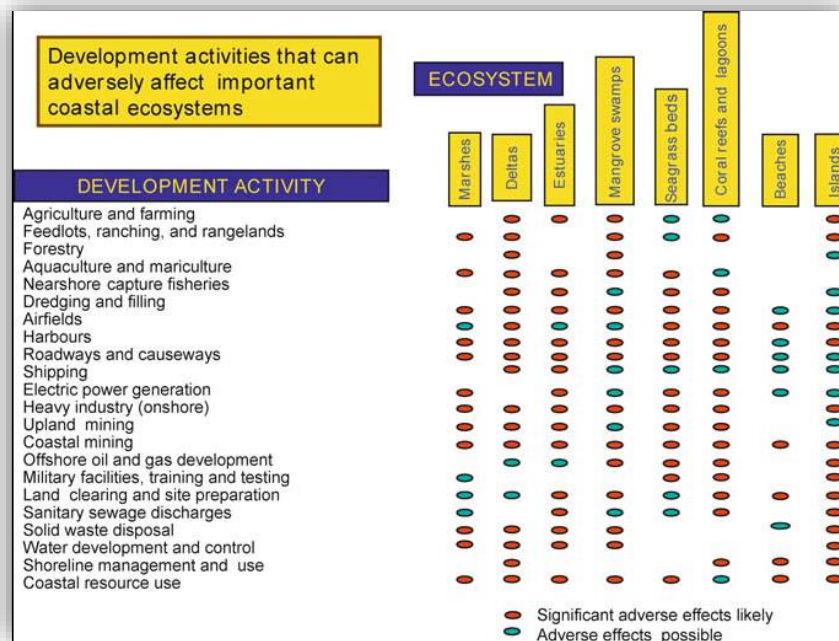


Figure 2.10: Relationship between development activity and coastal ecosystems

Source: Crossland *et al.* (2005, p. 24)

There are two significant ways through which businesses interact with BES including the use of services and contribution to ecosystem change (MEA, 2005; Wattage, 2011; IADB, 2012; IPIECA and OGP, 2012; UNEP-WCMC *et al.*, 2012; UNGC and IUCN, 2012). The degradation of BES from business activities have grave ramifications across the globe and also affect businesses and industry in different ways. MEA (2005) found that it has three serious upshots on businesses and industry including:

- (i) If the status quo is maintained, there will be dearth of ES which is freely available today or become more expensive in the near future.
- (ii) Though there may be variations across different countries and regions of the world, degradation of ES will also affect the way business operations are carried out and ultimately modify customer preferences, stockholder expectations, regulatory regimes, governmental policies, employee well-being, and the accessibility of finance and insurance.

- (iii) As demand increases for more efficient or disparate ways to use ES for mitigating impacts or to track or trade services, new business opportunities will unfold (see also UNEP-WCMC *et al.*, 2012).

Similarly, UNEP-WCMC *et al.* (2012) contend that failure to understand and address the impacts of business on BES can result to issues of liability and redress that may ultimately tarnish company reputation and hinder future access to credit, land and markets. Moreover, it was observed that many businesses are oblivious of how their activities impact on BES and consequently, such businesses need assistance to incorporate BES into their planning, corporate reporting, and accounting frameworks (Ibid).

To forestall further degradation and loss of these essential but finite natural resources, there is need to incorporate the real value of the services ecosystems provide into business models and account for those hidden values (TEEB, 2010; IADB, 2012; IPIECA and OGP, 2012; UNEP-WCMC *et al.*, 2012). IPIECA and OGP (2012) noted that based on the comprehension of the link between the dependence and impacts of their activities on BES, the oil and gas sector has been incorporating the concept of BES into their operations. Additionally, the industry is also developing an understanding of the direct and indirect drivers that affect ES, with a view to incorporating them into their impact assessments and management practices (Ibid). It is pertinent to stress that it is not enough to incorporate BES into oil/gas operations but the most important thing is implementation particularly in the developing countries like Nigeria where the unethical practices of some of the MNOCs have been documented (see Karl, 2007).

2.4.1 Efforts to Conserve BES

There have been series of safeguarding strategies to restore or conserve BES from further decline at global, regional and national levels. The decrease of populations, disappearance of species, and habitat alteration require immediate action (Palumbi, 2004; Egoh *et al.*, 2012b). At the global level there are various international conventions and laws/policies for the protection of biodiversity and ecosystems. International laws and conventions on natural resources conservation are many but the following are germane in the conservation of BES:

- ✚ The Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971;
- ✚ Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972;

- ✚ The Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973;
- ✚ United Nations Convention on the Law of the Sea (UNCLOS) 1982;
- ✚ United Nations Convention on Biological Diversity 1992;
- ✚ The 1992 United Nations Conference on Environment and Development;
- ✚ United Nations Framework Convention on Climate Change 1992;
- ✚ United Nations Conference on the Human Environment (Stockholm Declaration) 1972;
- ✚ Agenda 21; and
- ✚ The Rio Declaration

In addition to the above mentioned conventions, there are other international/UN initiatives that support the protection of BES such as the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), and the International Finance Corporation (IFC) Performance Standards. The recent publications of MEA and TEEB have provided added impetus to the global efforts towards protection of BES.

In the scientific study conducted by Worm *et al.* (2006), it was found that on the average restoration of biodiversity contributed positively in fourfold to productivity and decreased variability by 21%. Restoration of degraded areas through rehabilitation and remediation techniques such as land farming, hydrogen peroxide treatment, phytoremediation, rhizoremediation, phycoremediation and Bioaugmentation are some of the ways through which biodiversity can be conserved (IUCN Niger–Delta Panel, 2013). Scheffer and Carpenter (2003) however pointed out that plethora of studies have shown that preserving biodiversity is much easier than restoring it, more so, relying on the nature and extent of our impacts, some damaged ecosystems might never return to their original states, which presupposes that some endangerment could be permanent. The scientific report by UNEP (2011) on the assessment of degraded Ogoniland in Nigeria bolsters the need for preservation rather than restoration. The report reveals it will take between 25-30 years for the environment to be restored. This further lends credence to the finding of Western (2003) which established that research has accentuated the pivotal need for the sustainable management of natural resources across the globe.

The leading approach to the conservation of biodiversity is the application of protected areas (PAs) (Pimm *et al.*, 2001; Adams *et al.*, 2004; Gaines *et al.*, 2010). This approach according to Adams *et al.* (2004) has been the dominant approach in addressing the threats and conservation of BES right from the 19th century but however changed in the 20th century as economic growth was given a pride of place with the assumption that environmental problems could be attended

to later. It has however been observed that these coastal habitats are vanishing as a result of factors like sea level rise, eutrophication, coastal development and sedimentation, none of which are altered by the conventional management programmes for PAs (Valiela *et al.*, 2001).

While the establishment of PAs as a conservation approach to stem the trends of loss of biodiversity and ecosystems has assisted to some extent, its effectiveness has been questioned. For example, Mora and Sale (2011) contend that conservation alone is not adequate to protect against marine and terrestrial biodiversity loss given the current pace at which new PAs are being established (see also Eigenbrod *et al.*, 2009; Palomo *et al.*, 2014). The authors further maintained that despite the fact that there are over 100,000 PAs worldwide covering 17 million square kilometres of land and two million square kilometres of oceans, the number is not sufficient when compared to the rate of human usurpation on natural ecosystems that surpasses the rate of conservation.

Other grounds to justify the ineffectiveness of the conservation approach of the PAs (Eigenbrod *et al.*, 2009; Mora and Sale, 2011; Palomo *et al.*, 2014). The authors argued that notwithstanding the over 30 years of widespread campaign and adoption of PAs as conservation method, evidence abounds of its failure to effectively stem the problem of biodiversity loss across the globe. They indicate that the problem of biodiversity loss has been trivialized while the capability of PAs to address the problem overrated. The authors therefore maintained that for biodiversity loss to be mitigated the ecological footprint of humanity must be addressed.

Mora and Sale (2011), identified five factors limiting PAs as a conservation strategy; expected growth in protected areas is too slow; insufficient size and connectivity of protected areas; PAs do not protect against all human threats; insufficient funding; and conflicting human development. The authors contended that the growth in PAs is below expectation and that while there are over 100,000 PAs globally, strict enforcement occurs on just 5.8% of land and 0.08% of ocean. It was further argued that the least target that is extensively recommended for effective biodiversity is 30% noting that going by the current rate it will require 185 years and 80 years to protect the 30% of land and oceans respectively. Additionally, it was posited that conservation rate is far too slow to have a significant impact given the expeditious rate of climate change, habitat loss and resource exploitation that is estimated to engender the extinction of multiple species prior to 2050 (Ibid).

Mora and Sale (2011) maintained in terms of the sufficiency of size and connectivity of PAs that the PAs must be adequately big to support feasible populations in the event of the inescapable mortality of some individuals encroaching their borders and that areas must be

close enough, as proximity of PAs will engender healthy substitution of individuals amid protected species/populations. The authors further point out that the over 30% and the 60% PAs for ocean and land respectively are less than one square kilometre which is too compact for numerous enormous species.

On the failure of PAs to protect against all anthropogenic pressures Mora and Sale (2011) assert that while the drivers of biodiversity loss encompasses habitat loss, overexploitation, climate change, pollution, and invasive species, PAs can only mitigate habitat loss and overexploitation leaving the other three stressors to increase biodiversity loss. Additionally, the authors noted that about 83% of PAs are on the sea and 95% of PAs are on land are situated in areas with persisting high impact from numerous human stressors.

According to Mora and Sale (2011), for there to be effective management of the existing PAs a projected sum of US \$24 billion is needed per annum, however the global expenditures for 2011 on PAs revealed that only US \$6 billion was estimated per year. This shows the inadequacy of the funding of PAs across the globe and possibly the major reason why conservation strategy of PAs has not been effective. As humans continue to strive to meet their developmental needs their imprint on earth continues to enlarge, and placing just 30% of the global habitats under protection will result to severe conflicting human interests that would ultimately lead to the displacement of people and impairment of their livelihoods (Mora and Sale, 2011). Moreover, the authors argue that this would trigger trade-off between human development and supporting biodiversity which eventually will neither be in favour of biodiversity nor proffering any solution as to how to protect biodiversity.

Just as Mora and Sale (2011) argued that addressing the enormous and multifaceted challenge of BES loss and degradation requires remarkable inventiveness and collaboration which conservation through PAs alone cannot tackle, MEA (2005) also contend that a more integrated, cross-sectoral approach to decision-making is required for our natural capital to be managed in a sustainable ways. To achieve an effective management and conservation of coastal and marine ecosystems, it will require an urgent need for the development of policies that seek to curb degradation and promote the delivery of ES (Egoh *et al.*, 2012b). Furthermore, it will require changes in institutional and environmental governance frameworks in some cases, while in other cases the existing institutions could meet these needs but face significant barriers (MEA, 2005a). Added to this, is the commitment of industry and effective national governance through which the benefits to coastal communities and the protection of coastal and marine ecosystems could be substantially improved (UNEP, 2006).

2.5 Summary

This chapter has explored the nexus between oil and gas activities and BES in the coastal environment. The virtues of BES and its invaluable contribution to the sustenance of human well-being and businesses were also discussed. The chapter further demonstrates that despite the significance of BES to the sustenance of human well-being and to the sustainable growth of businesses, ES have rapidly been degraded in the past and still continue to be altered at present through various anthropogenic perturbations without any requisite actions to conserve this earth's natural capital.

This shows that continued business as usual approach to the governance of oil and gas sector in most developing countries including Nigeria with regards to conservation of BES portends serious danger for the present and future generations at both the global, regional and national level. The next chapter reviews extant literature on governance and institutions.

Chapter 3. Definitions, Governance and Frameworks

3.1 Introduction

In chapter one, the general background to the study was presented. Chapter two reviews extant literature on oil and gas exploration and production, nexus between oil and gas activities and BES as well as BES conservation methods. This chapter presents the theoretical discourses in which this study is embedded. Following the continuous critique of the modernist model of environmental management and the realization that states alone cannot address the increasingly complex societal problems (Meuleman, 2008 cited in Chuenpagdee 2011), this thesis takes governance as a starting point and an epoch-making alternative to unravel the problem of BES degradation in the NDR of Nigeria. It links two strands of literature: good governance theory and interactive governance theory (IGT).

3.2 Conceptualising Governance

In diverse, dynamic and complex areas of social activity no single governing agency is able to realise legitimate and effective governing by itself (Kooiman, 2003, p. 3)

A fundamental concern in this thesis is governance, and specifically the outcomes it generates. It is presumed that how we organise and interact – how we govern and are governed – is significant. It is also presumed that many issues that currently constitute major challenges and need addressing are of a complex and cross-scale nature, and that this applies to even greater extent to governing systems regarding specifically human-environment interactions. Consequently, when it comes to challenges such as BES degradation, which is of local origin but with global, regional, national and local impacts, as demonstrated in the quotation above no single actor alone has satisfactory capacity for effective governing. Governance in terms of problem-seeking and problem-solving interactions across scales and between private and public actors therefore may help to address this challenge (Kooiman, 2003; Pierre and Peters, 2005; Peters and Pierre, 2006; Duit and Galaz, 2008; Young, 2010).

3.2.1 Governance Definition

The concept of governance is not new as many may assume even though there is no uniformity in opinions about its origin among scholars. For example, Kjær (2004) traced the early discussions about the concept to Plato and that it emanated from the Greek verb *kubernân* and the Medieval Latin *gubernare* which all mean to pilot, steer or manage. Similarly, Kaufmann and Kraay (2008) traced governance origin to at least 400 B.C. to the Arthashastra that was ascribed to Kautilya who was the chief minister to the King of India.

Notwithstanding the long provenance, decades of thinking and prominence governance has gained in both policy and academic discourses, its progress has not been without critical challenges and shortcomings. For example, there is no unequivocally accepted definition (Pierre and Peters, 2000; Keefer, 2009) “that would provide a convenient device for organizing the literature” (Keefer (2009, p. 439). This possibly explains why there is wide array of definitions to governance as demonstrated in **Box 3.1**.

Box 3.1: Selected definitions of governance from International Organisations and Scholars

International Organisations

The exercise of political power to manage a nation’s affairs (World Bank, 1989, p. 61).

The manner in which power is exercised in the management of a country’s economic and social resources for development (World Bank, 1992, p. 1).

The manner in which power is exercised in the management of a country’s economic and social resources’ with three distinct aspects of governance: (i) the form of political regime; (ii) the process by which authority is exercised in the management of a country’s economic and social resources for development; and (iii) the capacity of governments to design, formulate, and implement policies and discharge functions’ (World Bank, 1994, p. xiv).

The institutional capacity of public organisations to provide the public and other goods demanded by a country’s citizens or their representatives in an effective, transparent, impartial, and accountable manner, subject to resource constraints (World Bank, 2000, p. 48).

The manner in which public officials and institutions acquire and exercise the authority to shape public policy and provide public goods and services (World Bank, 2007c, p. 3)

The *process* – by which authority is conferred on rulers, by which they make the rules, and by which those rules are enforced and modified’ (World Bank, 2013).

The exercise of economic, political and administrative authority to manage a country’s affairs at all levels. It comprises mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences (UNDP, 1997, p. 12).

The use of political authority and exercise of control in a society in relation to the management of its resources for social and economic development (OECD, 1995, p. 14).

A white paper issued on European Governance (*EC, 2001, p. 8*) described governance as ‘rules, processes, and behaviour that affect the way in which power are exercised at European level, particularly as regards *‘openness, participation, accountability, effectiveness and coherence.’*

Scholars

Self-organising, inter-organisational networks characterized by interdependence, resource exchange, rules of the game, and significant autonomy from the state (Rhodes, 1997, p. 15).

A set of institutions and actors that are drawn from but also beyond government (Stoker, 1998, p. 18).

The exercise of authority through formal and informal traditions and institutions for the common good, thus encompassing: (1) the process of selecting, monitoring, and replacing governments; (2) the capacity to formulate and implement sound policies and deliver public services, and (3) the respect of citizens and the state for the institutions that govern economic and social interactions among them (Kaufmann 2003, p. 5).

The setting, application and enforcement of the rules of the game (Kjær, 2004, p. 12).

The formation and stewardship of the formal and informal rules that regulate the public realm, the arena in which state as well as economic and societal actors interact to make decisions’ (Hyden et al. 2004, p. 16).

A *new* process of governing; or a *changed* condition of ordered rule; or the *new* method by which society is governed” (Rhodes, 2007, p. 1246).

The process of steering society and economy through collective action (Torfing, 2010, p. 7).

The horizontal interactions by which various public and private actors at various levels of government coordinate their interdependencies in order to realize public policies and deliver public services (Klijn and Koppenjan, 2012, p. 194).

Source: Author’s Compilation, (2014).

Box 3.1 depicts that governance is a concept defined and utilised in disparate ways and many of which would not suit the objective of this study as they either enable too wide or too narrow range of phenomena to be regarded (Chhotray and Stoker, 2009). In drawing inspiration for this study the researcher acknowledges these shortcomings, but at the same time recognise the enormous potential which the vibrant discourse on governance possesses in structuring our thinking on how to address societal problems. Therefore, in the spirit of the absence of consensus on the definition of governance, this thesis follows the definitions provided by Torfing *et al.* (2012) and Klijn and Koppenjan (2012) as they recognise the multiplicity of actors coming together to address societal problems. The multiplicity of actors is anticipated to encompass the state, private sector, civil society, and the scientific community among others; operating together and separately based on their own institutions and guiding principles (Pierre and Peters, 2000; Kooiman, 2003; Jentoft, 2005; Lemos and Agrawal, 2006; Biermann, 2008; Duit and Galaz, 2008; Kooiman and Bavinck, 2013).

Governance discourses at the global level revolved around three fields of studies, namely management, public administration and development studies (see for example Rhodes, 1997; Kooiman, 1999; Pierre, 2000; Stoker, 2000; Jessop, 2002; Kjær, 2004; Nuijten *et al.*, 2004). Within management studies, the governance debate is connected to decentralisation and neo-liberal reforms with notions such as participation and mobilisation (World Bank, 1997; Stoker, 2000; Nuijten *et al.*, 2004). Scholars in the field of public administration regard governance as an interactive approach of governing and steering processes of both state and non-state actors (Kooiman, 1993; Jessop, 2002). The last group of governance discourses which originates from development studies and has been popular right from the early 1990s is concerned about addressing governing problems and developing capacities for steering political and social institutions in failed states of developing countries (Nuijten *et al.*, 2004; Torfing *et al.*, 2012).

Further to the broader perspectives of the concept, it has been narrowly viewed in different ways among scholars. While some conceive governance as notions associated mainly with issues of financial accountability and administrative efficiency, others may concentrate on wider political concerns related to democracy, human rights and participatory processes (Rogers and Hall, 2003). Similarly, there are also those who view governance in terms of match and mismatch between the politico-administrative system and the ecological system or in terms of operation and management of services (Akpabio and Akpan, 2010). The latter standpoint may fit well into the operation and management of oil and gas activities with regards to conservation of BES which is the focus of this study.

While many of the extant definitions of governance incorporate a broad range of issues, one should not conclude that there is a total lack of commonality in this area. These commonalities include the understanding that: (i) the state is not the only essential actor in solving societal problems; (ii) there is need for both conventional and public-private interactions; (iii) governance processes vary for stages of society and differ sector by sector; and (iv) most issues are complex, resulting to mutuality across societal actors. This state of affairs is orchestrated by societal realities of diversity, dynamics and complexity which prevent the government from acting as the only governor (Kooiman and Bavinck, 2013). Consequently, it is evident from the foregoing that theories of governance have emanated to interrogate the conventional supremacy of the unicentric, state-centred ‘resource management’ response, understanding governance as a multi-lateral entwine of parallel *modus operandi*, undertaken at various scales.

A governance viewpoint therefore encompasses both structural and agency aspects and includes the full-range of emerging and self-organizing state-society interactions instead of just the determined efforts aimed at controlling and steering society and societal sectors. It does not only challenge the fundamental goals and the institutional processes and structures that are the bases for planning and decision-making but also interrogates the values, policies, laws and institutions by which a set of issues is addressed (Olsen, 2003). This suggests that the public sector may continuously, but need not, occupy an important role in governing activities. Governance in this thesis in concordance with interactive governance approaches is ideated as a structured and complex, interactive process between political and social actors aiming to formulate and achieve collective objectives (Kooiman, 2003; Torfing *et al.*, 2012).

3.2.2 Governance: a prescriptive, reaction and theoretical approach

A transition towards more inclusive and participatory forms of public governing; a “deliberative turn” (Healey, 1997) is perceptible on all levels and in different sectors including the private, semi-private and public spheres (Kooiman, 2003; Van Kersbergen and Van Waarden, 2004). This includes the fields of environment and natural resources (Bäckstrand *et al.*, 2010) and covering the aspect of environmental policy (Jordan *et al.*, 2005). To a considerable degree, the governing landscape *is* changing as new actors enter into governing arenas and conventional governing approaches are being complemented or supplemented by network-oriented processes.

Similarly, governance is oftentimes considered as a normative approach, given the arguments that wide participation is advisable and a measure of democracy in decision-making (see for

example Van Kersbergen and Van Waarden, 2004; Biermann, 2008; Kooiman *et al.*, 2008). The collaboration among the disparate actors will engender the application of new types of multilevel policy in addressing the complex and multifaceted issues confronting society that needs a complex and multifaceted response (see also Kooiman, 1999; Van Kersbergen and Van Waarden, 2004; Kooiman and Bavinck, 2013).

The ‘governance turn’ has also been viewed in terms of institutional reactions and an indication that governing systems are complex and dynamic systems reacting to a dynamic environment (see Kooiman, 2003; Duit and Galaz, 2008; Illsley *et al.*, 2010; Røiseland and Vabo, 2015). It is presumed to be a reaction to a perceived need to widen the research of governing outside the conventional arenas of formal government institutions to encompass more informal and less visible ways through which joint objectives are advanced (Van Kersbergen and Van Waarden, 2004; Biermann, 2007; Biermann, 2008; Illsley *et al.*, 2010; Armitage *et al.*, 2011). Governance is in this regard reckoned from a functional perspective that considers the interdependence, complexity and uncertainty – features of contemporary society and governing problems.

Scholars have phrased this in terms of ‘double complexity’ (Galaz, 2011) and a ‘diversity hypothesis’ – that in order to govern complexity, it needs to be matched in institutional structures (Duit *et al.*, 2010)¹⁰. This possibly explains why institutional diversity has been recognised to be of crucial importance in natural resource management and environmental governance (Ostrom, 1990; 2012). Governance-oriented forms of governing are believed to have the potential to offer more responsive and flexible governing structures, which, through diverse mechanisms, could improve socio-political problem-solving capacity (Kooiman, 2003; Pierre and Peters, 2005; Torfing *et al.*, 2012). Governance in this sense is more inclusive, participatory and disparate forms of governing can help tackle complex or ‘wicked’ problems (Rittel and Webber, 1973; Kooiman, 2003; Pierre and Peters, 2005). It has also in several cases led to empowerment, capacity building, legitimacy, and better decisions (Dietz and Stern, 2008).

The concept of governance is functional to investigate both new realities and new angles of collective action that are pertinent for tackling nexus challenges (Moss, 2009; Stein *et al.*, 2014) such as the impacts of oil and gas activities on BES that both the oil and gas companies and coastal communities depend on. The concept can be viewed as a ‘new perspective on an

¹⁰ Double complexity and diversity hypothesis presume that institutional and organisational diversity is the most effective way to address complexity in the governance system

emerging reality' which concerns the increasing complexity of policy issues in addition to the interactions within and between policy arenas, policy levels and policy actors (Torfing *et al.*, 2012, p. 10). A governance viewpoint "highlights phenomena that are hybrid and multijurisdictional, linking plural stakeholders in complex networks" (Bevir, 2010, p. 2) and is also valuable to understand the various interactions across scales and between actors whose boundaries are often indistinct (Leach *et al.*, 2010).

However, these promises deserve a critical address and this takes us to governance as a theoretical approach, which is still considered with some scepticisms. For example, Offe (2009) noted that governance remains a highly criticised construct and a potentially 'empty signifier' (see also Colebatch, 2009) because it is unspecifiable and subject to different interpretations. Discourses have also been lucid regarding whether changes in the governing landscape include a "hollowing out of the state"¹¹ (for example Rhodes, 1996; Skelcher, 2000; Milward and Provan, 2003) or whether central authority is only dissimulating by employing various tools (see Kooiman, 2003; Pierre and Peters, 2005). The origin of such disagreements may however partly be traced back to multiple governance debates with vague and even conflicting definitions of governance (see Rhodes, 1996; Stoker, 1998; Kjær, 2004; Van Kersbergen and Van Waarden, 2004; Pierre and Peters, 2005). The following section differentiates between governance and management.

3.2.3 Governance Versus Management Approach

While management includes operational decisions to accomplish some definite outcomes, governance refers to wider mechanisms and institutions through which decisions that affect the environment are made by stakeholders (Oakerson, 1992). The wider and institutional mechanisms are central to the conservation of BES imperative particularly from the impacts of oil and gas activities as they provide the structure and process for policy change and shape the various meanings and benefits that BES provides. This is not to say that management and governance are not reciprocally irreconcilable, as Lebel *et al.* (2006) pointed out that management interventions also include uncertainty, negotiation, deliberation, and sensitivity to socio-ecological dynamics. Acknowledging the similarities and differences between management and governance is significant because of the complex, non-linear and cross-scale character of conservation problems in an age of global environmental change (Rockström *et al.*, 2009; Chapin *et al.*, 2010).

¹¹ A phrase indicating reduction in functions of central government through involvement of private actors in governance.

The sustainable management of environmental resources has been a topic of continued public disquiet. Some scholars have contended for crucial paradigm shifts in management since existing environmental resources management methods have been mechanistic and technocratic and mostly abandoning complexity and the human aspect (Ludwig, 2001; Gleick, 2003; Pahl-Wostl, 2007; 2007b; 2009). The importance of governance in steering societal problems including environmental problems within cities and in the coastal environment cannot be overstressed and this has been well documented in literature (see for example, Olsen, 2003; Biermann, 2007; Olsen, 2009). Furthermore, while most issues within coastal environments appeared to be defying management approaches, Olsen (2009) asserts that the changes in the coastal regions should be seen as challenges of governance rather than management. Governance will help to make integrated decisions to be made more effective and sustainable particularly in coastal areas (Biermann, 2007). This stresses the need for the examination of the problems associated with the activities of oil and gas sector in this study context from governance perspective rather than maintaining the status quo¹².

Governance has also become noticeable that numerous problems are not fundamentally related to the resource base but have to be ascribed to governance failures (Pahl-Wostl, 2009) which are numerous and impact both developing and developed countries though in diverse ways. Corruption and the lack of civil society, paucity of efficiency and effectiveness of existing governance structures in most developing countries have not only presented problems for resource governance alone but for any form of development (Ibid). Based on the above conceptualisation, the probable added value of a governance-theoretical perspective is discussed in the next section.

3.2.4 Governance Theoretical Perspective

The governance-theoretical perspective offers the following: One, it has a wider scope than conventional mechanisms to governing and thereby focuses attention to how disparate actors interact and collaborate, and to the implications of those interactions (Kooiman, 2008; Chuenpagdee and Jentoft, 2009; Torfing *et al.*, 2012). Two, the multidimensionality of a governance viewpoint has also led scholars to contend that it is especially appropriate for situations characterised by high complexity, diversity (Kooiman, 2003; Pierre and Peters, 2005), common resources, multiple actors, and incessant conflicts (Peters, 2011). The existence

¹² Continuous reliance on the management approach based on scientific principles that is only reactionary in nature and has failed to yield the needed results.

of these characteristics in the present case of oil and gas activities in the NDR justifies the relevance of governance-theoretical perspective in this study. Another prospective advantage of the governance-theoretical perspective is that it places emphasis on problem-solving interactions. As Peters contends:

...an emphasis on governance enables the discipline of political science to recapture some of its roots by focussing more explicitly on how the public sector, in conjunction with private sectors or alone, is capable of providing direction to society and economy (Peters, 2011, p. 63).

From a governance-theoretical viewpoint a significant aspect is to examine how the state enables or constraints collective action – not abstaining from perceiving the state as potentially significant and dominant (see Baker and Eckerberg, 2014). This viewpoint of governance is in congruence with Pierre and Peters (2005, pp. 2-6) who document four major activities required of the state among societal actors including: (i) articulating a shared set of priorities for society; (ii) providing coherence; (iii) steering; and (iv) accountability. While the state can retain its position as the main governor, it can as well act more in terms of a facilitator or coordinator – governing from afar by for example providing and defining the arenas for collaboration and interaction. Deconstructing governance can thus be said to entail unpacking processes and structures of rule and essentially concerns the balance between state intervention and societal autonomy (Treib *et al.*, 2007). In this regard governance opens for a diagnostic and context-sensitive mechanism that gives room for comparative analyses, or as Kjær avers:

Governance as an analytical framework and as theory directs us to the comparative questions of how, and through what institutional mechanisms, governing occurs in particular settings (Kjær, 2011, p. 106).

Consequently, there are numerous potential ways through which a governance-theoretical approach could contribute. It can be applied widely, provides opportunity to bring agency back into the study of institutions, and offers ways to link various settings and levels. Furthermore, it holds the promise of combining issues of normative and empirical attribute like what is ‘good’ or ‘desired’ governance and whether governing interactions are capable of generating the desired results (Kooiman and Chuenpagdee, 2005; Chuenpagdee *et al.*, 2008; Kooiman, 2008; Kooiman *et al.*, 2008; Peters, 2011; Chuenpagdee and Jentoft, 2013; Kooiman and Bavinck, 2013).

However, governance as an empirical phenomenon is here tackled not as a given but as a question, as are the outcomes of supposedly new forms of public governance. Following similar logic, some governance scholars have specifically studied how the duty of the state has (or has not) changed and the interactions between the state and other actors (see for example McNutt

and Pal, 2011). Others concentrates more on governance outcomes at various dimensions, for instance the quality of governance and democratic implications (Bäckstrand *et al.*, 2010) or whether and how new forms of public, or even private, governance are able to engender and sustain legitimacy or mitigate environmental impacts (see Johansson, 2013). Outcomes of governance processes at the local level which is one of the major areas of concern in this study, remains in many regards an understudied aspect (Bäckstrand *et al.*, 2010).

To conclude, in this section, governance as a prescriptive approach relates primarily as input to the discussion on the right to a healthy ecosystems and how this is reflected in current forms of governing in the oil and gas sector. Governance as a reaction is addressed in terms of collective problem-seeking and problem-solving in the governing process of Nigerian oil and gas sector. Governance as a theoretical-analytical approach relates to examining the actors involved in the governing process, relationships between governing actors and the outcomes/effectiveness of the governing system.

3.3 Diversity of Governance Models

A broad spectrum of applications that cut across virtually every aspect of human spheres have evolved in governance including environmental governance, corporate governance, global governance, international governance, national governance, state governance and local governance among others. One of the key developments in addressing the challenges associated with oil and gas activities has been an effort towards governance.

Oil and gas sector governance with regards to conservation of BES in this study is being viewed as a subset of environmental governance which according to Lemos and Agrawal (2006, p. 298) “refers to the set of regulatory processes, mechanisms and organisations through which political actors influence environmental actions and outcomes.” Paavola (2007, p. 97) asserts that “environmental governance should be understood broadly so as to include all institutional solutions for resolving conflicts over environmental resources.” Environmental governance is a fast growing subject in applied human-environment science with implications for conservation praxis (Armitage *et al.*, 2012). While there are many issues to consider in environmental governance, the authors assert that the crucial issues that conservation scientists and managers must increasingly tackle encompass:

“... problems of institutional fit and scale; adaptiveness, flexibility and learning; the coproduction of knowledge from diverse sources; the emergence of new actors and their roles in governance; and changing expectations about accountability and legitimacy” (Armitage *et al.*, 2012, p. 245).

Grasping the trends in environmental governance will “(i) allow scientists and managers to participate more effectively in real-world conservation initiatives; (ii) encourage reflection on the assumptions and values that frame their own and others role in conservation initiatives; and (iii) further recognize how conservation occurs in a contested and power-laden social context” (Armitage *et al.*, 2012, p. 245). This further accentuates the involvement of multiplicity of actors including government (state), market and civil society collaborating to address environmental problems.

Oil and gas sector in Nigeria has been governed to achieve managerial-based outcomes. The reason for this approach may possibly be due to failure to acknowledge that management and governance are not the same (Chuenpagdee, 2011; Armitage *et al.*, 2012) or realise from Ludwig’s stance that management age “is over” (Ludwig, 2001). Too much efforts have been expended in assessing management effectiveness of the oil and gas sector (Elenwo and Akankali, 2014), establishment of new government institutions to monitor and mitigate impacts of oil and gas activities on the environment including BES, and dealing with other management responsibilities (UNEP, 2011; UNDP *et al.*, 2012; Elenwo and Akankali, 2014).

While these day-to-day governance duties are essential (Bavinck *et al.*, 2005), they do not tackle the fundamental issues affecting the human and environmental health (BES degradation) from the impacts of oil and gas activities. A shift from the resource management to ecosystem governance with an understanding of human and natural sub-systems on their own and in how they interact is necessary (Chuenpagdee, 2011). This takes us to the exploration of diversity of governance models with a view to determining the appropriate concept through which the objective of this study can be achieved.

Many scholars have identified different branches in the scientific discipline of governance studies (see for example Kooiman, 1999; Armitage, 2008; Bavinck and Salagrama, 2008; Ostrom, 2010) that could be employed in the analysis of the governance of societal problems generally including oil and gas sector. These governance models include good governance, network governance, adaptive co-management, interactive governance framework (IGF), collaborative governance and Institutional Analysis and Development (IAD)-framework among others. This by no means constitutes an exhaustive list of theoretical approaches to governance, but does reveal the variety of its usages. Specifically, it describes how governance can signify very dissimilar things to those considering governance as the running of a business

or an economic sector, to those considering governance as a model of socio-political interaction in society, to those considering governance as a medium for structuring society's interaction with the environment. While it is impracticable to consider all the theoretical approaches to governance listed above into details in this study, only relevant theories that will help in addressing the research objectives will be considered.

The governance of oil and gas sector in this study raises a host of questions about what needs to be done, when it needs to be done, how it needs to be done and where it needs to be done. Fundamentally there are two main perspectives in the discourse about how to tackle governance challenges in relation to water, energy [including oil and gas], food nexus or even other systems. One perspective is championing and searching for 'good governance' arrangements while the other perspective contends that it is impossible to design institutions and "challenges the idea of a set of tools for managing governance" (Bevir, 2010b, p. 31). While the former is explicit on the choice of good governance as a model to consider on how to tackle governance challenges, the latter calls for a model relevant for a specific issue and context.

This study follows the IGF propounded by Kooiman (1999); (2003) and later fine-tuned by others in the context of fisheries and aquaculture (Kooiman *et al.*, 2005b; Jentoft, 2007; Chuenpagdee and Jentoft, 2009; Chuenpagdee, 2011; Bavinck *et al.*, 2013) because of its novelty that rests in the application of a comprehensive, flexible and systematic governance analytical framework. The other governance models listed above are designed in a way that they could equally assist in the analysis of socio-environmental problems but they suffered some limitations that rendered them inadequate for this study. For example, the IGF share similar theoretical and conceptual frameworks with the other resource governance models like adaptive co-management which merges the principles and practices of co-management with adaptive management (Armitage *et al.*, 2011). As noted by Berkes (2010), the major concepts of the adaptive co-management governance are precaution and adaptation as reactions to the uncertainty and complexity embedded in the linked social-ecological systems that it seeks to govern.

Another example is network governance, which stresses the increasing robustness that networks can engender to governance, which is essential as it tackles uncertainty and risks (Gibbs, 2008). Collaborative governance is another form that centres on partnership building and responsibility sharing between states and resource users to engage in consensus-oriented decision-making (Healey, 1997; Zadek, 2006; Ansell and Gash, 2008). Similarly, the IGF shares many of the

advantages of the Institutional Analysis and Development (IAD)-framework developed by Ostrom and colleagues (Ostrom, 1990; Kiser and Ostrom, 2000; Andersson, 2006; Ostrom, 2010). However, there are some distinct differences that distinguish IGF from others.

Apart from the fact that the IGF emanated from a social science outlook, it offers a more detailed grasping of institutions and governing processes and has been acknowledged to suit empirical governance analyses (see Pierre, 2000) when compared to other models discussed. Furthermore, the IGF has also been developed specifically with human-environment interactions as a focus of attention by taking into consideration the interactions within the governing system as well as interactions between the governing system and the system-to-be-governed or the resource (Kooiman, 2003; Kooiman *et al.*, 2005b; Chuenpagdee, 2011). With regards to the aspect of institutional robustness (which can be interpreted in terms of stability) the IGF focuses capacity for problem-solving and limitations to problem-solving in terms of governability (Jentoft, 2007) which others did not do. The IGF also explicitly adopts an open systems approach which fits better with the wider governance perspective and satisfies the condition that empirical governance analyses gains from the application of typologies (cf. governing modes) (Peters, 2011).

Lastly, in contrast to the other models particularly IAD-framework, the intentional and ideational aspect of governing in IGF is made more distinct by focusing specifically on governing elements and governing images. Ideas and a discursive aspect has been acknowledged as crucial, though frequently omitted generally in governance (Torfing *et al.*, 2012), and in explicating transformation or changes in policy, institutional and governance processes in particular (Schmidt, 2011). Consequently, discussion on good governance and IGF are considered appropriate for this study.

3.4 Good Governance Debate and Criticisms from the African Perspective

Good Governance and Debate

Good governance (GG) like governance earlier discussed suffered a similar limitation of lack of acceptable definition and this explains why there are many definitions of the model as shown in **Box 3.2**. According to Torfing (2010, p. 6), GG “refers to the recent endeavour of international organisations such as World Bank and United Nations to assess and measure the quality of the governing institutions and practices in developing countries as regards their stability, interaction, transparency, responsiveness, procedural fairness, effectiveness and adherence to the rule of law”.

The debate about GG gathered momentum in the 1990s as a reaction to increasing dissatisfaction with ineffectiveness of aid policy in the realm of international development. This is sequel to the inability of some of the policies and programmes including fiscal policy and structural adjustment programme (SAP) introduced in the 1980s to the developing countries of Sub-Saharan Africa (SSA)¹³ by the international financial institutions of World Bank and IMF to produce the desired objective.

Box 3.2: Some definitions of Good Governance

Characterized as ‘participatory, transparent ... accountable ... effective and equitable ... promotes the rule of law ... ensures that political, social and economic priorities are based on broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision-making over the allocation of development resources’ (UNDP, 1997, p. 12).

Inclusiveness and accountability established in three key areas: ‘selection, accountability and replacement of authorities (voice and accountability; stability and lack of violence); efficiency of institutions, regulations, resource management (regulatory framework; government effectiveness); respect for institutions, laws and interactions among players in civil society, business, and politics (control of corruption; rule of law) (World Bank, Undated, pp. 3, 7).

Can be measured along six dimensions (voice and external accountability; political stability and lack of violence, crime, and terrorism; government effectiveness; lack of regulatory burden; rule of law; control of corruption) (Kaufmann, 2003, p. 5).

Can be measured along five dimensions (‘participation, fairness, decency, efficiency, accountability, and transparency’) in each of six arenas (civil society, political society, government, bureaucracy, economic society, judiciary) (Hyden *et al.*, 2004, p. 16).

Source: Authors Compilation, (2014).

The objective of introducing GG policy and programmes in the SSA region was to engender economic disciplines, privatisations, and deregulation (O’Connell and Mundial, 1988; Ndulu and O’Connell, 1999). However in almost a decade after the introduction of the policies and programmes, a review of the state of development in the region by the bank revealed that the bane of the crisis of governance in Africa is the litany of the region’s development problems. This is evident in corruption, nepotism and bad policies that retarded development, which ultimately culminated in the inability of the State to provide security for their citizens despite the assistance provided by the Bank (World Bank, 1989). This indicates the level of poor governance and the ineffectiveness of the unicentric state-centred approach of governance in the region.

¹³ SAP was introduced in Nigeria as part of the countries in the SSA in 1986 (World Bank, 1994).

Following the realisation that the problem that underlie the region's development is governance, the bank concluded that good policy can only work if it is supported by a good policy environment (Santiso, 2001). Consequently, the early 1990s witnessed a paradigm shift from government to governance (GG) that became a platform for restructuring how we govern (Lockwood, 2010; Lockwood *et al.*, 2010) and reckoned as a precondition for obtaining bilateral and multilateral aid for economic and social development (Weiss, 2000; Santiso, 2001; 2002). This also led the bank to initiate over 600 governance-related programs in about 95 countries, encompassing projects for legal and judicial reforms, civil service reform, anti-bribery legislation, decentralization, red-tape reduction and the strengthening of accountability institutions like ombudspersons and parliamentary oversight bodies (Santiso, 2001; 2002). Additionally, the new policies and programmes were introduced to augment the institutional capacity of public organisations to produce value in an effective, transparent, impartial, and accountable way (World Bank, 2000).

Other international organisations who have also been concerned about the level of growth and development in the developing countries have also been at the vanguard of the campaign for GG (see United Nations, 2000, p. 4; UNDP, 2002, pp. 51-52; United Nations, 2005, p. 7). Thereafter, the development agenda had come to show the awareness that both market and democracy could only perform well if, as Grindle captures it, 'governments are able to design and implement appropriate policies, administer resources equitably, transparently and efficiently, and respond efficaciously to the social welfare and economic claims of citizens' (1997, p. 5).

The GG model which '... has assumed the status of mantra for donor agencies as well as donor countries' (Nanda, 2006, p. 269), does not operate in a vacuum. It has some benchmarks or meta-principles that assist in the analysis of the governance system, though not uniform among scholars and international organisations (see for example UNDP, 1997; Kaufmann, 2003; Hyden *et al.*, 2004; Lahn *et al.*, 2009; Crabb and Leroy, 2012; UNESCAP, 2012). For example, the principles include accountability, transparency, responsiveness, equity and inclusion, effectiveness and efficiency, following the rule of law, and participatory, consensus-oriented decision making (Crabb and Leroy, 2012; UNESCAP, 2012). The essence of the principles is to guide as a standard for development.

According to World Bank (2000, p. 5), GG is characterized by 'a well-functioning and accountable core public sector' that contributes to growth, private sector investment and poverty mitigation (Ibid, p. 1). Since the early 1990s the concept of GG has not only been

popularised but has also been arguably accepted across the globe as a model to follow in addressing the myriads of development problems in the society. For example, IjimAgbor (2013) noted that there is general consensus that GG is perhaps the single most significant factor in eradicating poverty and promoting development, though this may not necessarily be so as shown in the case of Western and East Asian nations (see Chang, 2002; Khan, 2004).

The importance of GG in addressing societal problems is corroborated in literature (see Commission for Africa, 2005; UN Millennium Project, 2005; Crabb and Leroy, 2012; IjimAgbor, 2013) including problems in the oil and gas sector (Lahn *et al.*, 2009). A growing body of research measures the nexus between the ability to govern and the ability to improve peoples' lives. For example, while the Commission for Africa (2005) believes that GG and capacity-building is what underlie the core of all of Africa's problems (see also World Bank, 2000), the UN Millennium Project (2005) submits that there is no excuse for any country no matter how poor, to abuse its citizens, deny them equal protection of the law or leave them victims of corruption, mismanagement or economic irrationality.

While poor/bad governance results to increase political and social risk, institutional failure and inflexibility and decline in the capacity to cope with shared problems (Rogers and Hall, 2003), GG can help address the shared problems within the society (IjimAgbor, 2013). This possibly justifies why The Economist (1999 cited in IjimAgbor, 2013) contends that, of all the ills that kill the poor in the society, none is as lethal as bad governance. This in a way reflects the state of things in the NDR and accentuates how GG can contribute to the development of any society. Regrettably, what GG entails is not constantly discernible to managers and scientists addressing complex, real world conservation challenges (Armitage *et al.*, 2012).

At the centre of the crusade for GG is how the governance system in SSA could be reformed by addressing the menace of corruption through policies that emphasise transparency, accountability and corporate responsibility and foster better and stronger governance to address the myriad of development challenges including elimination of poverty. Additionally, a growing body of evidence across the globe connects GG with higher economic growth rates and this was exemplified in the World Bank Institute's World Governance Indicators (WGI) project. The study of Kaufmann *et al.* (2005) which is one of the longest-running endeavours of the Bank to evaluate the impact of governance on development indicates a nexus between GG and per capita GDP. The authors cite evidence buttressing a causal link in which GG raises

per capita incomes, which they refer to as a “governance dividend” in economic growth rates (Kaufmann and Kraay, 2002; Kaufmann *et al.*, 2005).

From the foregoing, it is evident that the GG model contains a strong participatory element, through which the needs and viewpoints of different actors can be accommodated and integrated to produce a collective decision in governance. It is also perceptible that though the focus of the international organisations on GG revolved around socio-economic development, how to curb corruption and address the problem of poverty that is prevalent in most developing countries of the world, it does not foreclose its significance in addressing other crucial societal problems. This is just as Lahn *et al.* (2009) advocated for the application of the GG in the oil and gas sector. The authors identified five universal encompassing principles including clarity of goals, and roles and responsibilities; sustainable development for the benefit of the future generations; enablement to carry out the role assigned; accountability of decision-making and performance; and transparency and accuracy of information (Ibid). These principles are anticipated to assist the institutional structures to perform effectively and efficiently. Adopting a GG as a framework for oil and gas sector in Nigeria may not only enhance the recognition and participation of all relevant stakeholders in the governance process but may also make the oil and gas companies to be circumspect in their operations and an attempt to curb corruption, increase transparency, accountability and promoting ethical practices in the governing system.

3.4.1 Good Governance Debate in Africa

Beyond the rhetoric about GG, there are other fundamental issues that are intrinsic to the African system such as centralisation of power that are dissimilar to what subsist in developed countries and possibly some other developing countries too. For example, the study of Mwenda and Tangri (2005) on the reform programmes of the international financial institution’s (IFIs) foisted on Africa with focus on Uganda revealed that power is not only centralised in Africa but has also been captured by few political elites. Rather than the political elites use power to work towards the growth and development of the entire nation, they capitalise on the weakness of the civil society that has hampered accountability (Hyden *et al.*, 2004; De Grassi, 2008) and therefore concentrate on enriching their pockets and empowering their cronies at the expense of the masses.

Similarly, in contrast to what obtains in Europe and America, governance reforms in the African countries were geared towards building capacity, strengthening government and its effectiveness and accountability, rather than establishing networks and partnerships (Kjær

(2014). Unlike the civil society networks in EU and USA that are involved in pursuing public interests, the networks in African system were dominated by affective/emotive networks that are concerned with mobilising resources for their kingship (Hyden, 1983; Hyden *et al.*, 2004; De Grassi, 2008). This has not only shown part of the effects of centralisation of power in the region but also the neo-patrimonial features of the African system which denotes the lingering influence, within contemporary state structures of personalised patterns of authority and obligation (Ndulu and O'Connell, 1999).

This neo-patrimonial patterns which in the Weberian sense is linked with socio-political organisation in the smallest or most conventional political units (Bratton and Van de Walle, 1997) has been emphasised in literature as one of the governance challenges of the region (see Kjær, 2014; Ndulu and O'Connell, 1999). It has contributed to the exhaustion of state resources and aggravation of poverty among the populace as well as hindering GG reforms (Kjær, 2014).

As Hyden *et al.* (2004) point out, most governance theories are grounded in institutionalism, Kjær (2014) noted that Africa GG debates are grounded on the theories of institutionalism similar to the European governance debates. While some scholars have interrogated the processes through which the state steers the society and economy and what the outcomes are (Pierre, 2000), some have considered the type of governing that depends more on the dialogue among actors through recognised networks with minimal dependence on the state (Peters, 2000; Kjær, 2004). These governance viewpoints were described as “old and new governance” respectively (Peters, 2000). The ‘old governance’ talks about the state as the sole actor, while the ‘new governance’ recognises other actors including the state. Drawing from Peters (2000), Kjær (2014) established that the governance debate in Africa is an amalgam of the elements of old and new governance grasp but the old governance conceptualisation dominates. This shows that the state in Africa though has to some extent started to recognise other actors but still wield more power in the governance system above other actors, compared to the developed countries where the state with minimal control collaborate with other actors to steer the society and economy.

As Lahn *et al.* (2009) notes, application of the GG model may help to address and forestall most of the environmental degradation issues associated with oil and gas activities and any threat to the attainment of sustainable development in a given nation. It may as well help to engender peace and assist in mitigating further degradation of BES in the NDR. Furthermore, following the transition of most of the developing countries to democracy this paradigm of centralisation of power and neo-patrimonialism in African governance is changing (Kaufmann, 2012; Kjær,

2014). For example, Kaufmann (2012) noted that governance has improved tremendously in some of the extractive-rich countries in Africa including Ghana, Liberia, Sierra Leone and Namibia since 2000. Apparently, Nigeria¹⁴ is conspicuously missing out of the African countries that have shown impressive improvement in their governance approach.

Governance in oil and gas sector is a cross-cutting theme, intimately connected with issues surrounding accountability. Accountability in this context is therefore an inherent aspect of governance that concerns the management of relationships between disparate stakeholders in oil and gas sector, including individuals, households, communities, firms, governments, NGOs, private firms and other entities that have the responsibility to monitor, conserve and use BES.

The Nigerian government in an attempt to stem the tide of corruption particularly among the political class and to promote fiscal accountability, transparency and efficiency in all sectors in the nation including oil and gas sector in line with the GG principles and international best practices have taken some measures. These include introduction of some policies and creation of various anti-graft institutions such as Independent Corrupt Practices Commission (ICPC), Economic and Financial Crimes Commission (EFCC)¹⁵, and NEITI, while the policies include Excess Crude Oil Account, Fiscal Responsibility Act, Public Procurement Act, and Electoral Reform Committee (ERC). Despite the various measures implemented, there is still much to desire as this ponderous political corruption and lack of transparency continue and the oil and gas environmental-related problems still persist (UNDP, 2006; Müller, 2010; UNEP, 2011; UNDP *et al.*, 2012).

The problem of opaque management in the sector was further compounded by the multi-ethnic and flawed federal character of the state which predates oil discovery (Müller (2010). Accountability can only be achieved where there is transparency and probity among the governing actors particularly the leaders. This was corroborated in The Guardian (Undated) report on how James Ibori, a former governor in Delta State, Nigeria was sentenced to 13 years imprisonment by a London Court for fraud and money laundry in 2012. The report further quoted the Metropolitan Police as saying the estimated worth of his embezzlement is £157m of Nigerian public funds and that prior to his incarceration, his wife, sister, mistress and London-based solicitor who were his associates have also been convicted of similar offence.

¹⁴ Nigeria transitioned to democracy in 1999 after over two decades of military rule.

¹⁵ EFCC and ICPC are the two anti-graft agencies helping to stem the tide of corruption in Nigeria.

Recent study on the environmental governance in the oil-producing developing countries including Nigeria by Alba *et al.* (2010) also revealed that though there are changes in the process of governance in all the countries but there is still much to be desired in the following areas: (i) country institutional capacity development in EIA monitoring and follow-up, (ii) consultation and outreach process to build trust among stakeholders including local communities, (iii) communication systems and (iv) management approach for managing environmental liabilities arising from oil and gas development among others (Ibid pp. 21-25). Additionally, there are criticisms of GG concept in Africa as shown in the following section.

3.4.2 Criticisms of GG in Africa

The problematization of the GG debate in Africa is not only founded on local governance structures but also on transferring or imposing the developed countries liberal democratic system or what critics describe as ‘western-style perception’ on Africa without taking into consideration the peculiarity of the African context. For example, Mkandawire and Olukoshi (1995 cited in Kjær, 2014) condemned the neoliberal ideology of GG reforms such as cutting down public expenditures and downsizing of civil servants which to the authors, have contributed to disintegration of African states’ potentials.

A growing body of research has rejected the normative idea of using the GG principles as basis of analysis and questioned the notion that economic development is determined only by the principles (Chang, 2002; Grindle, 2004; Khan, 2004; Goldsmith, 2005; Kjær and Therkildsen, 2011). In the opinions of these scholars, countries in Western and Eastern Asia overcame the problem of poverty and witnessed rapid development despite being under autocratic leadership whose administrations were characterised with problem of high-level of corruption, no property right and non-uniformity in the institutional set-up in the 1960’s (Ibid). As Glaeser *et al.* (2004) notes, the implication of this is that democratisation and GG ideals may not necessarily be the only antidote to development as advanced by its proponents but may be a function of other factors like human and social capital. Similarly, Grindle (2004) calls for further studies about the social, political, and economic conditions that would be suitable for reform in African countries rather than relying absolutely on western ideal model. This corroborates the argument of Booth (2012, p. 93) who noted that: “The real situation is more diverse and less one-dimensional than assumed by the GG template” (see also Kjær, 2014).

Chang (2002) suggests that developing nations adopt policies and institutions that are appropriate to the developmental stages of their country and recognition of other conditions confronting them. To Chang, this will not only help developing countries to grow faster but will

also benefit the developed countries eventually, particularly in the areas of trade and investment opportunities. Similarly, Goldsmith (2005) asserted that there are different perspectives to the notion of GG that transcend the narrowly economic viewpoints of the Western donors which had consistently been fostering and foisting aid recipients to establish rule-based institutions and transparent governance systems. He therefore urged Western donors to be circumspect in holding developing nations to impracticably high standards for governance that even countries like US could not achieve when it was poor (Ibid). The implication of this is that high standards of governance can only be achieved by a country if rich.

Additionally, while most blue-chip development organisations today claim that advancing GG is a significant part of their programmes, Gisselquist (2012) contends that it is an extremely evasive ambition as GG is interpreted differently not only by disparate organisations but also to dissimilar actors within these organisations (see **Box 3.2**). Critics have contended that the World Bank view of GG is too technocratic (Weiss, 2000, p. 804; Santiso, 2001; cf. Hyden *et al.*, 2004, p. 15). Similarly, the World Bank who was at the vanguard of the campaign for GG in Africa now recognises that the upshots of the crusade for institutional reform are at best conflicting (World Bank, 2007). While this does not necessarily question the desirability of GG and its principles, it clearly suggests the conventional GG ideals alone are not beneficial in Africa but should rather be viewed pragmatically and different from the approach in the West by operating in what Booth (2012, p. 95) described as “context-sensitive, best-fit way”.

Although conditions differ substantially between the developed and developing countries and institutional designs in both contexts cannot be replicas of each other (Kjær, 2004), this thesis contends that GG and environmental policy principles would apply generally and equally in both developed and developing countries. Furthermore, if the GG concept with its set of meta-principles (EC, 2001; UNESCAP, 2012) had been conscientiously and sincerely followed by the leaders it would have contributed immensely towards the growth and development in their countries. This does not however foreclose the recognition of other contextual issues in the various countries which the model cannot address. This possibly explains why UNESCAP (2012) acknowledges that although GG is a paragon that every country must strive to follow in order to achieve sustainability but it is difficult to achieve in its entirety and therefore recommend a careful application of the principles as the only way to achieve it.

From the above discussion it should be clear that the GG model will not be able to effectively help in the governance of oil and gas sector regarding the conservation of BES because of its inability to assist in the understanding of the real situation of the governance system, though its

principles are good. The problem is that while the look for straightforward lay-out solutions is delusive (Dietz *et al.*, 2003; Ostrom *et al.*, 2007), critique alone without offering any concrete alternatives is not adequate to improve decision-making in the oil and gas and environmental sector. Consequently, the following section considers IG as the theoretical framework and filter through which the complexity associated with the governance of oil and gas sector could be investigated.

3.5 Interactive Governance- a framework for analysis

Unlike the GG concept earlier discussed, the IGT methodologically offers a range of conceptual, analytical and normative tools to map and disentangle some of the complex (social) patterns of interaction between and among disparate actors at different scales and to explore the implications of their interactions (Kooiman and Jentoft, 2009). An IG perspective can offer valuable insights about who the actors are that determine process, how they interact with each other and how their interactions facilitate or constraint joint action which ultimately determines the outcomes (Kooiman and Jentoft, 2009; Kooiman and Bavinck, 2013; Jentoft and Chuenpagdee, 2015). It is important to stress the fact that unlike the GG concept, the IG concept will help to define governance challenges and dilemmas in concrete and tangible ways.

As already explicated, IG takes a socio-political perspective to governance analysis and considers not only the conventional governing authorities but also how, which, and where interactions occur among disparate actors including the state, market and civil society. Governance from an IG outlook is therefore about navigating or steering via joint agency (mediated through institutions) so as to construct shared problems or achieve common goals (Kooiman, 2003; Chuenpagdee and Jentoft, 2009; Torfing *et al.*, 2012). The state is seen as one of the several actors that are involved in governing interactions, either in direct decision-making or through governing ‘from afar’ by “defining and shaping the arenas within which interactions may be occurring” (Torfing *et al.*, 2012, p. 3). As negotiation and trade-off are considered as central governance aspects, it makes governance less bothered with authority and more focused on political brokerage – how the state can facilitate collaboration, self-organisation and to steer (Jentoft *et al.*, 2007). In this sense IG is an expression of ingenious governance theory which abstains from ‘hollowing out’ the state (cf. Rhodes, 1996; Milward and Provan, 2003) but rather considers the state constantly as a (potentially) strong actor and whose responsibility may be experiencing qualitative change.

This broader perspective is in acknowledgement of the ecological and social systems and the interactions between them. The pertinence of this approach is that it offers a better understanding of BES challenges associated with oil and gas activities, from problem identification, who is included or excluded from decision-making during agenda setting, and to institutional design, and policy instrument choices (Bavinck *et al.*, 2005). Perceiving biodiversity loss and ecosystem services degradation as a wicked problem underscores the complexity and persistence of the BES challenges (MEA, 2005; Daily and Matson, 2008; Costanza and Kubiszewski, 2012). These challenges transcend scientific problems to encompass governance concerns about social justice, legitimacy, power, equity, corporate social responsibility and stewardship (Jentoft and Chuenpagdee, 2009).

As Jentoft and Chuenpagdee (2015) contended in the case of marine environment, the governing system will show the complexity and dynamics of the social and ecological systems, as well as the anthropogenic and natural perturbations put or exerted on the system. The IG model is expected to help in unravelling and clarifying overall understanding of the core problems of governance that are usually orchestrated by the complexity of interactions among actors and enhance our understanding about the identified key multi-level, multi-sector and multi-actor integrated challenges (see Kern and Gilek, 2015). As shown in **Figure 3.1**, the understanding of core problems and complex interactions in tackling the challenge would help in achieving efficiency, legitimacy, justice and effectiveness within the governance systems. According to Gilek *et al.* (2015, p. 261), legitimacy is “about their acceptance among stakeholders and their willingness to comply. Justice is about distribution of resources and space as well as due process. Effectiveness relates to the basic governance concerns, one of them being good environmental status and the way to realize it most cost-effectively”.

Torfinn *et al.* (2012) identified three forms of IG model including quasi-markets, partnerships, and governance networks. There are strands in governance networks: while some networks aim to enhance cooperation in terms of knowledge sharing, some aim to facilitate coordination so that joint efforts could be maximised. Lastly, some networks aim to enhance collaboration through the joint definition and panacea of emerging problems and challenges. The last strands which perfectly captures Kooiman’s IG theory is followed in this study and even though it shares the fundamental suppositions with the interactive governance approach, there are some differences with others (Ibid). Whereas others do not consider hierarchical governance as a form of IG, Kooiman perceives hierarchical governance as a form of governing mode and there is a specific analytical and conceptual apparatus that conforms to Kooiman’s framework that is

not always compatible with how concepts are used in others (Ibid). Consequently, IG as demonstrated in **Figure 3.2** hereafter refers to Kooiman’s notion and the grasping of governing as interactions playing out between structures (governing modes) and intentional approaches (governing elements) in governing systems arranged across governing orders.

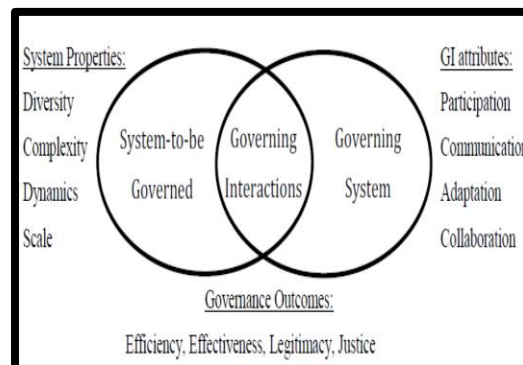


Figure 3.1: IG Model
Source: Chuenpagdee and Jentoft (2009, p. 113)

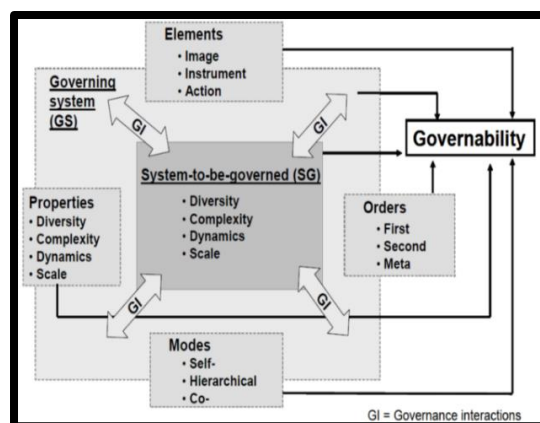


Figure 3.2: Components of IG and Governability Model
Source: Chuenpagdee *et al.* (2008, p. 3)
(as adapted from Kooiman and Chuenpagdee, 2005; Kooiman, 2008).

Kooiman’s IG approach which was inspired by the systems theory philosophy of von Bertalanffy offers a holistic framework for exploring and tackling the numerous dimensions of governance of societal issues (Kooiman *et al.*, 2005b). According to Checkland and Scholes (1990), system theory is concerned with relationships between entities within a given frontier that has the advantage of framing the world for exploration purposes. As observed by Capra (1996), these systems thinking approach has been applied widely in various fields and its application is dated back to the era of the organismic biologists in the 1920s. The letter sent by Kenneth Boulding, an economist to von Bertalanffy in 1953 corroborated the wider applicability of the theory:

“I seem to have come to much the same conclusion as you have reached, though approaching it from the direction of economics and the social sciences rather than from biology -- that there is a body of what I have been calling "general empirical theory," or "general system theory" in your excellent terminology, which is of wide applicability in many different disciplines. I am sure there are many people all over the world who have come to essentially the same position that we have, but we are so widely scattered and do not know each other, so difficult is it to cross the boundaries of the disciplines” (As quoted in von (von Bertalanffy, 1968, p. 14).

The link between the IG approach and system theory is in the relationships between entities within a societal system. Kooiman (2003) demonstrated this link when he identified three sub-systems including system-to-be-governed (SG), the governing system (GS) and the governing interactions (GIs) as shown in **Figures 3.1** and **3.2** respectively within a fisheries system and coastal governance. While **Figure 3.1** shows an overview of the IG model, **Figure 3.2** demonstrates the various components of the model. Kooiman further contends that this system thinking approach is applicable to all societal problems and his justification for framing societal problem as a system with subsystems was based on the assumption that system thinking will help to view societal problem from a holistic point of view as well as focusing on the components and relations of a complex system. Moreover, it will help in the identification of key issues and corresponding variables to be considered in the governance of societal problem (Kooiman *et al.*, 2005b; Kooiman, 2008; Chuenpagdee and Jentoft, 2009).

3.5.1 The governing system, system-to-be-governed, governing interactions and governability

A GS constitutes the formal and informal arenas where disparate actors including the state, market and civil society interact in order to voice, tackle or try to resolve societal problems. They are responsible for influencing the behaviours of the social system through interventions such as regulatory measures and institution building that provoke resource users and other actors to cooperate. However, the GS is grasped in context with the SG and this encompasses the natural world and the social world. IG thereby offers a synthetic process for analysing the interaction between governing subjects and governing objects (Kooiman, 2008b).

The intrinsic attributes of the SG ideated in terms of complexity, dynamics and diversity and interactions with the GS determines the overall governability (Kooiman, 2003). Governability is an important element of the IGF and a measure of the standard of governance – the totality of problem-solving capacity as well as ‘what *can* be governed’. Put differently, governability talks about the status of a system and its proclivity for successful governance (Kooiman, 2008; Kooiman *et al.*, 2008). It is a tripartite synthesis comprising the SG, GS and the GIs.

Governability can thus be grasped “by reference to their [natural resource systems] basic qualities” (Kooiman *et al.*, 2008, p. 2). Governability is a dynamic attribute and change due to governing activities and external drivers. The framework thereby adopts contemporary developments towards more context-sensitive and diagnostic processes – recognising that context matters (Kooiman, 2008; Booth, 2012; Kjær, 2014). This further means that instead of reducing governability to a technocratic issue (where governing problems can be addressed through refitting) intrinsic and external limitations to governability are presumed.

The stress on systems, particularly GS can be viewed as an endeavour to encapsulate more fundamentally the complexity of socio-political governance. As noted by Jentoft *et al.* (2007, p. 613) IGF embraces a so called “open rational systems model” that presumes complex, heterogeneous systems of stakeholder interest groups and networks exist within a GS. Defining a GS is thus a relational and subjective exercise – though it can be presumed that “the more people agree on system boundaries the stronger the conclusions will be” (Kooiman *et al.*, 2008, p. 4). Put differently, there are no definitive GS limits.

In encapsulating the intrinsic characteristics of these systems and how they interact, the aspiration with the IGF is to make “social-political processes analysable and interpretable” (Kooiman, 2003, p. 4). According to Kooiman (2008, p. 172), IGF and governability “can be seen as a contribution to developing a conceptual context for policy analytical purposes”, in which interactions are viewed as the major manifestations of governance (see **Figure 3.1**) and these are believed to have two dimensions including structural and intentional. Whereas reckoned to be mutually constituting in terms of structure and agency constantly producing each other through dialectical exchange – for analytical purposes, Kooiman (2003) demonstrates that they can be divided into governing modes and governing elements respectively. The aim is not to identify the precise course of influence, but rather to stress the significance of tackling both if we are to comprehend GS and governability. Lastly governance is perceived to occur not only in direct decision-making but also determined through more indirect processes and structures. Similar to the IAD-framework the GS is thus viewed as arranged across three orders including first, second and third (Meta) order.

3.5.2 Modes, elements and orders

Governing Modes

While it becomes necessary to recognise the various relevant stakeholders and involve them in governance, all entities are not expected to participate equally or simultaneously (Huntjens *et*

al., 2012) and as noted by Chuenpagdee (2011) their involvement and responsibilities is dependent on the operating mode of governance. As demonstrated in **Figure 3.1**, governing modes are classified into three quintessential types including hierarchical governance, self-governance and co-governance (although in praxis it is acknowledged that various types of modes will always coexist) (Kooiman and Bavinck, 2005; Kooiman and Jentoft, 2009). The governing modes constitute the architecture through which governing interaction processes occur (Ibid) and hence relate to governing arenas and actor constellations (cf. Treib *et al.*, 2007).

The hierarchical governance is a top-down approach and the longest-established of the governance modes, archetypal of the interaction between a state and its citizens which also manifests itself in policies and in law. Self-governance on the other hand talks about a situation where actors particularly community groups take care of themselves outside the ambit of the state. Unlike the hierarchical and self-governance modes, the co-governance mode allows societal actors to “join hands with a common objective in mind, and stake their identity and autonomy in the process” (Kooiman and Bavinck, 2005, p. 22; Kooiman and Jentoft, 2009, p. 821). Co-governance which manifests in numerous ways in governance theory, encompassing public-private partnerships, networks, regimes and co-management (Kooiman and Jentoft, 2009) is central to IGT, as the exigency of wide participation is, for example viewed in the context of fisheries as essential from the normative and empirical viewpoint (Kooiman and Bavinck, 2005).

Governing Elements: Images, Instruments and Action

The governing elements (intentionality) which is more widely ideated include governing images, governing instrument, and governance action. Governing images constitute one of the fundamental elements representing the normative and cognitive concerns of stakeholders (Chuenpagdee, 2011), including visions, knowledge, facts, judgements, presuppositions, hypotheses, convictions, ends and goals (Mahon, 2008; Kooiman and Jentoft, 2009) that help to determine how and why governance. Governing instrument constitute the intermediating element of IG that connects images to action (Kooiman and Jentoft, 2009) or policy tools that governors apply to move from one state to the other (Kooiman, 2003) which vary from soft ones like information and advice to hard ones such as taxes and regulations. Action which is putting of instruments into effect has also been perceived as the connection between images and instruments and how agency can be mobilised through various means (Kooiman and Jentoft, 2009). Governing action shows the drive factors that make a governing strategy work

and this includes variables such as the capability of a strategy to garner actors, to ensure commitment to organisation, to create inspirational environment, or tap into existing social capital. Identification and utilisation of the right strategies alone in governance does not guarantee good result except the drive factors are considered.

3.5.3 Governance Orders: First, Second and Third Order

The first-order governance is concerned with the day-to-day problem-solving and opportunity creation within and between the SG and the GS through interactions between two or more societal actors/groups. The second-order governance centres on the assemblage of institutions that are created to shape interaction in an attempt to solve societal problems and offer opportunities within the system. There is a growing literature about the place of institutions in development and which in this context are either formal or informal do not denote any organisations or physical structures (Pahl-Wostl, 2009) but refer to rules governing the behaviour of actors (North, 1990; Cleaver, 1998; Scott, 2014). While the formal institutions are related to the official channels of state bureaucracies, informal institutions denote socially shared rules like social or cultural norms (Pahl-Wostl, 2009) sanctions, norms, taboos, customs, traditions and codes of conduct (North, 1990). The authors further contend that while the former are systematized in a regulatory frameworks or any form of legally binding documents which can be implemented by legal procedures, the latter are not written down or codified and are usually implemented outside of legally sanctioned channels (Ibid).

Kooiman and Jentoft (2009) observed that institution provide the framework for day-to-day affairs (first-order) and a meeting ground for the governed and the governors (see also Jentoft, 2005). It further prepares actors for learning and building trust across viewpoints of societal reality. This suggests that institutions do not only help in structuring the interactions and interests among the interacting actors but institutions on their own are also structured by the various interactions, which may either be vertical or horizontal (Torfing et al., 2012).

As Salmi (2009) argues in the case of Finnish coastal fisheries, the capability of governance institutions to tackle oil and gas-environmental problems is critical, and necessitates giving heed to crossing sector boundaries and ensuring the legitimacy of the decision-making system. The ideas of institutional “fit” and interplay are rapidly gaining traction in governance discourses (Galaz *et al.*, 2008; Armitage *et al.*, 2012; Booth, 2012; Moss, 2012). For example, problems associated with institutional fit “include spatial fit (finding the appropriate spatial match between institutions and environmental problem) and temporal fit” (Armitage *et al.*,

2012, p. 248). The authors further expatiated that the incapability of decision makers to respond to external perturbations (like the issue of environmental degradation in the NDR) appropriately or a mismatch between advent of a problem and the political time demanded to resolve the problem is a good example of problem of institutional fit (Ibid).

Galaz *et al.* (2008) also identified the problem of fit to include: (i) problem of threshold behaviour which happens when the governance systems could not tackle the irreversible changes in system performance such as coastal resource declines with extensive livelihood and ecological implications; and (ii) problem of cascading effects where governance actors are incapable of mitigating the flow of crises across scales and systems. These latter two problems of fit which capture the situation in this research context (NDR) have also been noted to be issues conservation practitioners and decision makers across the globe are contending with (Armitage *et al.*, 2012). However, it has been acknowledged in literature that due to several reasons achieving spatial fit is still an elusive task in practice (Galaz *et al.*, 2008). This calls for a review of the capacity of the governance system of the oil and gas sectors.

Research on institutions has not generated many unequivocal answers to the critical challenge of how to promote institutional change without foisting external blueprints that neglect the complexities of local conditions (Evans, 2004). According to Pahl-Wostl (2009), participation of actors in the design of formal institutions is expected to increase compliance and long-term effectiveness, but this may come at the expense of reduced short-term efficiency given the fact that participatory processes are resource consuming. Nevertheless, while something is inefficient in the short term the reasons for that inefficiency (e.g. capacity building) may engender a more efficient system in the longer term.

The third/meta-order concerns the deliberation and determining the values, norms and principles that constitute the normative framework through which interactions occur (Kooiman and Jentoft, 2009). Values, notwithstanding being abstract and ideal (Hitlin and Piliavin, 2004) are the essence of governance (Kjær, 2004) and ‘are the most general and fundamental notion, and choices the most applied and specific, while norms and principles have intermediate positions in the sequence’ (Kooiman and Jentoft, 2009, p. 823). Principles are code of conduct, operating guidelines/standards to internally refer to when decisions and actions are made, assessed, censured and when changes are recommended (Song *et al.*, 2013). To Kooiman and Jentoft (2009), principle is the most applied concept in the sense that it has a more direct bearing on real-life choices and practices than values and images. In addition to some of the UN

environmental principles like precautionary approach among others, the authors suggested other meta-governing principles including transparency, efficiency, accountability, respect, equity, inclusion, effectiveness, responsiveness and moral responsibility that should be considered in governing societal problems. Meta-governance happens when the values, norms and principles of a GS that are rarely explicit are discussed and making them coherent and explicit to all concerned (public and private) in an interactive learning atmosphere may engender difficult choices to be less hard (Ibid).

The assessment of the governing orders and elements is expected to help in determining how a particular GS is run on daily basis, the policies and regulations that have been put in place regarding some societal activities, evaluate the strength and weakness of some policies/regulations as well as the norms and ethical issues behind some policies. Assessment of the governing mode on the other hand is expected to help in determining the relationships among and between actors, and possibly why some laudable policies are not working in a given context and why it works elsewhere. It would help to determine whose values, norms and principles are likely to prevail among the governing actors/stakeholders.

Major improvements have been made in the last decade in fine-tuning IGT, particularly the governability concept, which is a function of the attributes of the SG and the capacity of the governing actors in fulfilling their tasks (for example, see Jentoft, 2007; Chuenpagdee *et al.*, 2008; Kooiman, 2008; Kooiman and Jentoft, 2009; Chuenpagdee, 2011; Chuenpagdee and Jentoft, 2013; Kooiman and Bavinck, 2013; Jentoft and Chuenpagdee, 2015). In terms of operationalisation IGT is increasingly being applied in different sectors of the society in the socio-political analyses of problems and it has broadened the formerly popular idea of co-management to a new level. For example, it has been applied extensively in different context in fisheries governance (see Bavinck *et al.*, 2005; Kooiman *et al.*, 2005b; Jentoft, 2007b; Bavinck and Salagrama, 2008; Chuenpagdee *et al.*, 2008; Chuenpagdee and Jentoft, 2009; Jentoft and Chuenpagdee, 2009; Salmi, 2009; Jentoft *et al.*, 2010; Song and Chuenpagdee, 2010) and in marine protected areas (see Jentoft *et al.*, 2007; Chuenpagdee, 2011; Jentoft *et al.*, 2012).

The theory has equally been applied in addressing societal problems in other areas including governing shipping externalities in Baltic Sea region (see Gritsenko and Yliskylä-Peuralahti, 2013), poverty issues in Lake Victoria, Tanzania (see Onyango and Jentoft, 2010), public health sector in India (see Varghese and Kutty, 2012) and conflicts in forestry sector (see Derkyi,

2012). However, in spite of all these advances and the fact that IG has been conceived and recommended as an instrument for cutting red tape and intensifying innovation in public sector (Goldsmith and Eggers, 2004) as already demonstrated, operationalisation has thus far been underdeveloped. This is reckoned to be a crucial aspect in order to promote the application of the framework in future studies (Kooiman, 2008; Song and Chuenpagdee, 2010). Similarly, the IG viewpoints still suffer some limitations as shown below.

3.6 Limitations and operationalization

The objective with the IGF is to develop it into a multidimensional framework for governance assessment – enabling evaluation of the ‘quality’ of governance from disparate perspectives (Kooiman, 2008b). The contribution of this thesis is to do so with a focus on conservation of BES in the oil and gas sector’s environment. Notwithstanding claims that the GS is the most developed part of the framework (Ibid), this thesis maintains that the intentional (element) dimension has in fact been rather shallowly addressed. In consonance with other governance scholars (Anderies *et al.*, 2004; Onyango and Jentoft, 2010; Torfing *et al.*, 2012) the significance of tackling governing praxes across orders is here recognised to be of considerable importance. Due to the challenges associated with operationalisation this thesis has devoted specific attention to how the components of the GS can be explored empirically. This study therefore proposes that governing orders can be used to detail and conceptualise the understanding of governing elements.

Furthermore, Song and Chuenpagdee (2010, p. 237) contend that their exploration of governability in the case of Lake Malawi fishery represents “the first empirical study aiming to operationalise governability in a real-world case”. This talks about the challenges in applying the framework empirically in addition to its explorative promise and possibly justifies the assertion that IG remains inaccessible to wide audiences due to the fact that it is generally regarded too theoretical (Symes, 2006). Generally, the framework is somewhat uncharted and this has possibly led scholars like Mahon (2008) to raise the issue of lack of methodology in the application of the framework. Although it has been acknowledged that processes of making the framework operational are complex and difficult (Kooiman, 2008b), nevertheless it would not be out of place to apply the framework in this study due to the “nearly limitless” opportunities available (Song and Chuenpagdee, 2010, p. 237).

While there is no readily available methodology for assessing governability, it has however, been recommended that governability analyses should include assessment of the systems in

terms of the prevalence of the systems' attributes. These include features such as complexity, diversity and dynamics (concerning the SG), a fit of elements (concerning the GS) responsiveness of modes (relating to GIs), and the quality of orders (relating to the GS and GIs) (Jentoft, 2007; Kooiman *et al.*, 2008).

Another drawback of the framework relates to explaining change. Although Kooiman (2008) talks about the dynamic attribute of GS and dissimilar modes (and combination of modes) that may describe governing there is little mention of how and why governing systems experience change. Instead the framework is suggested as a way to analyse complex GIs from a multidimensional perspective, open for different evaluative variables. Once again, the focus on conservation of BES can thus contribute to bridge a chasm.

Another area of probable concern relates to the role of power. Generally, power has appeared to be neglected in governance studies (Walters, 2004; Goetz, 2008) and therefore critical for governance analysis (Torfing *et al.* 2012). For example, Offe (2009, p. 551) contends that the governance literature appears to prioritize political aspects in terms of '*power to*' rather than '*power over*' other actors which regrettably "is strongly deemphasized". Therefore, more important approaches to governance analyses have been demanded (Bäckstrand *et al.*, 2010).

According to Adger *et al.* (2005), power and its use determine how cross-scale interactions happen. While the analysis of power is ubiquitous and highly contested in social science, Few (2002) points out that central to this is the grasping of power in the utilization of action, knowledge and resources to solve problems and further interests (see also Lukes, 1974). Few (2002) specifically makes a major difference between, on the one perspective, sociological aspects of power with regards to tactical practices of power through processes of social interaction and, on the other perspective, structural effects of power that are demonstrated through the allocation of resources and influence.

Despite the fact that power is not explicitly tackled in Kooiman's (2003) framework, it is ubiquitous and implicitly tackled through recognising for example which governing images are given priority and how governing structures allow opportunities for interactions between and among dissimilar actors and interests. Torfing *et al.* (2012) have recommended a multidimensional viewpoint on power fitted with IG, which encompasses tackling power in terms of '*power in*', '*power of*', '*power over*' and '*power as interactive governance*'. The authors further contend that it is necessary to:

...consider all the different ways that interactive governance and power are related in order to fully understand the essentially political character of interactive governance (Torfing et al., 2012, p. 49).

These categories are, unfortunately, not definite and this thesis therefore decided to remain with the classic, although relatively disentangled conceptualisation of power concentrating on 'power to' and 'power over'. This conceptualisation shows an underlying grasping of how power can be conceived but is not in any way proposed to be an all-embracing frame for power analysis. In short, 'power to' is in this thesis grasped as the more direct and intentional exercises of power such as power to act and ability to affect other actors. This 'power to' is what Chuenpagdee and Jentoft (2009, p. 115) described as "to ignore, exclude, marginalise or mobilise other groups". In the context of this thesis this will help to investigate the actors that are involved in governance and how they are mobilised as well as those that are marginalised.

'Power over' includes more structural and discursive notions and concerns the power that actors can exercise over the conditions in which they find themselves. Direct exercises of power between actors draw mainly on Luke's (1974) seminal idea of the three faces of power¹⁶. This has elsewhere been alluded to as 'power over other actors' (cf. Offe 2009). Similarly, Lemos and Agrawal (2006) observe that while governance models may allow institutional spaces which provide opportunity for the disadvantaged/weak stakeholders to air their voices, it also permits the prepotent actors to synergize their position, and possibly suppress the voices of the disadvantaged. The authors further contend that the international corporations for example, have grasped how to influence the nascent global structures, and have attained a level of power where they lay their own environmental inhibitions. For example, it has been established that the failure of government in Nigeria to exert its power of control over the activities of MNOCs and other stakeholders in the Niger Delta project is causal to the perennial conflict in the region (IjimAgbor, 2013) and this accounts for the extensive environmental problems in the region (Ogbonnaya, 2011) including BES degradation. Structural or indirect conceptions of power refers to how institutional structures create meaning and how actors' perceptions and interests can be determined. This could for instance relates to what is regarded as valid or legitimate knowledge. Power over in IG also relates to how for example governments can exercise power over governance through structuring arenas for interaction and regulating access to them.

¹⁶ Luke's three faces include direct power, indirect power, and ideological power.

Even within levels of government, governance is shared by multiple agencies (U.S Department of Energy, 2009). However, broad distribution of regulatory power may also weaken each agency, feeding the public's concern that oil and gas activities are under-regulated (Efstathiou, 2012; Brown *et al.*, 2013) and can undermine risk detection and response, unless "information flows freely across departmental boundaries" (Schoemaker and Day, 2009, p. 83). As Konschnik and Boling (2014) pointed out in the case of shale gas that information can shrink the gap between actual and perceived threats, focusing regulatory efforts where they are needed most, effective governance of oil and gas sector requires understanding of risk and its root causes. This will require free flow of information among agencies and proper coordination which can help to promote one of the key goals of functional fragmentation and improve the accountability of the agencies to their political principals (Freeman and Rossi, 2012).

However, as Adger *et al.* (2005) observes that there are unequal benefits from interactions, i.e. winners and losers, Stein *et al.* (2014, p. 17) equally point out that "governance and coordination processes are not without conflicts and power struggles". Of course, coordination may not always improve the likelihoods of compromise as one agency might be more powerful than others and dominate a joint decision-making process, producing a result similar to what would have happened had lawmakers delegated authority to a single agency (Freeman and Rossi, 2012). Nonetheless, it appears reasonable to say that coordination tools ought to increase the chances for trade-off. If coordination tools do enable trade-offs, they assist to achieve one of the claimed objectives of functional fragmentation.

Another issue might be collusion in which under the semblance of coordination, one or two agencies will try to pervert clear congressional preferences (Ibid). To successfully steer governance arrangements where disparate actors determine governance processes and outcomes, Torfing *et al.* (2012) contend that grasping how power structures the interactions between actors involved is indispensable. This understanding is not only essential but desirable, given the fact that all actors are not equally endowed in terms of resources will naturally afford the well-endowed the capacity to structure interactions (O'Neil, 2001). These diverse aspects on power are viewed as complementary instead of opposing and constitute an endeavour to capture 'the political' aspects of governance instead of considering it as an exclusively deliberative and collaborative exercise.

Despite the drawbacks of IG frameworks discussed above, this section proposes IG as a novel *ex post* analysis framework for oil and gas sector governance. Adopting an IG perspective has important implications for how policy-makers, practitioners and scholars alike conceptualise

and evaluate the quality of BES, particularly in developing countries like Nigeria with a monolithic economy dominated by oil and gas. The framework which is formulated on the IG components seeks to analyse the oil and gas sector governance capacity with regards to conservation of BES according to the analogous touchstone of:

- (a) The quality of institutions relative to the IG components with regards to variables of values, norms and principles, decision-making and outcomes; and
- (b) The quality of stakeholder/actor interactions, relative to participation, empowerment, and learning.

3.7 Conceptual Frameworks

While some severe, long-standing problems may be addressed more easily by immediate stakeholders to the issue (Susskind and Cruikshank, 1987 cited in O'Brien 2010), other unclear persistent, “wicked” problems may become more manageable through broad-ranging discourses among an array of broad spectrum of stakeholders (Roberts, 2004). Given the fact that knowledge about ocean and coastal systems is often partial, management outcomes are mostly provisional, leading in many occasions to destructive and frequently irreparable consequences, and to vexation and despondency among stakeholders (Chuenpagdee, 2011). This underscores the need for stakeholders’ involvement which is more essential for achieving good outcomes than political involvement (Edelenbos *et al.*, 2010).

Whereas this study concurs with the approach of Kooiman and Jentoft’s (2009) meta-governance process, understanding how the meta-governance links with the other steps in the governance process such as choices, decision-making and action/behaviour is very important for the successful application of IGF in oil and gas sector governance. At every stage in human life decisions have to be made and the decisions to be made are subject to the available choices. Choices in this context refer to a set of alternatives that actors/decision-makers can choose from, while alternatives are the options the decision-makers are presented with before making a decision or the selection of final choice.

In the conventional perception of the problem-solving mechanism, choices are the solution that results from analysis of data or situation under investigation (Conklin, 2006). The interval between having one or several choices and coming up with a final choice includes a process that is usually known as decision-making (Kahneman and Tversky, 1984). In the meta-governance viewpoint on the other hand, as far as wicked problems are concerned, the process is less linear and should be left for empirical investigation. Defining the problem is frequently

the problem, and solutions often precede definitions (Rittel and Webber, 1973; Chuenpagdee and Jentoft, 2007). Drawing from Kooiman and Jentoft (2009), this study considers the concept and its key elements presented in **Figure 3.3** as a framework to be followed in decision-making and in the analysis of the governance of oil and gas sector in this study.

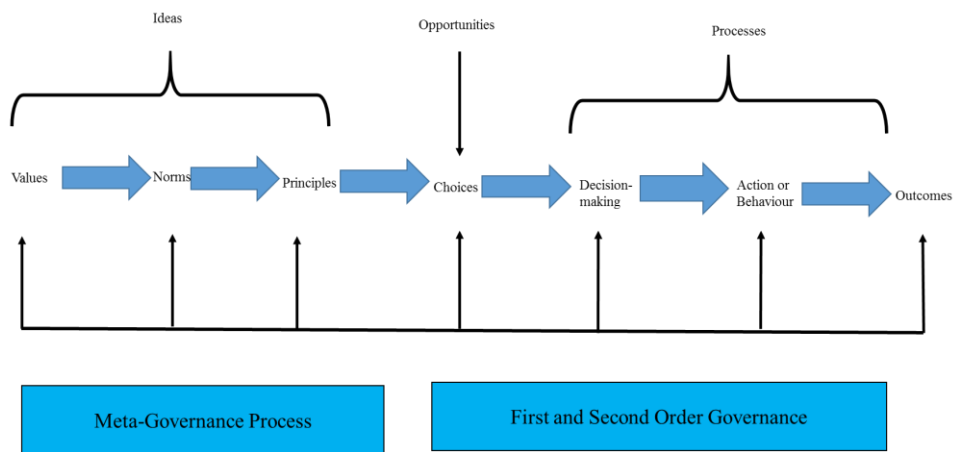


Figure 3.3: Relationship between meta-governance process and decision-making
Source: Modified from Kooiman and Jentoft (2009).

3.7.1 Interactive Governance and Governability of Oil and Gas Sector

Given the complexities and the multiple and conflicting stakes that together make problems and challenges inherently ‘wicked’, oil and gas governance in Nigeria (and elsewhere particularly in developing countries) is deemed to be a work in progress where outcomes are unpredictable. The challenge is to establish governance arrangements that promote constructive decision-making processes that involve interested parties in a way that is democratic and legitimate while tackling the problem of BES degradation in the NDR of Nigeria.

In seeking to understand the conditions and limitations of oil and gas sector governance, the IG theory suggests the need to examine the interactions between the oil and gas GS and SG. According to IPIECA and OGP (2011) and as demonstrated in **Figures 3.4** and **3.5** the various segments¹⁷ within the oil and gas exploration and production project cycle have potential impacts on BES. Despite the availability of modern technologies designed not only to efficiently and safely endure high pressures and temperatures encountered during exploration and production but to also promote environmental stewardship along the entire oil and gas value chain (IPIECA and OGP, 2012b), environmental problems still persist in the sector.

¹⁷ The sectors include upstream, midstream and downstream.

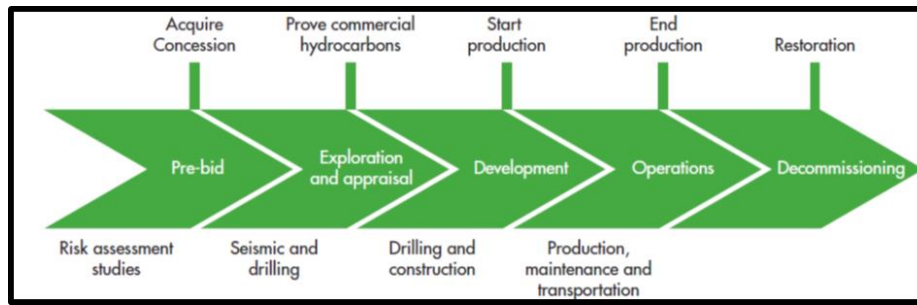


Figure 3.4: Oil/gas E&P Project Cycle
 Source: EBI (2003, p. 13).

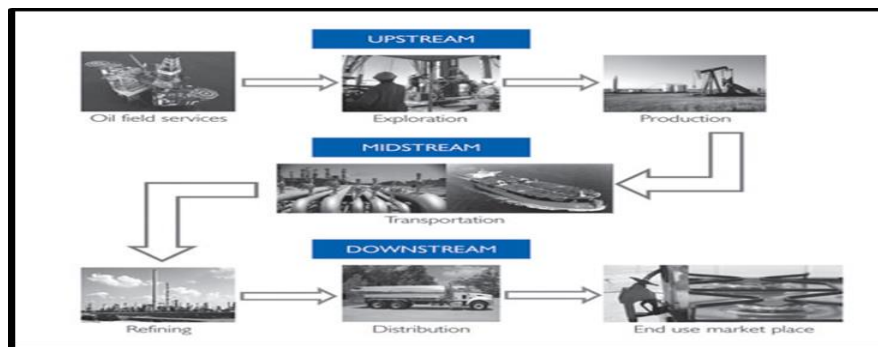


Figure 3.5: Oil and Gas Supply Chain
 Source: Oladunjoye *et al.* (2012).

The implication of this is that scientific/technological approach alone cannot address the extensive problems associated with oil and gas activities. Additionally, IPIECA and OGP (2012b) point out those issues such as climate change, biodiversity impacts and access to energy that are pervasive in the sustainable development agenda are too big for individual companies to address alone. Similarly, activities in the oil and gas value chain are framed as intrinsically complex and dynamic and their system attributes are rich and spatially variable. This will in line with the IG theorists require the collaboration of various stakeholders interacting together to address the challenges, concerns and making hard choices on problems associated with the impact of the sector on BES. This may often result in uncertainty, unpredictability and incomplete grasping of issues that ended up making governance difficult. Understanding the nature and challenges of societal problems like loss of biodiversity and ES degradation associated with oil and gas activities is expected to help to proffer a better approach to addressing the governance problems. Consequently, this thesis contends that oil and gas sector governance in Nigeria is challenged by simultaneous and multidimensional factors that can only be understood and disentangled by thoroughly assessing the SG and the GS, and the interactions between them.

The governance of the oil and gas sector is devolved across many institutions as shown in Chapter Five. Rather than centralised joint decision-making in a single state-centred institution, it is more feasible to see the fate of the coastal BES as being continuously structured, by all oil and gas sector stakeholders together through deliberations, decisions and actions in a horde of institutional settings. The plurality of stakeholders coming together to take decisions calls for the application of meta-principles that will provide common ground across institutions to determine how BES is being perceived among stakeholders, how policies to conserve BES are formulated, and how institutions can learn and adapt to changes. For interaction to be effective the aspect of institutional framework and participation of stakeholders play a significant role, hence, the following section considers these.

3.7.2 Oil and Gas Sector Governance: From Meta-Governing Perspectives

Governance of oil and gas sector is used in this study to refer to a multi-faceted framework in which various stakeholders play a distinct and critical role in overseeing and regulating oil and gas activities, both in direct and indirect ways. From an IG perspective, oil and gas governance is grasped as “the whole of public as well as private interactions taken to solve societal problems and create societal opportunities. It includes the formulation and application of principles guiding those interactions and care for institutions that enable them” (Kooiman and Bavinck, 2005, p. 17). Applying this concept to the oil and gas sector, Ebinger *et al.* (2014) state that oil and gas governance is about how and to what ends oil and gas activities are managed. In their opinion, oil and gas governance encompasses:

- (i) the processes, mechanisms and formal and informal institutions in place to take decisions on oil and gas activities (interactions at meta and second order level);
- (ii) the actors involved in these decisions (actors within GS and SG: first and second other); and
- (iii) the way in which oil and gas policies, laws and regulations are implemented on the ground (First order).

While Stevens (2003) observed that the governance system of countries with abundant point-source natural resources such as oil tend to have less prudent policies and poor governance as well as weaker institutional capacities, Baumüller *et al.* (2011) contends that in countries like Nigeria, the main limitation is often not the absence of regulations, but the lack of political will and capacity to implement and enforce them. Thus any solution will ultimately have to deal with issues of governance (Ibid). One of the reasons for poor decision-making by governments in oil-rich African countries is high expectations from the populace which usually pressures the

government to take quick, inappropriate and poorly coordinated decisions (Stevens, 2003). The author further argues that governance indicators like effectiveness, voice and accountability, political instability and violence, the rule of law, regulatory quality, and control of corruption are markedly weaker in such countries. Hence, this study will examine how the interactions at the Meta, second and first order levels translate to decision-making in the oil and gas sector in Nigeria.

Governance in oil and gas sector in Nigeria is a central issue that affects millions of people within the SG whose livelihood activities are dependent on healthy ecosystems, particularly in most coastal OPCs. At a global level, 'good' oil and gas sector governance faces several challenges. For example, there are many uncertainties such as the ecological, livelihood, knowledge and socio-political which may affect the management of natural resources (Mehta *et al.*, 2001) and may affect people's use of natural resources. To Bavinck *et al.* (2005, p. 28) such uncertainties can make governance "very troublesome". For this reason, 'good' oil and gas governance is indispensable to protect people's livelihoods and improve their well-being, and to protect them from the deleterious consequences of humanity intense usage of oil and gas resources.

Decision-making is the study of identifying and choosing among alternatives based on the values and priorities of the decision maker (Harris, 2012). The values and preference are acquired by being part of a community or the environment in which one has to make the decisions. This encompasses a mental process in which a decision-maker, for example local communities as well as government actors and other actors, have to choose alternatives that produces the highest possibility of success while fitting the values and aspirations of the decision-makers and their peers (Ibid).

It has been contended that decision-makers are usually driven by subjective valuation of the outcomes of their decision (Glaser and Strauss, 1967; Kahneman and Tversky, 1984). This demands for a normative or less idealistic theory and more for theory produced from the study of empirical reality. Kahneman and Tversky (1984, p. 341) for example, averred that the focus of the decision-maker is mainly on questions regarding rationality, logic, beliefs and preferences as they are, not as they should be. Both authors considered two decision-making strategies namely, risk averse and risk-seeking. According to the authors, while risk averse presupposes that decision-makers will choose alternatives with outcomes they are certain of, risk-seeking means that decision-makers negotiate the outcome irrespective of whether the final outcome has lower or higher (monetary) value.

Grasping decision-making as part of IG, this study further exploit Langley (1995, p. 63) who examines two mechanisms namely Paralysis by Analysis and Extinction by Instinct. While Paralysis by Analysis on the one hand talks about a situation where decisions are made after a careful study and synthesis, on the other hand Extinction by Instinct is about a situation where decisions are arrived at arbitrarily without systematic study and reflection. This thesis sees the application of meta-level governing process of IG as akin to both risk seeking and the Paralysis by Analysis approach and therefore suggests that a careful consideration and incorporation of the values, norms and principles of the disparate stakeholders in decisions about the governance of the oil and gas sector will generate better and legitimate outcomes. Against this backdrop, the framework proposed in **Table 3.1** will assist in the analysis of the oil and gas sector governance in this study and may as well be adopted in other regions of the world.

Table 3.1: Framework for analysing oil and gas sector governance with regards conservation of BES

Variables	System-to-be Governed	Governing System	Governing Interactions
Values, norms and principles	How do oil/gas producing communities define and interact with biodiversity and ecosystem services (BES) in their community? Which values, norms and principles are regarded crucial for the conservation of BES?	How do governing institutions define BES with regards to oil/gas activities? Which values, norms and principles are underpinning their approach to conservation of BES?	How are values, norms and principles converting into the relationship between oil/gas companies, government and oil/gas producing communities? Which are shared, which are in conflict? Which mechanisms are put in place to bridge differences?
Decision-making	Are they enabling or restricting the coping mechanisms of oil/gas sector at the level of the community?	How are oil/gas policies with regards conservation of BES arrived at? Is the process transparent, responsive to the community, inclusive, consensus building?	How do the oil/gas producing community and governing actors interact as they negotiate on definition and they reach decisions for conservation of BES?

Action/Behaviour	What exactly are the oil/gas producing communities doing to cope with and confront BES degradation?	What policies and actions are put in place by the governors to address and mitigate BES degradation in oil/gas producing communities?	How the governors and the oil/gas producing communities interact (communication, cooperation and proceed) as they address the problem of BES degradation?
Outcomes	What outputs are generated when addressing the problem of BES degradation from oil/gas activities? Is there satisfaction, justice, happiness, trust, well-being, freedom?	How do governing institutions learn and adapt from outcomes achieved? What changes have occurred over time?	How do outputs affect how the oil/gas producing communities interact? Do their interaction increase or reduced, or does it assumes new form?

3.7.3 Values, norms and principles: Meta-Order

When all stakeholders are involved in governance they contribute to the outcomes, they tend to have suppositions about what the GS should provide to all stakeholders. Involving the disparate stakeholders in problem definition (BES degradation) will provide a platform for their values, norms and principles to be deliberated and agreed upon, though trade-offs are inevitable but it will help build trust in their respective circles that the resulting information will be reliable (Doremus, 2010). The locals in the OPC that possess the necessary capacities for participation are justified to be involved in the process of problem definition, policy formulation and decision-making, though they are predominantly poor with high rate of unemployment among the youths (UNDP, 2006). Involving the poor locals becomes necessary because policies that change the environment can hurt the poor more than the rich (Eskeland and Devarajan, 1996; Eskeland and Kong 1998). Similarly, when measures are taken to improve a degraded environment, priority should be given to how it will impact the poor, as environmental regulations that increase the costs of producing certain goods [in this case oil and gas] can lead to increased unemployment (Markandya, 2001).

Regarding problem definition and arena for negotiation, participation is oftentimes confined right from the beginning (Gonzalo-Turpin *et al.*, 2008) resulting to the exclusion/restriction of relevant interest groups (Turnhout *et al.*, 2010; Van Alstine *et al.*, 2014). In analysing the governance of oil and gas sector from the meta-level perspective, this suggests the need to examine the various stakeholders (at both SG and GS) whose values, norms and principles are

considered/shared while defining the problem of BES degradation, decision-making, actions as well as in the formulation of policies and whether some are in conflict/excluded. This becomes necessary as Kaner (2006 cited in O'Brien 2010), warned that attempts to exclude some stakeholders can eventually threaten the legitimacy of the collaborative process (see also Innes, 1996; Innes and Booher, 1999; Innes and Connick, 2001; Innes and Booher, 2004; Crosby and Bryson, 2005; Aarts *et al.*, 2007; Lynam *et al.*, 2007; Wollenberg *et al.*, 2008; O'Brien, 2010).

3.7.4 Decision-making: Second Order

Schuman (2006, p. xxviii) noted that “All individuals and interests’ groups in all sectors of society have the right to meaningful participation in the decisions that affect them” (see also Turnhout *et al.*, 2010; Armitage *et al.*, 2012). Drawing from Fung (2006), Page (2010) avers that the involvement of the disparate people in collaborative process is significant because those involved will determine what is included in agendas, what facts are sought, and what panaceas are recommended and agreed upon. No doubt participatory initiatives will produce a diversity of intended and unintended responses and there is need to reckon both the initiators and participants as actors in the sense that they act and structure participatory processes (Turnhout *et al.*, 2010). Involving those affected by the outcomes will show how responsive the governing system is, and encouraging these partnerships early can make governance more effective throughout the oil and gas project cycle.

The success of collaborative decision-making is predicated on three factors including whether the participants are respected by the people affected by the decision, their expertise, and the group’s power to make decisions (Page, 2010). For good decisions to be made on how to address the problem of BES degradation, knowledge of complex and changing systems is needed to ease evaluation and assessment processes, respond to feedback and broker conservation trade-offs (Campbell *et al.*, 2010). However, the knowledge required to address complex socio-ecological systems takes various colourations including scientific and local which transcend the prerogative of a single actor (state or non-state), but it is rather broadly distributed among the disparate actors within the society (Berkes and Folke, 2002; Ballard *et al.*, 2008; Berkes, 2010; Berkes, 2010a; Armitage *et al.*, 2012). This possibly explains why Armitage *et al.* (2011) point out that the emphasis in contemporary environmental governance has increasingly been on the “coproduction of knowledge,” accentuating the value of scientists and managers involving with disparate actors to establish more holistic understandings. Coproduction mechanisms in this context is expected to help obfuscate epistemologies and the duties of the various actors in the making and interpretation of knowledge (see Cufaude, 2005;

Lynam *et al.*, 2007; Pohl *et al.*, 2010) and also essential for a full assessment of a resource governance problem and for discovery innovative solutions to address it (see for example Berkes and Folke, 2002).

For oil and gas/environmental governing actors in Nigeria, this suggests supporting decision-making processes that involve meaningful regular interaction among all relevant stakeholders, and which do not promote formal western science over other forms of knowledge. The stakeholders which include the “citizens and pressure groups can *enrich the policy-making process* by providing knowledge, information and other forms of input that policy-makers otherwise would not have had” (Nabatchi and Amsler, 2014, p. 13). For example, the involvement of NGO can offer environmental expertise and help to validate the process to the public (GEMI and EDF, 2008). Central to emerging concerns about knowledge in environmental governance is acknowledgement that knowledge is dynamic and uncertain since it is formed, validated, and adapted in the context of ever-changing surroundings (Davidson-Hunt and O’Flaherty, 2007). Although the process of coproduction of knowledge is difficult in uncertain conservation contexts and experiences are not uniformly positive (Armitage *et al.*, 2011) but this can be less difficult in an atmosphere of regular interaction and proper coordination of stakeholders.

Due to corrupt practices in some countries some locally powerful families may make or wield influence in decision-making process particularly in some rural areas; hence they will be regarded as part of the stakeholders/actors (UNESCAP, 2012). The sudden development and growth of the numerous militant groups in the NDR of Nigeria (Oluduro and Oluduro, 2012) which have become powerful forces to reckon with in the region, corroborates the above assertion. In a related discussion, the problem of power imbalance can happen not only with the entrance and exits of participants from the collaborative arena but also at a more crucial level (O’Brien, 2010). The author further observes that while decisions about the inclusion of representative stakeholders in a collaborative governance process from organised segments of the community can come at the expense of less organised yet concerned others, many interests may lack organisational infrastructure that can represent them (Ibid). English (2000) contends that the more spread out the affected stakeholders and the more chronic the problem horizon, the more onerous it will be to represent stakeholders in collaborative processes. This calls for the recognition and involvement of the various concerned groups in society in the governance process. Involving them will help to integrate their views in decision-making.

Participation of relevant stakeholders is anticipated to result to public support for decisions and consequently lead to effective and efficient implementation processes (Turnhout *et al.*, 2010). It has been contended that participation of citizens in decision-making processes transcends merely representing citizens but should be viewed as a way to improve learning processes, enhance the quality of decisions, add to empowerment, or foster democratic citizenship (see also Stringer *et al.*, 2006; Ballard *et al.*, 2008; Dietz and Stern, 2008; Fernandez-Gimenez *et al.*, 2008; Kuper *et al.*, 2009; Turnhout *et al.*, 2010; Nabatchi and Amsler, 2014). However, participatory approaches and methods can make powerful interests to be strengthened and empowerment of participants oftentimes not actualised (Stringer *et al.*, 2006; Turnhout *et al.*, 2010). The degree to which significant participation is practicable and for the different ideals of participation including consensus, better decisions, legitimacy and support to be met, depend on the specific capacities and skills of the participants (Wagemans, 2002 cited in Turnhout *et al.*, 2010) and unless participation is designed in such a way that is suitable for the local context and the issue at stake (Dietz and Stern, 2008).

Furthermore, there is evidence that where communities are admitted to be part of the policy process they often perform a relatively unimportant role, notwithstanding rhetoric indicating otherwise (Illsley *et al.*, 2010). This may not augur well with the locals who may decide to do anything to hamper rather than enable smooth operations of oil and gas activities in their communities. This possibly explains why Arnstein (1969) was critical of the lower rungs of her ladder of participation and cautioned about manipulation, therapy, and tokenism. She further stressed that “real” participation could be found only on the higher rungs of her ladder participation¹⁸ (Ibid).

While participation is oftentimes stimulated by the desire to open-up decision-making process to broader audiences, it is obvious that it is impracticable to involve everybody and that representation can never be complete (O'Neil, 2001). Participation can consider local communities as homogenous units with common outlooks and interests, thereby disregarding the problematic nature of defining communities and community interests (Selfa and Endter-Wada, 2008) and stifling intra-community diversity and difference (Mohan and Stokke, 2000). Participation is definitely selective when it comes to who is able to participate. While all participants are not equally endowed in terms of capacity/skills and as noted by O'Neil (2001, p. 484) that “[the] capacity to say and to be heard are unevenly distributed”, which justifies why selection of actors may be selective. This suggests the recognition and views of various interest

¹⁸ This include partnership, delegated power and citizen control.

groups within the communities which this study will investigate as participation may run the risk of depriving people that lack those capacities from being involved and heard in governance. The objective of many participatory processes is consensus as this is regarded to be a robust ground for high quality and legitimate decisions (Innes and Booher, 1999; Innes and Connick, 2001; Innes and Booher, 2004).

The idea of bringing together a diversity of actors with varied interests in the governance of oil and gas sector indicates a potentially explosive situation may evolve. As Powell *et al.* (1996, p. 117) contend, “a lack of trust between the parties, difficulties in relinquishing control, the complexity of the joint project, and differential ability to learn new skills are all barriers to effective collaboration”. Balogu (2009 cited in IjimAgbor, 2013) writes of leadership in the NDR as being highly corrupt.

How trust can be fostered in a region like the NDR towards the state and the market actors (IjimAgbor, 2013) is a major challenge to be surmounted in the interactive/collaborative process. The study of Leach and Sabatier (2005) revealed that participants in a collaborative process are more likely to trust and find outcomes of collaborative process satisfactory if they reckon the negotiation process itself as legitimate, fair, and transparent. In congruence with Leach and Sabatier (2005), this thesis contends that the negotiation process can be legitimate, fair and transparent only if the leadership is focused primarily on the success of the collective effort, poised to relinquish control as suggested by Powell *et al.* (1996) and playing the role of facilitative/servant leadership (Fayemi, 2015b).

3.7.5 Action/Behaviour: First-Order

As Newig *et al.* (2005) noted that involvement of interested stakeholders can lessen uncertainties in the policy implementation process by lessening the tendency of unanticipated renitence. Berkes (2002) contends that almost all resource management systems possess some external linkages and drivers at various scales. He further contends that a failure to acknowledge these linkages is a principal reason for some failed interventions in resource systems and that the continuation of resource degradation may be in part linked to ‘cross-scale institutional pathologies’: “it is useful to start with the assumption that a given resource management system is multi-scale and that it should be managed at different scales simultaneously” (Berkes, 2002, p. 317). This calls for the examination of the actions taken at disparate scales including the SG (local community levels) and GS (government and market levels) to address BES degradation and the interactions that exist between governing actors.

At the GS level, Kaufmann and Kraay (2008) rule-based outcome indicators will assist to measure whether there are suitable policies, strategies and codified approaches for the governing system in Nigeria. These will include for example, the existence of an environmental protection agency/ministry and appropriate national policy on environmental degradation/pollution control from the impacts of oil and gas (Ibid). Further to the existence of rules (called “formal procedures”), the determinants of oil and gas sector governance include four other broad categories: ownership arrangements, decentralization, stakeholder participation, and contextual factors.

Adger *et al.* (2005) observed that one of the recognised limitations of co-management in the management of coastal resources is that different levels of government involved are often conflicting in their objectives and attitudes to co-management and sharing responsibility. From the GIs perspective, the actors are interdependent such that for the actions of one to be effective other actors must rely on actions of another. How the interactions between institutions play out in various contexts is an important issue from a policy perspective, since contradictory, overlapping or redundant regulatory can cause substantial inefficiencies and lead to institutional tensions (De Santo, 2015) and so called regulatory overload (Knudsen and Hassler, 2011).

Participation by multiple agencies can leverage relative strengths and avoid regulatory overlap (Freeman and Rossi, 2012). Similarly, a carefully structured deliberation may enable relevant stakeholders to surpass their initial conflicting preferences by working together to conceive collective goals and then design and execute policies and programmes to actualise those goals (Page, 2010). The collective goals can only be achieved in an atmosphere of regular interactions and proper coordination among the actors because coordination tools can help agencies to manage overlapping agency functions or related jurisdictional assignments in ways that improve both cumulative expertise and the quality of the final agency decision (Freeman and Rossi, 2012).

For a process to mitigate BES degradation in this study, Ostrom’s first institutional design principle of ‘clearly defined boundaries’ (1990, p. 259) is significant in the analysis of the activities of the multiplicity of government agencies/actors in the GS as shown in chapter five. As Huntjens *et al.* (2012) argue, it is essential that tasks, mandates, responsibilities, know-how and capacities among the governing institutions are clearly defined and transparent. While the boundaries may be clearly or unclearly defined in a given governance system, the boundaries can be re-negotiated and adjusted where necessary particularly when dealing with complexity

and uncertainty (Ibid). The implication of this in this study is to examine how the regulatory framework that established the various government agencies clearly/unclearly defined regulatory functions among governing agencies – whether it creates any form of overlap that could hamper their interaction, communication, cooperation between actors within the SG and GS and ultimately their performance/effectiveness.

3.7.6 Outcomes

Outcome-based indicators measure whether rules and procedures are being effectively implemented or enforced, based on the experience of relevant stakeholders. For example in this study, it may include the effective monitoring of oil and gas activities with a view to mitigating the impacts of oil and gas pollution; prompt and adequate compensations to victims of oil and gas pollutants among others within the SG. Empirical researches reveal that drawing from multiple sources of knowledge such as knowledge from trained scientists, policy makers and managers, as well as knowledge of resource users (in this case local communities, oil companies, etc.), can result to better socio-ecological outcomes (Pohl *et al.*, 2010; Gazzola *et al.*, 2015). This collective fact-finding mechanisms to accomplish a desirable outcome are emerging as central to governance mechanisms (Armitage *et al.*, 2012).

The emergence of particular governance configurations and their outcomes is a function of the way disparate actors including conservation managers and scientists interact with other actors in terms of the choices they make in conservation settings (Ibid). Gazzola *et al.* (2015) contended that for sustainable outcomes capable of engendering the required long-term political and institutional change to be attained, it would require the combination and mix of information, insights and knowledge from disparate communities of practice, disciplines and systems. For this to be achieved, the coming together of the various relevant actors in deliberative dialogue, reflection and iterations becomes not only necessary but enhanced across departmental boundaries and opportunities for collective learning must equally be promoted. This possibly explains why Armitage *et al.* (2012) assert that the non-state actors should not only be acknowledged and involved but be viewed as both knowledge generators and knowledge recipients.

While political will and civic capacity are essential by-products of collaboration, from a policy perspective the most significant results of collaboration are the outputs and outcomes of the programs and projects that the collaborators launch (Page, 2010). Outputs may encompass the successful implementation of joint programs and projects (Innes and Booher, 1999). Outcomes might include declines in the incidences of public disputes, increases in the incidences of

desired behaviours and events, and improvements in individual and aggregate indicators of clients' and citizens' well-being (Provan and Milward, 2001). This study will investigate the outputs generated while addressing the problem of BES degradation within the SG and whether the locals derive satisfaction, justice and happiness from the outputs.

Governance to steer conservation dilemmas is always contested, and eventually about trade-offs and grasping the socio-ecological dimensions of those trade-offs as they change over time and space is critical for successful conservation outcomes (Armitage *et al.*, 2012). According to Pahl-Wostl (2009), social learning processes are more likely to be beneficial when they deal with issues: (i) that are important for (and decided by) stakeholders; (ii) various stakeholders depend on each other to reach their goals; (iii) when knowledge is incomplete or dispersed amongst various stakeholders; (iv) there is little agreement on the problems at stake.

Despite the cultural differences among the people in the NDR, there are also significant similarities, which might mean that potentials for learning between the oil producing states in the region could be substantial. Above all, the types of environmental problems threatening the coastal ecosystems in the region and by extension the socio-economic problems to the people are quite similar, although their severity differs somewhat. This will help at the GS level in investigating how the governing institutions learn, their adaptive measures or changes that have happened over time based on the outcomes generated. This is because from a normative perspective polycentric systems are reckoned to have a higher ability to adapt to a changing environment and to be less affected in their integrity by unexpected changes or failure in parts of the system (Ostrom, 2001; Pahl-Wostl, 2007). Similarly, the outcomes will help to investigate the nature of the interactions between the SG (locals) and the GS (government on the one part and the MNOCs on the other) and whether their interactions have increased or reduced.

Monitoring and evaluation have been identified as an essential institutional praxis in IG that help to provide for reflexive social learning (Sanderson, 2002; Huntjens *et al.*, 2012). However, Nyberg (1999) noted that monitoring which is momentous to improvement is often neglected in conventional mechanisms to management. Reflexive monitoring is expected to help the governing actors to consciously reflect on the intended and unintended implications of their own actions/inactions, and as noted by Grin (2006) reflective monitoring may infuse strategic action.

Different assessments of the performance of the Nigerian oil and gas sector reveal that efforts put in monitoring the systems operation from impacting negatively on biodiversity and ecosystems, reforming the organisational structure, and modifying praxes of oil companies and government authorities still fail to fully meet its needs (Omotola, 2007; Oluduro and Oluduro, 2012; Ajibola, 2015; Omokhoa, 2015).

3.8 Summary

This chapter presented governance definitions/interpretations. Governance approaches that could contribute to a sustainable governance of oil and gas activities have also been described and contributions of these within the NDR was reviewed and perceived limitations discussed. IGT that stresses the need for interaction between public and private participants in addressing societal problems (in this case BES degradation) and creating opportunities (Kooiman *et al.*, 2005b) formed the basis of the conceptual framework of this study. Interactive governance approach can mobilise people with shared concerns from within the GS and SG to collaboratively/interactively assess the situation and to formulate shared values, goals and principles that have the potential to conserve BES while permitting continued exploration and exploitation of oil and gas resource. Precautions are needed, however, to ensure that relevant stakeholder like the local oil producing communities are not excluded from decision-making process but interactively engaged using suitable mechanisms. The conceptual framework concurs with the argument that governance also has a “meta-order” that should not be considered as external but inherent (Kooiman and Jentoft, 2009). Because these meta-governance principles will contribute immensely towards the choices, decisions to be made, the actions/behaviour that will be taken, and will ultimately determine the outcomes of the governance process.

The next chapter discusses the research design and methodology for this study.

Chapter 4. Research Design and Methodology

4.1 Introduction

The two foregoing chapters examined assumptions of the theoretical and conceptual frameworks that underlie this thesis. This chapter presents an overview of the research design and methods that guided data collection and analysis of this study. The following section explicates the research design, highlighting the rationale for choosing a qualitative case study approach and justifying the selection of the study areas, units of analysis and sampling methods. Thereafter, the data collection methods and sources are examined, and this is followed by the techniques used for data analysis. Finally, the chapter deals with the issues of validity and reliability before the limitations and ethical considerations of the research were presented.

4.2 The Research Design

Research design is a “logical sequence that connects the empirical data to a study’s initial research questions and, ultimately, to its conclusions” (Yin, 2009, p. 26). It constitutes the backbone of the research (George and Bennett, 2005) and is the underlying plan or protocol for conducting research (Maxwell, 2005, p. 2; Creswell, 2013). This underlying plan includes (a) the justification of research aims and questions, (b) the conceptual framework and underlying theories (discussed in Chapter three), (c) the rationale underpinning the study design, (d) the reason underpinning the decisions made concerning participants, time and places of data collection, and (e) issues regarding validity and reliability (Maxwell, 2005). As observed by Trochim (2006) and demonstrated in **Figure 4.1**, the research design binds together the different parts of the research in order to tackle the overarching research question. A well thought out research design will help to avoid instances where the “evidence does not address the initial research questions” (Yin, 2009, p. 27).

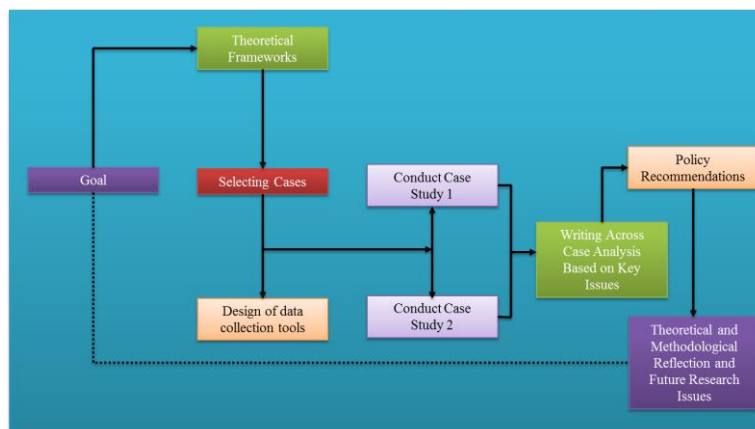


Figure 4.1: Research Design and Process

Global concerns for BES degradation form the background to this study. The environmental pollution problems that characterises the NDR as a result of oil and gas activities (Alabi, 2008; Babatunde, 2010; 2010b; UNEP, 2011), despite the existence of oil and gas policies and other environmental protection policies, has been a major concern among policy makers and environmentalists in Nigeria. This has equally provoked a lot of questions which this study attempts to address as one wonders why the policies could not address the problems and the implications of the continued environmental pollution on the BES in the region.

While there are many stressors to BES loss, economic development projects such as the oil and gas sector is found to be contributing to this problem (Crossland *et al.*, 2005). It is against this backdrop, this research aims to investigate the governance of the oil and gas sector with regards to BES conservation in Nigeria oil producing region often referred to as NDR.

At this point, a revisit to the research objectives outlined in Chapter one is crucial. Part of the central aim of this study, as stipulated in section 1.4, is concerned with the way to mitigate further degradation of BES from the impacts of oil and gas activities. Consequently, this chapter asks (a) who are the actors involved in oil and gas sector governance and who isn't involved? This question is essential for the right scoping of the disparate actors involved in the governance of the sector. Furthermore, the study explores (b) how do the actors perceive BES and what are their roles in relation to mitigating the degradation of BES from the impacts of oil and gas activities; (c) what are the impacts of oil and gas activities on BES and the host communities? Additionally, this study attempts to explore (d) what are the methods through which a synergy between the various stakeholders/actors could produce a coherent oil and gas governance strategy for the Nigerian oil and gas sector through IGF.

To seek answers to the questions raised above, it is apposite to commence a study of the different factors that contribute to the impacts of oil and gas activities on BES in the host communities and identifying empirical examples of such communities will be a step in the right direction. In its exploration of BES conservation, this thesis draws on various methods and approaches. It specifically explored how Kooiman's concept of interactive governance and governability framework (IGF) (2003; 2008) can help to achieve the objectives of the study.

The assumption is that the application of IGF as a concept will help to bridge the chasms in the subsisting governance approach. Additionally, the concept will help to unravel disparate actors that are (or supposed to be) involved in the oil and gas sector governance (their intentions and perceptions) and other stressors to BES degradation outside the oil and gas activities. It is

important to note that the main interest of this study is the analysis (using an IGF) of how the oil and gas sector governance approaches and oil and gas environmental-related policies have systematically contributed to the BES loss and how governance can be improved through approaches from social science studies. Together these considerations firmly position this study in a qualitative research tradition where a crucial aspect is exactly the focus on complex phenomena and interpreting and grasping the meaning actors ascribe certain phenomenon or their reality (Ritchie *et al.*, 2003).

4.2.1 Why a Qualitative Case Study Approach?

In environmental studies quantitative approach highlights a situation where the investigator in an attempt to achieve the research aim uses surveys and other aggregate data sources, to test formulated hypotheses where influencing factors are arbitrarily pre-selected; or to answer research questions (Bryman, 2012). However, as good as this approach is it has its shortcomings which include among others the problem of gathering significant data that reflects a sample representative of the population size in a survey (Larsson, 1993). The consensus opinion of most advocates of the approach suggests a larger population size may translate into a larger sample size. Qualitative research approach on the other hand is a distinctive research approach which usually stresses words instead of numbers in the collection and analysis of data (Bryman, 2012). It is the appropriate approach when little is known about the study (Brikci and Green, 2007) and when the researcher has no control over the behavioural events (Yin, 2009).

Stemming from the above explanation on both quantitative and qualitative methods and to achieve the objective of this study, qualitative approach is considered more appropriate for addressing the contemporary concerns of people and for answering the research questions. For the study of governance, adopting a qualitative approach over a quantitative method has been suggested also by other scholars (Torfing *et al.*, 2012, pp. 71-84). This study combined a case study approach with qualitative method to collect data. These instruments guided the analyses of (i) the impacts of oil and gas governance on BES; (ii) the challenges and opportunities in oil and gas governance processes; and (iii) the options for identifying constructive conservation strategies and governance mechanisms to mitigate further degradation of BES and improve oil and gas governance.

Stake (1995) notes that while there are several ways of conducting social research, deciding which one is appropriate for a particular case could sometimes be daunting. Creswell (2007) for example, recommends five types of qualitative research approach including narrative research, phenomenology, grounded theory, ethnography and case study. Punch (2005)

suggested six factors that could help in deciding the appropriate strategy to follow including research questions, purpose of conducting the study, literature, practical considerations such as resources, knowledge payoff, and style. The framing of research questions for example which may take the form of “what”, “who”, “how” and “why” (Yin, 2009; Rounding and Ulcers, 2009 cited in Ekwo, 2011) will help to determine the appropriate strategy to follow. The “what” question is suitable for experiments, case studies or surveys and can be properly used as an exploratory inquiry strategy (Yin, 2009). Yin further contends that the “who” question is most likely to be suitable as a strategy for archival studies while the “how” and “why” questions are more explanatory in nature and would likely be used for conducting case studies, historical and experimental research (2009).

In congruence with the prescription of Punch (2005) and Yin (2009), as enumerated above the research questions in this study have been articulated in terms of “what” and “how” questions. Consequently, a qualitative case study research strategy which has become an increasingly popular approach among qualitative researchers (Thomas, 2011) was adopted in this study because of its ability to provide in-depth understanding of social phenomena where context plays a significant role (Stark and Torrance, 2005; Gerring, 2007; Nunan, 2007; Yin, 2009; Bryman, 2012). This approach which is consistent with IGF principles (Kooiman, 2003; 2008; Chuenpagdee and Jentoft, 2009; Jentoft and Chuenpagdee, 2009), has always been favoured and used by researchers for many years across a variety of disciplines. Moreover, it provides an understanding of a complex issue and has the ability to reinforce what is already known through previous research. According to Silver (2008), it is generally much more detailed than when one studies a large sample.

According to Yin (2009, p. 18) a case study is “an empirical inquiry about a contemporary phenomenon (e.g., a “case”), set within its real world context, especially when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”. As a matter of fact, many prominent scholars have also added to methodological developments that have further increased the popularity of case study in several disciplines (Stake, 1995; Merriam, 2009; Denzin and Lincoln, 2011; Creswell, 2013), and this underscores its relevance to this study. The researcher’s choice of a case study approach over other methods of approach has also been informed by their limitations to represent the coverage of the over 682 km of the NDR coastline within the three year timeline of the study.

In this study, case study facilitates an understanding of a complex, interdependent and dynamic social phenomenon like BES which multiple actors/stakeholders are dependent upon. BES degradation from the impacts of oil and gas activities are complex and related to issues like oil and gas environmental management mechanisms, lapses in governance processes, the multiple interests of parties involved in the sector. Additionally, it enabled the researcher to explore the full extent and variety of governance issues associated with the governance of oil and gas sector in Nigeria. Furthermore, it provided a data set that was analysed to generate compendious generalisations that eventually helped to provide the framework for the governance of oil and gas sector in Nigeria. The conceptual framework advanced in Chapter three shows the significance of the IGF in helping societal actors to have a broader understanding of societal systems and the interdependent interactions existing among the sub-systems¹⁹ and how one or all the sub-systems shaped or constrained the governance of oil and gas sector.

However, the case study approach has been viewed by some researchers with scepticism for lacking in rigor and objectivity, contesting that the measure may not produce the same results if applied by another researcher on the same set of subjects. Moreover, it lacks capacity for generalisation (Silverman, 2013). Notwithstanding the limitations of a case study approach in terms of generalising research findings, there exist a counter-discourse that generalisation of case study findings is legitimate based on the researcher's comprehension of the issue. The generalisation problem can be overcome by triangulating the research with other methods so as to confirm the validity of the process (Tellis, 1997), and through theory and by utilising multiple case studies so as to strengthen or widen analytical generalisations (Yin, 2009). Qualitative data in this study was obtained through multiple sources of data collection methods including focus group discussions, semi-structured interviews, stakeholder workshop, field observations and document analysis. These sources of data shall be discussed later in this chapter.

4.2.2 Units of Analysis

The unit of analysis is the main entity analysed in a study. According to Trochim (2006), there are five major units to be analysed in a given study including individuals, groups, artefacts (books, photos and newspapers), geographical units (town, census tract, state) and social interactions like divorces and arrests. Social interactions within the SG and between the GS was employed as one major unit of analysis in this study with focus on impacts of oil and gas on

¹⁹ The sub-systems according to the interactive governance theorists include the system-to-be-governed, governing system, and the governing interactions.

BES in the NDR, conservation management strategies, and oil and gas governance arrangements.

4.3 Motivation for the Research

The researcher's motivation for embarking on this study was drawn from a number of years working as a planner in the coastal communities of Ondo State and the challenges he encountered. His first motivation arose in 2006 when as a Senior Planning Officer with OSOPADEC he encountered some challenges bothering on paucity of reliable environmental data about the coastal communities of Ondo State while coordinating some EIA projects and preparation of a Master Plan for a New Town in the area. In addition to the issue of inadequate data, some of the available data were characterised by inconsistencies which eventually delayed the completion time of the projects. As an environmentalist, the researcher was interested in how the lacuna created by the dearth/inconsistencies in environmental data in the coastal communities of Ondo State and by extension the entire NDR can be bridged.

Secondly, the researcher was alarmed during the course of his Master's degree in 2008/2009 when he read through the UN report on "*ecosystems and human well-being: Biodiversity synthesis*". The report revealed the rate of global loss and degradation of BES that are mostly being orchestrated by anthropogenic activities and that it will have colossal effect on the lives of people in the coastal developing countries (MEA, 2005c). This provoked a deep reflection in the mind of the researcher about the various activities in the coastal environment in the NDR and in particular on how the impacts of oil and gas activities on BES can be mitigated in the coastal communities of Ondo State.

Thirdly, the researcher was also concerned about the well-being of the people in the coastal communities of Ondo State who like the people in the other parts of the NDR lack basic infrastructural amenities and are living in poverty in the midst of abundance (UNDP, 2006). Moreover, their sustenance is intrinsically linked to the healthy ecosystems of the region. The researcher was therefore interested in how the well-being of the people can be improved through the assessment of the existing governance approach and opportunities that abound in the area, given the failure of the environmental oil and gas-related policies to address the problems of the region. These three reflections constituted both the normative and medium of orientating the research on better oil and gas sector governance with a view to involving all relevant stakeholders and mitigating further loss of BES.

4.4 Research Philosophical Positioning: Social Constructionism

This section presents the philosophy underpinning this study. Bryman (2012) asserts that ontological stances are frequently contained within the viewpoints of objectivism and constructivism. While objectivism maintains that social happenings and their interpretations have an existence independent of societal actors, constructivism maintains that social happenings and their interpretations are constantly being realised through societal actors.

To obtain a clear understanding of the governance of oil and gas sector with disparate actors having varied vested interests, social and cultural beliefs, and for actors to learn new ways/perspectives and from each other, the study adopted a social constructionism approach. The social constructionist approach is predicated on the assumption that our world is grasped through the concepts that are entirely social artefacts and created over time in the course of historical interactions (Gergen, 2009). The main argument for following a social constructionist standpoint is that a conscious and analytical treatment of basic research assumptions will enhance the quality of research and indicate that new and/or neglected realities and viewpoints can be included in the governance field.

In this study, the approach is applied to understanding the interactions that exist among the governing actors and this translates to the images that are formed about BES, how policies about oil and gas activities are formulated and decisions are made. The research problem is of significance to the country and region where the case studies take place because it attempts to examine the implications of the governance of oil and gas sector on BES. The research develops an IG model which might result in change within the current governance approaches if implemented.

As noted by Andrews (2012), social constructionism stresses on day-to-day interactions between humankind and on their use of language to construct reality. It sees the social practices humankind involve in as the focus of enquiry. This is very similar to the focus of IGT but with emphasis on values rather than language; images and principles social actors have towards an issue. Generally, both constructionists concentrate on the process of how interpretations are created, negotiated, sustained and modified (Schwandt, 2003).

4.5 General Setting: System-to-be-Governed and Justification for study sites

Given the need to build a comprehensive understanding of oil and gas sector governance, and bearing in mind time and resource constraints, this study was limited to one country – Nigeria

and concentrated on selected coastal communities in Ondo State (**Figure 4.2**) within the NDR. The region serves as the hub of Nigeria's oil industry activities which hosts most of its oil and gas exploration and production for close to three decades. While the choice of Nigeria and Ondo State (was not only predicated on the fact that the researcher is a Nigerian and from Ondo State) but because the country and State also provide a highly appropriate context in which the research aims and questions can be tackled and explored respectively.

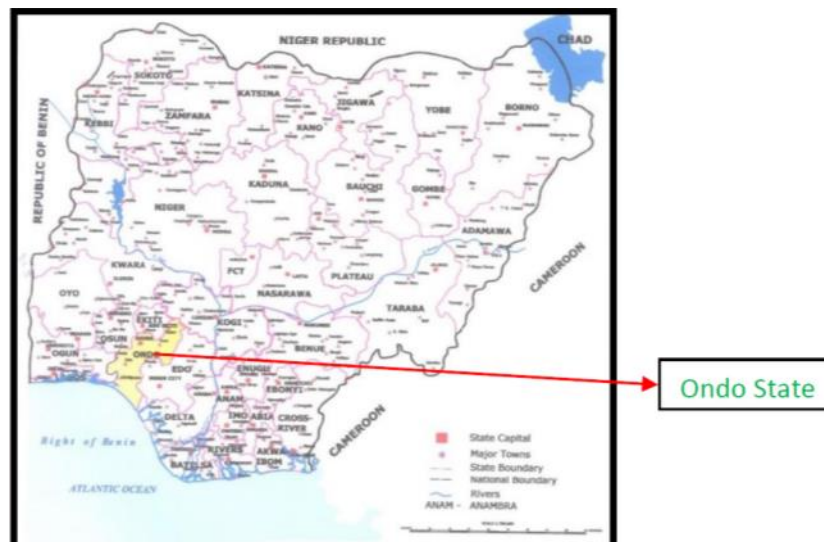


Figure 4.2: Map of Nigeria Showing Ondo State
Source: Modified from OSOPADEC (2008)

Nigeria, Africa's largest oil producer and the world's seventh largest oil exporter (Reuters, 2010 cited in Okpanachi, 2011) presents good reasons for the study of the governance of oil and gas sector with regards to BES loss. As noted in the introductory chapter, the oil and gas sector concentrated in the NDR in Nigeria accounts for over 95% of the nation's export earnings and about 85% of government revenue. At the moment, there are over 400 oil and gas production and storage facilities in the NDR with a daily production capacity of about 3.5 million barrels (Chinweze *et al.*, 2012). Nigeria is the largest continental producer of oil in Africa, holds the largest natural gas reserves on the continent, and is among the world's top five exporters of liquefied natural gas across the globe (USEIA, 2015).

As shown in **Figure 4.3**, the oil and gas infrastructure criss-crosses the entire region and this makes the BES and host communities highly susceptible to the externalities of oil and gas activities. It has also been impacting negatively on the communities and their environments in terms of desecration of water, land and air. According to Oluduro and Durojaye (2013), the NDR of Nigeria is the hotspot of environmental pollution due to oil and gas activities and this

is happening despite the fact that oil and gas activities in Nigeria is theoretically controlled by both national and international regulations.

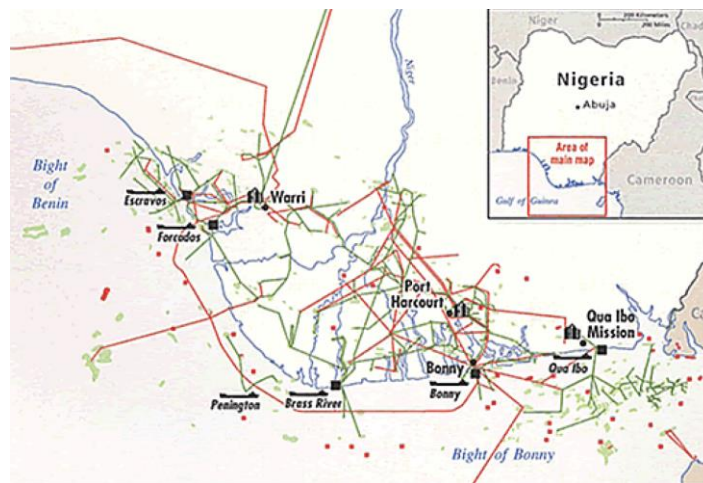


Figure 4.3: Niger Delta Oil and Gas Infrastructure
Source: CIA (2009).

As noted by UNDP (2006), it is contradictory to note that this oil rich region depicts one of the utmost conditions of poverty and underdevelopment (see also Ibaba, 2001; Ogwu, 2012). Due to low agricultural and fishing productivity orchestrated by pollution resulting from oil and gas activities, the people of the region had to endure poverty. It is estimated that average annual income per capita of the people in this region is lower than US \$2,000 and this suggests that most of the people in the region live below the poverty line. The poverty in the rural communities is more pronounced compared with the urban areas and lack of basic infrastructure like good roads, potable water, electricity and health facilities has further exacerbated the conditions of living of the people (UNDP, 2006).

The locals as a way of expressing their grievances over the problems that characterises this region have frequently attacked the oil and gas infrastructures, thereby causing more damage to fragile ecosystems. Consequently, looking at the Nigerian state, there is no other better place to conduct this type of study other than this region. Furthermore, the region is a coastal area where many activities are concentrated alongside oil and gas hence, the region presents a good opportunity for explaining the governance of the system with regards to BES.

4.5.1 Justification of the selection of study sites

Unlike in quantitative research, sampling in qualitative research is not generally predicated on probability samples that are designed to statistically represent the broader population in some

way. This is not appropriate in research that investigates socially constructed meanings. Instead, purposive sampling was utilised where the “sample units are chosen because they have particular features or characteristics which will enable detailed exploration and understanding of the central themes and puzzles which the researcher wishes to study (Ritchie *et al.*, 2003, p. 78).

Though small in terms of size compared to entire physical geography of the NDR, the cases were selected from the coastal communities of Awoye and Ojumole in Ondo State, Nigeria. These communities which fall under the administrative council of Ilaje Local Government Area (ILGA) in Ondo State (**Figure 4.4**) were selected among the nine oil producing states in Nigeria because of four primary factors. These factors include the general characteristics of the region, representativeness, existence of oil and gas-related problems. The five factors are explained below:

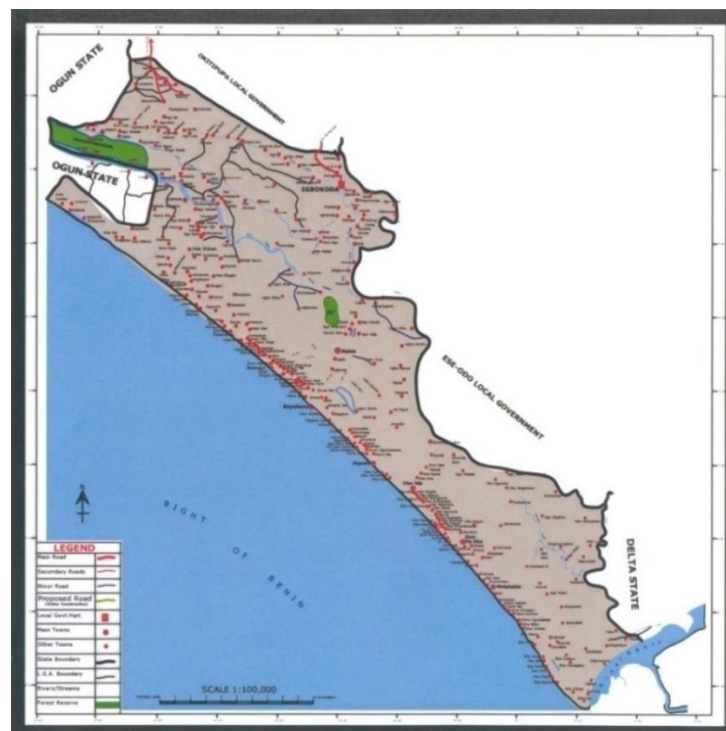


Figure 4.4: Map of ILGA showing the coastal communities
Source: OSOPADEC, 2008

A). Characteristics of the region. The two communities were chosen because they possess similar attributes with other communities in NDR in terms of terrain, developmental challenges, climate, vegetation, environmental problems and economic activities (UNDP, 2006; UNEP, 2011).

B). Security. The researcher’s initial plan was to select two communities from Ondo State and Bonny Island from Rivers State²⁰ as part of the case study communities so as to have a comparative study of governance issues in NDR but due to security challenges in the State this was not possible. The Foreign and Commonwealth Office advised strongly against visit to any of the coastal communities in the NDR except Ondo State because of the issue of security problems (FCO, 2013), Ondo state has remained the most peaceful in terms of safety and security, so two communities were selected from this state.

C). Representativeness. This takes into account whether the case-study communities are truly representative of the region in terms of the presence of oil and gas activities. This fact has been demonstrated in **Figures 4.5** and **4.6** which show location of Chevron’s oil fields in the study communities. Similarly, Nigeria as a nation is divided into six geopolitical zones (**Figure 4.7**) for administrative purposes but only three zones including the South-east, South-south and South-west fall within the NDR.

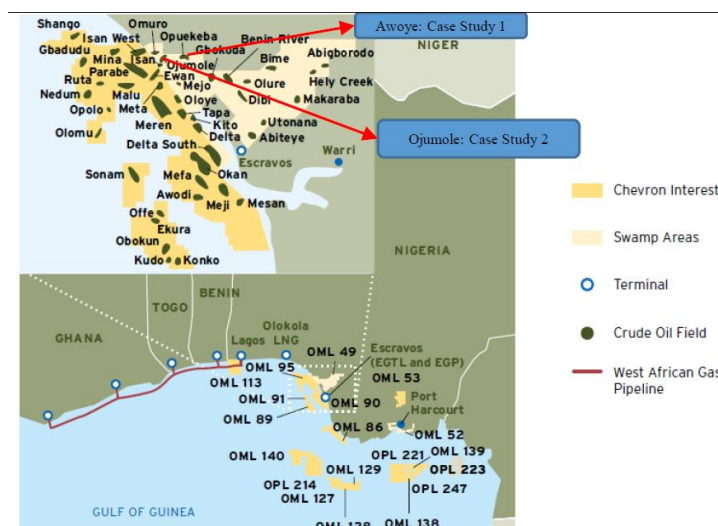


Figure 4.5: Chevron Areas of Operation in Nigeria
Source: Modified from Chevron Nigeria Limited (2010, p. 4)

²⁰ Rivers State has been adjudged as the main hub of oil and gas activities in Nigeria (UNDP, 2006; UNEP, 2011), and this is evident in the state’s monthly statutory allocation. For example, it was established that the State received the sum of 15.4 billion naira (£59.69 million) for the month of March, 2012 from the total sum 921 billion naira (about £3.57 billion) shared among the federal, 36 states and 774 local governments in Nigeria (Bawa, 2012).

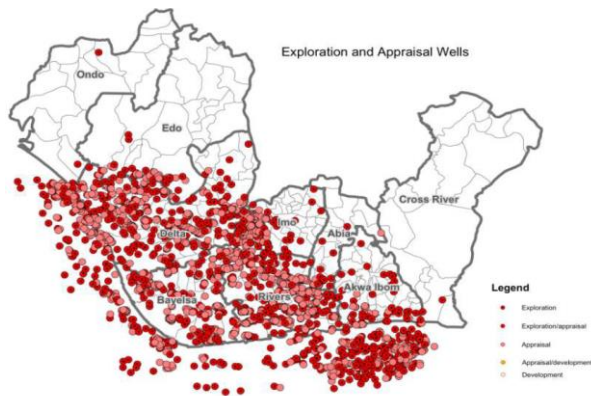


Figure 4.6: Location of Oil Exploration and Appraisal Fields in the NDR
 Source: NDDC (2006, p. 74).

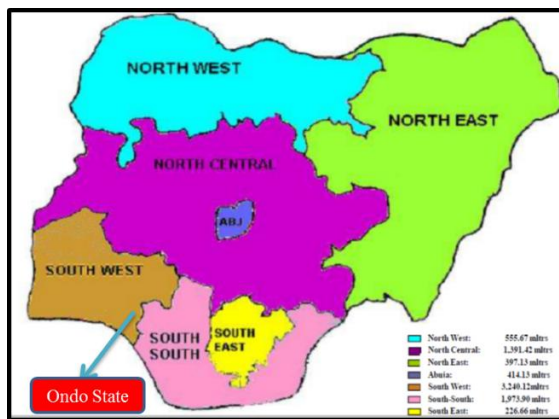


Figure 4.7: Map showing Six Geopolitical Zones in Nigeria
 Source: Modified from (NNPC, 2012, p. 70).

Since the core interest of this study is to investigate the governance of the oil and gas sector and its impacts on coastal BES, this further delimit the scope of the study to the South-south and South-West of Nigeria coastal zone. However, due to safety and insecurity issues none of the coastal communities in the South-south geopolitical zone could be considered, hence the selection of coastal communities of Awoye and Ojumole in Ondo State (within South-West zone) is a decision in the right direction. Moreover, they represent the spectrum of oil producing communities in the NDR with presence of oil and gas infrastructures as demonstrated in **Figure 4.8** and they are good examples of where the governance of oil and gas sector in relation to BES loss can be investigated.



Figure 4.8: One of the Oil Infrastructures in Awoye
Source: Fieldwork, 2013

D). Existence of oil and gas-related problems. This talks about the existence of oil spills, gas flaring, pipeline vandalism and other social vices such as bunkering and kidnapping of expatriates which have been well reported in literature and a commonplace in the NDR. The choice of the case study communities selected was informed by the fact that these problems exist in the two communities, though not on the same scale as in the South-South geopolitical zone.

Awoye was chosen because it was one of the coastal oil producing communities that serves as the main artery of Ondo State's oil and gas activities. It abuts the Atlantic Ocean and connects the State with Excravos. Ojumole is another coastal OPC chosen because of the presence oil and gas infrastructures, and also records of oil spills and fire incidents in the community.

E). Convenience. Secondary considerations that influenced the selection of these communities included distance and accessibility in relation to undertaking fieldwork within the limited time frame for the completion of the study, and the possibility of doing a research that will bridge the chasm created by dearth of reliable data in the region.

4.6 Key Issues, the Actors, Data Sources and Collecting Techniques

4.6.1 Governing System: Actors/Stakeholders

This study relied on various oil and gas actors to understanding the contextual elements, such as the institutional, historical and cultural contexts which may have acted together to create the web of activities that have contributed to the level of BES degradation as currently being witnessed in the region. Based on the assumption that each of these actors has specific roles they play in the governance of this sector and have varied experiences to share, this will help to understand the governance mechanism in place, problem associated with governance, how governable the system is as well as the opportunities that abound in the region. The key actors

that were interviewed in this study are considered in the following section and the summary of the information received from them is shown in **Table 4.1**.

Table 4.1: Summary of Actors interviewed and information they provided

Source	Information provided
<p>Statutory Governing Structure:</p> <p><i>(i) Federal level</i></p> <p>DPR, FMENV, NOSDRA, NDDC, FMND, NIMASA, and NIOMR</p> <p><i>(ii) State level</i></p> <p>OSMENV, OSOPADEC</p> <p><i>(iii) Local level: ILGA</i></p>	<p>Contribution to the oil and gas sector governance, legal framework and policy/regulations towards conservation of coastal BES, policy gaps in relation to governance of oil/gas and BES, interactions with other stakeholders/actors including communities, and involvement of other stakeholders/actors particularly the communities in policy-formulation and decision-making.</p>
<p>Market Governing Structure</p> <p>Chevron</p> <p>Shell</p> <p>NNPC</p>	<p>Contribution to the oil/gas sector governance, HES management policies towards conservation of coastal BES, CSR programmes, interactions with other stakeholders/actors including communities, and involvement of other stakeholders/actors particularly the communities in decision-making.</p>
<p>Civil Society Governing Structure</p> <p><i>(i) NGOs: NES, OFEPA, NCF</i></p> <p><i>(ii) CBO: AICECUM</i></p>	<p>Contribution to the oil and gas sector governance, interactions with other stakeholders/actors, and involvement in policy-formulation and decision-making.</p>
<p>Traditional Governing Structure</p> <p><i>Representatives of traditional leaders and community members: Awoye, Ojumole</i></p>	<p>Contribution to the oil and gas sector governance, interactions with other stakeholders/actors including oil/gas companies/government agencies, impacts of oil/gas on their communities, and participation in decision-making.</p>
<p>Hybrid Governing Structure</p> <p>IRDC</p>	<p>Contribution to the oil and gas sector governance, interactions with other stakeholders/actors including oil/gas companies/government agencies, impacts of oil/gas on their communities, and participation in decision-making.</p>

Actors in the Statutory Governing Structure

Actors in this category are officials in the government departments/agencies at the federal, state and local levels that are legally mandated to regulate oil and gas activities and protection of environment including BES within the NDR. They include representatives from the Department of Petroleum Resources (DPR), Federal Ministry of Environment (FMENV), Federal Ministry of Niger Delta Affairs (FMNDA), Niger Delta Development Commission (NDDC), NIMASA, NIMET, NOSDRA and NIOMR. At the state level, there are other actors from the Ondo State Ministry of Environment (OSMENV) and Ondo State Oil Producing Areas Development Commission (OSOPADEC) that were involved in the study, while at the local government level the ILGA was involved. The researcher ensured that at least one representative from the above mentioned government institutions was interviewed or included in a consultative workshop.

Actors in Market Governing Structure

The actors in this category include Multinational Oil Companies (MNOCs)²¹, the National Oil Company (NOC)²² and the Local Oil Companies (LOCs) operating in Nigeria. The targeted respondents in this category are the officials within the Health, Safety and Environment (HSE) unit whose responsibility include environmental protection generally and conservation of BES within and around oil and gas exploration and production area in the OPCs. However, despite series of contacts made, none of them was available for interview during the study. Nevertheless, this does not undermine the validity of the study in any form, as information needed from them was obtained from their websites.

Actors in the Civil Society Governing Structure

The actors categorised under the civil society governing structure in this study include the international and local environmental non-governmental organisations (NGOs) that contribute to capacity building, environmental restoration, ensuring legality and advocacy for policy reforms. Representatives of the local NGOs that engaged in advocacy and other environmental activities in the study area including Nigeria Conservation Foundation (NCF), Nigeria Environmental Society (NES) and OFEPA were involved in this study through interviews and consultative workshop.

²¹ The list of the Multinational Oil Companies operating in Nigeria is as shown in Chapter Five.

²² Nigerian National Petroleum Company (NNPC) as discussed in Chapter remains the only state-owned oil company in Nigeria through which the federal government operates a joint venture with the MNOCs.

The international NGOs in this area include Amnesty International, Environmental Rights Action/Friends of the Earth Nigeria, and International Union of Conservation and Nature (IUCN). Due to the fact that none of the international NGOs has its office in the study area and security advice against visit to other NDR where their offices are located, none of them was interviewed in this study. Required information from the International NGOs was retrieved from their websites and publications.

Other group of actors categorised under this governing structure include the oil and gas community-based organisations (CBOs) and the religious organisations given the fact that people in the study communities are predominantly Christians. The oil and gas CBOs in the study area are involved in offshore oil and gas related issues and a representative of AICECUM whose area of operation covers the study communities was interviewed in this study. Interview was also held with the representative of the religious organisation in the communities.

Actors in the traditional or customary governing structure

In the two cases examined, representatives of the traditional leaders and community members were identified and involved in this study through focus group discussions with the assistance of the two research assistants that interpreted questions in local (*Ilaje*) language.

Actors in Hybrid Governing Structure

Under this structure, interview was held with the representative of Ilaje Regional Development Council (IRDC) at the local government level especially with regards to their interactions with other stakeholders and involvement/contributions to oil and gas governance process.

Actors from Transnational Arena

Actors categorised in this group include the United Nations organisations such as United Nations Development Programme (UNDP) and United Nations Environmental Programme (UNEP). However, due to security advice that placed restrictions on places the researcher could visit during fieldwork, none of the actors within this group was involved directly in this study. The wide publication of these institutions about their activities in Nigeria as well as in the region which were accessed online assisted to bridge the lacuna their non-involvement would have created.

Having identified the various stakeholders/actors that provided the necessary information for this study the following section considers how the data was collected.

4.6.2 Data Collection Methods

The method for data collection which is contingent on the nature of the study determines the reliability and validity of the result (Johnson and Turner, 2003; De Leeuw, 2005). While Stake (1995), noted the existence of various sources of data for case study research, Yin (2009, p. 101) documents the most commonly used sources for the collection of qualitative data including documentation, archival records, interviews, direct observations, participant-observation, and physical artefacts. The main approaches employed for data collection in this study include in-depth interviews and focus group discussions (FGDs) with key informants, and this was supplemented with data from field observation and document analysis.

In-depth Interviews

In this study, 20 in-depth interviews were conducted with at least one respondent drawn from each of the various governing structures as demonstrated in **Table 4.1** that cut across government departments/agencies (including federal, state and local levels), NGOs, CBOs, and religious organisations from the case-study communities. As revealed in the literature review these actors show the array of governing/institutional structures that constitute the GS in the oil and gas sector (Kooiman *et al.*, 2005a).

There are different types of research interview including structured interviews, unstructured interviews, and the focused/semi-structured interviews (Bryman, 2012). The semi-structured interviews that plough a path between the two other types of interview was utilised in this study because it keeps the researcher focused on the subject matter of the research and also allows the interviewee the options to take different paths and explore different thoughts and feelings. Unlike the typical question-answer (structured interview) format, open-ended (semi-structured) questions generate mostly qualitative data (Ten Have, 2004) and this underscores its significance to this study which is qualitative in nature.

Additionally, information was also sought about their opinions on the CSR activities of the oil and gas companies, and the involvement of other stakeholders/actors particularly the local communities in policy formulation and decision-making on conservation of BES. Information regarding the CSR activities, environmental management policies of the oil and gas companies and their interactions with other stakeholders was retrieved from their websites since they were not available for interviews.

Specifically, some of the key informants were recruited through the assistance of one of the research assistants who doubled as environmentalist and senior lecturer at the Federal

University of Technology, Akure Ondo State, Nigeria. However, given the insufficiency of the efforts of the research assistant in recruiting all the required key informants in all cases, letters of introduction from the researcher's supervisor and employer provided immense assistance in breaking through the bureaucratic bottlenecks associated with government establishments.

As Manson (1996) prescribes taking an interview checklist or an outline of the topics that the interviewer wishes to cover with the respondents, the key informants in this study were interviewed based on the checklist developed by Chuenpagdee and Jentoft (2009). This checklist which is consistent with the semi-structured interviews earlier discussed was originally employed in assessing the contributions and limitations of governability for fisheries and coastal systems in the Gulf of Thailand. Put differently, it helps to identify what exactly governing systems can and should do in order to enhance their performance (Ibid). Given the context and objective of this study, the checklist was modified and subjected to the approval of the supervisory team before it was used for the key informant interview. Granted that semi-structured interviews are very complex and difficult to control (Bryman, 2012), FGD, workshop and direct observations were used in this study to complement the data obtained.

Focus Group Discussions

This study conducted four FGDs across the two case studies. FGD which was first used as a research method in the 1940s (Bloor *et al.*, 2001) and is a form of interview conducted for a group of people with a view to exploring certain topic (Bryman, 2012) or used to explore social interaction patterns and group dynamics (Stewart *et al.*, 2007) and is characterised by a guided discussion. Adoption of the method in this study assisted the researcher to probe further into the social system of the SG, which in this case are the two case-study communities of Awoye and Ojumole. As presented in the literature review, the SG consists of natural and social systems. While the natural systems concern things like biodiversity and ecosystems, social systems relates to the stakeholders/actors, their vested interests, property and access rights, capability to influence the way a given system works, relationships and interactions with other actors, and drivers and consequences of change. Added to these are the range of economic and livelihood activities of the people (Chuenpagdee and Jentoft, 2009).

While there are divergent opinions among scholars on the appropriate number that constitute a standard group discussion, participants in this study was restricted to between 8-10 to avoid the problem of having an unwieldy and difficult to analyse group. This is consistent with McGivern's prescription of 8-10 or 6-8 participants so that the group is small enough to be

managed and large enough to accommodate different opinions on issues (2006; 2013). The selection of the participants was based on purposive sampling technique. This technique helped recruit a variety of people including those that yielded the most pertinent and plentiful data regarding the topic of study as well as those that might offer contrary evidence or views to topic of study, given the need for testing rival explanations and it would help to remove bias on the study (Yin, 2011).

These participants encompass community elites that have prior knowledge and dynamics of oil and gas activities and its impacts in the region generally including on BES. The community elites that were recruited by the research assistants who had worked with some of them in the past include some representatives of oil and gas CBOs, traditional rulers, fishermen/farmers and individuals within the communities. To obtain diverse views and opinions, these participants cut across gender and age categories including young members (not children).

Using first-hand experiences, the community members provided information regarding causes of BES degradation, their perception of BES, their perception of oil and gas sector governance in Nigeria and CSR activities of the oil and gas companies. Additionally, the community members provided information on their participation/involvement in oil and gas sector governance, community's effort towards the conservation of BES, impacts of oil and gas on BES, and their perception on the role of government and oil and gas companies towards conservation of BES.

The conceptual framework developed in chapter three was used as interview guide/checklist for the group discussion. The checklist helped to investigate the roles of the community stakeholders in the governance of oil and gas sector and their interactions with other actors. Although the researcher decided to pursue a consistent line of inquiry in this kind of interview, the stream of questions was fluid as opposed to been rigid (Simpson and Humphrey, 2010). This suggests that while the researcher utilised the conceptual framework as a discussion guide/checklist, the discussion however took another dimension (Rapley, 2004). Throughout the period of the group discussion the researcher played the role of a moderator while the research assistant assisted to handle logistics, monitors recording equipment, and record necessary information in accordance with the objective of the study (Krueger, 2002). Rather than dominating the group discussion or being judgemental the researcher was empathetic, neutral, non-judgemental, and appreciative throughout the period of the group discussion (Patton, 2003).

As suggested by the people, the group discussions were conducted in religious buildings and youth centres within the communities. To avoid a situation where some people may not be able to express themselves freely because of fear or intimidation, participants were grouped according to age brackets. While it has been argued that the standard duration for FGD is two hours (Krueger, 2002), the group discussion in this study lasted between one hour to one and half hours and this was made known to the participants at the outset. In congruence with Bryman's suggestion that irrespective of the method adopted in the recruitment of FGD participants it is important to record and transcribe discussions, with the permission of participants a digital voice recorder was used to record interviews (2012). In order to avoid any form of unethical practices the consent of the participants was sought before any attempt was made to record their voices. At the request of the participants, the recorded discussion was played for them before leaving the communities and the participants were happy to hear their voices.

Direct/Field Observation Techniques

In addition to the in-depth and focus group interviews, direct/field observation is another method that was utilised in this study. According to Hartley (2004) and McGivern (2013), the various ways of observing a phenomenon include direct or indirect observation, and non-participant and simple observation. Added to these are structured observation, systematic observation, unstructured observation, and contrived observation (Bryman, 2012). A direct/field observation technique which allows researchers to see things in their natural setting and are increasingly being utilised in social science research was adopted in this study. It is a very important method of data collection that provides the opportunity for a concrete description of what has been observed (Jones and Somekh, 2005; Marshall and Gretchen, 2006).

One of the condemnations of observation is that it is vulnerable to the subjectivity of the researcher (Jones and Somekh, 2005). As this study is focused on a situation in which the observer has no influence or control over the behaviour of the research subjects but can only play a passive non-intrusive role in the research situation (Bogdan and Biklen, 1982; Barker *et al.*, 2002), observation helped to supplement the data generated from in-depth and focus group interviews as well as from other secondary sources. Specifically, the researcher observed the following:

- (i) The routines in the setting such as when people collect water and why.
- (ii) Evidence of impacts of oil and gas on BES within the community
- (iii) Proximity of oil and gas infrastructures to the community

- (iv) The behaviour of the people and their interactions with each other including how they relate to peers, those of higher social status and outsiders.
- (v) The behaviour and interactions of people with the environment including the various tasks/activities, where it takes place and with respects to BES.
- (vi) Different types of tools and equipment being used for various tasks as well as the working environment.
- (vii) Community's reactions to what is considered public or private, and
- (viii) Observation of interviewees/participants during in-depth and group discussions. The major things observed in the interviewees is their verbal and non-verbal behaviours/reactions to issues such as their body language, facial expression and tone of expression (Patton, 2003; Marshall and Gretchen, 2006).

Workshop

In order to part compensate for the non-involvement of the oil and gas companies and to ensure triangulation, a dissemination and consensus workshop for oil and gas governors and experts at the Ilaje Local Government Area (ILGA) in Ondo State was organised in September, 2013. During the workshop, the preliminary findings from the interviews were presented for discussion and validation. The workshop was attended by representatives of the various government officials, NGOs, CBOs and community members from the two case study communities. The comments and suggestions from this workshop helped to further elicit more important information and balance issues. It is important to note that the information gathered from the group discussions was complemented with direct observation/workshop and contrasted with the results of the in-depth interviews.

Secondary Data Collection

Yin (2009) established that in doing case study research, documents as a source of evidence play an explicit role in any data collection particularly to corroborate and augment evidence from other sources. The valuable roles played by documentation according to the author include: (i) the stability of documents as evidence for case study research due to the fact that it can be retrieved repeatedly, (ii) are unobtrusive (iii) contain exact names, references, and details of an event, and (iv) have broad-based content coverage (Ibid). Despite the good attributes of document, it has some limitations such as (i) recording bias, (ii) reporting bias, (iii) can be difficult to retrieve, and (iv) access may intentionally be withheld. Against the backdrop of these limitations, Yin suggested the need to thoroughly review documents before use so as to avoid any form of error (2009).

Documents studied and reviewed in this research include the Niger Delta Regional Development Plan (NDRDP) (NDDC, 2006); various environmental/oil and gas policies/regulations dating from 1969 to 2012, legal frameworks, institutional frameworks, and records of past efforts/achievements in the pasts or current efforts. Other documents reviewed from the oil and gas companies include their annual/progress report, yearly CSR, other corporate disclosures and written reports of events such as Global Memorandum of Understandings (GMOUs).

Other documents that assisted this study include archival records/material like statistical data of oil spill incidence in Nigeria, oil and gas production/flaring in Nigeria, reports on oil and gas incidences, company total field production, and field gas production and utilisation. Other archival materials that assisted this study include analogue and digital maps of the region. Most of the documents reviewed covered between 2003 till 2013 and this is to help gain insight into the efforts, commitments and achievement of the governors towards environmental protection in the region concerning the focus of this study.

While some of the documents mentioned above were collected officially by the researcher, others were sourced on the internet surfing the companies/government websites. Other oil and gas-related documents reviewed include documents from IPIECA and OGP which provided global information on the dynamics of oil and gas activities and their impacts on BES. From the Royal Institute of International Affairs (RIIA) which provided information on governance of oil and gas industry, and from UNDP and UNEP providing evidence on the impacts of oil and gas activities on the environment in the NDR. Additionally, articles and press releases regarding the case study areas from local daily newspapers were reviewed. This gave the researcher an understanding of the severity or desirability of mitigating the impacts of oil and gas on the NDR environment. A detail of the documents analysed and reviewed in this study is as shown in **Table 4**.

Table 4.2: Different types of document reviewed and sources

Type of Document	Source/Location	How Document was Accessed
Government policies/regulations on environmental protection from oil/gas activities, policies on oil spill/gas flaring, legal and institutional frameworks, and government programmes on	FMENV, FMND, NDDC, NIMASA, DPR, NOSDRA, OSOPADEC, and OSMENV.	Documents were accessed during official visit of the researcher to the offices.

conservation of the environment.		
Statistical data on oil spill	(i) DPR	Document collected during visit of the researcher to the office.
Archival records like maps	NDDC and OSOPADEC	Part of documents was accessed online while others collected during visit of the researcher to the offices.
Oil and gas companies annual progress report, programmes on corporate social responsibility (CSR), Health, Safety and Environment (HSE) programmes, and other company disclosures relating to BES	(i) NNPC, (ii) Shell, (iii) Chevron.	Documents were accessed online
Locally published daily newspapers report on incidents of oil spill, gas flaring and impacts on the NDR, environmental degradation in NDR due to oil and gas activities	(i) Punch Newspapers (ii) Nigerian Tribune Newspapers (iii) The Nation Newspapers (iv) The Sun Newspapers	Part of documents purchased from the local vendors during fieldwork while others were accessed online.
CSR activities of oil and gas companies	(i) IRDC (ii) Chevron (iii) Shell	Documents obtained during visit to IRDC office for interview. Regarding oil companies, documents were accessed online.

4.7 Triangulation

While some critics doubt the validity of case study research, Yin (2009) contends that case study be subjected to a revalidation process to ensure that data integrity is maintained and can be achieved variously through construct validity, internal and external validity and reliability

checks (see also Bryman, 2012). Triangulation is a strategy which increases the validity/reliability of the outcome of research. Four types of triangulation have been highlighted by Patton, (2002) to include data triangulation; investigator triangulation; theory triangulation; and methodological triangulation.

This study has used multiple sources of data collection which compare and synthesise data from different sources or methods thereby corroborating or repudiating findings. Therefore, it has been able to produce a more convincing and accurate account of the situation of the governance of oil and gas sector in Nigeria. To achieve cross-validation in this study, the findings from the literature review was subjected further to content analyses and triangulation through the review of governance of oil and gas sector challenges to know if there is a similar result that has been obtained and if not discover what might probably be responsible for that. Furthermore, prior to the commencement of the fieldwork the research framework and data collection techniques was subjected to expert/face validity evaluation of the supervisory team so as to ensure they are appropriate and useful for the purpose of extracting the required information.

Similarly, primary data collected through direct observation and interviews were triangulated with data from secondary sources. The multiple case-study design involving two cases also assisted to eliminate possible problems associated with the single case study approach in research process. The strength of triangulation hinges on the fact that the weaknesses of one method are usually the strength of another. In other words, the shortcomings of one method are overcome by another method, hence combining methods helps overcome unique deficiencies. Furthermore, a multi-method strategy helps comparison of data sourced from different sources which strengthens the validity of research findings (Patton, 2002; Yin, 2009).

Internal validity can be maintained by making sure that all rival explanations and possibilities were considered before any inference was drawn (Bryman, 2012). For this research design, data validation was managed based on the research framework, which was derived from the literature review and baseline information from the NDR.

The interviewees were carefully selected after wide consultation with the supervisory team, stakeholders and practitioners in the NDR of Nigeria. To ensure that errors are not accommodated in the research, transcripts of the interviews were sent to the interviewees and their feedback was received. This was done in all cases to confirm the integrity of the

transcription process and to ensure that there are no misunderstandings during the interview and in the process of transcribing the recorded interviews.

4.8 Data analysis strategy

This section presents the methods used in the analysis of the data. Although software like NVivo, Atlas.ti, HyperRESEARCH and CAQDAS are available for faster transcription, the researcher decided to do manual transcription as this would offer him the opportunity to interact with the data as much as possible. Following the feel of the reading and annotating of transcripts, the researcher examined the data with a view to extracting core themes that could be distinguished between and within transcripts. While similar themes identified were categorised together, dissimilar themes were also categorised separately and any data that does not apparently fit with the general theories adopted for this study were disregarded. For easy identification of themes, each transcript was coded or indexed and this makes it easier for interpretation. Coding or indexing in qualitative research according to Bryman (2012) is a process whereby data are broken down into their component parts and those parts are given labels.

One of the most commonly cited problems with coding is that while breaking down data into smaller units, the overall meaning of what has been said may be lost (Bryman, 2012). In this study the researcher tried to avoid this problem by identifying the themes in each paragraph of each transcript manually, group the themes together before analysing the meaning of each theme. This helped to prevent the data from being altered excessively from its natural state.

The emerging themes from the empirical study that have been categorised together were later summarised, merged and developed for the structuring of the analysis chapter and this was guided by the theoretical approach to the study of governance of oil and gas sector. The data analysis process of this study is demonstrated in a flow chart in **Figure 4.9**.

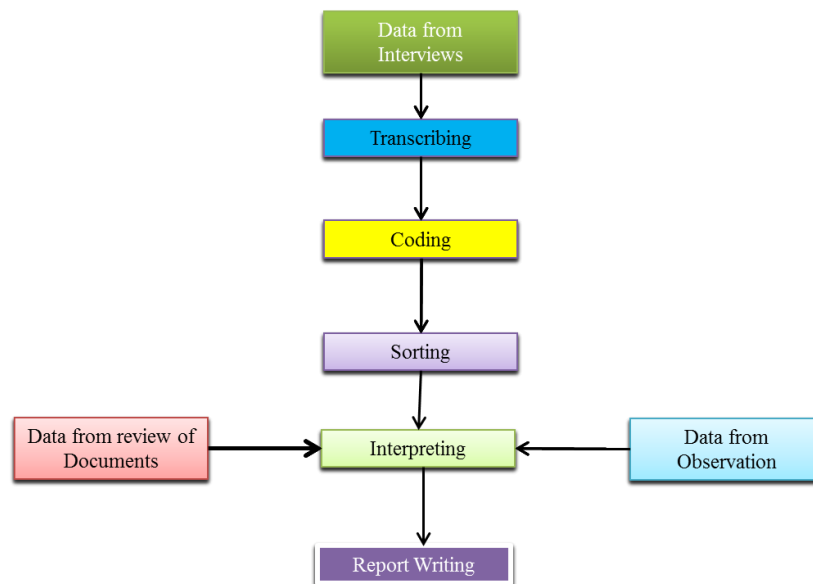


Figure 4.9: A Flow Chart of Data Analysis Process

4.9 Positionality and Reflexivity during Fieldwork

According to Greenbank (2003, p. 798), “the inclusion of reflexive accounts and the acknowledgment that academic research cannot be value-free should be included in all forms of research”. Given the two-case studies of this research, a large amount of data was generated; therefore a data base was created so as to organise and effectively process the data and the various units of the data.

In order to prevent the idea of dominating and controlling the research process, this study paid attention to the issue of positionality and reflexivity while embarking on the research. This stance was corroborated by Sultana (2007) who also noted that ethical issues must be considered by researchers for every stage and facet of the research process starting from beginning to its conclusions. The author further contends that when a researcher’s reflexivity and positionality are included only at the end of the study, it is tantamount to mere surface dressing. Sultana (2007, p. 376) further asserts that “reflexivity in research involves reflection on self, process and representation, and critical examination of power relations and politics in the research process, as well as implying researcher accountability in data collection and interpretation”.

The researcher’s previous work experience in supervising developmental and environmental projects such as EIA projects, sand-filling and preparation of a master plan for a new town in the coastal communities had a significant impact in the choice of the research topic and selected case study settings. The researcher’s initial experience and involvement with some of the coastal communities and other stakeholders was between 2002 and 2008 while working as a

Senior Planning Officer with OSOPADEC before he proceeded on study leave. In contrast to the researcher's previous status, his present status as a student researcher suggested that he addresses and approaches communities researched and settings in dissimilar way.

In social science research, ethical issues that concern the researcher's social and moral conduct (Yates, 2004) add directly to the integrity of the research (Bryman, 2012). Christians (2005, pp. 144-145) asserts that conventional social science research includes codes of ethics which are mainly predicated on four principles: informed consent; absence of deception; privacy and confidentiality; and accuracy. Researchers have an ethical obligation to make the best use of their research experience by reporting issues arising from all parts of a study, ethical issues was absolutely observed before, during and after the fieldwork of this study (Van Teijlingen *et al.*, 2001). One of the crucial ethical issues in research is how a researcher gained access to participants and to Yates (2004) the way a researcher gains access to the participants may influence their response to the researcher.

In order to ensure an ethical process, first and foremost the proposed methodology for this study was reviewed by an independent committee after which the researcher obtained necessary permission from the university prior to the commencement of the fieldwork. As part of the ethical issues required for this type of study, the researcher obtained two set of notification letters from the school that was dully signed by the principal supervisor confirming authorisation to conduct a fieldwork in communities, NGO/government establishments, and oil and gas companies. While one set of the letters was addressed specifically to some of the various establishments listed in **Table 4.1**, the other set was addressed "To whom it may concern" and this covered other organisations that was discovered later to be important for the purpose of data gathering during the fieldwork such as OFEPA, NCF, AICECUM and IRDC. In addition to the introduction letter from the University, the researcher equally collected another letter from his employer in Nigeria (OSOPADEC) where he works presently as Principal Planning Officer [presently on study leave] to the various organisations/communities. The letter from the researcher's office introduced local (insider) perspective to the study rather than the researcher been misconstrued as an overseas oil worker or agents of the oil companies. Similarly, it helped to remove any form of bureaucratic bottlenecks that may hinder the researcher from gaining access easily.

Both letters introduced the researcher and assured the organisations/communities and the officers to be interviewed of the utmost confidentiality with which information provided will be treated. Furthermore, it assured respondents that the data to be collected were for academic

purposes only. Additionally, telephone contacts were made to each of the organisations to which letters of introduction was sent earlier, to remind them and further sensitise them to the researcher's visit and the contribution the research would make to environmental governance and sustainability in Nigeria.

With regards to accessing and interacting with the case study communities on the issue of FGD, the researcher was accompanied by two research assistants who are both senior lecturers at Federal University of Technology Akure, Ondo State and the two of them are native speakers of Ilaje dialect²³ (the commonly spoken language of the locals in the communities). Two months prior to the researcher's visit to the communities for fieldwork, the research assistants on behalf of the researcher had paid a personal visit to the traditional rulers in the two case-study communities to explain the research and request permission to conduct a study in their community. This was followed up by another visit by the researcher and his assistants on his arrival in Nigeria, to remind them about the study. Rather than making phone calls or sending a mail, the people in the NDR appreciate such a personal visit because it was consistent with their culture (Okyere and Twum-Danso, 2014).

Despite series of studies the field assistants have conducted in the area, the researcher had meetings with them and gave them necessary orientations regarding the objective of the study. Additionally, the researcher formally introduced himself to the participants and without raising expectations about potential benefits respondents were also informed that the study aimed to add to mitigating loss of BES from the impacts of oil and gas activities. True representation/disclosure of aims of study to participants helped to address the problem of deception in research (Blaikie, 2010) and for participants to make free and informed decision regarding the nature and risk of their participation. Thereafter, an informed consent of every participant was sought and received by the researcher before the group discussion commenced, this equally applied to other forms of data collection. Though, the researcher participated in the FGDs as a moderator by asking questions, the participants were encouraged to provide answers/insights to issues and this allowed them to provide impartial personal opinions of issues without any influence from the researcher.

4.10 Limitations and Problems

A handful of limitations were encountered:

²³ The researcher understands the language fluently even though he was not from the area but he was accompanied by persons that were familiar with the settings and their inhabitants so as to guarantee his safety and of the researched (Marshall and Gretchen, 2006).

i. IGT demands an in-depth field analysis of the natural sub-system within the system-to-be-governed in order to determine practically the governability of the system. However, conducting an ecological inventory transcend the scope of this study, which centres on governance of oil and gas sector and impacts on BES. Data on the natural system was generated mainly from ecology literature, policy documents and focus group discussions.

ii Inability to involve any of the actors from the market governing structure (oil and gas companies) in interviews or participation in workshop was a challenge. This could be as a result of their busy schedule or apathy towards interviews. Nonetheless, data required from the companies were accessed online from their websites and publications/reports which were later triangulated from the data from other actors interviewed and literature.

iii. Insecurity in the NDR of Nigeria has been a major problem confronting the nation for some years back, though this has subsided lately possibly due to the nation's president that hails from the region. However, the recent insurgence by the Islamists named Boko Haram from the northern part of Nigeria has compounded the security threat to the entire nation and the fear that this may catalyse crises in the NDR was a limiting factor in this research particularly in terms of the case study selection. The researcher was unable to cover at least another state from the NDR particularly in the south-south geopolitical zone of Nigeria because of security challenges. This would have undoubtedly provided information from ethnic groups in that zone and opportunity for the researcher to make a comparative analysis.

iv. Although Nigeria signed into law the Freedom of Information Act in 2011, eliciting information from actors from the government departments was another major limiting factor as some of the staff did not want to cooperate because of fear of not to be exposed or the fear of losing their job after divulging some facts. However, the letter of introduction from the researcher's office was able to allay the fear of some staff from other governments' agencies and break the bureaucratic bottlenecks and they fully participated in the interviews and workshops.

v. The fact that the research could not consider the hidden interactions such as when the MNOCs and IOCs are trying to lobby the political leaders/government regulators or traditional leaders/local elites in their host communities could mean that some rich information on governance interactions between actors in the SG and GS are yet to be obtained. Consequently, this study can only speak on the ground of the empirical evidence collected from literatures and fieldwork.

vi. Time was another significant limiting factor in this research. The fact that the researcher is self-sponsored and his desire to finish the study within three years minimum period required, only about three months was actually earmarked for the fieldwork. A study with a protracted period of fieldwork to observe and monitor activities in the study area may possibly have provided more data but this would definitely require more financial cost for the researcher.

4.11 Summary

This chapter discussed the research methodology for the research and what informed the choice of a qualitative method of approach within a case study framework adopted rather than quantitative or mixed method. It helps to explore the impacts of oil and gas activities on BES and how the interactions between and among actors have shaped or constrained these impacts.

The next chapter will focus on the research context.

Chapter 5. Oil and Gas Exploitation in the Niger Delta Coastal Communities and Associated Environmental Governance Challenges

5.1 Introduction

This chapter presents a broader overview of the study context by unravelling the place of oil and gas in the Nigerian state, associated environmental governance challenges and its impact on the coastal BES in the oil producing region often referred to as the NDR. The detailed description of the research context and the contextualisation of a dependable approach that will assist in the actualisation of the aim and objectives of this study were done by following Kooiman's analytical components of the societal system distinguished in the IGF. According to Kooiman (2003); (2008) and as discussed in chapter three, IG provides an important and holistic way of understanding a societal system through a trilogy of system-to-be governed (SG), governing system (GS), and the governing interactions (GIs).

5.2 Overview of Nigeria's Coastal Zone

Nigeria which lies on the west coast of Africa between latitudes $4^{\circ} 40'$ and $3^{\circ} 53'$ north and longitudes $2^{\circ} 40'$ and $14^{\circ} 41'$ east (NPC and ICF International, 2014) was one of the British colonies that gained independence in 1960. It is one of the SSA countries and one of the largest countries and the most populous in the continent with more than 250 ethno-linguistic groups scattered across the country (UNEP, 2011; CIA, 2012). The nation (**Figure 5.1**) covers an area of $923,768 \text{ km}^2$ (UNEP, 2011; CIA, 2012; NPC and ICF International, 2014) with land and water area covering $910,768 \text{ km}^2$ and $13,000 \text{ km}^2$ respectively. The total area covers by Nigeria according to CIA is slightly more than twice the size of California and has a population of 140,431,790 according to the 2006 population census figure (NPC, 2009). The country borders the Gulf of Guinea, with Republic of Benin on 773km to the west, Cameroun on 1,690 km to the east, Chad on 87 km to the north-east and Niger on 1,497 km to the north.

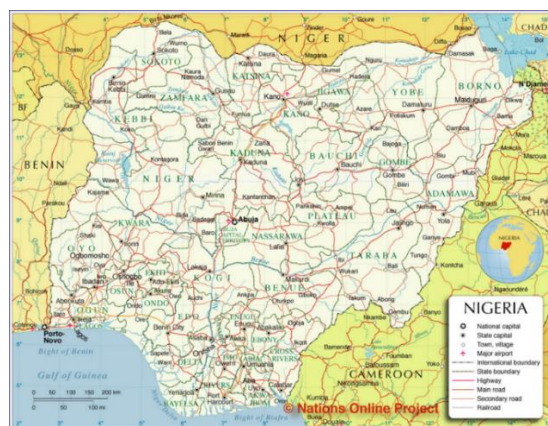


Figure 5.1: Map of Nigeria

Source: Nations Online Project (2009).

Nigeria's coastal zone and its ecosystem are generally credited to be among the most generative areas that supply food, energy, livelihood and home to millions of plants and animals species across the globe (Boateng, 2008). It's 853 km long coastline in the south that opens onto the Atlantic Ocean (UNEP, 2002; 2007; 2011; CIA, 2012) comprises inshore waters, coastal lagoons, estuaries and mangrove especially in the NDR (UNEP, 2007). The coastline which is distributed between the South-south and South-west geopolitical zones is of monumental and strategic importance to Nigeria from an environmental, economic and social point of view in the country's overall balance. This possibly explains why Nigeria is regarded as one of the world's leading oil producers owing to the vast oil and gas reserves in its coastal area (mainly from NDR²⁴: **Figure 5.2**) (UNEP, 2007; UNDP *et al.*, 2012). The terrestrial portion of this zone is about 28,000 km² in area, while the surface area of the continental shelf is 46,300km² (Nwilo and Badejo, 2008).

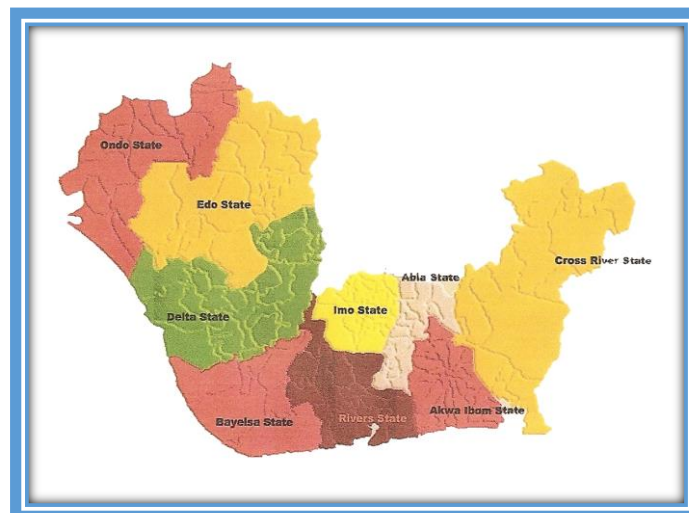


Figure 5.2: Map of Niger Delta Region
Source: NDDC (2004).

The Nigerian coastal environments are characterised by exceptional diversity in terms of climate change, rich and diverse ecosystems, natural resources, and large human populations (CEDA, 1997). The zone lies within the Atlantic Ocean with its continental shelf, the Exclusive Economic Zone and the coastal fresh water and brackish wet lands divided by an atomising network of rivers and creeks. These water bodies are typified by periodic tidal variations and ranges along water channels and the differences depend on the hydrological properties and slopes of the various channels (Ibid). Onshore, the Nigerian coastal area is dominated by

²⁴ The region which includes nine States of Akwa-Ibom, Bayelsa, Cross-Rivers, Delta, Edo, Lagos, Ogun, Ondo and Rivers States out of the 36 States in Nigeria accounts for 25% of the nation's estimated population (CEDA, 1997).

extensive stretches of sandy beaches - barrier islands, lagoons, estuaries, mud beaches, creeks and a deltaic complex (CEDA, 1997). The offshore area bordering the Nigerian coast consists of a narrow shelf between 15km offshore Lagos to about 75km off the shore of the NDR (Awosika *et al.*, 2001; UNEP, 2007) and about 85km off Calabar along the strand coast.

The Nigerian continental shelf is grooved by three major canyons namely: Avon canyon just east of Lagos, Mahin canyon off the Mahin mud coast and Calabar canyon off Calabar (Awosika *et al.*, 2001). These canyons have been reported to serve as conduits for channelling of sand into offshore sub-marine fans on the slope. The overall nature of the Nigerian continental shelf is mainly depositional as compared to adjacent parts of the continental shelf along the Gulf of Guinea where Basement complex rocks appear close to the coast (CEDA, 1997).

Generally economic activities on the coast include agriculture, fishing, mining, oil extraction, manufacturing of textiles, food, wood pulp, and paper production. Furthermore, there are other important uses within the coastal zone including transportation, communication, defence, tourism, recreation and other physical resources such as timber, sand, gravel, and limestone (CEDA, 1997). In all these, fishing remains the major activity especially in the coastal areas where we obtain other important resources such as fish, shellfish, like shrimps, lobsters, crabs and molluscs (Ibid).

5.3 Niger Delta Biodiversity and Ecosystem Services: Natural System-to-be-governed

The NDR is situated in the Gulf of Guinea between longitude 5⁰E to 8⁰E and latitudes 4⁰N to 6⁰N, (Opafunso, 2007). The region is a vast coastal zone in the south of Nigeria that acts as the hub of oil and gas activities as well as harbouring approximately 60-80% of all plant and animal species found in the country including the locally and globally endangered species (UNDP *et al.*, 2012). Furthermore, the NDR is not only home to biotic elements but also to abiotic elements such as water bodies that serve as fishing grounds and drinking water for many inhabitants of the region. Its natural resources are an important economic engine for the entire Nigerian state, its waters sustain a diverse and vibrant ecosystem; and the region's culture, natural beauty and historic significance to the birth and growth of Nigeria are unique and priceless.

Just like any natural system, the NDR is structurally characterised by diversity, complexity and dynamics. Kooiman and Chuenpagdee (2005, p. 326), define diversity as 'qualitative differences within and between interacting social and natural entities, complexity as the

multiple relations within and between these entities or actors, and dynamics as tensions within and between their interactions’.

5.3.1 *Vegetation of Nigeria’s Coastal Areas*

The vegetation of the Nigerian coastal area is typified by mangrove forests, brackish swamp forests and rain forests. The NDR is the largest delta in Africa and the world’s third largest consisting of flat low lying swampy terrain that is criss-crossed by meandering and anastomosing streams, rivers, creeks and largest mangrove forest (Awosika, 1995 cited in Chinweze et al., 2012; Human Rights Watch, 1999; NDDC, 2006; Ikwegbu, 2007; Spalding *et al.*, 2010; Adekola and Mitchell, 2011; UNDP *et al.*, 2012).

Awosika (1995 cited in Chinweze et al., 2012), specifically noted the region’s wetland being one of the largest in the world and is about 2,370 km² consisting of rivers, islands, creeks, swampy terrain and estuaries; the stagnant swamps cover 8,600 km² and the coastline spans over 450km. While the landmass of the region is over 70,006 km² (Ibid), the mangrove forest (**Figure 5.3**) covers 54,000 km² of the region, and this is more than 70% of Nigeria’s estimated 10,000 km² of mangrove forests (Human Rights Watch, 1999; FAO, 2007; UNDP *et al.*, 2012). The mangroves stands in the region stretch 30-40 km inland (FAO, 2007) According to UNEP (2007), apart from harbouring 22% of the total African mangrove cover, Nigeria is endowed with all the eight mangrove species found in West Africa and these include *Acrostichum aureum*, *Avicennia germinans*, *Conocarpus erectus*, *Laguncularia racemosa*, *Rhizophora mangle*, *Rhizophora harrisonii*, *Rhizophora racemosa* and *Nypa frutican* (see also FAO, 2007; UNDP *et al.*, 2012).



Figure 5.3: An aerial view of a Mangrove Forest in the NDR
Source: NDDC (2006, p. 61).

The region’s mangrove forests are on the “Tentative List” of potential UNESCO World Heritage Sites provide habitats for diversity of plant and animal species, wildlife, migratory and

resident organisms. This deep belt of mangrove forest protects the freshwater wetlands in the inner Delta and acts as nursery and habitat areas for fish, crabs, shells and other aquatic fauna. Mangrove forest also prevents the coast erosion, filtrates land runoff and controls flood among others (UNIDO, Undated). Furthermore, apart from providing socio-economic value to coastal communities in the form of wood and non-wood products, it also supports biodiversity while many birds, other vertebrates and invertebrates are found commonly inside and nearby mangrove forest (Ibid). The trees and roots provide rich habitats for a wide range of flora and fauna, much of which according to UNDP *et al.* (2012) is only just beginning to be comprehended. Humidity levels are close to 100% throughout the year (Ibid).

5.4 Coastal Biodiversity within the Niger Delta Area

Ezenwaka and Akinsola (2006) observed that the region is globally recognised for its endowment in rich and unique biodiversity of some endemic and threatened species of flora and fauna. These numerous species of biodiversity found in this region are not only economically, aesthetically, and scientifically priceless but have also been regarded as one of the highest conservation priorities of the west coast of Africa (IUCN, Undated cited in Isoun, 2006). However, as rich as the vegetation of this region is, it has been described as one of the most fragile ecosystem in the world (Awosika, 1995 cited in Chinweze *et al.*, 2012; Human Rights Watch, 1999; NDDC, 2006; Ikwegbu, 2007; Spalding *et al.*, 2010; Adekola and Mitchell, 2011; UNDP *et al.*, 2012). This suggests that any activity that will take place in the region must consider seriously the fragility of the ecosystem.

5.4.1 Mammals

The region harbours all of the nation's endemic or near-endemic mammal species and six IUCN Red List mammals including the forest elephant (*Loxodonta Africana cyclotis*), the West African Manatee (*Trichechus senegalensis*), the Sclater's guenon (*Cercopithecus sclateri*), the White-throated guenon (*Cercopithecus erythrogaster*), the pygmy hippopotamus (*Choeropsis liberiensis heslopi*) and the Niger Delta red colobus monkey (*Procolobus epieni*), have also been recorded. Apart from the Niger Delta red colobus is one of the world's 25 most endangered primates (Blench and Dendo, 2007; Schwitzer *et al.*, 2014), there are other near endemic ones like White-throated guenon and the endemic Sclater's guenon. The Sclater guenon which is otherwise known as the Nigerian monkey is found only in the NDR (Obot, 2006; UNDP *et al.*, 2012).

Other species include Mona monkey (*Cercopithecus mona*), White-nosed guenon (*Ceropithecus petaurista*), Tantalus monkey (*Ceropithecus tantalus*), Red-bellied guenon (*Ceropithecus erythrogaster*), Red-eared guenon (*Ceropithecus erythrotis*) and Red-capped mangabey (*Ceropithecus torquatus*); and the Putty-nosed monkey (*Ceropithecus nictitans*). All these species are listed as vulnerable on the IUCN Red List. The endangered Nigeria-Cameroon Chimpanzee (*Pan troglodytes vellerosus*), recognised scientifically in 2001 as a distinct sub-species, has an uneven distribution in the region, with its only populations probably in Bayelsa state, where in 1993 there were two main population groups: the Ogbotobo beach-ridge forest in the Dodo-Ramos estuary and the Biseni-Akpede-Asamabiri area of Taylor creek Forest Reserve.

The Niger Delta forest elephant (*Loxodonta Africana cyclotis*) probably still exists in the region, though current information on population numbers and condition is not available but known populations now are in the Andoni district of Rivers state where Game Reserve exists on paper (UNDP *et al.*, 2012). The pygmy hippopotamus (*Choeropsis liberiensis heslopi*) in the region is fundamentally un-studied in recent decades and may be a distinct sub-species (Ibid). The absence/presence in the region of this poorly documented species is unknown. While there is no confirmed sightings of the pygmy hippo in the wild for many decades and paucity of current reports about the species, the 1994 IUCN Red List ranked the Nigerian Pygmy Hippo as extinct (Blench and Dendo, 2007).

The aquatic antelope, sitatunga (*Limnotragus spekei*) and the water buck (*Kobus ellipsyprimnus*) occupy similar habitat, and still exist in the region and occupy the tangles associated with the swamp forests. The Water Chevrotain (*Hyemoschus aquaticus*) is the most aquatic antelopes and is reliant on the dense vegetation attribute of the swamp forests of the region. Considered an endangered species and listed in Nigeria's Endangered Species Act it has extensive distribution. Bate's dwarf antelope (*Neotragus batesi*) that was classified as least concern by IUCN and whose population is unknown in Nigeria was recorded lately at Nembe and Oloibiri is thought to be ubiquitous and subject to hunting (UNDP *et al.*, 2012).

5.4.2 Birds

The region also harbours eleven important bird areas and other species. About 148 water-related bird species from 38 families have been recorded in the area and these encompass five species of global conservation concern, two of which, the Anambra waxbill (*Estrilda poliopareia*) and Ibadan Malimbe (*Malimbus ibadanensis*), are endemic to Nigeria (Blench and Dendo, 2007).

The Ibadan Malimbe that was previously known only to occupy small area circumscribed by Ibadan, Ife, Iperu and Ilaro (Elgood *et al.*, 1994) was discovered in Ifon Forest Reserve (Ondo State) in December, 2006 where six sight records were obtained following a 10-day survey (Ajagbe *et al.*, 2009). According to BirdLife International (2015), the Anambra waxbill is said to be a very rare species classified as vulnerable. It was said to be common in Onitsha (a locality in the South east of Nigeria) in 1954 but only limited records exist since the 1980s (Blench and Dendo, 2007; BirdLife International, 2015) before it was reportedly sighted and photographed at Tombia, Bayelsa state recently (UNDP *et al.*, 2012; BirdLife International, 2015). Similarly, BirdLife International (2015) also noted that several individuals of the species were photographed in Benin Republic in 2010. It is found in the wetter parts of the lower reaches of the Niger to Forcados in Delta state and UNDP *et al.* (2012) noted that one or more of these places are known to be home to the Anambra waxbill, as well as other threatened species: the Damar tern (*Sterna balaenarum*), the White-tailed greenbul (*Baeopogon clamans*), and the Dusky Crested-flycatcher (*Trochocercus nigromitratus*). There is no information regarding the existence of these rare species in the case-study communities.

5.4.3 Fish

The NDR possesses the highest productivity of any known ecosystem and supports important local and commercial fisheries such as sardines, bonga, shad, cat fishes, croakers, snappers, among others (Chinweze *et al.*, 2012), where it produces up to 100 percent of dietary protein to the local people in the region (Macintosh and Ashton, 2003). This possibly explains why Scheren *et al.* (2002) reported that the region constitute a huge storehouse of food, mineral/natural resources such as oil and gas that if reasonably exploited will foster the attainment of sustainable development.

The region is home to diversity of globally outstanding fish fauna and exhibits exceptional evolutionary phenomena with its higher taxonomic endemism and distinct species assemblages with a minimum of 314 species (313 being indigenous) from 158 genera and 64 families found in the region. An exceptionally high number of freshwater species (165) exist in the region and this number excludes permanent freshwater representatives of marine families Denticipidae (denticle herrings) Clupeidae (herrings) and Eleotridae (sleepers). At least twenty (20) endemic species have been noted so far in the region. Unique conditions in the region have nurtured the evolution of five monotypic fish families including Denticipidae, Pantodontidae (freshwater butterfly fish), Phractolaemidae, Hepsetidae and Gymnarchidae (UNDP *et al.*, 2012). The Gymnarchidae is the highest concentration of monotypic families of any freshwater eco-region

in the world (Ibid). Two species of freshwater stingray exist in the region, the only two freshwater stingray species in Africa: *Dasyatis garouaensis* (vulnerable), which is found only in three river systems in Nigeria and Cameroon, and the endangered thorny stingray (*Urogymnus ukpam*).

According to UNDP *et al.* (2012), Herptofauna of the region are not well known and remained unstudied most of the 20th century. Old records combined with more recent studies (Akani *et al.*, 2003 cited in UNDP *et al.*, 2012) provide a picture of the amphibian diversity found in the NDR. Therefore, it is possible to estimate that over 30 species of amphibians exist in the region, with the number likely to be higher (UNDP *et al.*, 2012). Moreover, it was estimated that over 60 per cent of fish caught between the Gulf of Guinea and Angola breed in the mangrove belt of the NDR (UNEP, 2007; UNDP *et al.*, 2012).

5.4.4 Sea Turtle

Five species of endangered species of sea turtle visit the beaches of the region and probably breed there. These include the leatherback (*Dermochelys coriacea*), green (*Chelonia mydas*) and olive ridley (*Lepidochelys olivacea*), loggerhead (*Caretta caretta*), and the critically endangered hawksbill (*Eretmochelys imbricata*) (UNDP *et al.*, 2012). Little information on these species in the region is readily available but with the various oil and gas companies operating in the area, it is highly probably that there is more data available on these species (Ibid).

5.4.5 Crocodiles

Populations of the threatened West African dwarf crocodile (*Osteolaemus tetraspis*), the Nile crocodile (*Crocodylus niloticus*) and the slender-snouted crocodile (*Crocodylus cataphractus*) and up to five species of freshwater turtles are under intense hunting pressure (Ibid). The region remains the last stronghold of the dwarf crocodile *Osteolaemus tetraspis*, which is heavily traded. It was further observed that a complex cultural relationship between crocodiles and people in many communities ensures that some populations of all species are strictly conserved and recent studies of DNA and morphology indicate that *Crocodylus cataphractus* may belong in its own genus, *Mecistops* (Ibid).

The Niger Delta mangrove is priceless, given the economic value of one square kilometre of mangrove as highlighted in a study conducted by UNEP. The report indicates that the annual economic values of mangroves, estimated by the cost of the products and services they provide,

have been estimated to be between USD 200,000 – 900,000 per hectare (Wells, 2006 cited in Gilman et al., 2008). However, despite the region's endowment in abundance of biodiversity with numerous fauna and flora, and holds more endangered and national endemic species than other parts of Nigeria, it has no conservation area (Blench and Dendo, 2007), and the presence of oil and gas activities has made the region to be volatile and more vulnerable.

5.5 The Niger Delta Coastal Zone: Social System-to-be-governed

According to Chuenpagdee and Jentoft (2009), the diversity of the socioeconomic system is mainly related to the composition of the stakeholder groups and their interests and access rights within a societal system. This section presents two actors that are considered as direct users whose activities are dependent and impact on coastal BES in this study: local communities, which are based in traditional/customary governing structure and the oil and gas industry (both local and international companies), belonging to the market governing structure. The following section discusses the interests and roles of coastal users in terms of access and use of coastal resources.

5.5.1 Local coastal communities

In the context of this study the local communities are defined as the groups of people that share a specific geographical space (usually fishing village) and whose survival and wellbeing is intrinsically connected to the coastal BES of the given space. Demographically, the NDR is not a small region based on its population that was 31,313,901 according to the 2006 census figure (NPC, 2013). With over 265 people per km², the NDR is one of Africa's most densely populated regions with anticipated population of over 45 million by 2015 (UNDP *et al.*, 2012). The extensive mangrove forests of the region have been playing significant role in the national economy as well as supporting the livelihoods of coastal communities. In the NDR and as the case in the other coastal areas in Africa, the mangroves represent a major traditional source of wood (timber, fuelwood and charcoal) and tannins as well as supporting the fisheries of local populations (FAO, 2007).

The physical characteristics of the region largely explain why its people are so spread out: half of the region is covered in mangroves ramified by a complex network of rivers running between islands with dense tropical vegetation (NDDC, 2006; Watts, 2008). This further justifies why the people in the coastal communities of the region live on make-shift houses built with mangrove trees and raffia palms as demonstrated in **Figure 5.4**.



Figure 5.4: Typical Houses in the coastal communities of Ondo State
Source: Author, 2013

Despite oil and gas activities that are widespread in the region, the economy of the region is predominantly driven by about 80% in the informal sector while a modicum proportion is employed in the public/semi-public sector (NDDC, 2006). The major traditional occupations of the people in the region are fishing, farming, hunting, trading and salt making (UNEP, 2002; Onosode, 2003 cited in Owolabi and Okwechime, 2007; NDDC, 2006; UNDP, 2006; Babatunde, 2009; 2010; 2010b; UNEP, 2011), while only few are involved in education and health services, administration, transportation, construction and combination of other activities (NDDC, 2006).

These activities are being supported by the mangrove ecosystems of the region. In the coastal communities of Ondo State where fishing is also the major occupation of the people like in the rest of NDR, the mangrove trees are being utilized by the people for different purposes and this has placed more pressure on the mangroves. According to UNIDO (Undated), the red and white mangroves that are widespread along the coastline are used for diverse purposes, though reducing at high rate. The red mangrove (*Rhizophora racemosa*) locally called ‘Egba’ (Figure 5. 5) for example is used for the following:

- ✚ Building construction: roofing of houses; building pillar;
- ✚ Local boat construction;
- ✚ Carving of axe-handle used to cut trees and construction of boat;
- ✚ Household equipment like carving of comb used by the people;
- ✚ Medicinal purpose: the bark is used to cure the problem of loss of appetite and mouth sore;
- ✚ Dye: the barks contain certain red exudates that is used for dyeing fishing nets and clothes by the people; and
- ✚ Carving of shuttle locally known as ‘Aghen’ which is used for preparing newly bought fishing net and as thread for sowing fishing net that is thorn (Ibid).



Figure 5.5: Red Mangrove
Source: Author, (2013)

White mangrove often referred to locally as ‘*sekele*’ (**Figure 5.6**) on the other hand is used for the following:

- ✚ Building construction: plank, flooring and roofing of houses;
- ✚ Medicinal purposes: the bark and leaves help in healing of malaria, leg infection, skin diseases like eczema;
- ✚ Construction of wooden bridges within the communities;
- ✚ Fuelwood;
- ✚ Source of income: women cut it and sell; and
- ✚ Construction of fishing tools/baits for crayfish (UNIDO, Undated).



Figure 5.6: White Mangrove
Source: Author, (2013)

The use of mangrove as fuelwood and source of income for some group of people particularly women can be attributed to the fact that the region lacks the basic infrastructural facilities such as electricity, health facilities, pipe-borne water among others (UNDP, 2006). The people therefore depend on fuel wood²⁵ for example from the mangrove for energy in cooking and smoke-dry of fishes. Additionally, other occupations existing in the coastal communities of Ondo State include gin distillation from raffia palm (*Raphia vinifera*), mat weaving, and collection of mango seeds (UNIDO, Undated). These are parts of the provisioning services that humans benefit from the ecosystems and as shown in **Figure 5.7**, the women are the most

²⁵ Although cutting of fuel wood has been part of the contributors to the degradation of ecosystems in this region, this is inevitable when there is no alternative source of energy for the people.

affected as they travel long distances to fetch/cut fuel wood. Apparently, it is imperative to note that most activities in this region are hinged on the healthy BES of the region.



Figure 5.7: Women returning from cutting mangrove trees for fuel wood
Source: Ogele (2009, p. 95).

The diversity of ethnic groups in the region include Ijaws, Ogonis, Ikwerres, Etches, Ekpeyes, Ogbas, Engennes, Obolos, Isoko, Nembes, Okrikans, Kalabaris, Urhobos, Itsekiris, Igbos, Ika-Igbos, Ndoni, Oron, Ibeno, and Yorubas, Ibibios, Annangs and Efiks. Other groups include Anang, Efiks, Bekwarras, Binis, among others (Ibid). Given the presence of about 40 different ethnic groups speaking 250 languages and dialects in the region (**Figure 5.8**) as well as different cultures, the region is also very rich in culture and heritage (NDDC, 2006).

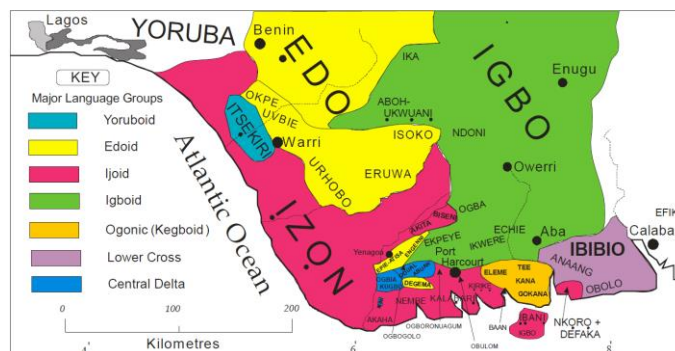


Figure 5.8: Peoples and languages of the NDR
Source: Blench and Dendo (2007, p. 9).

Based on the ecosystems of the region and as revealed in **Figures 5.9** and **5.10**, the people are maximising the advantage of the region’s ecosystems landscape to be involved in various cultural activities. These are parts of the cultural services that the people benefit from the ecosystems.



Figure 5.9: Traditional Boat Regatta
Source: NDDC (2006, p. 81).



Figure 5.10: Traditional Dancers (Moni of Abonnema)
Source: NDDC (2006, p. 81).

In addition to the above, mangrove biodiversity of this region are important for healthy ecosystems that help to protect coastline from erosion, storm damage, wave actions, and act as buffer and catch alluvial materials, consequently stabilizing land elevation by sediment accretion which balances sediment loss (UNIDO, Undated). In the coastal communities of Ondo State and as shown in **Figure 5.11**, it was reported that the residents use the root of the red mangrove on the base of houses as barriers against sea upsurge (Ibid).

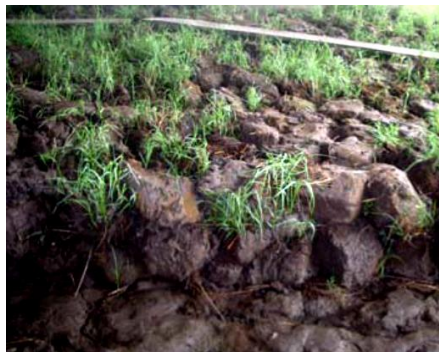


Figure 5.11: Root of Red Mangrove in Ondo State
Source: Author, (2013)

5.5.2 *Oil and Gas Industries*

The market actors consist of the oil and gas licence holders (both the MNOCs and the LOCs) whose activities are taking place within the coastal environment (onshore, offshore and deep water) and are supported by the coastal BES. The oil and gas industry is the most significant actor within the market governing structure with its disparate categories of contractors. Watts (2008) for example, reported that 6,000 oil wells have been drilled in the NDR, four refineries constructed with 7,000 km of pipeline that crisscrossed it; 1,500 areas are home to infrastructure related to the extractive industry (see **Figure 5.12**). In Ondo State for example, the following oil wells/fields have been drilled: Opuekeba, Omuro, Ojumole, MALu, Eko, Parabe, Minna, Bella, Obe, Esan, Ewa, Opolo, Opuama and Isekelewu.



Figure 5.12: Some Oil Infrastructures in the NDR
Source: NEITI (2011).

5.5.3 *Multinational and Local/Domestic Oil and Gas Companies in Nigeria*

There are many multinational and local/domestic oil companies (LOCs) operating in Nigeria. The MNOCs are operating joint ventures (JVs) or production sharing contracts (PSCs) with the Nigerian National Petroleum Corporation (NNPC). They include Shell Petroleum, Exxon Mobil, Chevron Nigeria, Total, Eni, Addax Petroleum (recently acquired by Sinopec of China), Conoco Philips, Petrobras, StatoilHydro and others (USEIA, 2012).

Shell Petroleum Development Company of Nigeria Limited (SPDC)

SPDC is the oldest and largest oil and gas company that has been operating in Nigeria since 1936 (USEIA, 2012). It operates 40% of Nigeria's oil production with more than 80 oil fields mostly onshore, on dry lands or mangroves (UNDP *et al.*, 2012) and this is done in a joint venture between NNPC (55%), Shell (30%), Elf Petroleum Nigeria Limited — a subsidiary of Total — (10%), and Agip (5%) (NNPC, 2008; USEIA, 2012). Its operations include a network of pipelines, nine gas plants, and two export terminals.

USEIA (2012) noted further that Shell operates in Nigeria through the SPDC and the Shell Nigeria Exploration and Production Company Limited (SNEPCo) (see also NNPC, 2014).

Shell owns 100 % of SNEPCo, which was formed in 1993 to develop Nigeria's deepwater oil and gas resources offshore. Under production-sharing contracts (PSC) with NNPC, Shell operates the Bonga deepwater oil and gas project and is a venture partner in the Erha deepwater oil and gas project with ExxonMobil (Ibid).

ExxonMobil

ExxonMobil is the second largest MNOC in Nigeria that operates fields producing approximately 800,000 bbl/d (700,000 bbl/d of crude), in joint venture with NNPC: NNPC (60%) and ExxonMobil (40%) (NNPC, 2008; USEIA, 2012). The company's areas of operation is offshore in shallow waters of Akwa Ibom State and with its plans to operate in deep water, the company is likely to take over Shell as the largest oil producer in Nigeria (UNDP *et al.*, 2012).

Chevron

Chevron which in the past was the second largest oil producer in Nigeria (NNPC, 2008) is now the third largest with an average of 516,000 bbl/d of crude oil in 2011 (USEIA, 2012). Chevron operates under its subsidiary, Chevron Nigeria Limited, and holds 40 % interest in 13 concessions under a joint venture arrangement with NNPC (60 %). Most of its oil projects are in shallow water and onshore in the NDR. Chevron also has interests in deepwater projects, particularly its largest deepwater discovery in Agbami (Ibid). Chevron is one major MNOC operating both on and offshore in the coastal communities of Ondo apart from its operations in other states in the region.

Total and ENI

Total and ENI are the fourth and fifth largest oil producers in the country, producing 179,000 bbl/d and 96,000 bb/d respectively in 2011. Both companies operate various on and offshore projects in the NDR (USEIA, 2012). ENI operates in Nigeria through a wholly owned subsidiary: Nigerian Agip Oil Company (NAOC) which operates in the land and swamp areas of the NDR, under a joint venture agreement with NNPC (60%), NAOC (20%), and ConocoPhillips (20%), with concessions lying within Bayelsa, Delta, Imo and Rivers States.

EPNL and Texaco Overseas

Elf Petroleum Nigeria Limited (EPNL) and Texaco Overseas Petroleum Company of Nigeria Unlimited (TOPCON) are other forms of MNOCs operating a Joint Venture partners with NNPC. In the case of Elf, NNPC (60%) and Elf (40%) while in the case of Texaco, NNPC

(60%), Texaco (20%) and Chevron (20%) (NNPC, 2008). Besides the companies mentioned above, there are other oil and gas companies operating in Nigeria including Addax Petroleum, Stat Oil, and several other local oil companies (USEIA, 2015), such as Consolidated Oil Nigeria Limited, Express Petroleum and Gas Company and Cavendish Oil that operates offshore in Ondo State.

Nigeria, in its bid to increase its economic revenue has issued more licences to both private indigenous/local oil companies and MNOCs so as to increase its daily production capacity and demonstrate its commitment to its Local Content Act 2010. As demonstrated in **Figure 5.13** and **Table 5.1**, it is instructive to note that all the proposed upcoming projects are still within the NDR, suggesting that more pressures are likely to be exerted on the already degraded biodiversity and ecosystems of the region.



Figure 5.13: Olokola Liquefied Natural Gas Project Site, Ondo State
Source: Author, (2013).

Table 5.1: Upcoming oil projects in NDR, Nigeria

Project name	Operator	Type	Plateau liquids production (000 bbl/d)	Final investment decision?	Est. start
Dibi Long-Term Project	Chevron	onshore oil	70	yes	2016
Sonam Field Development	Chevron	natural gas project	30	yes	2016
Gbaran-Ubie Phase Two Project	Shell	natural gas project	20	yes	2017
Erha North Phase 2	ExxonMobil	deepwater oil	60	yes	2018+
Egina	Total	deepwater oil	200	yes	2019+
Bonga Southwest and Aparo	Shell	deepwater oil	225	no	2020+
Bonga North	Shell	deepwater oil	100	no	2020+
Zabazaba-Etan	Eni	deepwater oil	120	no	2020+
Bosi	ExxonMobil	deepwater oil	140	no	2020+
Satellite Field Development Phase 2	ExxonMobil	deepwater oil	80	no	2020+
Uge	ExxonMobil	deepwater oil	110	no	2020+
Nsiko	Chevron	deepwater oil	100	no	2020+

Source: USEIA (2015, p. 6) based on reports from Chevron Corporation, ExxonMobil, Royal Dutch Shell, Total, and *Oil and Gas Journal*.

The multiplicity of activities within the Nigerian coastal zone particularly in the NDR and their dependence on the ecosystems further justifies the observation of Chuenpagdee (2011) who noted that oceans and coasts are probably among the most difficult ecosystems to manage. The challenge stems from the complexity of coastal populations, the dynamics of linked social-ecological systems, and the scale of issues connected to jurisdictional boundaries and establishments (Robards and Greenberg, 2007; Garcia and Charles, 2008; Berkes, 2010).

5.6 Impacts of Oil and Gas in the Niger Delta Coastal Region

As demonstrated in **Figures 5.14** and **5.15**, it is a paradox that the people in the oil-rich coastal region in Nigeria are living in poverty. This condition has been exacerbated by the extensive environmental pollutants that have degraded their once pristine environment.



Figure 5.14: The Face of Poverty in NDR
Source: NDDC (2006, p. 148).



Figure 5.15: Poverty amidst Plenty (Oil) in NDR
Source: NGOLC (2012) and Rice (2012).

According to UNDP (2006) nearly half of the inhabitants of the region live on less than a dollar a day, while annually the region produces the equivalent of one-fifth of US energy needs and

that life expectancy among this population is less than 45 years; one in ten infants dies before its fifth birthday (see also Karl, 2007). This shows the level of poverty of the people in this region while living amidst abundance of resources. It can therefore be concluded that since the commencement of oil and gas exploration/exploitation activities in the region there has been social, political, economic, health and ecological destabilisation, and significant reduction in terrestrial and aquatic life. This is what the interactive governance theorists termed the outcomes of the interactions between the natural and social systems.

Although slightly divergent in their central assumptions, the two fundamental theoretical approaches focusing on the topic of resource abundance – the rentier state theory and the resource curse thesis – both contend that resource-exporting countries are negatively impacted by political, economic, and social distortions. Similarly, while the immense contribution of the oil and gas sector to the Nigerian economy and the infrastructural development of the nation is not in doubt, its extensive socio-economic, environmental and health impacts in the NDR cannot but be mentioned. It is against this backdrop that this study would examine the socio-economic, socio-political as well as the environmental and health impacts of the interactions between the natural systems and social systems within the NDR. The following section starts with the environmental impacts of the interactions between the social and natural systems.

5.6.1 *Environmental Impacts of Oil and Gas Activities in the NDR*

There is a compelling evidence that oil and gas have a strong negative environmental and socio-economic impacts on the NDR (Ikporukpo, 1995; Okeagu *et al.*, 2006; Omotola, 2006; UNDP, 2006; Owolabi and Okwechime, 2007; Nwilo and Badejo, 2008; Obi, 2010; Babatunde, 2010b; Ite *et al.*, 2013) among others. For example, in 2006 an independent group of researchers visited the region to assess the level of environmental degradation, they described the region as ‘one of the 5 most severely petroleum damaged ecosystems in the world’ (FMENV. *et al.*, 2006, p. 3).

The various stages in the oil and gas exploration and production cycle are associated with numerous environmental problems such as oil spills, gas flaring and ecosystems degradation. The pervasive deleterious effects of oil and gas exploitation and production on the region’s social life and environment including the BES was well captured by Saro-Wiwa (1995, p. 131) who portrayed the prevailing grim situation as:

“an ecological war which no blood is (apparently) spilled, no bones are (seemingly) broken, no one is (assumedly) maimed; but men, women, and children die; flora, fauna

and fish perish; air, soil and water are poisoned; and finally, the land and its inhabitants.”

Oil Spill

For over five decades, oil exploration and production in Nigeria has been steady in rising but in recent time the rising has not been steady as anticipated by Nigerian government while the number of oil spill incidents and volume of oil spilled have been on the increase. The decreasing and increasing trend in oil production and oil spill incidents respectively can be attributed to incessant pipeline vandalism, kidnappings and militant takeovers of oil facilities in the NDR particularly since December, 2005 (USEIA, 2012; Ogwu, 2012). This has made Nigeria to be noted as one of the worst countries for oil spills menace. For example, Ikporukpo (1995) and Nwilo and Badejo (2008) have shown that the three largest known spills in the region have been the Forcados terminal spill of 1979; that of the Apoi North 20 spills of 1980; and the Idoho spill of 1998. To the authors, these incidences respectively accounted for over 500,000; 200,000 and 40,000 barrels of oil spilled.

In a related discussion, Gilbert (1999) reported that between 1982 and 1992 that about 40% of Shell’s global oil spills incidents happened in Nigeria, notwithstanding the fact that oil production in the nation is about 14% of Shell’s overall production. Nickerson-Tietze (2000 cited in Ogwu, 2012) observe that between 1976 to 2000, the number of spillages overshot the Department for Petroleum Resources (DPR²⁶) tolerant limits which are 20 parts per million (ppm) for hydrocarbon in respect of effluent discharge near coast water, 10ppm for inland water, and 10ppm as limit for near shore water set by FMENV.

According to NDES (2009), about 25% of oil spills incidence in the region happens in the swamp areas, while 69% occurred offshore and 6% took place on relatively dry land. Gilbert (1999) however lamented the fact that while over 4,000 incidences of oil spills were recorded and reported in the region between 1976 and 1996, only about 20% of over 2 million barrels of oil spilled into the environment was said to have been recovered. This further lends credence to the earlier study of UNDP (2006) which established that between 1976 and 2001, a total number of 6,817 oil spill incidents were recorded in NDR with major loss of approximately 2.1 million barrels of oil to the environment.

²⁶ The DPR is the oil and gas industry regulator in Nigeria. More information about this institution would be provided later in this chapter.

As demonstrated in **Figure 5.16**, oil spills have also led to extensive pollution of groundwater, soil and rivers which have been having detrimental impacts on the BES of the region as evident in agricultural and fisheries sectors (FMENV. *et al.*, 2006; Okeagu *et al.*, 2006; Chinweze *et al.*, 2012) that are major occupations of the people. This was made possible because ‘many of the oil facilities and operations are located within sensitive habitats - including areas vital to fish breeding, sea turtle nesting, mangroves and rainforests - that have often been severely damaged, contributing to increased biodiversity loss and poverty (FMENV. *et al.*, 2006, p. 2). With the high demands on Nigeria oil (Watts, 2008) and the desire of the nation as a mono-economy to make more oil wealth; there is every tendency that some number of spills will occur while more gas will be flared and this will ultimately impact negatively on the BES and wellbeing of the local coastal communities of the NDR.



Figure 5.16: Drinking water source polluted by an oil spill in the NDR
Source: Newswatch Times (2013).

In addition to the pollution from oil spills, other activities of MNOCs have been contributing to habitat degradation in the region. For example, it was established that the MNOCs in their endeavour to shorten travel time and improve access to oilfields infrastructures involved in laying of pipelines, construction/dredging of canals that requires extensive land clearance in the mangroves (FMENV. *et al.*, 2006; UNDP, 2006). In most cases it causes saltwater intrusion into freshwater zones thereby causing destruction of freshwater ecological systems (Ibid). Relatedly, the associated activities of oil and gas industry (such as seismic activities) have opened the large sections of remote NDR habitat for exploitation and the increased access to new areas has also exacerbated illegal logging activities (UNDP, 2006; Blench and Dendo, 2007) of trees like ‘abura’ (*Hallea ledermannii*) (Blench and Dendo, 2007).

Furthermore, in the course of dredging, the soil, sediment and vegetation along the route of the proposed site are removed and in most cases deposited on the mangroves surrounding the banks. The abandonment of the resulting dredged material has caused a number of impacts including smothering of surrounding mangroves, alteration of the surface topography and hydrology,

acidification and water contamination (UNEP, 2011; Ogwu, 2012; Ite *et al.*, 2013; UNIDO, Undated). The impact of dredging on mangrove is extensive, because it affects many components of the ecosystem including mangrove vegetation, benthic invertebrates, fisheries, plankton, wildlife, soil, sediment and water quality (Ohimain *et al.*, 2005). Additionally, abandoned oil and gas infrastructures have also added to the environmental pollution through oil residues (NDES, 2009; UNEP, 2011). This suggests that the well-being of the communities that live in the area and who depend directly on the services of the rich biodiversity of the mangrove ecosystem for their livelihoods would be impinged upon.

It has also been noted that the consensus among most stakeholders in the NDR is that the environmental degradation that characterise the region is being orchestrated by oil and gas activities (Moffat and Linden, 1995). That said, it is also pertinent to mention that the impact of oil exploration in the NDR is not limited to oil pollution alone. Further to the problem of oil spill and gas flaring, intensive fishing and agriculture in the region also contribute to the degradation and exploitation of coastal resources and together they reflect the short-term vision and lack of integration in the management of the coastal zone (USEIA, 2012; UNIDO Undated).

Gas Flaring

According to Orimoogunje *et al.* (2010) and Edino *et al.* (2010), there are extensive opinions among the inhabitants of the NDR on how the flaring and venting of gas in the oil and gas industry has orchestrated numerous environmental, socio-economic and health-related problems in the region. Because majority of the gas flaring-emitting infrastructures in the NDR (**Figure 5.17**) are located close to the communities (FMENV. *et al.*, 2006; Edino *et al.*, 2010), the people comprehend gas flaring as precarious to human health, environment and general well-being of the community (Edino *et al.*, 2010).



Figure 5.17: Typical Oil and Gas Infrastructures in the NDR showing Gas Flaring

Source: NDDC (2006, p. 109).

According to Fagbeja (2008), air emissions are the most significant causes of environmental degradation from refineries and petrochemical facilities. The major air pollutants emitted by refineries and petrochemical facilities are sulphur oxides, nitrogen oxides, particulates, carbon monoxide, and hydrocarbons. The refineries are estimated to generate virtually all the industrial NOx emissions and 25% of the industrial particulate emissions in the Port Harcourt area. Nigeria is one of the leading contributors of NOX emissions in Africa, releasing estimated 1.1 Tg/year in 2000 (Van Aardenne *et al.*, 2000 cited in Fagbeja, 2008).

A study of metal concentrations near the Warri refinery found elevated level in both soils and plants. Concentrations ranged from 3 times background for chromium (44 ppm), 4 times for lead (20 ppm), 4 times for zinc (119 ppm), 6 times for copper (43 ppm), to 7 times for nickel (7 ppm) and cadmium (44 ppm). Plant levels were similarly elevated. The combination of metals and other air pollutants from the refinery complex may result in air pollution, as well as wastewater, degrading human and ecosystem health (Ndiokwere and Ezihe, 1990).

As pointed out by Hamso (2013) and shown in **Figure 5.18**, 140bcm of gas which is the 5% of the world gas production is flared globally in 2012 and this is equivalent to the total annual gas consumption of Italy and France. As demonstrated in **Figure 5.19**, Nigeria is the second largest gas flaring country in the world, next to Russia (Effiong and Etowa, 2012; NOAA, Undated cited in USEIA, 2011). Presently, there are about 123 gas flaring sites in the region where most flares burn 24 hours a day and some have been burning for over five decades (UNDP *et al.*, 2012).

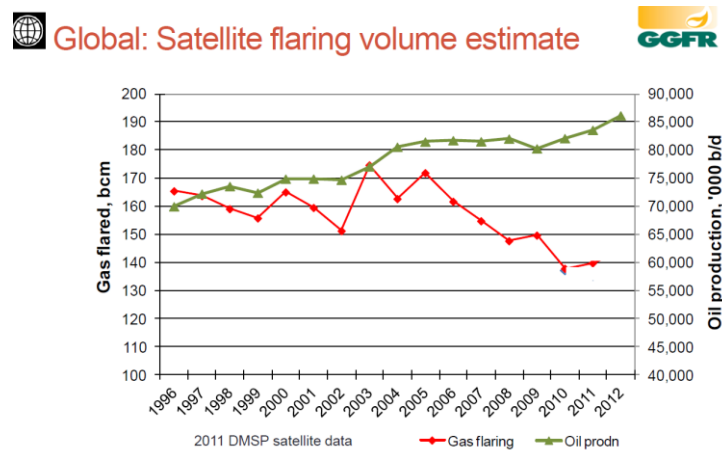


Figure 5.18: Global Gas Flared Estimates

Source: NOAA, BP Statistics (Adapted from Hamso, 2013).

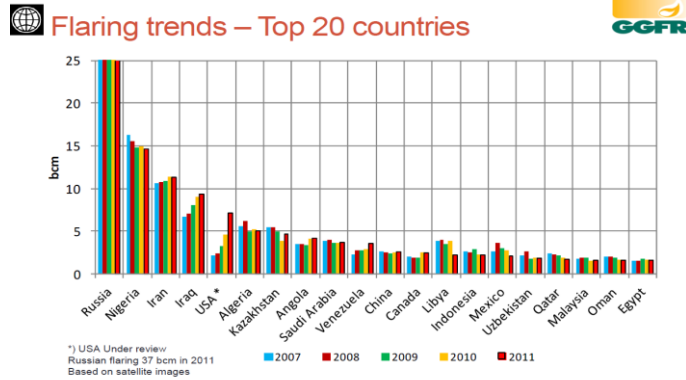


Figure 5.19: Nigeria shown as the second largest gas flaring nation
Source: NOAA (Adapted from Hamso, 2013).

Despite the rate of gas flaring in the region, there appears to be no quality standard measurement for air quality in Nigeria. If there is any independent measurement in place being used by oil companies and/or research based institutes such as universities and research institutions, they are not readily available to the general public. The recent report of UNEP (2011) on the assessment of impacts of oil and gas in Ogoni land (one of the communities in the NDR) confirms the lack of air quality standard in Nigeria. UNEP conducted the assessment at the behest of the Nigerian government to ascertain the magnitude of environmental damages caused by Shell exploitation activities in the community.

The request by the federal government came against the cries and demands of the people of the region for compensation and restoration of their land that has been severely degraded by the activity of the MNOCs. The Nigerian authority has identified emissions of CO₂ and other greenhouse gases (GHGs) that contribute to climate change as an environmental menace (Adeyinka *et al.*, 2005). The federal government recently increased gas flaring tax on oil and gas industry that flare gas in the NDR. The possible reason for this is for the government to fulfil its long promise of halting gas flaring in the country, but the new rate may not even have any significant impact on the oil companies to stop. The new tax regime is \$3.50 (about £1.65) on every 1,000 standard cubic foot of gas flared, representing an estimated 4,000 per cent increase from the former charge of about \$0.08 (about £0.035), that had been in effect since early 1960s shortly after oil activities commenced in Nigeria (Ibiyemi, 2008 cited in Fagbeja, 2008). Enforcement has been one of the issues confronting air pollution management in Nigeria.

Another angle to look at the issue of the environmental impacts of oil and gas on the region is on the infringement on the human rights of the people. Under the 1999 constitution of Nigeria, Article 20 stipulates that:

“The state shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria”

While Article 20 provides for the protection of the environment, Articles 33 and 34 guarantee the fundamental rights to life and to dignity respectively (COFRN, 1999). In whatever perspective the issue is being looked at; there is clear violation of human rights of the beleaguered people in the NDR. In addition to the constitutional provision on the protection of the environment and human right of Nigerian citizenry, Nigeria has also incorporated into its law the African Charter on Human and Peoples’ Rights that provides for example the following in Articles 16, 24 and 25:

Article 16 stipulates that:

(1). *Every individual shall have the right to enjoy the best attainable state of physical and mental health;*

(2). *States parties to the present Charter shall take the necessary measures to protect the health of their people and to ensure that they receive medical attention when they are sick.*

While Article 24 provides that “All peoples shall have the right to a general satisfactory environment favourable to their development”, Article 25 notes that “States parties to the present Charter shall have the duty to promote and ensure through teaching, education and publication, the respect of the rights and freedoms contained in the present Charter and to see to it that these freedoms and rights as well as corresponding obligations and duties are understood” (OAU, 1982). This possibly explains why Amnesty International (2009) and Ogwu (2012) contended that the exploitation of oil and gas activities in the NDR has created problem of environmental injustice for the people in the region.

Despite the negative externalities of the oil and gas activities in the NDR discussed above, there are some benefits accruing to the people. As revealed in **Figure 5.20**, the local women that are involved in farming utilised the heat from the gas flaring to dry their products.



Figure 5.20: Gas Flaring in the NDR
Source: World Bank (2009).

Nypa palm and Water hyacinth

Nypa palm (*Nypa fructicans*) an exotic invasive mangrove species, originally native to Asia that was brought to the region in 1906 for various purposes such as coastal stabilization and food production has been spreading westwards and displacing the mangrove ecosystem in the region (FMENV. *et al.*, 2006; UNDP *et al.*, 2012). The laying of pipelines, seismic trails, and construction of transport channels for oil and gas activities were said to be responsible for opening up the once inaccessible swamplands of the region to nypa palm (*ibid*), which can survive the turbidity of the oil and gas pollutants than the native species. Similarly, Water hyacinth (*Eichhornia crassipes*) (**Figure 5.21**) is another highly problematic invasive species that has spread through the creeks, rivers, swamps and temporary water bodies of the region. It forms an enormous mass that has been threatening the swamp mangroves of the region through displacement of native vegetation to suffocation of aquatic biota (Ogele, 2009; UNDP *et al.*, 2012). The next section considers the socio-economic impacts of oil and gas activities in the NDR.



Figure 5.21: Water hyacinth Ondo State waterways
Source: Ogele (2009, p. 105).

5.6.2 Socio-Economic Impacts of Oil and Gas in the NDR

As earlier noted, to describe the socio-economic context of the NDR is to describe a paradox of utmost wealth in which over US\$ 50 billion in revenue is generated annually through the oil and gas sector taking place within the region but majority of the locals in the region live in

extreme poverty (UNDP *et al.*, 2012). With over five decades of oil and gas exploitation in the region, the standards of living of the local residents have not witnessed any significant improvement. Apart from the basic infrastructural facilities such as electricity, clean drinking water, sanitation, health care and schools that are grossly inadequate in most local communities, the economic condition of the region is poor when compared to other parts of Nigeria (UNDP, 2006; UNDP *et al.*, 2012). The per capita income in this well-endowed region is below the national average of \$1,980 (UNDP *et al.*, 2012).

According to NNPC data as reported by USEIA (2012), pipeline vandalism has increased by 224 per cent in 2011 lower than the previous year. Similarly, USEIA also observed that bunkering which in the context of Nigeria's oil industry refers to the theft and trade of stolen oil, has recently surged. Estimates from Nigeria's Ministry of Finance show that about 400,000 bbl/d of oil was stolen in April 2012, which led to a fall of about 17 per cent in official oil sales. Shell petroleum recently estimated that 150,000-180,000 bbl/d, or 6 per cent of the country's total production on average is lost to oil bunkering and spills (Amaefule and Opara, 2012; Okafor, 2012; USEIA, 2012). The implication of the continuous pipeline vandalism and cost (environmental, economic and health) resulting from the oil spills is unquantifiable.

According to Ramseur (2012), costs that can result from an oil spill can be broken into three categories namely clean up expenses, natural resource damages (ecosystem degradation), and the various economic losses incurred by the affected community or individuals. He specially observed that the clean-up of an oil spill can vary greatly and are influenced by many factors such as location characteristics, oil type, and oil volume. In the case of the NDR with its peculiar terrain, it may attract more cost and take longer time to clean. The recent assessment of Ogoni land by UNEP corroborates this, as it was recommended that the sum of US \$1 billion should be set aside to cover the first five years of clean-up operations while 25-30 years was estimated for countering and cleaning up the pollution and catalysing sustainable recovery of the land that will require long time financing (UNEP, 2011).

Unemployment is another major socio-economic impact of oil and gas in the region and the people who are predominantly involved in fishing, farming and other artisan works have suffered some setbacks from incessant pollution from oil spill and gas flaring (UNDP, 2006; Müller, 2010). The employment statistics of the region reveals that the preponderance number of the people are either unemployed or are employed in the informal sector with an income of less than US\$1 a day (UNDP, 2006; Obi, 2009). Though, the oil and gas activities are taking place within the region the sector has not been able to provide adequate employment for the

people in the region. For example, Watts (2008) found that the sector in Nigeria has employed 100,000 people and these are either employed by the state company (NNPC) or by MNOCs that operates in joint ventures with state company. The implication of this is that even if all the people employed were from the region only 0.32 per cent of the population would have been considered. This figure is infinitesimally small compared to the number of youths (militants) that are looking for gainful employment in the region and as attested to in the number of those that surrendered their arms through the Amnesty programme.

Rather than improving the socio-economic condition of the people in the region, the oil and gas activities have exacerbated the socio-economic condition of the people. It has heralded series of protests approach such as pipeline vandalism, sabotage that later snowballed into bunkering (oil theft), kidnapping and killing of oil government workers. For example, Obi (2009) found that pipeline project for the distribution of oil that traverses the communities has worsened the socio-economic situation of some of the indigenous people through vandalism (see **Figure 5.22**) and other heinous crimes that were not part of the culture of the people prior to the commencement of the project.



Figure 5.22: People scooping petroleum from vandalised pipeline in Nigeria
Source: Jimoh (2014).

Although the unemployed people in the region may see vandalism as a way of generating money from the scooped petroleum the side effect on the environment, economy and the people is usually colossal. Karl (2007) for example, found that due to ruptured pipelines²⁷ thousands of indigenous people in the region have been killed in pipeline explosions resulting from leaks, as the case in October 1998 with over 700 casualties. In some parts of the region, a pipeline explosion has rendered some once thriving economically stable and self-sustaining

²⁷ Ruptured pipelines may be due to improper maintenance of pipelines by oil companies or sabotage by the youths.

communities such as Iko in Akwa Ibom unliveable (Ibid). It has also been established that today the mangrove forests that once covered three quarters of the coastlines of tropical and subtropical countries has been degraded by over 50% and the degraded areas have been rendered unproductive (Sorensen, 2002).

Furthermore, Ogunleye (2008) reveals that over 200 species of coastal and brackish water fish and shellfishes have been identified to be susceptible to the impacts of pollution along the coastal area of Nigeria. This is indicative that as BES continue to be degraded, fishes and lands are being killed as a result of pollution so will many lose their jobs and the poverty level of the people will be exacerbated, consequently feeding will become difficult and universal primary education becomes unachievable since schools are not totally free in Nigeria. The next section considers the impacts of oil and gas activities on the socio-political aspect of the region.

5.6.3 Socio-Political Impacts Oil and Gas in the NDR

The oil and gas has also made politics in Nigeria to be volatile as most politicians see politicking as an avenue to amass wealth from the oil revenues of the nation. As Karl (2007), points out that oil appears to hinder the appearance of democracy in most cases as witnessed in the Middle East, North Africa and Nigeria, though it facilitated democratization in Venezuela. This possibly explains why in the 52 years of Nigeria's history, democracy was impeded by the military for 23 years and it was during this prolonged period of political instability that corruption was introduced by the military (Ibid). The military could not in any form be held accountable for their deeds in power, and corruption has since then been a cankerworm deleterious to the fabric of the nation.

The exploitation of oil and gas in NDR has a profound national and local socio-political impact, and from the standpoint of the majority of the observers, this impact is alarming. The once peaceful region has become politically volatile as many greedy and corrupt politicians are scampering for power so as to be in control of the proceeds that accrue to their states from the federation accounts (Karl, 2007). This is similar to one of the assumptions of the rentier state theory that stipulates that oil rents have a stabilising effect on authoritarian rule (Ross, 2001). As Ross (2001) point out, it can be assumed that resource wealth makes it easier for authoritarian rulers to use violence in the form of political repression; as it enables the financing of a massive security apparatus (see also Karl, 2007). For example, Ikelegbe (2001) noted that the NDR grievances have metamorphosed from a mere demand for development from the MNOCs and the state into a political and comprehensive agitation that challenges the authority

and legitimacy of the state in control and allocation of national resources. Alongside the increase in nationalist and environmentalist protest in the NDR, young people were recruited, armed and subjected to political manipulation following the democratic transition in 1999, particularly concentrated around electoral periods, in 1999, 2003, and 2007. During each of the elections, territorial struggles between political parties (including the ruling party, which was simultaneously the source of the repression) mobilised gangs who were given arms, material benefits, or informal authorisation to traffic various items (including oil) in exchange for their services in mobilising (often forcefully) the electorate (Human Rights Watch, 2005; 2008a cited in Guichaoua, 2009).

Guichaoua (2009) further argues that failed promises, interruptions in the sharing of stipends, and struggles for supremacy between rival gangs resulted in the use of mercenaries and political violence. The region has become conflict-ridden and politically volatile as most of the aggrieved youths protest against the unethical practices of MNOCs and security operatives are increasingly deployed to protect oil infrastructures (Karl, 2007).

Similarly, Owolabi and Okwechime (2007), found in their study on oil and security in Nigeria that the continuous crises in the NDR occasioned by oil and gas activities are causing grave threat to human security beyond other well-known threats to the security of the nation. The authors further contended that the continued exploitation and degradation of the region's ecosystems pose serious threats to human security and by extension to the Nigerian state (Ibid).

While farmlands and fishing grounds have been destroyed due to oil and gas pollution and people rendered unemployed, some of the youths in their bid to survive joined the militants and some opted for bunkering (oil theft) with the construction of illegal refineries (UNEP, 2011). Because the people were neither trained nor have the requisite infrastructure to refine and manage crude oil, their illegal activities tend to contribute to the further degradation of the coastal ecosystems within and outside the region.

Anyim *et al.* (2012) aver that there are many oil and gas-related conflicts and issues in the region including community versus oil companies; community versus governments, and intra/inter community conflicts. Added to this, is decaying social values and practices, crime, population displacement, poor transportation, housing and infrastructural decay, poverty, unemployment, inadequate compensation and high cost of fuel among others (Ibid). It is also important to note that in the course of the conflicts oil infrastructures are often destroyed thereby contributing to the degradation of the ecosystems and many communities despoiled.

Ross (2006) finds that even though the likelihood of civil war in countries that produce oil, gas and diamonds rose sharply from the early 1970s to the late 1990s, the external factors of oil, gas and diamond wealth are robustly correlated with the onset of civil war. Nevertheless, these correlations are based on a small number of cases, “and that at least one other mechanism ties oil and diamonds to the outbreak of civil war – particularly national civil wars” (Ross, 2006, p. 296). This possibly explains why there has been series of conflicts in the NDR. The oil and gas industry in Nigeria has been a source of conflict and responsible for polluting air, soil and water that had led to observed losses in arable land and decreasing fish stocks in the NDR (USEIA, 2012). Similarly, Aghalino (2006) observed that every attempt by the government to increase oil production or to maintain the status quo in the region has always been met with stiff opposition from the irate youths who see oil wealth to be antithetical to their aspirations and were poised to endanger its flow.

5.6.4 Health Impacts of Oil and Gas on the NDR

It has been contended that the public health impacts of oil spill and gas flaring for the residents of the NDR is yet to be systematised empirically (Jike, 2010). The author also argues elsewhere that the residents of the region suffer some respiratory diseases, which are as a consequence of exposure to gas flaring (Jike, 2004). Jike (2010) further observes that the protest staged by the women leaders at the headquarters of Chevron and Shell in Warri, Delta State in 2001 was predicated on widespread of bronchial diseases and eye problems being orchestrated by continuous gas flaring in the region. As succinctly captured by the people in the coastal communities of Ondo State, the lack of adequate health facilities to mitigate the health effects of oil spill and gas flaring in the region has worsened the state of things:

“This area has not witnessed any medical facilities. They [people] depend on the trial and error of native medicines using local herbs. With the destruction of trees and their under-growths, these herbs are no more.” (The Concerned Ilaje Citizens, 1998, p. 5).

According to Karl (2007), there are 37.7 malnourished children per thousand in the NDR compared to the global average of 26.5 and the Nigerian government spends about \$2 per person per year on health care compared to \$34 per year recommended by the World Health Organisation for developing countries. Similarly, Obi (2009) found that apart from the fact that due to poverty and pollution in the region only about 5% of residents at close proximity to pipelines lives to celebrate 60 years on earth. This implies that the life span of the people in the region have been shortened due to the oil and gas activities. It further explains why the people utilised the mangrove trees for different medicinal purposes.

5.7 Governance System

5.7.1 Features of the Governing System

This section presents the features that prevail in the governance of oil and gas sector in Nigeria with regards to conservation of BES in terms of diversity, complexity, scale and dynamics. Nigeria's oil and gas resources are subject to a state property regime (COFRN, 1999). Many instruments, policies and institutions have been established with a view to mitigating the critical implications of oil and gas on BES and the livelihoods of the host communities in the NDR. For example, the federal government introduced an Amnesty Programme in 2009 for the militants to lay down their arms and embrace peace in addition to undergo capacity training and rehabilitation programmes within and outside the country.

However, it is instructive to note that as the youths were being disarmed for peace to be restored to the region so that oil exploitation can continue unabated, a whopping amount of money that would have been invested on other sectors of the economy are being expended to buy peace though the amnesty office claimed the programme is saving the country billions of dollars daily but that is yet to be verified.

Diversity in institutional structures: The governing actors

Kooiman and Bavinck (2005) categorised actors into three groups including the state, market and civil society (see also Alba et al. 2010 on oil and gas producing developing countries). Lemos and Agrawal (2006, p. 310) also distinguish three social mechanisms through which interactions between these actors take place: public-private partnerships, co-management and private-social partnerships. Considering the transitional nature of the Nigerian governance process, a number of actors do not fit neatly into one specific category. This study introduces a new governing structure termed the hybrid-governing mode. In this mode, actor constellations are usually formed through the integration of two or more of the governing structures. The delineation into the hybrid mode becomes crucial because actors 'are often constrained or enabled in their actions by structures' (Bavinck *et al.*, 2005, p. 29).

In Nigeria, there is diversity of actors involved in the governance of oil and gas sectors as it relates to the conservation of BES. These actors that cut across the government, market and civil society including communities are referred to as the oil and gas actors and are also defined in this chapter as all those who have responsibilities, roles and interests in (i) policy-formulation and decision-making regarding the regulation of impacts of oil and gas activities on BES, (ii)

implementation and enforcement of rules and regulations regarding environmental pollution from oil and gas activities, (iii) Coastal BES users and (iv) oil and gas environmental management. Coastal users are diverse in terms of composition, the levels of geographical scales at which they are operating, their interests, and their roles in the oil and gas governance system.

5.7.2 Actors in Statutory Governing Structure

Each of the 36 states in the country is headed by the governor who doubles as the chief executive as well as the chief security officer while the Federal Capital Territory is statutorily headed by the president of the country, who usually delegates administration to the cabinet ministers appointed by him. The governors in each of the 36 states have been constitutionally empowered to protect their environments in line with the federal regulations. According to the COFRN (1999), the powers of the state governors to perform certain responsibilities and manage and protect the environment falls within the residual list of the Constitution.

They are termed ‘oil and gas governors’. These include the Federal Ministry of Petroleum Resources (FMPR) which is responsible for the formulation of policies, designing relevant governance principles and guidelines expressed in policy and laws, as well as for monitoring, supervising and implementing the oil and gas policies. Under the FMPR the Department of Petroleum Resources (DPR) is an institution saddled with the responsibility of formulating and implementing environmental policies in the oil and gas sector in Nigeria, and issuing of licences²⁸ to prospective oil companies. The Federal Ministry of Environment has been saddled with the general responsibility for environmental issues within Nigeria and its coastal waters with supports from two parastatals: the Nigerian Environmental Standards and Regulation Enforcement Agency (NESREA) and the National Oil Spill Disaster Response Agency (NOSDRA).

5.7.3 Actors in Market Governing Structure

Chevron is the major MNOC that operate both onshore and offshore in the study area while other MNOCs such as Shell, Mobil Producing Nigeria Unlimited (Exxon Mobil), Agip operate offshore. The IOCs which are operating mainly offshore in the study area include Consolidated Oil and Cavendish Petroleum Nig. Ltd.

²⁸ These licences include oil exploration licence (OEL), Oil Prospecting Licence (OPL), and Oil Mining Licence (OML).

5.7.4 Actors in the Traditional or Customary Governing Structure

The traditional or customary governing structure consists of communities and customary institutions. The customary governing structure has different levels of hierarchy in the various communities along the coast of Ondo State. The community head (locally called *Baale*) is usually assisted by other chiefs within the community and followed by other members of the community including the youths. The *Baale* is normally appointed head of the community by the Paramount ruler or the king of the Kingdom (Olugbo of Ugbo Kingdom) (locally called *Kabiyesi*) which literally means ‘nobody is qualified to question your authority’ who is a first class King in Ondo State. While the communities no longer have control over the lands in their territories by virtue of the Land Use Decree of 1978 that vested the ownership of lands in the governor of the state, the communities are paid royalties by the oil and gas companies. The royalty is paid to the communities through the paramount ruler or his representatives such as the Oil and Gas community-based organisations (CBOs) to be discussed in the following section.

5.7.5 Actors in Civil Society Governing Structure

The civil society governing structure in the oil and gas sector consists of national and international environmental organisations as well as NGOs that contribute to capacity building, environmental awareness/conservation, ensuring legality and advocate for policy reforms. Examples of national environmental organisations that are involved in environmental programmes in the region include NCF, NES, OFEPA, Living Earth Nigeria Foundation (LENF), ProNatura Nigeria and Environmental Rights Action (ERA) among others. There are also oil and gas CBOs in the study areas that are acting as representative of the communities on offshore oil and gas-related issues and they include AICECUM²⁹, ASCOPIC, and OBE Confederation. The international NGOs in this area include Amnesty International, the International Union of Conservation and Nature (IUCN), and BirdLife International.

5.7.6 Actors in Hybrid Governing Structure

The actors in the hybrid governing structure in the context of oil and gas sector in Ondo State coastal communities include Ilaje Regional Development Committee (IRDC). IRDC is the operator of Chevron/NNPC Joint Venture Global Memorandum of Understanding (GMoU) (Onshore) established in 2005 by Chevron Nigeria Limited. Under the GMoU, the committee members which are chosen by the traditional ruler in conjunction with the government from

²⁹ AICECUM is an acronym that consists of seven oil blocs including Actual, Indigenous, Concessional, Eighty nine thirty, Core, Ultimate and Major. They are OPC’ representatives to Chevron in Ondo State on offshore oil and gas issues.

two core oil producing communities (OPCs)³⁰ are empowered to initiate and execute developmental projects in the various OPCs. This model is a total departure from the past tradition in which the money the MNOCs pay directly to the communities as royalties and part of their corporate social responsibility (CSR) are not judiciously spent and there is no commensurate developmental project to show for it. This thesis sees this as a form of bottom-up approach introduced by the MNOCs and their joint venture partners for implementing CSR projects in the OPCs. This is considered and discussed in detail in Chapter eight.

5.7.7 Actors from Transnational Arena

Actors in this group that are closely related to almost all the aforementioned governing structures are those from the international arena that support environmental development through research and capacity development, and institutional policy planning. Some of these actors include UNEP, UNDP, UNIDO, FAO, and World Bank.

5.7.8 Third order governance

Third order governance, or meta-governance, encompasses the principles underlying oil and gas sector governance (Kooiman *et al.* 2005). In the following sub-sections, the principles underlying Nigeria's oil and gas sector governance and environmental management are first analysed, insofar as they are based on international agreements.

Principles underlying Nigeria's environmental governance and management

For the past six decades, global concerns about coastal pollution particularly in developing countries have brought environmental management issues to the forefront of many environmental debates, especially after the United Nations Conference on the Environment and Development (UNCED) in Rio in 1992. This has led to the concept of sustainability featuring prominently on the international agenda (Adams, 2009).

Since Nigeria is a signatory to all of these conventions and a member of several international organisations, the nation is obliged to fulfil the objectives of these bodies. Several international sustainable development principles have therefore shaped most of the governing instruments that guide Nigeria's oil and gas sector including:

³⁰ The core oil producing communities include Awoye and Molutehin.

- ✚ The precautionary principle which stipulates that where there are threats of serious or irreversible damage, the paucity of full scientific knowledge shall not be used as a reason for postponing cost effective measures to prevent environmental degradation;
- ✚ The Pollution Prevention Principle (3+) that encourages industry to invest positively to avert pollution;
- ✚ The Polluter Pays Principle (PPP) that suggests that the polluter should bear the cost of averting and controlling pollution;
- ✚ The User Pays Principle (UPP) which holds that the cost of a resource to a user must encompass environmental costs associated with its extraction, transformation and use;
- ✚ The Principle of intergenerational equity that demands that the needs of the present generation are met without jeopardising the ability of future generations; and
- ✚ The principle of intra-generational equity which holds that different groups of people within the country and within the present generation is entitled to benefit equally from the exploitation of resources and that they have an equal right to a clean and healthy environment (FEPA, 2008).

Some of the international treaties that have been ratified by Nigeria which were all intended to improve oil and gas sector governance at global and national levels in order to ensure sustainable environmental management and which have influenced the principles underlying Nigeria's oil and gas environmental-related policies including BES are shown in Section 2.4.1.

Some of the principles that come to the fore include sustainable management, biodiversity conservation, the recognition of customary rights, and stakeholder involvement in governance. At the regional level, there are other policies that also influence the Nigeria policies on environment including the Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region.

5.7.9 Second order governance: Institutional arrangements

This section first reviews the current oil and gas policies and regulations under statutory law that determine existing institutional arrangements and then reviews the institutional arrangements under customary law.

Statutory law: current environmental policies and legislations on oil and gas activities

The Nigeria oil and gas industry is governed by a plethora of statutory laws and policies/regulations that are directly influenced by numerous global/international policies. The

following section considers the relevant policies available in Nigeria for the management and conservation of environment including BES.

In addition to the nation's constitution and Petroleum Act 1969 which are the supreme environmental policy and the principal legislation regarding oil and gas activities respectively, other the relevant laws and policies relevant to the conservation of BES from the impacts of oil and gas activities are summarised in **Table 5.2**.

Table 5.2: Relevant Oil and Gas Environmental Laws/Policies in Nigeria

Name of Law/Policy or Regulation	Relevance to Conservation of BES in the Oil and Gas Sector
The 1999 Constitution of Nigeria	It is the law of the nation and the cornerstone of environmental policy in Nigeria. Apart from Section 44(3) that vests ownership and control of mineral resources including oil and gas, Sections 12, 20, 33 and 34 provide for the protection of the environment from any form of pollution.
Petroleum Act 1969	This is the chief legislation on oil and gas activities in Nigeria. It provides for safety and environmental protection during exploration and production from the territorial water and continental shelf of the nation.
Mineral Oil (Safety) Regulations 1962	It requires safety measures in handling mineral oil in Nigeria including good safety standards to follow during oil drilling/production and prevention of pollution of water courses.
Petroleum Regulations 1967	It makes guidelines for the importation, shipping, unshipping, landing and storage of petroleum resources by prohibiting ships from releasing oil or permitting oil to escape into the waters of the port.
Oil in Navigable Waters Act 1968	It allows for the implementation of the International Convention for the safeguard of the pollution of the sea through oil and interdicts polluting the navigable waters of Nigeria with crude oil, fuel oil, lubricating oil, heavy duty oil or any blend of oil.
Petroleum (Drilling and Production) Regulation 1969 with amendments in 1973, 1979, 1995 and 1996	It details the requirements and documents to attach with an application before a licence will be issued to oil companies. It guarantees proper protection of lands and water by boundaries of oil and gas projects, and makes provision for compensation for persons whose rights might be infringed upon in the course of production. The various amendments to the regulation mainly set out new fees, rates for payment of rents and royalties.
Petroleum Refining Regulations 1974	It prescribes refining measures to be taken to avert and control environmental pollution as well as penalty to be paid in the event of any violation.
Nigeria National Petroleum Corporation (NNPC) Act 1977	The Act empowers NNPC to engage in all activities relating to the petroleum industry and to enforce all regulatory measures relating to the general control of the petroleum sector through its Petroleum Inspectorate Department.
Crude Oil (Transportation and Shipment) Regulations 1984	The regulation provides guidelines for precautions during transportation and shipment of crude oil in Nigeria so as to avert environmental pollution.
Oil Pipelines Act 1965	It provides for licences to be issued to oil and gas industry for the installation and maintenance of

	pipelines without impacting on the immediate environment.
Mineral Oils (Safety) Regulations 1962	The regulation requires oil company operators to meet specified minimum standards of safety.
Land Use Act 1978	The Act vests ownership of land in the governor of the state.
Associated Gas Re-injection Act 1979 (as amended in 1985)	The objective of this Act is to phase out gas flaring in the country by compelling the oil and gas operators to submit their gas re-injection programmes.
Environmental Impact Assessment Act 1992	It sets out the general principles, procedure and methods to enable the prior consideration of environmental impact assessment on certain categories of public or private projects so that projects do not adversely affect the environment.
National Energy Policy as applicable to Oil and Gas 2003	It encourages the adoption of environmentally friendly oil exploration and exploitation methods.
National Oil Spills Detection and Response Agency (NOSDRA) Act 2006	The Act guarantees a safe, timely, effective and appropriate response to oil pollution and to identify high risk and priority areas for clean-up.
National Environmental Standards and Regulations Enforcement Agency (NESREA) Act 2007	The Act provides for standards and enforcement of relevant environmental laws in all facets including sustainable management of the ecosystem, biodiversity conservation and development of the nation's natural resources. However, Section 7 (g, h, j, k, l) of the Act prohibits the Agency from taking action on oil and gas environmental issues.
Niger Delta Development Commission (NDDC) Act 2000	The Act empowers the Commission to tackle ecological and environmental problems that emanate from oil and gas activities in the region. It empowers the commission to liaise with oil companies on all matters of oil and gas pollution prevention and control, in addition to oversee the physical development of NDR.
Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGASPIN) 2002	The regulation and standards cover the control of and impacts from oil and gas operations. It demands that EIA be conducted by oil and gas companies' prior project development.
National Policy on Environment (NPE) 1989	The policy is formulated to achieve sustainable development for Nigeria by requiring integration of environmental concerns and sustainability into development projects like oil and gas. It aims to restore, maintain and enhance the ecosystems and ecological processes relevant for functioning of the biosphere, preserve biodiversity and the principle of optimum sustainable yield in the utilisation of natural resources and ecosystems.
Petroleum Industry Bill (PIB) 2012 (under review)	This is a new bill under review at the National Assembly that is anticipated to facilitate major overhaul of the oil and gas legislation in Nigeria. It has in its present form the following relevant provisions among others: <ul style="list-style-type: none"> - Requires submission of environmental programme/environmental quality management plan to ensure good environmental quality management; - Requires financial provisions from licensee/lessee for remediation of environmental damage; and - Explicitly provides for adequate restoration in the aftermath of harm to the environment beyond compensation only.

Customary laws and practices governing environmental management

Prior to the modern context of natural resource management in Nigeria, there exists a customary/traditional approach that has been in existence before the colonial era and still exist though in an unwritten sense (UNDP *et al.*, 2012; Afe, 2013). The customary laws and practices that are used to govern environmental management by the traditional institutions in the coastal communities in Nigeria are based on cultural norms, traditions and beliefs that together ensure that biodiversity and ecosystems are protected. These traditions and beliefs that are often referred to as ‘taboos’ represent the major source of guiding principles for regulating and directing the behaviour of individuals and community (Afe, 2013). Taboos which places restrictions on some activities such as cutting down trees, killing of some animal/fish species are well respected by the people in the various coastal communities in the NDR, as stricter sanctions are placed on defaulters than what is stipulated in the statutory laws (Adekola and Mitchell, 2011).

According to Ipinlaye (2010 cited in Afe, 2013), unlike sanctions from other institutions that have to wait for a given period before defaulters are punished or mitigated by God’s mercy, taboo sanctions were believed to be automatic and instantaneous. For example in the coastal communities of Ondo State, Ehinmore (2010 cited in Afe, 2013) noted that one of the major ways through which the traditional institutions mitigates any form of crime and ensure social justice was to invite the spirit of the ritualistic agent of ‘*Ayelala*³¹’ over anything a taboo has been placed upon. In view of the traditional roles of the local communities in the region in the conservation of BES, this thesis suggests that their involvement in policy formulation and decision-making is necessary for the attainment of environmental sustainability of the region.

5.7.10 First order governance: Day-to-day Environmental Management

In Nigeria the day-to-day regulation/control of the oil and gas sector with regards to the conservation of BES is exercised through diversity of Government institutions both at the federal and state levels which include the following:

The Federal Ministry of Petroleum Resources (FMPR)

The FMPR ministry has the mandate to manage the petroleum sector in Nigeria as well as to develop and implement government policies in the oil and gas sectors. However, the day-to-day regulation of this sector is carried out by the DPR, a parastatal under the FMPR. The crucial role DPR is saddled with includes the following:

³¹ A deity regarded as having an unbroken extensive power in the administration of social justice.

- ✚ Ensures compliance with industry regulations; process applications for licenses, leases and permits, enforces most of environmental regulations.
- ✚ Promotes the exploration and management of prospective acreages for hydrocarbons besides the production, import, export, transport, storage and commercialization of oil and gas resources.
- ✚ Performs a major role in issuing concessions (production sharing contracts) and the allotment of oil and gas acreages.
- ✚ Drafts legislation and regulations and their application for the exploration, transport and storage of hydrocarbons.
- ✚ Supervises all petroleum industry operations being carried out under licenses and leases in the country so as to ensure compliance with the relevant laws and regulations.
- ✚ Enforces safety and environmental regulations, ensuring that those in operation follow the national and international industry practices and standards.
- ✚ Maintains records on petroleum industry operations, particularly petroleum reserves, production and exports of crude oil, gas and condensate, licenses and leases besides rendering regular reports on them to Government.
- ✚ Advises Government on technical matters and policies that may impact the administration and control of petroleum.

Nigerian National Petroleum Corporation (NNPC).

As noted above, NNPC is the national oil company in Nigeria and the majority shareholder in all of the oil and gas projects in the NDR. Though the MNOCs most often have operating responsibilities, senior management and financial decisions are ultimately determined by NNPC (UNDP *et al.*, 2012). The National Petroleum Investment Management Services (NAPIMS) is a Corporate Services Unit (CSU) in the Exploration and Production Directorate of the NNPC. It is responsible for managing Nigeria Government's investment in the upstream sector of the oil and gas industry including environmental management issues. While there is evidence of a commitment to social responsibility by NAPIMS, it does not outline its support for biodiversity.

Federal Ministry of Environment (FMENV)

The broad responsibility of FMENV is to coordinate environmental protection and natural resource conservation for sustainable development, including to:

- ✚ Secure a quality of environment adequate for good health and well-being;
- ✚ Conserve and use the environment and natural resources for the benefit of present and future generations;
- ✚ Restore, maintain and enhance the ecosystems and ecological processes essential for the functioning of the biosphere so as to preserve biological diversity and the principle of optimum sustainable yield in the use of living natural resources and ecosystem;
- ✚ Raise public awareness and promote understanding of the essential linkages between the environment and development and encourage individual and community participation in environmental improvement.

The FMENV's Department of Environmental Assessment (DEA) is responsible for overseeing and managing the EIA process, as shown in the bullet point pathway below:

- ✚ Oil and gas companies submit project proposal to the FMENV (DEA), for screening to determine the need for EIA;
- ✚ The vetting of Terms of Reference (TOR) by DEA for the EIA studies to ensure that all significant issues (impacts) are studied;
- ✚ Optional site visit/verification exercise may be required to aid the process;
- ✚ EIA conducted by private consultants/firms. Oil and Gas companies often contract baseline data gathering, stakeholder consultation, and report preparation to independent consultants and private environmental consulting firms with expertise in the field;
- ✚ Oil and Gas companies submit draft EIA report to DEA for review.
- ✚ In-house DEA review of the draft EIA; comments/feedback provided to oil and gas companies.
- ✚ Submission of revised final EIA report to DEA.

Both NESREA and NOSDRA are parastatals under FMENV and are relatively new environmental agencies responsible for the enforcement and overseeing due diligence. NESREA for instance, is responsible for establishing minimum operating standards and proposing policies and legislation. Although NESREA's mandate is national and pertains to several types of environmental issues, the Agency has however been interdicted from performing any role regarding oil and gas sector (NESREA, 2008b). NOSDRA's oversight function is mainly operational with respect to oil spills, with some enforcement responsibilities.

Niger Delta Development Commission (NDDC)

NDDC was established as an intervention agency in 2001 with the objective of implementing physical development of the NDR as well as address the extensive environmental problems that characterise the region.

Federal Ministry of Niger Delta Affairs (FMNDA)

FMNDA was established in 2009 following the incessant conflicts by the truculent youths in the NDR which escalated to the level of destroying oil and gas infrastructure. It is one of the newest dynamics that have taken place in the governance of the sector. The Ministry has the responsibility to ensure peace in the region as well as addressing environmental problems that have been orchestrated by oil and gas activities in the region.

Ondo State Ministry of Environment (OSMENV)

Environmental management institutions exist at the State level, primarily through State Ministries of Environment. The State level institutions are critically important in the management of oil and gas environmental-related issues in the NDR. With the establishment of the FMENV, the OSMENV like its counterparts in the rest of the NDR was established to complement the efforts of the FMENV and has responsibility to ensure that state laws and regulations on the environment are obeyed. While the FMENV has responsibility over EIA, the state ministries of environment do not have such control but they facilitate the process since land belongs to the respective state.

Ondo State Oil Producing Areas Development Commission (OSOPADEC).

OSOPADEC is the pioneer state-developmental agency in NDR. It was established in 2001 through the Act of the State Assembly as an interventionist agency to cater for the development of the oil producing areas of the state, following the period of long neglect and environmental degradation accompanied by sustained agitation and restiveness like the other parts of the NDR of the country (ANEIJ, 2004; UNDP, 2006; OSOPADEC, 2008).

Ilaje Local Government Area (ILGA)

ILGA is the local administrative headquarters of where oil and gas activities are being exploited in Ondo State. It is the first place of call whenever there is any problem associated with oil and gas activities by the communities.

5.8 Summary

This chapter has demonstrated that the NDR is diverse as it holds a mixture of ecological vegetation types typified by a wide range of flora and fauna and abiotic factors that play significant roles in the ecosystem in addition to a variety of anthropogenic actors. However, the demand for some of these resources as a source of livelihood by the local communities and raw materials in the exploitation of oil and gas resource to generate foreign exchange for the country have put a lot of perturbations on the natural system, with negative consequences on both biotic and abiotic elements.

IG is chosen as entry point for this study as it allows for a clearer comprehension of the level of involvement of the varied actors, the interactions that exist between and among them as well as the contributions of each actor to the overall outcomes of GS particularly degradation of BES.

The next three chapters will focus on the analysis and discussion of the empirical data gathered from the fieldwork.

Chapter 6. System-to-be Governed: Oil and Gas Activities and Impacts on Biodiversity and Ecosystem Services in the Niger Delta Region

6.1 Introduction

In chapter five the NDR was presented as the epicentre of oil and gas activities in Nigeria as well as a region well-endowed with rich biodiversity and ecosystems that are undergoing serious degradation particularly from the impacts of oil and gas industry. This chapter presents the empirical data gathered from the two-case studies through FGD and interviews; it later discusses how these results affect existing understanding of BES.

Kooiman (2008) contends that in the governance of any resource such as oil and gas, an understanding and assessment of the system-to-be-governed which encompasses both the natural and socio-economic aspect of the social system (NDR) is very important. Consequently, this study emphasizes the momentous upshots of the industry's activity and impacts on BES in the NDR and advances IG developed by Kooiman (2003) as a framework for the effective conservation of BES as a system-to-be-governed.

The call for the adoption of IGF in the oil and gas sector in Nigeria has become imperative. The impacts of oil and gas activities on the fragile ecosystem of the NDR are captioned in the words of Ibeanu (2008, p. 11):

“Pollution arising from oil spillage destroys marine life and crops, makes water unsuitable for fishing and renders many hectares of farmland unusable. Brine from oil fields contaminates water formations and streams, making them unfit as sources of drinking water. [...], flaring gas in the vicinity of human dwellings and high pressure oil pipelines that form a mesh across farmlands are conducive to acid rains, deforestation and destruction of wildlife.”

6.2 Oil Producing Communities and BES: From Meta-Governance process to Action

6.2.1 Meta-governance Process: Values, Norms and Principles

The OPCs' perception of BES and the benefits they derive from it have strongly influenced their definition and interactions with BES. Interviews with the locals in the two coastal communities in this study revealed that the sustenance of the people is intrinsically linked to the benefits they derive from their immediate environment (ES), hence, they treasure BES like human life. Two cases are provided as exemplars below on the people's perception of BES and its importance [BES] to them:

“Our environment [BES] is our life; it is our hope, our future and our heritage. [...], if you travel round the coastal communities in Nigeria, or outside the country to Cameroun or Gabon, you'll see our people [Ilaje] there because we are naturally

connected to water and that is why we are predominantly involved in fishing. [...]. Everything in our environment is very useful for our well-being” (FGD, 2013).

“[...], the mangrove trees in our community are used for the building of our houses (pillars, walling, roofing and flooring). We also use mangrove for carving of canoes, canoe paddles, fishing traps, pestles, combs, fuel wood for cooking and fish drying among others” (FGD, 2013).

The remarks above confirm the reliance of the OPCs on the ES particularly from the mangroves, land and water for their well-being. It also shows the norms among the people in the OPCs and the values they attached to BES.

6.2.2 Decision-making

It is imperative to state that the OPCs in Ondo State like many other coastal communities in NDR managed their environment long before the discovery of oil and gas. Management regimes were mostly driven by traditional and religious motives and conducted through the designation of traditional reserves and harvesting periods. For example, the traditional institutions in the two case-study communities and like in other coastal communities in the area have long been regulating human activity with regards to conservation of BES. They are usually unanimous when it comes to decision-making that borders on BES. According to a member of a FGD:

“We have been protecting our environment [BES], prior to the discovery of oil. We are Christians in this community and most of our things are guided by our religious belief and respect for our traditional leaders who instruct us on what to do. There are taboos and we see it as an aberration and a forbidden act for anybody to break the traditional [informal] laws and whoever breaks the law will not only be punished, his/her family will also be fined” (FGD, 2013).

The comment above shows that the people have a tradition and custom that is deeply rooted in nature and this assisted them to protect and preserve BES for generations. It is instructive to note that besides formal/statutory institutions, traditional institutions with their informal/soft governing instruments still exist throughout the NDR and local communities regard the latter than the former because of the potential consequences such as shame to the entire family and fine (penalty) that might follow their disobedience. Interviews with government officials also confirmed the claims of the communities on the traditional ways of protecting BES. One of the officials put it this way:

“[...], there is a culture that believes you have to conserve the resources from the sea like the sea turtle. To them if you capture a sea turtle and the community knew about it you’ll be sanctioned to pay some ransom and also sometimes the culprit is asked to perform ritual rights or ceremonies of burying a cow just like one is burying a human being. [...]. That is based on culture or the tradition and we are

suggesting that such tradition should be promoted” (Interview with Government Official, 2013).

The finding above shows that the OPC have values, norms and principles that guides their interactions with BES and which must be respected by other actors in the coastal environment. This study attributes the problem of degradation of BES in the NDR to the lack of recognition of the traditional institutions, some of the soft instruments they use, their values, norms and principles in the conservation of BES. This study calls for the recognition of the traditional institutions, their soft instruments and local knowledge in the conservation of BES in the NDR.

6.2.3 Action

According to Isoun (2006), sand mining is another prevalent occupation that exacerbates the rate and magnitude of riverbank erosion and decreases the downstream sediment accumulation in the NDR. While sand mining is not a common economic activity in the two case-study communities, the communities occasionally mined sand to reclaim and protect their land from riverbank and coastal erosion which they claim is affecting their buildings and thereby threatening their lives. One of the respondents in a FGD captured the use of sand mined from the water this way:

“We use shovels to excavate sand from the water to protect our community from been eroded and if not our community would have been under water now. If you look outside the window, [pointing at a place] you’ll notice some areas have been eroded and if not for the man that we lost in our community the youths would have filled it up” (FGD, 2013).

Further on the communities’ action to conserve BES, the study also found that the communities have other means of conserving BES as evinced in the statements below:

“What we do to conserve our environment is that the river [fresh water canals] and the creeks are normally closed to fishing, logging, farming, or any other human activities at a certain period of the year until the time the traditional leaders and the elders give permission for anybody to do so. Some trees like *Akoko* [*Newbouldia laevis*] cannot be cut indiscriminately and likewise some animals and birds like *Igun* [vulture: *Aegypius Monachus*] cannot be killed” (FGD, 2013).

“We have protested and written series of letters to the governments and the MNOCs, with a view to finding a lasting solution to our problems but nothing has been done about it” (FGD, 2014).

The actions of the communities in conserving BES do not in any form hinder the exploitation of oil and gas activities. The following section analyses the data collected and thereafter presented the impacts of the interactions within the SG in the NDR that show the scale and manifestations of the impacts of oil and gas activities on the BES in the region.

6.3 Negative Outcomes of the Interactions within the SG: Impacts of Oil and Gas Activities on BES (Natural System)

Based on the empirical data generated from the field and literature, this section explicates some of the negative outcomes of the interactions between the natural SG (BES) and the socio-economic SG (oil and gas activities) in the NDR. This is examined through the various stages in the oil and gas project lifecycle. There are diverse impacts associated with the various stages in the oil and gas project lifecycle commencing from site clearance, construction of roads, tank farms, brine pits and pipelines, and other land modifications for oil and gas installations (ERA, 2012; Ogwu, 2012; Ite *et al.*, 2013).

“From the point of seismic and exploration activities, through production, to transportation, the oil industry in Nigeria is noted for pollution and calamity” (ERA, 2012, p. 2).

The oil and gas project lifecycle (as the basis for assessing the impacts of the sector on BES) provides a comprehensive coverage of all the stages involved in the resource management continuum. It shows according to the IGT the diversity, complexity, dynamism and the various scales through which oil and gas activities can degrade BES. Some of the impacts of the oil and gas activities on the Niger Delta environment portrayed in the literature were confirmed by the data collected through interactions with the communities and direct personal observations conducted during this study. The deleterious state of the various ES that support the livelihoods and well-being of the people in the study communities attest to the noteworthy levels of damage.

As demonstrated in **Figures 3.4** and **3.5**, the oil and gas project lifecycle is the connecting line between the production/extraction centres otherwise known as wellhead and the burner pit or the end-consumers. This project lifecycle can be complex and sometimes indeterminate systems to many that depend on their products and services. Specifically, the situation in the Ondo State part of the NDR (the case-study communities) has been succinctly captured by some of the indigenes of the OPCs in a letter written over a decade ago explaining their plights to the State government with a view that the latter will come to their aid:

“[...] The effects of physical and ecological pollution was more pronounced and experienced when Chevron Nigeria Limited (CNL), (then Gulf Oil Company) opened our fresh water canals into the sea, for the purpose of drilling a well at Awoye sea-shore. Later, so many canals were dredged which open up virtually all the creeks into the ocean. This was the beginning of problems of drinkable water [...]. Before the drilling of the canals into the sea [...], people were enjoying drinking fresh water throughout the years. [...] Fishing which is the major occupation of all the inhabitants has now become a thing of the past [...]. This has resulted into mass unemployment of our people.” (The Concerned Ilaje Citizens, 1998, p. 2).

The comment above will be investigated further in this study. In doing justice to the first research question raised in this study the various stages in the oil and gas project lifecycle and their impacts on BES are considered in the following section.

6.3.1 Pre-production Stage in the oil and Gas Production Cycle

This stage is the exploratory stage in the oil and gas production cycle and according to Ite *et al.* (2013), it includes geological survey, aerial survey, seismic survey, gravimetric and magnetic survey, exploratory drilling, and appraisal activities that take place before the development of a field is finally decided. As noted by Boardman Energy Partners (2014), prospecting for oil and gas activities usually requires employing various confirming geological, geophysical or geochemical technologies such as seismic surveys shown in **Table 6.1**.

Table 6.1: Seismic Survey

Seismic Survey Technologies		Use
(i)	Two-dimensional seismic (2D seismic)	This helps to create two-dimensional seismic lines through the laying of geophones in a single line.
(ii)	Three-dimensional seismic (3D seismic)	This is primarily a dense grid of the 2D lines.
(iii)	Four-dimensional (4D seismic)	This technology increases a time lapse variable to 3D seismic, performing repeated 3D seismic surveys over a producing hydrocarbon field over time.
(iv)	Reprocessing seismic data	This involves using computer models for clean-up and enhance seismic data
(v)	Geochemical techniques	It is a modern day technology through which analysis of soil samples at the surface is correlated to petroleum accumulation at depth.
(vi)	Radar Gas Imaging	This sensing technology are flown over an area to seek for hydrocarbons seeping from the earth and this is predicated on the assumption that hydrocarbons are generated and/or trapped at depth and leak in varying but perceptible quantities to the surface.
(vii)	Magnetic surveys	This helps a prospector to determine where oil-bearing sedimentary rock is more likely to be found since most oil occurs in sedimentary rocks that are nonmagnetic unlike the igneous and metamorphic rocks that rarely contain oil and are highly magnetized.

Source: Adapted from Boardman Energy Partners (2014).

However, these exploratory operations have been noted for having potential impacts including noise pollution; habitat destruction and acoustic emission; drilling discharges such as drilling fluids (water based and oil based muds) and drill cuttings; atmospheric emission; accidental spills/blowout; and solid waste disposal (Ite *et al.*, 2013).

These exploratory activities have the tendency to destabilize the ecosystem equilibrium of a given place, thereby causing the displacement and death of many wild animals, aquatic and marine fishes, marine mammals, and discomfort within human communities.

Air, land, water, light and noise pollution are parts of the environmental impacts that are associated with the various stages in the oil and gas production chain that have direct bearing on the degradation of BES in the NDR. According to Okeagu *et al.* (2006) oil and gas pollution in Nigeria has adversely affected the atmosphere, soil fertility, waterways and mangrove, wildlife, plant life and caused acid rain in the NDR.

Noise Pollution

In the NDR noise from seismic activities has been identified as source of pollution that can scare wildlife and impair hearing (Chinweze *et al.*, 2012). It was established during group discussions that wildlife that were available to them in the past as food are no longer available in the forests due to oil and gas activities that have scared them:

“We used to kill various animals in our forests that make good delicacies for us but they are no longer there because they have been scared by the incessant noise from oil/gas activities. All the hunters here have left because there is no job for them again” (FGD, 2013).

While the communities’ claim may be a factor to reckon with, it may as well be due to over-hunting. Over 80% of the respondents in the FGDs from the two case-study communities expressed their concerns about the noise and vibrations which they usually experience as a result of the on-going seismic activities of the oil and gas industry taking place within their vicinity. This is best described by one of the respondents who notes:

“The noise and the reverberation of the blast of the dynamites during seismic survey usually scared us whenever we are in the bush/farmland. By the time you get to the scene you will see the hollow ground. [...], its vibrations usually cause the wooden pillars of our buildings to sink” (FGD, 2013).

Readings from literature further corroborates the respondent’s stance on the problems associated with exploratory stage in oil and gas activities. These problems include ecosystem

destruction and interference with land use to access onshore sites and marine resource areas; environmental pollution (air, soil and controlled water) and safety problems associated with the use of explosives; land pollution which affects plants and pose human health risks; groundwater contamination and adverse effects on ecological biodiversity (Ite *et al.*, 2013, p. 82).

As pointed out by Goines and Hagler (2007), chronic environmental noise causes a wide variety of adverse health impacts, including cardiovascular disease, noise-induced hearing loss (NIHL), sleep disturbance, social handicaps, reduced productivity, impaired teaching and learning, absenteeism, increased drug use, and accidents (WHO, 2011). This study found that some of the noise pollution-related diseases have become a commonplace in the study communities as noted by one of the respondents during group discussion:

“Maybe due to the noise from seismic activities of the MNOC that is on-going in our environment, we’ve been experiencing problems of sleep disturbance and hearing impairment particularly during the day” (FGD, 2013).

While the communities continue to point fingers on the lack of monitoring of the oil and gas activities, the governments have defended themselves (Interview with Government Official, August 2013), indicating that they conduct quarterly monitoring of oil and gas activities in the OPC. However, interview with the non-governmental organisations (NGOs) suggests that monitoring and evaluation of oil and gas activities is very weak (Interview with NGO, 2013).

Sea Incursion and Coastal Erosion

Another important aspect of the pre-production stage in oil and gas activities is the laying of pipelines for easy transportation of the resource. This stage will require acquisition and clearing of lands or construction of canals for access depending on where the oil and gas activity is taking place which according to Ogwu (2012) often results in a loss of farm lands and fishing grounds. This research revealed that following the discovery of oil and gas in Ondo State, Chevron which is the only major oil company operating both onshore and offshore in the state, dug a canal through Awoye to connect its oil platform in Opuekeba (**Figure 6.1**) to its oil terminal in Escravos in the Atlantic Ocean with a view to improving its activities.



Figure 6.1: Opuekeba Oil Platform, Ondo State
Source: Fieldwork (2013).

The pipelines for transporting oil from the platform to the oil terminal were also buried under the water (canal) that passes through Awoye community thereby creating various problems for the community and other neighbouring communities. The majority of the respondents in the FGDs in both communities blamed the canalisation done by the MNOC as the bane of their lives. They lamented it has caused the problem of sea incursion, coastal erosion, aquatic contamination, extinction of aquatic animals and fishes, flooding, and lack of safe drinking water. The research gathered that due to the problem of sea incursion, Awoye had lost its original location into the Atlantic Ocean and the people had been displaced severally and this is corroborated by one of the respondents during the FGD:

“[...], moving towards the sea shore you will discover that where our community is presently is the fourth location. This is because our land has been opened up to sea incursion due to Chevron’s oil pipelines that connect its platform at Opuekeba [location of oil platform close to Awoye] to the oil terminal at Escravos in the Atlantic Ocean through our community. Our water has been polluted, no water for us to drink, and there is no fish, [...]” (FGD, 2013).

The view of the communities was also supported during interviews with the NGOs and government officials as revealed in the statements below:

“We saw in one of our visits to the seaside that was co-sponsored by NIMASA that the rate of incursion from the Atlantic Ocean was higher than what was reported by some scholars [...], particularly in places like Idi-gbengbe, Aiyetoro and Awoye. [...], we saw evidences through previous housing pillars that the people in Awoye have relocated from their original location thrice” (Interview with NGO, 2013).

“We are aware of the environmental challenges in Awoye and neighbouring communities. We have constructed series of shoreline protection projects in the area and we would not stop at that until the problem is addressed” (Interview with Government Official, 2013).

However, the oil company in question was not accessible during the fieldwork to verify its stance on this. Despite the efforts of the government, the problem still persist. This finding lends credence to the earlier studies by Ebisemiju (2001), Etuonovbe (2007), and Olorunlana (2013) which noted that due to the canal constructed by an oil company in Awoye area of Ondo State

that in addition to various problems such as saltwater intrusion the community has also lost some hectares of land to the Atlantic Ocean.

In addition to the extensive deleterious impact coastal erosion being orchestrated by oil and gas industry is having on the buildings, canals and mangrove forest, it is also having a far-reaching effect on the farmlands of the coastal communities. It was a collective opinion of the respondents in both communities that they have lost sizeable portion of their lands and farm products due to the problem of coastal erosion:

“Apart from oil pollutants, coastal erosion is another major threat to the survival of our crops in our farms where we plant series of crops like plantain, banana, cassava, mango, orange, vegetables like okra and amaranth. We are just suffering now because our crop yield and harvest have been destroyed and some washed away by erosion” (FGD, 2013).

The communities view on erosion was buttressed during interviews with the NGOs.

“Coastal erosion is one major problem the communities in that area are contending with. Apart from its threats to their houses, it’s seriously affecting their farmlands and crops” (Interview with NGO, 2013).

The communities’ claim was further substantiated during direct field observation as shown in **Figure 6.2** of a banana farmland being threatened by coastal erosion in the NDR. The foregoing finding suggests that the canalisation of the canal by the MNOC has not only affected the regulating services of the ecosystems which made the OPC vulnerable to coastal environmental problems but has also rendered the provisioning services ineffective by creating problems of food insecurity for them. This study confirms the finding of Okeagu *et al.* (2006) and Chinweze *et al.* (2012) which established that oil and gas activities has created problem of food insecurity in the NDR.



Figure 6.2: Coastal Erosion in Ondo State
Source: Fieldwork, (2013).

Problem of Dredge Dump

Another major contributor to mangrove destruction found in this study is the problem of dredge dump along the coastal corridor. According to Angonesi *et al.* (2006) and Essink (1999), dumping of dredged sediments which usually range from mud to silt in the coastal environment or waters may result in increased turbidity and enhanced sediment deposition at dump sites. To the authors, this will have detrimental effect on the principal production of phytoplankton³², functioning of discernible predators such as fish and birds, and growth and existence of benthic organisms.

One of the government officials interviewed noted that due to the problem of siltation which may occur naturally or as a result of incursion from the sea and with the tendency of being heightened during the period of low tides, the canals are re-dredged regularly to enhance navigation. The communities confirmed this but also noted that the exercise was not as regular as claimed by the government. However, as good as this practice is, it was discovered during field observations that the dredged sediments from the canal were dumped along the water corridor (**Figure 6.3**) where it has destroyed expanse of mangrove vegetation. Although Nabi and Brahmaji Rao (2012) point out that mangrove plants are reputed to withstand high salinity, tidal extremes, and high fluctuations in wind, temperature and muddy anaerobic soil, other species and organisms (see **Figure 2.7**) that will ordinarily contribute towards a healthy ecosystem and support the survival of the plants may not be able to tolerate the turbidity and salinity. Similarly, there is every tendency that rainfall which is heavy in the region will wash some of the dredged sediments back into the water and this will not only further exacerbate the already contaminated water but also the destruction of the benthic lives.



Figure 6.3: Dredge Dump in Ondo State
Source: Fieldwork, (2013)

³² These are microscopic marine plants often referred to as microalgae that provide food for a wide range of aquatic creatures such as whales, shrimp, snails and jellyfish in a healthy ecosystem.

6.3.2 Production Stage in the Oil and Gas Production Cycle

The activities at this stage in the oil and gas project lifecycle encompass development and production³³, refining of petroleum products, and transportation and distribution³⁴ (Ite *et al.*, 2013). Some of the potential risks associated with this stage include discharges of effluents (solids, liquids and gases); operation discharges; atmospheric emission; accidental discharge of oil spills; deck drainage; sanitary waste disposal; noise pollution; socio-economic/cultural issues; discharges from transporting vessels. Ecosystem despoliation; contamination of soils and sediments; environmental (air, water, soil) pollution; ground water contamination; ecological problems; health and safety issues; and socio-economic problems are the fallout of these risks (Ite *et al.*, 2013, p. 82).

Problem of Oil Spill

One of the major problems that characterises oil and gas activities across the globe either at onshore or offshore level, even in the technologically advanced nations is the issue of oil spill. It is an unavoidable menace because it can occur anytime in the production cycle through intentional or unintentional act. The NDR is not immune from the problem of oil spill and as revealed by Nwilo and Badejo (2008), every year oil and gas activities in Nigeria cause disaster as massive as the Exxon Valdez³⁵ in US. Drawing from Ogwu (2012) and Ite *et al.* (2013) and as demonstrated in **Figure 6.4**, oil spill in the NDR occurs through different sources including pipeline explosion; operational failure; pipeline rupture; sabotage and pipeline vandalization by the irate youths or militants; and through stealing³⁶ that is often referred to as bunkering.

³³ Activities at this stage include development drilling; processing; separation and treatment; and initial storage

³⁴ This is another stage in the production cycle where petroleum products are conveyed from the platform to another location either through pipelines, barges, and ships. At times the Floating Production Storage Offloading (FPSOs) vessels are used for receiving, processing and storage of hydrocarbons from nearby platforms or subsea template before it is finally offloaded into a ship or transported via pipelines.

³⁵ The Exxon Valdez oil spill is the second largest oil spill to have occurred in the USA in which according to Carson *et al.* (2003), 11 million gallons (462,000,000 barrels) of Prudhoe Bay Crude oil was released into Prince William Sound.

³⁶ Another form of stealing often practised in the region is the illegal refining of crude oil. This is discussed in Chapter three and this as noted by UNEP (2011) also contribute to the volume of oil being spilled into the environment.



Figure 6.4: Showing major causes of oil spillage in the NDR as gleaned from Ogwu (2012) and Ite et al., (2013).



Figure 6.5: Oil Spill site at Ojumole in Ondo State
Source: ERA (2012).

As shown in **Figure 6.5** above, oil spill is experienced in the study area as it is in the other parts of the NDR where it has created a lot of environmental, socio-economic and health impacts on the lives of the coastal communities. Apart from the oil slicks covering and polluting the entire water body which is the major source of drinking water for the people in the study area, it has destroyed the ecosystems thereby hindering the communities from benefiting effectively from the ES.

Despite these, the gravity of the havocs this will wreck on a given land and environment can better be appreciated if the quantity of oil spilled is considered. Readings from literature confirms that series of oil spills have occurred in the NDR resulting to millions of barrels spilt into the environment in the region (see UNDP, 2006 and Chinweze at al., 2012). Obtainable data from the DPR during this study (**Figure 6.6**) revealed that between 1985 and 2012 the sum of 12,089 oil spill incidents have occurred leading to the discharge of 1,279,232.70 barrels of crude oil (**Figure 6.7**) into the environment. Just as Gilbert (1999) notes only about 20% of over 2 million barrels of crude oil spilled between 1976 and 1996 was recovered with about 80% left on the environment; a substantial quantity of the spilled reported by DPR may also not have been recovered thereby contributing to the degradation of BES in the region.

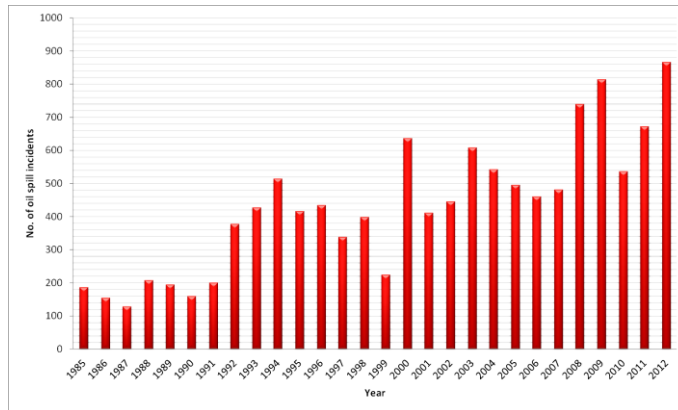


Figure 6.6: Number of Oil Spill Incidents in the NDR
Source: DPR (2013) ‘personal Communication’.

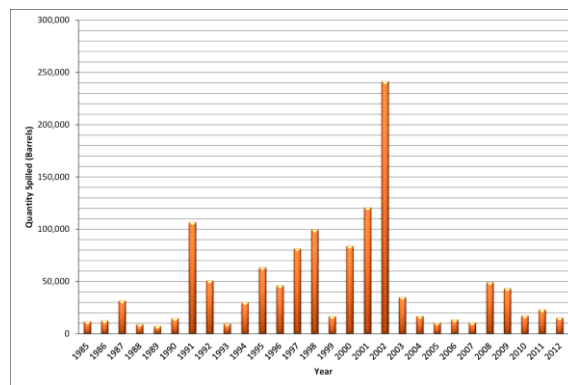


Figure 6.7: Quantity of Oil Spilled in Barrels
Source: DPR (2013) ‘personal Communication’.

While the DPR noted that the figures were based on incidents reported by the MNOCs, Moffat and Linden (1995) maintained that MNOCs working in the region understate the quantity of oil spilt and sizeable number are not reported in most cases. This is indicative of the fact that the quantity of oil spilt reported could be as high as times ten of what is officially reported (Ibid).

The destruction of mangrove as one of the fallout of oil and gas pollution in the NDR has been documented as a serious problem in the region since 1976 (Isichei and Sanford). Similarly, as exemplified in **Figure 6.5** and established in the study of Nwilo and Badejo (2008) is the loss of mangrove trees due to their inability to withstand the toxicity from oil spills in the NDR. It is however instructive to state that the impact of the toxicity of oil spills may transcend the death of mangrove trees alone to include other visible and invisible species within the ambient habitat that contribute to the functionality of healthy ecosystems which may not be able to tolerate the turbidity and salinity.

On the interdependent relationship between plants and animals living within an ecosystem, USEPA (2012) established that animals and plants do not have uniform level of acid tolerance and that as aquatic ecosystems become more acidic the numbers and types of fish and other aquatic plants and animals that live in these waters decrease. Furthermore, evidence abounds of the contribution of the impacts of oil and gas activities to the extensive damage of ecosystems in the NDR with corresponding threat on the food security of the region and the nation at large. Okeagu *et al.* (2006) and Chinweze *et al.* (2012) established that while the oil spilled into aquatic environments affect the coastal marshes, mangroves and wetlands, the mangrove which is the habitat and nursery for numerous fish species such as fin-fish and shellfish among others that are of commercial value in the region are destroyed. The destruction of the mangrove not only destroys the fishery industry and livelihoods of the host community but exposes the sandy-beach to sea waves and coastline erosion, increasing the possibility of inundation of the region due to sea level rise (Chinweze *et al.*, 2012; Popoola, 2012).

This shows a direct impact on provisioning and regulating services of the ecosystems with the tendency of impacting other ES. This viewpoint was further corroborated by the people in the study communities during FGD who lamented the loss of some fish species and lack of regular catch of fresh fish in their vicinity lately due to the salinity or chemical composition of their water which was caused by impacts of oil spills. The people also noted that the lack of regular catch of fish has compelled them to be relying on imported fish³⁷ as an alternative source of protein. Two elderly men that were parts of the respondents during FGD from both communities incisively captured this:

“[...], honestly, it is a paradox for us to be living on water where we used to get fish in abundance to now begin to buy fish to survive” (FGD, 2013).

“[...], if you ask some of our younger children the different types of fishes common in this community you’ll be shocked they’ll not be able to mention them all because they did not know we used to catch fishes like Agbadagiri [African Arowana], Ekikiri [Climbing perch], Aro [Walking Catfish], Aso [African Catfish] Toko [Grey Mullet] here before our water was polluted by oil” (FGD, 2013).

The threat of the toxicity from oil spill on the mangrove in the region and particularly on fish and some endangered species such as the manatees (see **figure 6.8**) and marine turtles was further confirmed by one of the government officials interviewed who noted that:

“In addition to different fish species, the Ondo State coastal environment is endowed with all the species of sea turtles including the Loggerhead Turtle (*Caretta caretta*), Green Turtle

³⁷ According to the people the imported fish which is often referred to as iced fish by the people in the communities are brought to their communities from the cities and they are usually expensive.

(*Chelonia mydas*), Leatherback Turtle (*Dermochelys coriacea*), Hawksbill Turtle (*Eretmochelys imbricate*), Kemp's Ridley (*Lepidochelys kempii*), Olive ridley (*Lepidochelys olivacea*), and Flatback Turtle (*Natator depressa*). Oil spill is threatening their existence and some are gradually going into extinction” (Interview with Government Official, August 2013).



Figure 6.8: African manatee (*Trichechus senegalensis*)
Source: Wetlands International Africa (2012).

The comments above which have direct link with provisioning services and education (cultural services) of ecosystems in the coastal areas of Ondo State were further corroborated by another government official interviewed who expressed the fear that the trend may continue unabated except a baseline study of the area is conducted urgently:

“To stem the rate of extinction of fish and animal species in the NDR, there is need for preparation of baseline study/survey of the area by all stakeholders including the communities to determine the state of the biodiversity in the region. This must be followed by a periodic auditing” (Interview with Government Official, 2013).

In a region like the NDR where basic infrastructures are lacking, the benefits the people derive from BES are invaluable. For example, an elderly man during FGD noted that:

“Due to lack of hospital we use many of the leaves of the plants around us for herbs/medicinally for bathing new born babies, their mothers and anybody that is sick. Fish like catfish are also cooked with alligator pepper as medicine but unfortunately we don't catch that fish here again” (FGD, 2013).

The implication of the above finding is that the loss of some fish and animal species in these communities have denied the present and future generations of children and by extension the academic community (research purposes) the educational benefits (cultural services) they supposed to derive from such resource.

Land Pollution

The impact of oil spill in the NDR has manifested in destruction of soil fertility, affects farmlands including fauna and flora, low agricultural production, death of plants and animals (Akinola, 2003; Okeagu *et al.*, 2006; Ajakaiye, 2008; Nnubia, 2008; Chinweze *et al.*, 2012), as well as birds in the host communities (Ajakaiye, 2008). Similarly, Atuma and Ojeh (2013) and Dung *et al.* (2008) document the impact of gas flaring on soil and agricultural products while Efe (2010) noted the changes to the ecosystems due to the flaring of oil and gas.



Figure 6.9: Farm land impacted by oil spillage
Source: Ajakaiye (2008, p. 7).



Figure 6.10: Seabirds killed due to oil spill in NDR
Source: Ajakaiye (2008, p. 13).

While no animal or bird killed as a result of oil spill or gas flaring was seen during the study in the two communities, **Figures 6.9** and **6.10** above show an impacted farm land and sea birds killed due to oil spill incidents in the NDR. The people during group discussion regretted the despoliation of their farmlands, low agricultural outputs, loss of fishing grounds, and extinction of plant, animal and fish species in their environment. This is tersely captured by one of the respondents in Ojumole:

“[...]. Where we cut weaving mats have been burnt, our farmlands have been rendered infertile, and there is no fish again in the creeks/bush and this has gross implication on our right to adequate food” (FGD, July 2013).

Interviews with the government officials and the NGOs established that lands in some OPCs have been degraded due to the impacts of oil spills and gas flaring. One of the government

officials involved in the conservation of biodiversity confirmed the impacts of oil spill and gas flaring on the land stating that:

“[...] we have some areas where pollutants from oil and gas have affected the environment. The vegetation yellowish in colour instead of green which suggests that the process of photosynthesis that enhances plant diversity has been impaired. This has the tendency of affecting agricultural production negatively” (Interview with Government Official, August 2013).

The communities' remark above that is well corroborated by the government official above might be interpreted as another way through which the problem of poverty and food insecurity in the NDR have been exacerbated by oil and gas pollutants. The finding confirms the earlier study on the contribution of oil and gas pollution to poverty and food insecurity in the region (Okeagu *et al.*, 2006; Chinweze *et al.*, 2012).

Water Pollution

Water is part of the basic necessities of life required for the well-being of plants and animals including humans. Going by the MEA's categorisation of ES as discussed in chapter two freshwater and purification of water fall under the provisioning and regulating services of the ecosystems respectively. However, the continuous pollution of the surface and underground water from oil and gas pollutants in the NDR is causing water pollution in the region (UNDP, 2006; NDDC, 2006; UNEP, 2011) and in Ondo State (OSOPADEC, 2008; Ogele, 2009; Olujimi *et al.*, 2011). This problem portends serious threats to human health (UNDP, 2006; UNEP, 2011; Chinweze *et al.*, 2012).

Empirical data from the group discussions in the two case-study communities revealed that due to the continuous demand for water, the federal and state government tried to provide water (**Figure 6.11**) but unfortunately the water is not good for human consumption. One of the respondents in Awoye expressed it in this way:

“The water provided for us by NDDC is very dark and the moment you bath with it your body will be itching you as if you applied lubricant or okra in your body. The water is not in any form good for our consumption” (FGD, 2013).



Figure 6.11: Drinking Water provided by Government
Source: Fieldwork, (2013).

As indicated from interviews with the government officials and to NGOs; government's efforts at providing water for the people had not yielded positive results as water produced in some communities is not good. One of the NGO's specifically noted that it takes some communities up to six hours before they could get drinking water:

“[...], we discovered during a joint visit to the area involving our NGO, OSMENV, OSOPADEC and NIMASA that it takes a journey of between four to six hours before some communities can get good drinking water” (Interview with NGO, 2013).

“[...], we are trying to test-run the reverse osmosis to get potable water from the sea so that our people can have good water, [...]” (Interview with IRDC, 2013).

As shown in the remark above, the problem of drinking water was further established during interview with IRDC who is working on the CSR programmes of the MNOCs on how to provide solution to the lingering problem of water in the area.

Consequently, the people depend on rainwater harvesting (**Figure 6.12**) as alternative source of water. Although, the people have some scepticisms about the purity of the rainwater as shown in the comment above but they utilise the water for lack of alternatives. Studies revealed that the rainwater chemistry has been impacted by emissions from flare systems and atmospheric deposition of pollutants (Uzomah and Sangodoyin, 2000; Nduka *et al.*, 2008; Ejelonu *et al.*, 2011; Nwankwo and Ogagarue, 2011). Nduka *et al.* (2008) and Uzomah and Sangodoyin (2000), specifically noted that rainwater from all the industrial cities in Nigeria has increased in acidity.



Figure 6.12: Rainwater Harvesting in NDR
Source: Fieldwork, (2013).

This finding confirms the earlier studies conducted in the area (OSOPADEC, 2008; Ogele, 2009; Olujimi *et al.*, 2011). According to Idodo-Umeh (2010), the Nigerian crude oil contains heavy metals like aluminium (Al), Zinc (Zn), Arsenic (As), Barium (Ba), Iron (Fe), Lead (Pb),

Cobalt (Co), Chromium (Cr), Manganese (Mn), Gallium (Ga), Antimony (Sb), Nickel (Ni), and Vanadium (V). This possibly explains why the surface and underground water in gas flared environments have high concentrations of heavy metals such as chloride, nitrates, magnesium, manganese, sulphates, lead, cadmium, copper, calcium, potassium, zinc and selenium compared to the non-gas flared area (Idodo-Umeh, 2010; Nwankwo and Ogagarue, 2011; Egwurugwu *et al.*, 2013b). Exposure of humans to some heavy metals like Pb, As, Ba, and Cd (Cadmium) such as those present in the oil and gas flared in the NDR, can engender increased blood pressure in the life of people (Satarug *et al.*, 2006; Satarug *et al.*, 2010), and can adversely affect kidney (Egwurugwu *et al.*, 2013).

Another source of drinking water that communities rely on is the water fetched at opuekeba flow station (**Figure 6.13**). As pointed out by the people, it takes two to three days before the water can be consumed because the water is usually very hot when fetched.



Figure 6.13: A woman returned from fetching drinking water from Opuekeba Flowstation. Source: Fieldwork, (2013).

Although there are issues of water purity as contained in a letter written to the government over a decade ago:

“The only source of water is at Opuekeba flow station. The water [...] is not meant for drinking but for cooling gas turbine. When fetched, it has to be kept for about three days before it becomes drinkable.” (The Concerned Ilaje Citizens, 1998, p. 7).

Figure 6.14 below shows typical sachet water in Nigeria which the people drink as an alternative source to the one fetched at the flow station or rainwater though very expensive compared to what people in the cities pay for a sachet. During the field observation it was discovered that a sachet of water is sold for N20 (twenty naira: Nigerian currency) in the communities compared to N5 that people in the hinterland/cities pay for same sachet of water. When asked why it was so expensive compared to the amount it was sold in the cities, the water

vendor claimed it was “imported” from the cities and the cost of importation was high. The purity of the water being sold in the coastal communities cannot be guaranteed because there are myriads of sachet water producers in Nigeria (Ajayi *et al.*, 2008; Dada, 2009), as there have been outbreak of water borne illnesses due to consumption of polluted sachet water from unknown sources (Dada, 2009b). Although sachet water is being regulated by government agency (NAFDAC) but the monitoring of the water quality is poor (Ajayi *et al.*, 2008; Dada, 2009) which leaves room to doubt the purity of the water generally. The inability of the ecosystems to purify the water in the area due to oil and gas pollutants is another impact on regulatory ES in the region.



Figure 6.14: Typical Sachet Water in Nigeria
Source: Ozochibuzo (2013).

The domestic animals in the OPC are not spared from the deleterious impact of water pollution and this is succinctly captured by one of the respondents in Awoye during FGD:

“[...], we lost all our domestic animals that we used to rear in this community because we noticed shortly after they drink this polluted water they die” (FGD, 2013).

Readings of environmental reports from one of the government agencies regarding their activities in the study area made available to the researcher during this study confirms the respondent’s view as demonstrated in **Figure 6.15** below taking during the visit of the agency with other government agencies and NGO (NES) to the area.



Figure 6.15: Goat killed in Awoye after drinking water
Source: OSOPADEC (2005, p. 8).

The communities' claim about their domestic animals, this study found this to be true as it was observed during direct personal observation that domestic animals at locations/communities farther away from the direct impacts of oil and gas pollutants are alive (**Figure 6.16**), compared to those in the study areas that are in close proximity to the oil and gas activities.



Figure 6.16: Domestic Animals in coastal communities of Ondo State: Unaffected by impacts of oil/gas activities due to long distance away from production sites
Source: Fieldwork, (2013).

Problem of Gas Flaring and Venting

“Gas flaring is widely recognized as a waste of energy and an added load of carbon emissions to the atmosphere. Because the flaring combustion is incomplete, substantial amounts of soot and carbon monoxide are produced, contributing to air pollution problems.” (World Bank, 2007b, pp. 2-3).

Another major and prevalent problem identified with oil and gas activities at the production stage (across the globe) is gas flaring and venting but this problem could be mitigated through sound environmental policies (Buzcu-Guven and Harriss, 2012). Gas flaring remains one of the most thought-provoking and significant energy and environmental problems confronting the world today. Gas flaring and venting are commonly used in the oil and gas industry to describe the process of burning associated natural gas as a by-product of petroleum production. While the former describes the burning of the associated natural gas on reaching the surface, the latter talks about the process of releasing it into the atmosphere without burning (Ibid).

Flaring and venting of oil and gas associated gas has been substantially restraint in developed countries (Christen, 2004), most developing countries particularly the three main gas flaring regions of West Africa, the Middle East and Russia as shown in **Figure 4.10** are still contributing seriously to the global gas flaring menace. Although Stevenson (2012) established that there has been significant reduction in the amount of gas flared and vented particularly among the Global Gas Flaring Reduction (GGFR) partners including Nigeria. This is sequel to

the introduction of the Global Standard for Flaring and Venting (GSFV) introduced by GGFR partnership in 2004 with the objective of assisting the efforts of the national governments and oil industry to mitigate flaring and venting of associated gas (Ibid).

“The Nigerian government, the GGFR and oil and gas operators have developed a collaborative approach to flare reduction in Nigeria through the “Nigeria Flare Reduction Committee” (NFRC), which was set up in 2007 [...]” (Stevenson, 2012, p. 7)

The GSFV and collaborative efforts at reducing the amount of associated gas being flared in Nigeria are good steps in the right direction and as shown in **Figure 6.17**, it has really assisted in drastically reducing the quantity flared particularly from 2004 and 2007 when the GSFV and the collaborative approach were introduced and adopted respectively. Although GGFR (2006) noted that it will require some time before significant improvement on the reduction of associated gas flaring and venting becomes noticeable, whether this will be achievable in Nigeria or not will also be determined by time.

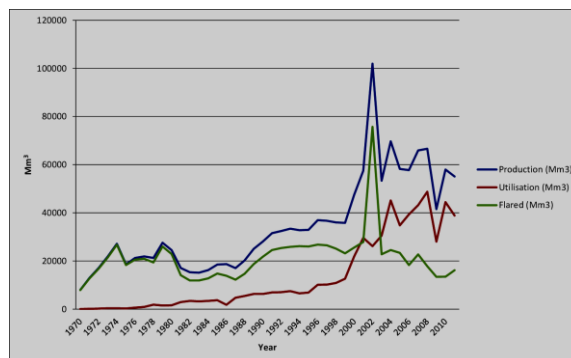


Figure 6.17: Amount of Gas Production, Utilisation and Flared in Nigeria from 1970-2011

Source: NNPC, DPR and CBN Estimates; adapted from Ite and Ibok (2013).

The practicality of achieving this over time in Nigeria may be constrained by the MNOCs as Dung *et al.* (2008) point out. They indicate that gas flaring and venting remain the desired technique employed by the MNOCs operating in Nigeria in discarding their waste gas. Similarly, as revealed in **Figure 6.17**, the amount of gas flared in Nigeria for over three decades was not only high but it profoundly surpasses the amount being utilised, notwithstanding the reduction in the amount flared lately (Stevenson, 2012). Given the quantity of gas being flared and vented presently and in the past in the NDR of Nigeria, its impact on BES in the region cannot be taken for granted. This issue remains an issue of concern locally and internationally just as Hamso (2013) rated Nigeria as the second largest gas flared nation after Russia.

Air Pollution

“Flaring of associated gas is a multi-billion dollar waste, a local environmental tragedy, a global environmental issue and an energy problem that can be solved” (GE Energy, 2010, p. 3).



Figure 6.18: Multiple Gas Flaring points in NDR

Source: Nzeadibe et al., (2011 p. 13 as adapted from ERA, 2004).

Gas flaring and venting (**Figure 6.18**) in the oil and gas operations are consistent starting points of atmospheric pollutions with diverse associated ramifications on the various ES at the local, regional and global levels. While Chinweze et al., (2012) established that there are over 100 flare sites in the NDR most of which have been burning for over five decades, Nzeadibe *et al.* (2011) reported over 123 gas flaring sites in the region. The flares contain heat, toxins and particulates that adversely affect vegetation, humans, soil, water and livelihoods of the host communities. It is estimated that in the NDR about 70 million tonnes of carbon dioxide are flared off during oil and gas activities daily (UNDP/World Bank 2004 cited in Nzeadibe et al., 2011). The global estimated annual flared volume from satellite data is 134 billion cubic meters (bcm) and Nigeria accounts for 15.2 bcm which is 11.34 per cent of the global flare rate (World Bank, 2010 cited in Chinweze et al., 2012).

As pointed out by Ajao and Anurigwo (2002) emissions from the flaring and venting of associated gas mostly contribute to the atmospheric pollution in the NDR. Apart from carbon dioxide (CO₂) and carbon monoxide (CO) that are commonly emitted during the flaring of associated gas, there are other air pollutants including volatile organic compounds (VOCs) such as carcinogens and toxics, nitrogen oxides (NO_x), sulphur dioxide (SO₂), toxic heavy metals and black carbon soot (Chinweze *et al.*, 2012; Ite and Ibok, 2013; USEPA, 2013).

On the issue of the effects of gas flaring in the NDR, it was reported that the large amount of gas flared into the air have caused respiratory infections, skin diseases, and an acid rain that has not only affected the houses of the people but has also degraded their arable land (Chinweze et al., 2012, UNDP, 2006). In tandem with the findings of USEPA on the gases associated with

flaring earlier discussed, Chinweze's report has also attributed impacts on the communities to large volumes of carbon dioxide, methane, oxides of nitrogen and sulphur it emits to the environment together with carcinogenic substances such as benz(a)pyrene and dioxin; and unburnt fuel comprised of benzene, toluene, xylene and hydrogen sulphide.

Acid Rain

Another major impact of oil and gas activities in the region which also contribute to the degradation of the various ES is the problem of acid rain. This problem is associated with gas flaring in NDR and it has been copiously established in literature (see for example ERA, 2005; Nzeadibe *et al.*, 2011; Chinweze *et al.*, 2012; Popoola, 2012). As shown in **Figure 6.19**, the chemical forerunners of acid rain formation emanate from both natural sources including volcanoes and decaying vegetation, and anthropogenic sources, mainly emissions of sulphur dioxide (SO₂) and nitrogen oxides (NO_x) resulting from fossil fuel combustion (Ibid).

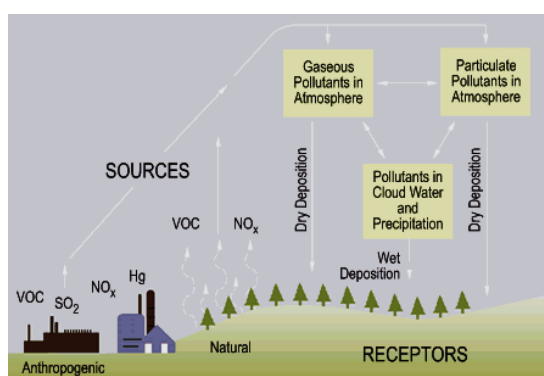


Figure 6.19: Formation of Acid Rain
Source: USEPA (2012).

Acid rain looks, feels, and tastes just like clean rain. The gases that engender acid rain (Sulphur dioxide and Nitrogen oxides) interact in the atmosphere to form fine sulphate and nitrate particles that can penetrate indoors and can as well be transported long distances by winds and inhaled deep into people's lungs (USEPA, 2012). In contrast to the normal pH of rainfall which is approximately 5.7 when the carbon dioxide equilibrium is regarded (Canter *et al.*, 1999), Efe (2010) noted that acid rain from increased SO₄²⁻ and NO₃ concentrations in the NDR is seen in the pH values that fall within 4.98 - 5.15 and mean value of 5.06. The author further maintained that rain water acidity (pH) differ considerably ($P > 0.05$) and it reduces with increasing distance from the sites of gas flare throughout the course of study. This study could not confirm this in the two-case study communities because it is beyond the scope of this study. Moreover, no previous study on rain water acidity has been conducted in this part of the NDR.

USEPA (2012) further points out that while acid rain causes acidification of lakes and streams and contributes to the damage of trees at high elevations and many sensitive forest soils, it accelerates the decay of building materials and paints, including irreplaceable buildings, statues, and sculptures. In consonance with the argument of Abdulkarim *et al.* (2009) that aluminium alloy sheet is more corrosion resistant than corrugated sheet, this study found that most of the newly constructed/roofed buildings in the communities were built with aluminium alloy roofing sheets, which is a departure from the tradition of using corrugated sheets. According to the people in the study communities, the resolution to build with aluminium alloy sheet came against the backdrop that their buildings were being corroded in recent times than before because of its durability. The claim of the communities regarding the use and durability of the aluminium alloy sheet over corrugated sheet was substantiated during interviews with the government officials that attest to the fact that roofing sheets in the area lately got eroded than before:

“Following the high rate of corrosion level of corrugated sheets in the area lately [...], we recommend the use of aluminium alloy sheet which we also use in the construction of our housing units in the area to the people because it’s more corrosion-resistant than corrugated sheets (Interview with Government Official, 2013).

While this result corroborates USEPA’s findings about damage to building materials due to the problem of acid rain, it also confirms previous studies in the region (see ERA, 2005; Nduka *et al.*, 2008; Efe, 2010; Ejelonu *et al.*, 2011).

Climate Change

This is another area where the impacts of oil and gas activities have been contributing to the degradation of regulating services of the ecosystems which in turn is having multiplier effects on other services provided by ecosystems. Several studies have corroborated the contribution of gas flaring and venting to climate change and global warming across the globe as well in Nigeria. For example, ERA (2005) argues that burning of gas through flaring results to the emission of carbon dioxide which is the main source of greenhouse gas and venting of the gas without burning produces methane which is the second major greenhouse gas. ERA further established that the two gases contribute about 80% of global warming to date and finally concluded that gas flaring in Nigeria has contributed more emissions of greenhouse gases than all other sources in Sub-Saharan Africa combined (Ibid).

Similarly the contribution of associated gas flaring and venting to greenhouse effect, climate change and other major negative consequences on the environment has also been documented (Okeagu *et al.*, 2006; World Bank, 2007b; Orimoogunje *et al.*, 2010). Recent studies in the region have confirmed that the fallout of climate change has affected the rainfall pattern, emergence of diseases and pests, crop and animal production, fisheries, biodiversity, frequency and regularity of floods, and human health (Nzeadibe *et al.*, 2011).

About 45.8 billion kilowatts of heat are released into the atmosphere of the NDR out of the 1.8 billion cubic feet of gas on daily basis (Aaron, 2006 cited in Egwurugwu *et al.* 2013) and the resultant effect of this is greenhouse effect and thermal gradient or increase in ambient temperature (Oseji, 2011; Oseji, 2011b; Anomohanran, 2012; Ojeh, 2012; Anomohanran, 2012b). The increase in ambient temperature due to the pollutants from gas has obnoxious effect on human health in the region as well as on their socio-economic activities particularly among residents with close proximity to the flare infrastructures (Oseji, 2011; Oseji, 2011b; Ojeh, 2012). As the far-reaching effect of global warming usually transcends the boundary of a given nation, the threat from this may exceed Nigeria's boundary and cut across the globe.

Increase in ambient temperature can engender interminable and severe dehydration among people living at close proximity to the gas flared environment and to Egwurugwu *et al.* (2013) dehydration arouses reduced blood volume, increase in blood viscosity, and increase in blood pressure. As noted by Egwurugwu *et al.* (2013b) and also noticed during this study, the problem of dehydration among the people has further been aggravated by the poor water quality being experienced in the region.

Various farmers in the region have ascribed the increase in ambient temperature from gas flaring systems to poor agricultural outputs and loss of vegetation (Dung *et al.*, 2008; Odjugo and Osemwenkhae, 2009); and deleterious human health (Gobo *et al.*, 2009; Ekpoh and Obia, 2010). In the two-case study communities, the people complained about excessive heat, loss of vegetation, death of domestic animals, and poor agricultural products and this may also be attributed to the impact of gas flaring.

Light Pollution

Drawing from the growing evidence of the problematic effects of widespread artificial light, this section considers the light impact of oil and gas activities in the NDR (**Figure 6.18**). According to Navara and Nelson (2007), the prevalence exposure to light at night has notable

social, ecological, behavioural, and health impacts that are becoming discernible. Artificial lighting can cause significant ecological changes and alterations in the survival of major species (Longcore and Rich, 2004; Navara and Nelson, 2007). One significantly disturbing impact of light pollution interference is on hatching of sea turtles which according to Salmon and Witherington (1995) bewilders young sea turtles and therefore hinders them from nesting. Artificial light can also disorients fishes. As indicated by Grau et al. (1981 cited in Navara and Nelson, 2007) exposure to new moon engenders migration of salmonid fishes towards the sea. This possibly explains why some fish species have become extinct in the area or it may be due to other types of pollution.

The health impacts of light pollution on both humans and animals have been documented as well (Falchi *et al.*, 2011). The authors contends that exposure to light reduces pineal melatonin hormones that determines when to sleep and wake up as well as help in the control of timing and release of female reproductive hormones. No studies have been conducted in this area in the NDR where artificial light from gas flaring is illuminating the environment throughout the night. The people in the coastal communities did not identify any problem in this regards except that some animal and fish species have become extinct and which may be connected to migration due to light pollution or may not as it could be related to other forms of pollution or other dynamics.

6.3.3 Post-Production Stage in the oil and Gas Production Cycle

This stage which is often referred to as the decommissioning and rehabilitation or restoration stage is the final stage in the oil and gas production cycle. According to Ite *et al.* (2013), activities at this stage include well plugging, removal of installations and equipment, and site restoration. This stage like the other stages earlier discussed, also portends serious environmental and health issues such as pollution from either onshore or offshore operations, hazard to other anthropogenic activities like farming, fishing and navigation.

IPIECA (Undated) maintains that the oil and gas industry is not only committed to restoring the decommissioned sites to the preceding agreed end uses but has in recent years advanced appreciably on grasping habitat dynamics and restoration technologies. However, the environmental assessment of Ogoniland (one of the communities in the NDR) conducted by UNEP (2011) revealed the inadequacy of oil and gas industry practices on the control, maintenance and decommissioning of oilfield infrastructure (see **Figure 6.20**). While this may not necessarily be the common practice of all the MNOCs in Nigeria, the study specifically noted that:

“Industry best practices and SPDC’s own procedures have not been applied, creating public safety issues” (UNEP, 2011, p. 12).



Figure 6.20: SPDC’s Oil Facility in decommissioned site overgrown with vegetation in NDR

Source: UNEP (2011, p. 98).

On the issue of remediation approach adopted, the study found the remediation by enhanced natural attenuation (RENA) approach to be ineffective and where new approaches like *ex situ* RENA approach was adopted, it neither conforms to the local regulatory requirements nor international best practices (Ibid). The usual practice by the MNOCs and its corresponding effects was succinctly captured by one of the respondents in Ojumole during FGDs:

“[...], we were told the oil well in our community is dry but we noticed Chevron left its infrastructure there and one day fire erupted from one of the pipelines [...], nobody knew the cause of the fire. The fire burnt the forest and thereafter there was oil spill that spread all over the water ways and many fish died; our fishing nets destroyed [...]” (FGD, 2013).

The respondent’s view above which was supported by other respondents demonstrated the externalities such as accidental fire outbreak and oil spills associated with the failure and ineffective decommissioning in oil and gas exploration and production. Interviews with government agencies further support the claim that the oil wells in question is no longer working.

“[...], the Ojumole and Omuro oil wells which are part of the onshore wells that are closer to the people are not been worked on lately. We hope the infrastructure will be decommissioned soon” (Interview with Government Official, 2013).

The claim that the oil wells are no longer functional was established during field observations. As shown in **Figure 6.21**, it was observed during field observations that water hyacinth (*Eichhornia crassipes*) which is one of the alien invasive species (AIS) blocking the waterways in the region surrounded the said abandoned oil infrastructure. This has further revealed how the failure to decommission oil infrastructure has contributed to the breeding of some AIS in the NDR.



Figure 6.21: Abandoned Oil Infrastructure in Ojumole
Source: Fieldwork (August 2013).

Nypa Palm Problem

Nypa Palm (*Nypa fruticans*) is another AIS that was discovered during this study which has also constituted threat to the mangrove vegetation in the region. According to IPIECA and OGP (2010), every stage in the oil and gas production cycle in both upstream and downstream activities can create direct and indirect pathways for AIS if appropriate measures are not taken. Nypa Palm is an AIS to mangroves in Nigeria and according to Sunderland and Morakinyo (2002), there are two single points of entry. According to Holland (1922 cited in Sunderland and Morakinyo, 2002), it was brought from Singapore to Nigeria when it was used as a trial plantation in the old Calabar and later in Oron, Cross River State in 1912. Zeven (1971 cited in Sunderland and Morakinyo, 2002), noted that the second entry might have occurred when over 6000 seeds were brought from Malaya in Malaysia in 1946 and planted along the brackish swamps of the NDR.

Nypa palm was brought to control erosion in some coastal communities, but it has spread beyond its initial location to become invasive and posing serious threats to the native mangroves. For example, it was discovered during field observation that Nypa palm (**Figure 6.22**) has invaded, out-competing and engendering permanent displacement of native mangroves particularly where the native mangroves could not withstand the turbidity of the impacts from oil and gas.



Figure 6.22: Nypa Palm (*Nypa fruticans*) in Ondo State
Source: Fieldwork (August 2013).

“We have *Akpejaja* [Nypa palm] all around us here and where most of our plants that we depend on are dying due to oil pollution, *Akpejaja* is growing and occupying more lands. It is not useful to us in any form because it lacks economic value, [...]” (FGD, 2013).

The remark above confirm that Nypa palm has not been of any significant value to the people in the study communities and has contributed to the reduction in the capability of the ecosystem to perform its services such as control of coastal erosion and loss of native biodiversity, habitat alteration among others. This corroborates UNEP (2007)’s findings based on which Nypa palm has not been utilised by the local communities in Nigeria.

6.4 Socio-economic Impacts

Whereas oil and gas activities have contributed immensely to the economic fortune of Nigerian state, the socio-economic loss and cost to the nation and the people in the NDR respectively cannot be glossed over. Campbell (2004 cited in Ite and Ibok, 2013), reports that 2.5 billion cubic feet of gas were flared everyday by the oil and gas companies in Nigeria with an estimated economic loss of \$2.5 billion annually. A recent study revealed that economic loss to the nation due to gas flaring was estimated to be \$17 billion annually (Anomohanran, 2012).

Notwithstanding the huge economic benefits that a nation supposed to derive from harnessing this globally-sought after resource (Madueme, 2010; Buzcu-Guven and Harriss, 2012), venting and flaring of gas is still very high in the NDR of Nigeria. It was observed during this study that households in the coastal communities depend on fuel wood (firewood) (**Figure 6.23**) as a means of energy for cooking. However, if the gas flared and vented in the facilities in the region were effectively harnessed, they could be utilised for domestic uses, providing a significant and reliable alternative to fuel wood (Nwayan, 2011), and mitigating deforestation associated with cutting of fuel wood (Ite and Ibok, 2013).



Figure 6.23: Fuelwood in the coastal communities in Ondo State
Source: Fieldwork, (August 2013).

Watts (2008) observes that only a small percentage of the people in the region are considered in the oil and gas sector in Nigeria. However, the majority of the people in the NDR who are predominantly involved in fishing, farming and other artisanal works have suffered some setbacks due to the degradation of the ES as a result of incessant oil and gas pollutants. The people in the two case-study communities lamented the impact of the pollution on the provisioning services of the ecosystem as evidenced in the rate at which they were being rendered unemployed as a fallout of the impacts of oil and gas activities that have been destroying their means of livelihoods. The women and the youths appeared to be the most affected. While some of the women were involved in fishing as well as trading in fish, some were involved in artisan work such as weaving of African mats, those involved complained of having little or no fish to sell, while those involved in mat weaving remonstrated the death and possible extinction of the plant used for mat weaving. One of the women respondents in Ojumole notes that:

“Apart from the problem of inadequate fish cash or to sell, some of us are involved in mat weaving but unfortunately due to oil/gas pollutants the plants we use for weaving have been killed. Now some of us are jobless” (FGD, 2013).

The youths on the other hand lamented their inability to get something to do:

“Imagine there are a number of us that have graduated for about three years now but there is no job for us either from the MNOCs, the government or other private sectors. Unfortunately, there is no fish again and surviving has been very difficult” (FGD, 2013).

This study confirms the earlier findings about the rate of unemployment in the region. For example, Müller (2010) and UNDP, (2006) noted that unemployment is one of the major problems bedevilling the people in the region and to Obi (2009), the employment statistics of

the region reveals that the preponderance number of the people are either unemployed or are employed in the informal sector with an income of less than US1\$ a day.

Due to the high level of unemployment in the region, some of the youths in their bid to survive joined the militants and some opted for bunkering (oil theft) with the construction of illegal refineries as shown in **Figure 6.24**. Because the people were neither trained nor have the requisite infrastructure to refine and manage crude oil, their illegal activities tend to further degrade the already degraded coastal ecosystems in the region. This is another major problem that is contributing to the devastation of BES in the region, though this practise was not witnessed in any of the study communities during the study. The consensus among the people interviewed is that oil and gas activities have exacerbated their socio-economic condition rather than improving it and this is evident in the inability of the provisioning services that provides job and opportunities in the past to function effectively.



Figure 6.24: Illegal Refinery in NDR
Source: Purefoy (2010).

6.4.1 Alteration of Cultural Values

Obi (2009) found that pipeline project for the distribution of oil that traverses the communities has worsened the socio-economic situation of some of the indigenous people through vandalism and other heinous crimes that were not part of the culture of the people prior to the commencement of the project. Culturally, the people in the coastal communities in Ondo State and like other parts of the NDR were known to be hospitable and accommodating; however, now some of the cultural beliefs have been altered. The people in the study communities bemoaned their inability to entertain the researcher and his assistants and also to provide them some fish items as gifts in line with their cultural practise due to the impacts of oil and gas activities. As noted by one of the respondents during FGD:

“It is part of our culture to package fish for you as a way of welcoming you into our community but unfortunately we can’t afford that now because the fish are not there again” (FGD, 2013).

Further, this study found that in Awoye shrines had been relocated twice due to the quest for oil and gas reservoirs while in Ojumole nothing of such was recorded. This study found that the relocation of shrines negates the provisions of Paragraph 17 of the Petroleum (Drilling and Production) Regulations Cap P10 (LFRN, 2006b) which stipulates that a licensee of an oil mining lease is precluded from exercising its mining lease where, inter alia, the land is a sacred forest. This research further found that the issue of environmental degradation was not only well known in both Awoye and Ojumole, but was also one about which the people held a variety of views.

6.4.2 Health Impacts of Oil and Gas in the NDR

While it has been established that studies on acute health effects of exposure to an oil spill are few particularly in developing countries, there is a consensus that exposure to VOCs will have serious impacts in human body (Janjua *et al.*, 2006). Following the massive oil spill from the tanker at the coastline of Karachi, Pakistan on 27 July, 2003, Janjua *et al.*, (2006) found that high level of pollutants and increased occurrence of headache nausea vomiting, eyes symptoms, respiratory difficulties are prevalent among the exposed when compared to the unaffected groups. Similarly, the study also found that the proportion of those who developed wheezing with shortness of breath was higher among the exposed as compared to the control groups.

Exposure to ambient air pollutants can cause serious health problems for people as well as exacerbating the health conditions of people with pre-existent health challenges. For example, Janjua *et al.*, (2006) found that exposure to VOCs in oil and gas has a role in the occurrence of asthmatic symptoms and that self-reported disturbance in daily routine due to symptoms further substantiate evidence about the severity of symptoms that was higher among the exposed as compared to the non-exposed groups. Similarly, the studies of Bethel *et al.* (1983) and Koenig and Mar (2000) have also demonstrated that children and people with pre-existing conditions such as asthma are especially vulnerable to the effect of air pollution such as SO₂ and this can occur even at concentrations lower than the required standard in a given place. Furthermore, the clinical study conducted by Watts (2006) also revealed that increases in asthma cases in China is ascribed to air pollution and that there is connection between asthma and industrialisation.

Many scientific studies have identified a connection between elevated levels of fine particles such as sulphate and nitrate and increased illness and premature death from heart and lung disorders, such as asthma and bronchitis. Before the falling of sulphur dioxide (SO₂) and nitrogen oxide (NO_x) gases and their particulate matter derivatives (sulphates and nitrates) to the earth, they contribute to the visibility degradation and harm public health (USEPA, 2012).

A number of recent studies have demonstrated the human health impacts associated with flaring of oil and gas (Okeagu *et al.*, 2006; Ana *et al.*, 2009; Gobo *et al.*, 2009; Ekpoh and Obia, 2010; Egwurugwu *et al.*, 2013). The study of Okeagu *et al.* (2006) for example noted that as a consequence of oil and gas pollution, the NDR population are prone to respiratory problems and partial deafness. The impact of gas flares on the health of the host communities in the NDR include increases in the risk of respiratory diseases, asthma, cancer, premature death and reduced crop yield and acid rain (Gobo *et al.* (2009). A handful of researches have also connected VOCs such as benzene to increased chances of causing leukaemia (Ana *et al.*, 2009). Ana and co-workers further noted that communities that are located at close proximity to industrial activities in the region are more predisposed to respiratory morbidities, skin disorders and other related health perils (Ibid). The scientific study of Egwurugwu *et al.* (2013) revealed that there is statistically significant increase in systolic blood pressure (SBP), diastolic blood pressure (DBP), and mean arterial blood pressure (MAP) among the test group subjects compared to the controlled group. The study further established that protracted exposure to gas flares has increased the incidence of hypertension among the people and in higher degree among the males than their female counterparts. Additionally, the study revealed that increase in hypertension may increase the threat of cardiovascular disease. Aguilera *et al.* (2010) found headaches, migraines, eye, throat and skin irritation, dermatitis, respiratory distress, nausea, vomiting and dizziness as the physical impacts which are found mainly among the uninformed and unprotected workers during the study on BP oil spill. This research found during a FGD that people in the study communities were not immunised against similar diseases that people experienced in the case of the BP oil spill. This is succinctly encapsulated by one of the respondents:

“Due to the oil and gas activities in our environment we have continued to experience series of diseases including skin irritation, diarrhoea, vomiting, cough, dizziness, headaches, breathing and hearing difficulties, and because of lack of medical facilities we no longer grow as old as before. The rate of these diseases is higher particularly when there is oil spill” (FGD, 2013).

The view of the communities on the health impacts of oil spill in their communities was also corroborated by some of the NGOs interviewed as expressed by one of them below:

“[...] in one of our visits to the OPCs, we found people having problems of skin irritation and coughing which they said they usually experience whenever there is oil spill in their communities. [...], and they said at times headaches, dizziness and hearing difficulties are some of their experiences” (Interview with NGO, 2013).

In a similar discussion, Pérez-Cadahía *et al.* (2008) found that other acute impacts of exposure of oil to human health include DNA damage, alterations in endocrine status and significant increases in levels of heavy metals in blood of exposed workers. Psychological, psychiatric and social effects of oil spills can be severe, just as Palinkas *et al.* (1993) noted following the Exxon Valdez oil spill of 1989 in Alaska; there was higher prevalence of generalised anxiety disorder, post-traumatic stress disorder and depressive symptoms (see also Gallacher *et al.*, 2007). Palinkas *et al.* (2004) noted that high levels of social disruption among workers from native Alaskan communities involved with clean-ups of oil spilled. In the NDR studies are yet to be conducted to determine the psychological and psychiatric effects of oil spills while many social effects such as militants that are ups in arms, series of conflicts within and among communities have been known.

From whichever angle one views the negative impacts associated with the various stages in the oil and gas chain, particularly from the way it's being done in the NDR, a picture of deprivation and degradation vividly comes to mind. Coastal areas contain different ecosystems such as mangroves, dunes, coral reefs or tidelands that help to protect the coastline against storms and flooding, spawning grounds for fish and crabs, and habitats for migrating species (TEEB, 2010). Often they also provide other products such as wood, fodder or building materials and play an important role for recreation and tourism. Marine systems are home to fish and many other species (Ibid). This is indicative of the ability of mangroves to perform the various ES as earlier identified (MEA, 2005) in chapter two. Evidently, the destruction of mangroves as part of ecosystems will therefore have a domino effect on the various services that the ecosystems provide. Although the destruction of mangrove vegetation is a function of many factors, this study found that oil and gas activities have contributed to this in a number of ways. The next section considers the positive impacts of oil and gas activities.

6.5 Positive impacts of interactions within SG: Benefits of Oil and Gas Activities

6.5.1 Educational Development

While the two study communities claimed to be benefiting from the scholarships provided by the MNOCs, their experiences were not the same. For example, one of the respondents from Awoye put it this way:

“[...], Chevron and IRDC give scholarships to people in secondary schools and university every year in this community but the beneficiaries are few. For example, only five people were given university scholarships while 10 in secondary schools every year” (FGD, 2013).

Another respondent from Ojumole expressed their experience this way:

[...], two scholarships were given to tertiary institutions and three for secondary schools in our community but the beneficiaries have not been fully paid” (FGD, 2013).

Despite the disparate views of the people on the issue of scholarships to their communities, there is a consensus that the scholarships are inadequate. Reacting to the communities’ claim that they are not benefiting much in the area of educational development, some of the government officials hinted that the government has been doing a lot in that area. According to one of the officials:

“Apart from what PTDF and OSOPADEC are doing, every year NDDC gives over 200 international scholarships to indigenes of NDR as part of its human resource development programmes for Masters and PhD programmes in UK” (Interview with Government Official, 2013).

While the government through some of its agencies have been granting scholarships to people in the NDR as claimed in the remark of the government official above, this study however found through a review of beneficiaries made available during the study that only few people from the study communities have actually benefited. This upholds the communities’ claim.

6.5.2 Provision of Infrastructure

“We have constructed housing units, health centres, water, electricity, wooden-jetty projects among others in various communities in the coastal area of Ondo State. The general hospital in Ilowo [some kilometres away from the two study communities], is expected to service people in Awoye and Ojumole that you are looking at, [...]” (Interview with Government Official, 2013).

From the remark above, it is evident that some infrastructural facilities have been provided for the OPCs but these may not be adequate as evinced in the comments of the locals:

“Truly we see housing units though not adequate, we see electricity which worked for some time but no longer work now. [...]. We have wooden jetty, school building, town hall and water project, though the water is not good. A road was constructed to Ugbonla [some kilometres away to study communities] [...], the road is not meant for us here in our community” (FGD, 2013).

It was however observed during personal observation of the study communities that the state of infrastructure provision is inadequate and it clearly corroborates the claim of the local

communities. Apart from the only hospital in the area that is located far away from the study communities, some of the few infrastructures like water and electricity are not functional and schools are not well equipped. The research notes that there is an urgent need for the government to ensure that adequate infrastructures are provided for the people in the OPCs.

6.5.3 Employment Provision

“Government policy on employment gives 60% concession to the catchment area of operation of a company. The Ilajes have not been given such opportunity in all Chevron operations [...]” (The Concerned Ilaje Citizens, 1998, p. 7).

It was gathered during the interview with IRDC (August, 2013) in the course of this study that many of the youths have been trained in various oil and gas-related skills with a view to building their capacities for good jobs in the sector but in reality there was no job for the people as exemplified in the statements below:

“Right from when Chevron and its subsidiaries started their operations here none of our people were offered contract or permanent employment. When they were laying pipelines only few of our people were employed as casual employees. We were only considered when there was oil spill but following the conflict in 1998/99 [Ilaje and Ijaw tribes] we have neither been involved again nor considered for employment despite trainings we have done” (FGD, 2013).

“Some of our people who are our representatives in IRDC are only there for four years and after that there is no job for them again” (FGD, 2015).

Although the locals contend that most of the employment opportunities available to them were transient in nature, this study found that a few youths that were engaged during the project have acquired new skills and experiences that would remain an assets to them even after they have disengaged from the work. This study further found that oil and gas activities have provided other permanent employment opportunities for the people in the OPC, though not in oil companies and this is confirmed in the interviews with IRDC and government officials:

“[...], through oil/gas activities NDDC and FMNDA are established at the federal level and OSOPADEC at the state level. NDDC and OSOPADEC as oil derivation fund management agencies have employed some of our children on permanent basis, though not as we expected” (Interview with IRDC, 2013).

“[...], the law that sets up NDDC clearly indicates that its funding will be derived from proceeds from oil/gas activities and donations from MNOCs. [...], the Commission has employed a large number of people in all the nine states within the NDR. This is a clear benefit of oil/gas activities” (Interview with Government Official, 2013).

Despite the benefits accruing to the people in the NDR as highlighted above, it is perceptible that the people in the study communities are unhappy, dissatisfied, they do not trust the

government/MNOCs as only few people from their communities benefited and they felt oil and gas activities have infringed on their well-being and freedom. This was succinctly captured by one of the participants during FGD:

“What we are experiencing due to the impact of oil/gas activities now can be likened to an indirect way of killing somebody. Due to pollution of our water, we have been denied the right to swimming freely on the water which is part of our way of life because of fear of being infected with skin diseases” (FGD, 2013).

The destruction of BES that the people are dependent upon for sustenance and other things prior to the commencement of oil and gas activities may be interpreted as an infringement on the fundamental human rights of the people to a healthy environment which according to Ogwu (2012) was described as environmental injustice. Such injustices are well known locally as established in the following statement:

“[...], imagine the government saying they didn't see anything about a spill because it doesn't concern them something that concern communities that they drink water from. Let us be fair, even when communities cannot do anything, the people should be made happy and say this is justice” (Interview with IRDC, 2013).

6.6 Summary

Based on the environmental and socio-economic data generated from the fieldwork, and connecting this to the literature, this chapter has identified in line with the concept of IG, some of the negative and positive outcomes of the interactions within the system-to-be-governed in the study communities. The study notes that though there are positive impacts to the interaction between the natural (BES) and socio-economic (oil and gas activities) SG, the negative impacts outweigh the former.

From the foregoing findings, it is evident that the interactions within the SG in the NDR have led to serious degradation of BES with grave consequences on the lives of the people within the OPCs whose livelihoods are intrinsically linked to healthy ecosystems. The degradation of BES also manifested in the destruction of mangrove vegetation and extinction of some endangered animal and aquatic species. The destruction of the mangrove vegetation for example has grave implications for the various coastal ES including hindering the effective functioning of the ecosystems in providing its essential services such as food, natural medicines, coastal protection, and other raw materials that the people depend on for their sustenance and well-being. This possibly explains why problems of food scarcity, unemployment, and health-related problems that contribute to short life expectancy and social unrest are presently rife in

the region, and these problems would ultimately be aggravated if the impact of oil and gas activities on BES is not mitigated.

The findings also shown that the people in the study communities are acquainted with the significance of BES though this may not be grasped from a scientific point of view or the way it was encapsulated by the Millennium Ecosystems Assessment as presented in chapter two. Additionally, as demonstrated in **Figure 6.25** continued oil spill and gas flaring in the economically, socially and environmentally strategic region like the NDR will not only be having devastating impacts on BES alone but will also be hindering the attainment of sustainable development and Goals 1, 2, 4 and 7 of the MDGs:

- ✚ **Goal 1:** To eradicate Extreme Poverty and hunger
- ✚ **Goal 2:** To achieve Universal Primary Education.
- ✚ **Goal 4:** To reduce child mortality; and
- ✚ **Goal 7:** To ensure environmental sustainability

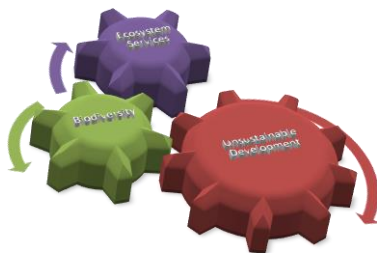


Figure 6.25: Threat on Biodiversity and ES will produce Unsustainable

The study of Aguilera et al., (2010) on the Gulf of Mexico Deep Water oil spill found that the most vulnerable to the acute effects of oil spills are the clean-up personnel, who often include volunteers. This possibly shows why in the NDR where the people are predominantly rural and uninformed (UNDP 2006), it is the occupational groups such as fishermen, farmers and artisans whose livelihood is dependent on the coastal BES that suffer disproportionately of the effects of oil spills and gas flaring. Given the insignificant investment of the government on health care in Nigeria (Karl, 2007) and lack of the basic health facilities in the region amidst the catastrophic implications of the health impacts of oil and gas pollutants on the beleaguered people in the NDR, mitigating further degradation of BES deserves urgent and immediate solution.

The major challenge globally even in democratic systems is that, the people most adversely beleaguered by environmental degradation are often the worst off and least empowered as policy priorities do not reflect their interests and needs (UNDP, 2011). Similarly, as Ajakaiye (2008) points out that mostly when oil spills occurs the losers are the most vulnerable while the winners tend to be less vulnerable and possess the economic and privileged political power to influence institutions and the decision-making process. The next chapter is thus devoted to the examination of how the oil and gas sector in Nigeria is governed and how the various oil and gas policies in the nation has assisted or constrained conservation of BES.

Chapter 7. Governance System: Features, Orders, Modes and Elements of Nigeria's Oil/Gas Sector Governance Regarding BES

7.1 Introduction

The failure of oil and gas sector governance regarding the conservation of BES can have far-reaching implications for the economy, social, cultural and environmental sustainability of a nation. By the same token, a good governance approach such as the interactive governance model could mitigate further degradation of BES, increase national wealth, environmental sustainability and social stability. Given the environmental impacts of oil and gas resource development in Nigeria on the oil production communities (OPC), the direction and success of the national strategy towards mitigating further degradation of BES from oil and gas activities and ameliorating the suffering of the people in the region justifies rethinking now. This raises a number of questions: Is the creation of national protection regimes in Nigeria, while unquestionably obligatory, adequate to control environmental problems in the NDR? Has the tide changed from the autocratic or top down approach that dominated the governance system in the military era to a more democratic method that recognises all relevant stakeholders including the host communities in working together on remedies for environmental problems affecting the region? If some or all the issues raised exist in the governance system, has the time arrived for a shift in national strategy that aims to enhance the possibilities for implementing more effective management of the environment that recognises and involves all stakeholders even at the local level?

Drawing from Kooiman *et al.* (2005b), the benefits of effective management of the environment can only be achieved through a governance approach that identifies the various stakeholders' concerns and interests which are crucial for the future conservation of BES from the impacts of oil and gas activities. Such a viewpoint encompasses comprehensive social, institutional and political considerations regarding for example participation and social justice. It also stresses the issue of problem definition, given the fact that it would be wrong to assume that stakeholders would unequivocally agree on what the problems are and how they should be addressed. Consequently, questions about what the problems are and whose problem definition is considered in the governance system are essential for oil and gas governance.

This chapter adds to the governance debate by applying the interactive governance model (IGT) (Kooiman, 2003) developed by Kooiman *et al.*, (2005) (see also Jentoft, 2007; Kooiman, 2008; Chuenpagdee and Jentoft, 2009; Jentoft and Chuenpagdee, 2009 and Chapter three of this thesis), with a view to assessing the status of Nigeria's oil and gas governing system regarding

conservation of BES. From a normative viewpoint it also investigates the opportunities that the interactive governance approach (IGA) holds for the oil and gas sector in Nigeria regarding conservation of BES. The central questions guiding this chapter are: (i) What are the policies/regulations in place within the oil and gas industry in Nigeria for the conservation of BES? (ii) What are the impacts of governance system of oil/gas on the conservation of BES in the NDR?

To answer these questions four sub-questions have been developed. (i) How do governing institutions define the problem of BES degradation; (ii) Who has influence in oil and gas policy formulation; (iii) What are the various existing policies and how adequate are these policies in addressing the problem of BES degradation; and (iv) How do the governing institutions learn and adapt from the negative impacts generated? Answers to these sub-questions are provided in four parts below.

The information in this chapter is based on a review of literature and empirical findings from in-depth interviews and FGDs with oil and gas governors, NGOs and locals from OPC. The intention is to generate data on their knowledge, views and perceptions of oil and gas sector governance regarding BES. The first part of the chapter considers the process of decision-making in terms of how oil and gas policies regarding conservation of BES are arrived at, and examines how transparent, responsive and inclusive this process is (first order governance). Having presented the various policies/regulations that are put in place within the governing system of oil and gas sector in Nigeria to address and mitigate BES degradation in the OPC in Chapter five, the second part of this chapter reviews the said policies to determine their adequacy in addressing environmental-related problems (second order governance). The third section of the chapter examines how the governing institutions define BES concerning oil and gas activities as well as the values, norms and principles that underpin their approach to conservation of BES (meta-governance). Lastly, the fourth part of the chapter considers how governing institutions learn and adapt from negative impacts generated, and the changes that have occurred over time.

7.2 First Order: Decision-making

As noted in chapter three, the first order governance considers the daily decision-making with a view to addressing the quotidian problems that OPC are confronted with as a result of degradation of BES in their environment. The day-to-day management of BES within the oil and gas sector in Nigeria can be categorised into preventive and mitigation measures, and there are diversity of government institutions involved in the governance of the sector with regards

to conservation of BES at both the national and sub-national levels. Notwithstanding the provision of Section 20 of the 1999 Constitution of Nigeria that the nation’s environment is a joint responsibility of the Federal, State and Local Government, the daily management of oil and gas resources falls under the supervision of the FMPR. This duty is undertaken by the DPR which is a technical parastatal under the ministry.

7.2.1 *Unclear Mandate in Policies*

Overlap of Responsibility

This study found that the activities of multiple institutions on daily basis are not immune to governance challenges. The issue of unclear mandates in the policies that established the various institutions has caused overlap of authorities and responsibilities among federal agencies and between the federal and state ministries (see **Table 7.1**). This has serious impact on the day-to-day management of the environment; a problem which has possibly been exacerbated by the Nigerian system in which the federal government agencies also have regional and state administrative offices.

When asked during an interview on how the policies define clear responsibilities and authorities for the various actors responsible for the day-to-day oil and gas sector governance regarding conservation of BES, one of the government officials said:

“I can’t really say the policies are clear enough. It’s mutual understanding that has actually been helping us, because another agency is been saddled with what we are doing in our ministry. Maybe with time we need to actually come together as government umbrella to handle some of these areas where there are conflicts. [...], so I think the policies need to be clearer so as to realise its set objectives” (Interview with Government Official, 2013).

Table 7.1: Overlap of Responsibilities among Government Institutions

S/No.	Area of Duplication of duties	Affected Agencies
1.	Oil Spill response and associated Environmental issues	DPR and NOSDRA
2.	Issues with EIA Act and environmental regulation	DPR, FMENV and SMENV
3.	Issues with marine safety	DPR and NIMASA
4.	Issues with oil pollution on marine environment	NIMASA and NOSDRA
5.	Oil pollution, prevention and control in NDR	DPR, NOSDRA, FMENV, NDDC, FMND and SMENV

Source: Fieldwork Survey, 2013.

From the observation of the government official above, it is obvious that this issue of unclear mandates among the various institutions has caused some governance chasms that require urgent review. Interviews with the NGOs further confirmed the non-clarity in policies regarding responsibilities and authorities among the various government institutions and one of them puts it this way:

“[...] there is need to have a kind of stakeholders meeting where this issue of unclear policies is engendering duplication of efforts among the government institutions will be addressed/reviewed. For example, last month there was nearly a problem here in Ondo State when about four regulators were disagreeing, fighting over functions in the presence of an investor. [...], the operations of the oil and gas companies in Nigeria are the sole responsibility of DPR. [...], looking at it critically there can be a kind of loophole or a gap in it [...] there is need to have a clear demarcation of functions and responsibilities” (Interview with NGO, 2013).

Conflict of Interest

In addition to the issue of overlap of responsibilities between authorities, another governance challenge that characterised most of the government departments is conflict of interest (see **Box 7.1**). For example, this study found that DPR which has been saddled with the responsibility of ensuring environmental compliance is the same agency that issued licences for oil and gas operations and also has the duty to maximise revenue by increasing production. Similarly, there is also conflict of interests in NDDC that generates part of its fund from the MNOCs operating in Nigeria and is expected to address environmental problems orchestrated by the same MNOCs that finance its operations. This practice is not appropriate because even in most oil producing countries across the globe including the Middle East where oil remains the bastion of the regional economy, environmental regulations have been placed under the ministry of environment or other government department assigned to perform environmental functions rather than DPR. No wonder Zagi (2012) suggested as one of the options for the way forward that the environmental functions of DPR be transferred to FMENV.

Although conflict of interest has been found as a governance problem in this study as demonstrated in **Box 7.1**, one cannot rule out the possibility of experiencing the same even in some of the developed countries of the world. The fallout of the 2010 *Deepwater Horizon* incident in the US is a good case in point, as it was revealed that the US Offshore Energy & Minerals Management Office (under the Bureau of Ocean Energy Management, Regulation and Enforcement) doubles as the agency charged with the responsibility of supervising the development offshore oilfield and issuing environmental approvals. As noted by Goddard (2010), President Obama referred to this type of practice as “cosy relationship” between the oil companies and the federal agency that issued licence to drill. Accordingly, in October, 2011 the

Bureau of Safety and Environmental Enforcement was set up as new agency under the US Department of the Interior and now operates independently from the Department of Energy Resources. It is the expectation of this study that the Petroleum Industrial Bill (PIB) before the National Assembly since 2008 when it is eventually passed into law will address some of these anomalies in the GS.

Box 7.1: Conflict of Interests in DPR and NDDC

<p>DPR (Part of the Functions)</p> <ul style="list-style-type: none">(i) Supervising all Petroleum Industry operations being carried out under licences and leases in the country;(ii) Processing industry applications for leases, licences and permits;(iii) Ensure timely and accurate payments of Rents, Royalties and other revenues due to government;(iv) Monitoring the Petroleum Industry operations to ensure that they are in line with national goals and aspirations including those relating to Flare down and Domestic Gas Supply Obligations;(v) Ensuring that Health Safety and Environment regulations conform to national and international best oil field practice. <p>NDDC (Part of Functions)</p> <p>NDDC Act Section 7 (g) assess and report on any project being funded or carried out in the Niger-Delta area by oil producing companies and any other company including non-governmental organizations and ensure that funds released for such projects are properly utilized;</p> <ul style="list-style-type: none">(h) Tackle ecological problems that arise from the exploration of oil mineral in the Niger-Delta area and advise the Federal Government and the member States on the prevention and control of oil spillages and environmental pollution;(i) Liaise with the various oil mineral prospecting companies on all matters of pollution prevention and control. <p>Financial Provisions to NDDC (part)</p> <p>NDDC Act Section 14 (c) <i>0.5 per cent</i> of the total annual budget of any oil producing company operating, on shore, in the Niger-Delta area.</p>

Source: Fieldwork Survey, August 2013

7.2.2 Lack of Effective Coordination

Another governance challenge akin to the issue of unclear mandates among the various government institutions is the lack of effective coordination. From the empirical findings, the failure of all the regulators to coordinate due to unclear mandates and overlapping responsibilities has often propelled the MNOCs to drive the coordination. One of the NGOs interviewed succinctly put it this way:

“[...], we have major actors like NOSDRA, NESREA and DPR but I think there is no synergy between the agencies and there are overlapping responsibilities. The coordination which is expected to be coordinated by FMENV or DPR as the case is presently, is a bit challenging. You’ll discover at times that it is the MNOCs that are supposed to be checked that are actually driving the coordination of these initiatives. So, at times it is not objective because they would protect their interests, they would probably cover up some more information, so it’s difficult” (Interview with NGO, 2013).

The problem associated with coordination was confirmed by almost all the government regulators including DPR which is the main institution saddled with such responsibility, though

they claimed there is an improvement in recent times. This is noted by one of the government institutions:

“[...], there are too many agencies with duplication of functions meaning that there are lots of overlapping functions which makes the whole thing cumbersome for the various institutions, though we are all working towards achieving the same goal but from different angles and we are not being coordinated effectively to achieve the desired goal. That is why some agencies under a ministry see themselves as more powerful than a substantive ministry” (Interview with Government Agency, 2013).

This finding lends credence to the study of UNEP (2011) on the environmental assessment of Ogoniland³⁸ that found that overlapping of responsibilities among various institutions and lack of proper coordination are part of the problems that characterised the environmental management system in Nigeria. This problem with coordination of environmental management on daily basis possibly explains why monitoring of oil and gas activities by the regulators in the region has been found to be poor as shown in the next section.

7.2.3 Inadequate Monitoring

Good environmental monitoring, data collection and comprehensive assessments and interpretation and sound management are required to support the many levels and types of decision-making involved in the management of environmental externalities associated with oil and gas activities, particularly in the NDR. The day-to-day environmental monitoring of the impacts of oil and gas activities are expected to be carried out across the region through national programmes under the responsibility of the FMENV, this is however being carried out in this case primarily by DPR. Although, the federal and state regulators claimed that notwithstanding the challenges they have with funding they operate a routine monitoring of the OPC, this may not be entirely so. For example, the chairman of a CBO interviewed on the monitoring of the environment by the regulators expressed the issue this way:

“[...]. Monitoring of oil and gas activities in the OPC by the various government agencies is very poor” (Interview with CBO, 2013).

The interview with the people in the two case-study communities further bolsters the view of the CBO on the monitoring of oil and gas activities on the environment by the government regulators. A very vocal member of a FGD lamented that:

³⁸ Ogoniland is one of the environmentally-ravaged communities in the NDR that drew the attention of the international communities to the level of oil and gas-related environmental degradation in the NDR. The state of the environmental degradation in Ogoniland was brought to the fore in 1995 when the government killed Kenule Saro-Wiwa, a writer and environmental activist alongside eight others by hanging for their condemnation of the impacts of oil and gas activities on their environment among other issues.

“[...]. The government agencies have not been visiting our community despite series of letters we have written to them about our problems including the local government chairman. None of them has deemed it fit to come for on the spot assessment of our environment or for monitoring of oil/gas activities [...]. If they had been coming they would have discovered the level of degradation we are subjected to here, [...]” (FGD, 2013).

Omeje (2005) provides evidence to support the inadequate monitoring of the environment by the government institutions. In his words:

“[...], the DPR which supposedly supervises the day-to-day oil operations in Nigeria to ensure compliance with laid down legal norms basically relies on the mandatory obligation of individual oil companies to report any incidents of oil spills in their operational sites and installations. The real consequence of this ‘self-report’ technique is that some oil companies under-report the incidence of oil spills” (2005, pp. 327-328).

Interviews with the NGOs further corroborate the views above and disprove the claims of the government. Comments from two interviewees are provided as exemplars:

“Our [Nigeria] monitoring system is not effective enough because of the loopholes/gaps which has to do with the leaders [political leaders]. In contrast to the amount budgeted for monitoring the environment, the leaders determine what is eventually released. If you take 50% or 70% of the amount budgeted you are lucky and you cannot talk hence there is a limit to what can be achieved in such situation. The system is too complicated, and this possibly explains why the monitoring is poor because the staff can only do the little they can do with the available resources” (Interview with NGO, 2013).

“There are policies but I think the stakeholders are circumventing the process so the laws are there but who measures what is discharged into the lagoon? So for me, the monitoring and evaluation is still very weak [...]. At times the government provides funds but people [regulators] want to cut corners, [...], it might be the Health, Safety and Environment (HSE) Officers who fail to do what they supposed to do because they feel that it’s an opportunity to make money into their pockets” (Interview with NGO, 2013).

From the two cases stated above, the research observes two things. One, it shows that despite the nation’s transition to democracy, power is still being abused by the political elites to overwhelm the government officials and prevent them from carrying out their responsibilities effectively. This further corroborates the argument of Mwenda and Tangri (2005) as discussed in chapter three of this thesis on the African Governance debate that power is not only centralised in Africa but it has also been seized by the few political elites. Also, it reveals the level of corruption and lack of accountability that characterises the GS in the country. This lends credence to the conclusion made by De Grassi (2008) and Hyden *et al.* (2004) as noted in

chapter three that many problems persist in Africa because accountability in the region's governance has been impeded due to the weakness of the civil society in relation to government and influence. These issues will definitely have a way of weakening the monitoring of environment in the region.

To Dabup (2012), the fact that managers in the MNOCs agreed that there was high rate of health and safety (H&S) awareness within their workplace but there was no consideration for H&S in the host communities and particularly during site operations is indicative that significant attention had not been given to monitoring. The efficiency of the government institutions in Nigeria and the effectiveness of the policies is seriously being questioned, as Moffat and Linden (1995) point out that decades of weak environmental regulation have allowed oil companies to operate their facilities without incorporating the costs of environmental damage into their decision-making. Chinweze *et al.* (2012) assert that the government at both the national and sub-national levels has not done anything to effectuate measures that will tackle environmental-induced stresses in the region and mitigate communities' vulnerabilities to environmental-related calamities.

7.2.4 Information Shortcoming: Baseline Data

According to Mosley (1992), lack of reliable data and information to guide policy makers at decision-making level is one of the banes of policy formulation and implementation in Nigeria and in numerous developing countries. This shows that apart from the poor environmental monitoring outlined above, where there is regular monitoring without reliable baseline data the decisions made on the environment is bound to be fraught with problems. This is because the baseline data is expected to provide good information during monitoring on the various species that are at risk, understanding of the status and trends of species occurring in the region as well as the cumulative and individual effects of land disturbance by oil and gas activities on coastal BES.

One of the government officials interviewed on the need for proper conservation of the environment (BES) in the OPC lamented the lack of reliable baseline data and made suggestions on what to be done:

“First and foremost is the preparation of the baseline study or survey of the area by all stakeholders including the communities to determine the states of the environment and to be followed by a periodic auditing that will help to mitigate further impacts on the biodiversity and ecosystems in the area”, (Interview with Government Official, 2013).

The issue of dearth of reliable baseline data was further established during interviews with the NGOs as one of the major problems confronting the day-to-day management of the environment in the nation generally and particularly in the OPC. One of the NGOs that concisely captured the issue puts it this way:

“Generally, reliable baseline data on environmental issues in the nation and in Ondo State is scarce. [...], it’s not that we don’t have data at all but there is paucity of up to date data due to the failure of the government to sponsor research in that direction” (Interview with NGO, 2013).

Amokaye (2012) contends that an atmosphere of insufficient, undependable and inconsistent data will make environmental regulation to be ineffective. The NGO’s remark above about the lack of adequate, reliable and consistent baseline data in the NDR suggests that the day-to-day functionality and effectiveness of the activities of the regulators is bound to be defective.

7.2.5 Administrative Shortcomings

“The major constraints identified in conserving biodiversity and in the achievement of the 2010 Targets, include the dearth of trained/skilled manpower, appropriate technology, and inadequate funds to implement the various biodiversity programmes.” (FMENV, 2010, p. 12).

While most oil producing developing countries (OPDC) have a sufficiently relevant, but mainly theoretical environmental policy and legal framework in place, the effectiveness of this framework tends to be undermined by the lack of an adequately organized administrative structure that facilitates efficient regulatory compliance and enforcement (Alba *et al.*, 2010). The authors further found that there is general paucity of human and financial resources required for effective environmental governance in the OPDC. According to UNEP (2011), paucity of resources both physical and human are attributes of Nigerian government institutions at both federal and state levels. To UNEP, these are evident in the lack of office equipment, vehicles and other infrastructure, and shortage of human resources with requisite knowledge in the field of petroleum engineering or science and these shortfalls are more pronounced among State ministries of environment (2011). Apparently, where these forms of problems exist, the day-to-day activities and decision-making of the concerned regulators will be hampered particularly in a region like the NDR that is not accessible by road. Specifically the issue of inadequate facilities/equipment among the government institutions in Nigeria regarding monitoring of oil and gas activities has been succinctly captured by the IRDC in this way:

“Mostly if the government need to go to Escravos [Chevron oil terminal located offshore in NDR] or to the OPC for monitoring they cannot go until transportation is provided by the company under investigation. That in a way is discouraging; it

does not project the government as an institution that has a duty. Government should be strengthened, [...]" (Interview with IRDC, 2013).

According to Leibel (2012), monitoring the environment, supplying advice to biodiversity policy-makers, circulating information and coordinating programmes are issues that demand specialised skills. Regarding the issue of lack of human capital with good knowledge and skills on oil and gas environmental-related problems, this was found to be true in this study by some of the government officials interviewed. One of the government officials interviewed stated

"Regarding human resources, there is paucity of technical competence and because of inadequate funding some few competent hands we have developed ourselves" (Interview with Government Official, 2013).

Empirical findings from the interviews with the NGOs on the issue of lack of human capital among the government regulators further support the stance of the above respondent. In this study two cases are provided as exemplars below:

"I can say there is a dearth of skill within the government circle and most staffers are not well knowledgeable about environmental issues. [...] When you get to OSMENV you'll see some people that are not properly placed and some are to perform functions they cannot perfectly handle. Our organisation has trained them on many things at various times" (Interview with NGO, 2013).

"[...], and funny enough some of our government staffers have attended relevant academic trainings. You'll be shocked at the number of the NFP [Netherland Fellowship Programmes] scholars we have in the federal ministry but I don't think it has dovetailed into effectiveness of their duties [...]. In terms of the government we have some of the expertise but they are not empowered and hence they are not effective. It is one thing to have training on some of the modern equipment and another thing is to be empowered to use that skill in practice. When you don't have resources and you still have to wait for Shell/Chevron to bring its boat/equipment before you go for response/monitoring" (Interview with NGO, 2013).

Interviews with the NGOs also provided two important dimensions from which the problems must be viewed. One, basic skills and knowledge through academic qualifications, training and re-training on the job is a *sine qua non* for regulators to perform optimally and effectively. Two, it is not enough for the government regulators to have the required academic qualifications, undergo series of regular trainings, they must also be empowered with the necessary tools with which to work. Developing human capacity is the only antidote to addressing some of the problems that characterised the GS and this will require training and re-training on the job. This is seen as one of the major problems of all the government regulators:

“Ordinarily, those things [trainings] are just like a mirage particularly to the field officers but the management level officers [at headquarters] most of them still participate in one form of training or another” (Interview with Government Official, 2013).

Recent development in the country revealed that individuals and organisations have gradually been drawing the attention of the government to some of these anomalies within the GS. For example, Bademosi (2014) reported that lack of proper orientation and training for officers is the key problem in the government ministries, departments and agencies (MDAs) across Nigeria. As noted by Leibel (2012), training in most cases does not come without cost and for a move towards a sustainable and biodiversity-friendly production to be actualised, government officials and supply chain managers must commit funds and other resources to training. Bademosi quoted the Managing Director of COINMAC International Mr. Ayo Salami who spoke at the opening event of an induction training for newly-recruited staff in NIMET as saying that: “Federal Government needs to learn a lot from the experience of the developed world, as they place high premium on training. Government make monetary provision for training for all the MDAs but most of the time, the provision they make for training is very small”.

The issue of inadequate training among government officials was further underscored by Chevron who reported its involvement in sponsoring some of the government officials to international conferences to further improve their understanding of the oil and gas industry in its 2013 CSR as demonstrated in italics in **Box 7.2**. The implication of this is that officials that were meant to be the government regulators would be unable to discharge their responsibilities effectively because they have benefited from MNOCs.

Box 7.2: Part of Chevron’s Activities in Nigeria

- Continuously involved the government in the execution of our Social Investment programmes
- *Sponsored government officials to the international conferences to further enhance their understanding of the oil and gas industry*
- Held an interactive workshop with members of the Senate Committee on Gas Resources, and Legislators from State Houses of Assembly in some of our areas of operations in Nigeria.

Source: Chevron Corporation (2014e, p. 18).

An equally important challenge is insufficient funds among various government institutions to implement most of their programmes. Almost all the government officials interviewed lamented the inadequate funds as a major challenge that made it difficult to manage environmental problems constructively. One of the interviewees stated that:

“[...]. Apart from the fact that government officials are not well remunerated when compared with their contemporaries in the private sectors, the problem there is that of the general problem in the country in which the ministry is not well funded. For example, I have been in this office for many years now and there is no running grant and monies that are being released once in a while are channelled to other frivolous things, [...]” (Interview with Government Official, 2013).

7.2.6 Non-application of Modern Technology

It is probable that governance will be effective if it utilizes a mixture of techniques and responses that comprise various strategies to change incentives, increase information, monitor use of resources and impacts, and induce compliance (Dietz *et al.*, 2003). Part of the techniques in the case of the governance of oil and gas sector regarding conservation of BES is for the government as the regulatory body to ensure that modern technology is applied in the exploitation of the resource.

“Investment climate in Nigeria is very receptive of all kinds of investments considered necessary to drive the economic growth. This has unwittingly made the country a dumping ground for all kinds of obsolete technologies” (Eneh, 2011, p. 258).

Whereas States may oversee, implement, and enforce environmental laws and regulations, MNOCs possess the unique capacity to develop new technologies relating to recycling, energy alternatives to finite natural resources, cleaner air production, and others (UNSD, 1992). While the application of modern technology across the globe could provide significant opportunities to monitor and mitigate environmental and social impacts from the day-to-day oil and gas activities, FMENV. *et al.* (2006) averred that companies operating in Africa do not utilise the best available technology and practices compared to other parts of the world and this is particularly worse in the NDR.

“Oil companies operating in the Delta have not employed best available technology and practices that they use elsewhere in the world – a double standard. They can easily improve their environmental performance in the region. Old leaking pipelines and installations must be replaced immediately and dumping of waste must stop” (FMENV. *et al.*, 2006, p. 2)

In a related discussion, Opukri and Ibaba (2008) established that despite the availability and frequent utilisation of modern technology in other countries across the globe to avert gas flaring, this problem still persists in Nigeria. Apart from the fact this is indicative of lack of modern infrastructural capacity (technology) in the oil and gas operations in Nigeria, Dabup (2012) asserts that the gas plants are designed to flare associated gas. Beyond the issue of paucity of infrastructural technology which may be hampering the nation's efforts to stop gas flaring, there are some fundamental issues (Baumüller *et al.*, 2011; Dabup, 2012). The authors noted that the gas flares-out deadline has been frequently shifted (see also chapter six) due to lack of political will on the part of the government to stop gas flaring. Furthermore, the authors noted that MNOCs contend that despite their efforts at reducing flaring in their operations, it has continued because of disagreements over the payment for modern and costly technology since they operate a joint-venture partnership. A major problem with the joint venture structure has been the repeated failure of NNPC³⁹ to fund its share of capital and operating expenses (Nwokeji, 2007). This suggests just as it was earlier noted in section 7.2.1 that the government is only interested in the economic benefits from oil and gas and not committed to the environmental sustainability of the region by encouraging continuous flaring of gas.

Based on the available information from the Pipelines and Product Marketing Company (PPMC) a branch of NNPC, Nigeria has a total of 5,001 kilometres of oil pipelines including 4,315 kilometres of multi-product pipelines and 666 kilometres of crude oil pipelines that criss-cross the entire nation (Lawal and Ese, 2012). The study of Dabup (2012) found that it costs about five million dollars (US \$5 million) to lay a kilometre of pipeline in Nigeria. This implies that over US \$25 billion must have been expended on the laying of the 5,001 kilometres of pipelines that are being vandalised regularly by the militants or by youths in the nation. Given the environmental and socio-economic impacts of the vandalism of the pipelines particularly in the NDR and coupled with huge amount of money required for laying or repairing damaged pipelines, the expectation is that the pipelines will be adequately protected and monitored through different means including application of modern technology such as Sensornet⁴⁰ among others that can help to monitor any form of third party interference with the pipelines.

³⁹ NNPC is the national oil company that represents the government in the joint ventures

⁴⁰ This is a digital monitoring solution that uses fibre optical sensors that offers continuous and absolute certainty for the monitoring of pipelines, fluid or gas detection and other environmental-related problems. For further information about this monitoring technology visit <http://www.sensornet.co.uk/images/PDF/download7d1d.cfm.pdf>

The lack of modern technological equipment is prevalent in almost all the government institutions in the country and this is bound to have direct bearing on the day-to-day decision-making. One of the government officials interviewed said:

“[...], but to some extent we have the equipment to carry out some of our activities, though they may not be enough because modern equipment are very necessary and naturally we are coming behind, and then maintenance problem here and then. Our problem is a general problem of Nigeria, which everybody knows have been affecting us in carrying out our functions”, (Interview with Government Official, 2013).

As Baumüller *et al.* (2011) noted, complex bureaucracy, paucity of capacity and unfavourable working conditions in the pertinent government department will engender serious challenge to efficiency and strong oversight. The absence of the requisite capacity in the various government departments in this study is found to be hampering their optimum performance on daily basis. The foregoing findings suggest that the regulatory agencies saddled with the day-to-day environmental management of the nation from the impacts of oil and gas activities are structurally defective to perform effectively. It is therefore the view of this study that it is important that these anomalies that characterised the regulatory systems which have been hindering the effectiveness of the governing process particularly at this first order governing level be addressed to forestall further collapse of the system.

From the IG perspective, fundamental BES degradation issues from oil and gas activities that are important for decision-making would comprise transparency, responsiveness, inclusiveness; and consensus building. These are considered in the next section.

7.3 Oil and Gas Policies Formation: Issues of Transparency, Responsiveness, Inclusiveness, and Consensus Building

Within the context of this study, policy-making is defined as the formulation of objectives for oil and gas sector with regards to conservation of BES. Policies can be formulated at the local, state, regional level within a country, national or international level. The presence or absence of specific oil and gas policies and plans is generally a reflection of the significance of the sector to the national economy as governments are averse to allocate scarce resources to an activity that will only add little to the national economy. According to the IGTs, to create a national regime capable of handling a particular issue-area like the degradation of BES as a result of oil and gas activities will require the coming together of the various stakeholders to collectively agree on norms, rules, principles, values, and policy-making approaches. This is important because some goals may be better achieved if sought widely through cooperation among

stakeholders. Moreover, the purposeful coordination of intergovernmental and intra-governmental activities can be fostered through recognition of normative institutions.

For over half-century national strategies for managing protection and conservation of the nation's environment were enacted through the promulgation of environmental regimes. Majority of these environmental regimes came after the commencement of oil and gas exploitation; they were specially designed and purposefully implemented through decrees during the era of military governments⁴¹, when there was no opportunity for stakeholder deliberation, negotiation and adoption. Following the nation's transition to democratic system of government in 1999 the national environmental regulatory regimes have witnessed a significant change, as distinct sophisticated policies have been developed through the Acts of the national assembly to regulate national environmental concerns from the impacts of oil and gas activities. With respect to the NDR, efforts to regulate oil and gas activities evolved into highly institutionalised regimes that incorporate strongly-rooted norms and overlapping national agreements.

Accordingly, it is apposite to state that national response to the need to manage environmental problems related to oil and gas activities in Nigeria has been significant, but piecemeal and ad hoc. Regime development was based on management approach and driven by technological change and the shared perception that anthropogenic activities and conditions threatened that environmental area. Rather, a governance framework that is enabling enough for all stakeholders' interests and concerns to be considered in an open, transparent, and participatory manner must be of prime interest to the nation. Consequently, active involvement by powerful actors like the MNOCs with advanced technologies is essential for regime formation and growth. Active involvement of civil society like the NGOs, CBOs and the local people is also desirable. The next section dwells on the involvement of the relevant stakeholders in policy formulation and decision-making based on some of the UNESCAP's GG principles, but following the conceptual framework developed in chapter three.

7.3.1 Participation and Transparency in Policy Formulation and Decision-making

The expectation among the OPC in Nigeria is that following the nation's transition to democracy and subsequent formulation of new policies that most environmental problems in the region will be mitigated if not totally addressed. Furthermore, the communities felt they

⁴¹ In the 54 years history of Nigeria after independence from colonial rule, the military ruled for 28 years (1966-1979 and 1983-1998).

will be involved in the process of policy formulation so that new policies will take cognisance of their needs and how the needs can be met in a sustainable way.

From the standpoint of the local communities in the OPC, transparency is about empowerment, a condition for their cooperation and basic human right. It is crucial for people to be able to understand what is happening to them, what powerful people and institutions are up to, and to determine policies that impact on them. A question should therefore be to what extent and in what fashion are the communities involved in decision-making process? Transparency entails openness, communication, and accountability. Put differently, a decision is transparent if all the requisite information used in reaching it is not only open but also accessible.

In the two case-study communities as in all other communities in the NDR, involvement in decision-making is for the most part restricted to the government and the MNOCs. However, information gathered during the fieldwork reveals some level of divergence in opinions among interviewees. On the one hand, both the local communities and the NGOs tend to believe that both the government and MNOCs have not been involving them in formulation of policy and decision-making.

“The mechanism for public participation in policy-making is bad and not effective, for example NDDC and OSOPADEC were established for the development of the OPC but they play politics with everything they do. They don’t involve us in everything they do”, (FGD, 2013).

One of the NGOs clearly puts it this way:

“Public participation presently I can say is non-existent. For instance the Petroleum Industrial Bill (PIB) before the national assembly, [...] they [national assembly members] went round and get people’s opinion but the community people cannot understand what was going on. They were not involved. We [NGOs] were not involved. [...]. They take the best hotel in Akure [State capital] and just discuss among themselves there and later vamoose back to the national assembly. That does not depict adequate public participation”, (Interview with NGO, August 2013).

Given the high level of illiteracy, underdevelopment, lack of environmental education and awareness about environmental sustainability, there is the absence of public participation and enforcement of environmental policies in Nigeria (Nwafor, 2006). However, the government maintained that though there may not be public involvement in some of the old policies, they involve the public including the locals in the OPCs in the formulation of new policies and decision-making. One of the government officials expressed it this way:

“People including communities are only been carried along in new policies been made and of course there is still need for more grassroots participation. [...], this issue is a national problem, education is a focus I’ll say is the basis for development. Before participation can be effective a larger percentage of the nation must be

educated because in most communities their leaders still decide for them. They will say please go and represent us, [...]" (Interview with Government Official, 2013).

However, one of the NGOs interviewed who confirmed that the public are occasionally involved noted that:

"EIA is the only stream we have that allows the participation of the public and it is even restricted to only people that are officially invited to the venue" (Interview with NGO, 2013).

This shows that prior to the development of the newly developed policies in Nigeria the opinions of the public particularly the NGOs and the locals in the OPC were not considered in policy-making. If they were involved, then how involved were they? Being illiterate should not be a barrier and a justification for not involving local people for them to express their views and opinions about issues. Contrary to the opinion of the government officials that the people prefer their leaders to represent them, this study found that the people no longer trust the so called leaders and they want to be fully involved. This is well captured by one of the respondents during FGDs who noted that:

"The government and the MNOCs have not been involving us in decision-making. [...], any decision taking is usually among the MNOCs, government and traditional rulers which does not get to us here. The traditional rulers from the OPC here do not allow us to be involved in decision-making and they are the people that also hijack anything that supposed to come to us" (FGD, 2013).

In a related discussion, another government official puts the issue of involving the public particularly people from the OPC this way:

"[...]. And even where public are involved in policy-making, it is those that are not directly affected that are involved. The government will bring people who had not stayed in that village or community for so long a time to come and talk on behalf of the community without necessarily knowing what the problems of the people are" (Interview with Government Official, August 2013).

Further on the issue of inclusion of local communities in the process of policy formulation, observation by the chairman of one of the CBOs interviewed in the course of the study is pertinent here:

"Regarding policy formulation and decision-making it is only the decision of the government and Chevron that are handed over to the community. They will sit on their own and decide, may be they are doing it hand in hand" (Interview with CBO, 2013).

This is a clear indication that the GS for the formulation of policy and decision-making in the oil and gas industry concerning conservation of BES in Nigeria does not involve the people who are affected by the oil and gas activities. The involvement of stakeholders in the governance system can be likened to what Sen and Nielsen (1996) in chapter three classified

under instructive and consultative approach, which are not democratic and will disenfranchise some important stakeholders like local OPCs to register their views on issues. Participation of the local communities in the policy and decision-making process regarding oil and gas activities in this study can at best be described to be at the lowest levels of Arnstein's ladder of citizen participation which falls within placation and manipulation (Arnstein, 1969).

According to Gillies (2010), in countries across the globe, high degrees of suspicion permeate the natural resource and energy sector, with members of the public and concerned stakeholders questioning the integrity and intentions of companies and governments involved. Gillies' observation is found to be true in this study: there is lack of transparency in the oil and gas policy formulation and decision-making with regards to conservation of BES as most of the activities in the sector are shrouded in secrecy and evident in the non-involvement of stakeholders in the local communities.

In the minds and reckoning of preponderance of people in the OPC, there is hardly any difference between the government and MNOCs. Responding to this subject, one of the NGOs argued quite persuasively:

“[...] I think the MNOCs and the government have been colluding to the detriment of the people. If we want to have solution here the government should be sincere and transparent. They should not decide alone, the communities including the women and youths that are often side-lined should be involved in decision-making because they feel the impacts more than anybody else” (Interview with NGO, 2013).

As noted above by one of the NGOs, the government and the oil companies are not sincere and transparent in the process of decision-making regarding the governance of oil and gas sectors. This view was further corroborated by another government official that:

“[...] When the government wants to do anything relating to the environment they don't go to the grassroots. They either select some people that are members of the communities that are not necessarily representing the interests of the communities as in most cases they don't have information about communities' expectations/contributions to programmes. Taking for example, ..., EIA of Aiyetoro [one of the OPC in Ondo State] shoreline protection, the community people do not have much information about the report because the materials to be studied by the communities were not given to them until the day they were called upon to come and contribute to the report” Interview with Government Official, 2013).

This shows that if at all the community people are involved in the governance process it is usually as Adesida (2001) puts it at the exclusion of the vulnerable people including the women and youths. Moreover, it reveals the fact that the people are not always properly informed about issues, an indication that they are not empowered and hence, there is no transparency in the

process of policy formulation and decision-making in the governance of oil and gas sector in Nigeria. This further questions the legitimacy of the existing policies in the governance of oil and gas activities, as they may not necessarily reflect some of the important values, norms and principles of the host communities. The next section considers the responsiveness of the policies to the communities in the NDR.

7.3.2 Oil and Gas Policies and its Responsiveness to the Community

“[...] The government at both the sub-national and national levels must be responsive, adopt and implement science-based policies that protect the people and the environment; policies that marry economic process with social systems and environmental factors.” (Chinweze et al., 2012, p. 542).

To the people in the coastal communities, the oil and gas policies to protect the environment have not been effective and citing the NDDC policy as example the people noted that this accounts for the various environmental problems in the region. This study found that the people in the coastal communities are gradually losing confidence in the ability of the NDDC as a Commission to protect the environment. Group discussions with the people in the two case-study communities clearly reveals that apart from the fact that they were not involved in decision-making, the policies and actions taking in the conservation of BES have not been sensitive to their plight. In this study two cases are provided as paragons below:

“Apart from the fact that they don’t involve us in anything that they do, they don’t also consider our plight in all that they are doing. They are not responsive to our challenges at all. They might be assisting in other communities that we don’t know about but as far as our community is concerned they have not been helpful” (FGD, 2013).

“[...] The only thing the government thought of in assisting us is the creation of NDDC and OSOPADEC but these agencies are not working enough in mitigating the impacts of oil and gas on our environment, so to us these agencies are only there to enrich their pockets while they are also using the money meant for the development of the communities to campaign for elections. [...]” (FGD, 2013).

Anwana (2004) asserts that government response to environmental problems and the nagging problem of unsustainable resource exploitation has been rather slow. Interviews with the NGOs further confirm that the oil and gas policies have not been responsive to the communities and one of them voiced its opinion on the subject this way:

“There are many regulations and regulators quite well but the impact of regulators has not actually been seriously felt at the local community. If you go to the OPC, many of the communities are still there with oil pollution without remediation and compensation, which is an indication that the policies are not responsive to the communities. [...]” (Interview with NGO, 2013).

This is a clear indication that non-involvement of relevant stakeholders like local communities in formulation of policy and decision-making will not only engender ineffectiveness of policies but it will also cause mistrust among the governed towards the governors. This will ultimately impact negatively on the efforts to conserve BES.

7.3.3 Oil and Gas Policies and Consensus Building

According to Innes and Connick (2001), consensus building necessitates face-to-face discourse among participants, joint learning, and the development of a joint apprehension of the problems faced. The scholars further noted that it encompasses interest-based dialogue, shared problem-solving, and agreement on policies and actions that, in aggregate, parties regard to be at least as good as those they could accomplish through other means. Consensus building also referred to as collaborative problem solving provides a way for individual citizens and organisations to collaborate on addressing complex problems in ways that are acceptable to all parties involved (Burgess and Spangler, 2003).

While some of the policies in line with the international regulations stress the need for collaboration among relevant stakeholders to address some nagging and complex problems, this study found that the government has not been maximising these opportunities. For example, Alba *et al.* (2010) noted that when it comes to public consultation and involvement, governments in OPDC may consult about oil and gas activities, but they reveal little to the public and concerned stakeholders. The authors further contend that consultation is more about notifying stakeholders about proposed oil and gas projects than involving them in project-related decisions (Ibid).

“While governments recognize the need to consider diversity and pay attention to language and cultural differences in the public consultation process, improvement is needed in involving indigenous peoples in consultations on oil and gas projects”
(Alba *et al.*, 2010, p. 11).

The provisions of Sections 6 to 11 of the EIA Act for example directs that before a decision whether positive or negative is reached regarding a proposed project or activity, government agencies, members of the public, potentially affected states, local governments, and experts should be given the opportunity to comment is noteworthy. Nonetheless, this study found this to be inadequate as it does not reflect the existing realities as evident in the practice in Nigeria where issues regarding EIA are publicised in the national newspapers and the preponderance of people in the NDR do not have access to or understand such information.

Some previous studies on oil and gas in Nigeria further reveals the lack of consensus building in most projects embarked upon with a view to address some of environmental problems in the region despite the provisions of the policies. For example, Müller (2010) points out that most of the development projects executed by the government and the oil companies in the region were planned in a top-down manner, hence, the projects lacks ownership by the people. Müller, through interviews with the locals on their involvement in the preparation of the Niger Delta Regional Development Master Plan, established that the people could not claim ownership of the plan because they were not involved contrary to the claims by the Commission that the people were involved. This not only further questions the transparency and the involvement of the host communities in most government activities and decision-making but underscores the fact that there is no consensus building among stakeholders in the oil and gas GS.

7.4 Second Order Governing: Institutions

This section examines the institutional dispositions within which the first-order governing occurs: rules; rights; laws; norms; roles and processes. According to IGT, institutions indicate the diversity, dynamics and complexity of the societies they are part of and the governance systems they unify (Kooiman and Jentoft, 2009). This will show how institutions influence BES degradation and conservation from the impacts of oil and gas activities, the need to stress their limiting as well as their enabling functions, the way institutions help to enhance governance.

Oil and Gas Policies for Conservation of BES in Nigeria

It is instructive to mention that substantial parts of the federal environmental legislation in Nigeria were passed years after the discovery and exploitation of oil in commercial quantities started in 1958. The National Policy on Environment in Nigeria for example, that indicates the objectives of securing and conserving the quality of the environment for the well-being of the people presently and in the future was not developed until 27 November, 1989 following the dumping of toxic waste in Koko village in Delta State⁴² in Nigeria in 1987. To Adegroye (1994), the dumping of toxic waste in Koko was the incidence that stirred the government and the people to environmental protection in Nigeria. Sequel this incident, the Harmful Waste Decree 42 of 1988 was promulgated by the Federal Government that later enabled the establishment of the Federal Environmental Protection Agency (FEPA) (FEPA, 1988).

Similarly, an Environmental Impact Assessment (EIA) Decree came into existence in 1992, and in June 1999 the FMENV was created following the nations transition to democracy. There is

⁴² One of the oil the oil producing States within the Niger Delta Region.

plethora of enabling policies and regulations in Nigeria for the governance of oil and gas sector, the major and subsidiary ones that are germane to the sector in the conservation of BES have been discussed in Chapter four. The objective of this section is to present a review of the policies in terms of its inadequacies and how it constraints conservation of BES.

Given the deluge of policies governing the oil and gas sector in Nigeria, this study found that accessing and appreciating the legal and regulatory framework appropriate to the conservation of BES is usually a herculean task. In addition to the stress related to accessing the laws and apprehending them, it seems that the preponderance of the policies are government and oil and gas industry centred to the abandonment of the OPC. The reason for this may not be improbable from the fact that oil and gas sector remains the bastion of the nation's economy.

As earlier mentioned, oil and gas industry operators in Nigeria are statutorily required to observe the highest international environmental safety standards in their activities, including undertaking of EIA and the adoption of measures to prevent or limit oil pollution, gas flaring, and other industrial risks to the environment [particularly, as it relates to the ES that coastal inhabitants depend on for their sustenance]. However, despite the plethora of policies and regulations several reports have documented the impact of the oil and gas activities in the extensive despoliation of BES and livelihood of many of those living in the OPC as revealed in Chapter six of this study. For example, Aghalino and Eyinla (2009) noted regarding the Funiwa-5 oil blow-out in 1980 in Rivers State and Qua Iboe oil spillage that both Texaco and Mobil which are the companies respectively involved failed to make genuine effort to combat the oil spilled from their various platforms until much harm had been done to the environment. The authors blamed the action of the oil companies on the laxity and inadequacies of the Nigerian environmental laws.

Given the various governance issues and challenges that characterised the GS of this sector, a further review of the legal and regulatory framework of the sector to determine other governance issues and why some of the issues still persist becomes necessary. The review of regulatory framework is the subject of the following section.

7.4.1 Federal System and Constitutional Provisions

On paper, Nigeria is one of the most decentralised countries in West Africa. The political and administrative decentralisation is well spelt out in the nation's constitution (COFRN, 1999) as a federation comprising the federal, state and local governments. The expectation from any country like Nigeria with a federal system of government is that as enshrined in the constitution

that power will truly be devolved among the three tiers of government but this is found not to be so, particularly when it comes to the major revenue-generating sectors in the nation like oil and gas. This centralised approach of the federal government has a lot of implications for the oil and gas sector governance regarding conservation of BES as well as for other sectors in the nation. For example, most headquarters of government offices where decisions are taken are concentrated at the nation's capital which is far away from rural areas, where oil and gas are taking place. Although, there are regional and state offices of the government MDAs across the nation most staff do not want to stay in rural areas or regions like the NDR where there is poverty and paucity of basic infrastructures (UNDP, 2006).

USAID (2010) established that the centralised approach to oil and gas sector governance was one of the issues instrumental to the 1967-1970 civil war (Biafra war) in Nigeria. USAID further observes that this governance approach of the sector has bred series of protests against the distribution of benefits from oil wealth as people in the NDR recognised the impact of the growing industry on the environment (Ibid). This centralised approach has disenfranchised some of the government institutions and stakeholders particularly at the sub-national and local levels including the locals in the OPC from playing active role in the process of formulation of policies and decision-making regarding the management of the environment.

7.4.2 Ownership and Control of Resources

Another major governance challenge that has been contributing to biodiversity loss and ecosystem services degradation in the NDR is the ownership and control of oil and gas resources in Nigeria. Just as Watts (2008) noted, the ownership, regulation and redistribution of oil and gas wealth in Nigeria have been entrusted in the federal government. While section 44 (3) of the Nigerian constitution vests the absolute ownership and control of minerals in Nigeria in the Federal Government, the 1969 Petroleum Act (section 1) and section 1 of the Minerals and Mining Act (2007) also vest the entire ownership and control of oil and gas resources on the federal government. Evidently, the Acts and the constitution place under the Federal Government's list of exclusive legislative powers of all matters relevant to the regulation and management of the oil and gas industry⁴³.

⁴³ These include export duties, incorporation and regulation of corporate bodies, mines and minerals (including oil fields, oil mining, geological surveys and natural gas) and taxation of incomes, profits, and capital gains.

The provisions of the constitution and the Acts that conferred ownership and control of management of oil exploration and production has enabled the federal government to acquire a prepotent role in the management of the oil and gas industry and other activities related to the resource such as management of oil and gas environmental-related problems. For example, the 1969 Petroleum Act which was enacted by the military government in the course of the civil war in the country (Omeje, 2005; Ejibunu, 2007; Müller, 2010) is not only valid today but also places the absolute ownership over all resources in the federal government. This explains why the federal government still exercises supreme responsibility over the environmental management efforts across the nation and the non-involvement of other stakeholders, including the locals in the OPC, in the formulation of policies and decision-making processes.

7.4.3 Land Tenure System

Similar to the issue of ownership of mineral resources in the nation is the issue of ownership of land. In Nigeria, the Land Use Act (LUA) of 1978 statutorily empowered the federal government to acquire land for public use. The Act vests ownership of all urban lands on the state [governor of a state⁴⁴] and rural lands on the local government chairman, but when it comes to mineral resources the federal government usually acquires such lands from the state. The federal government acquires land by exercising its power of “*eminent domain*” which permits it to obtain land for public use and in this case oil and gas purposes without recourse to the interests of people who lived there by claiming that oil operations serve the public interest.

The Act provides and sets out guidelines by which lands may be compulsorily acquired from land owners and the constitution of the Federal Republic of Nigeria (1999) also alludes to revocation of rights and interests in land. According to Human Rights Watch (1999, p. 68), the Act provides “for an extraordinary level of government control over land use and transfer”. This is another issue that placed the OPC in a disadvantaged position regarding ownership, control of lands in their communities, and by extension the management of their environment. As noted by Ebeku (2001), prior to the enactment of this Act the communities were not just in control of their lands but they also received rent on the land. The implication of this is that the Act circumscribes the obligations of the MNOCs towards local communities unlike before when the communities’ views and interests must be respected before, during and after any activity like oil and gas commenced in the region. In essence, the Act has disenfranchised the

⁴⁴ At the conception and enactment of the Act, the ownership of land was vested on the Military Governor that was appointed by the Military Head of State who could not question the authority of his/her boss but following the nation’s transition to democracy the *status quo* has been maintained by the elected governors that assume ownership of land within their states.

people from having a say over their lands⁴⁵ and the management of the environment and the oil and gas resources. No wonder, this idea of compulsory acquisition of land for oil and gas activities that usually infringe on the rights and interests of the locals in the OPC has orchestrated series of crises among stakeholders. The infringement on the interests of the locals on land and the associated crises was well captured by Akpan (2005, p. 136) who noted that:

“[...] petroleum operations constitute the single most important process through which such interests have become threatened, and through which there has been a deepening crisis of confidence over the years between local communities and the state on the one hand and between communities and oil corporations on the other”.

The structure of the Land Use Regulatory System in Nigeria as clearly spelt out in the LUA had two cardinal implications: One, the Act made land absolutely a matter of national, rather than sub-national jurisdiction, effectively permitting the federal government to control and acquire land anywhere in the federation, thereby uncommonly limiting the formal powers of the governors under the Act to control land use in their respective states. Two, land that was under the private or customary (communal) ownership before the enactment of the Act was brought under the government. This suggests that land legally or customarily occupied before the Act could be revoked and obtained by the government “for mining or oil pipeline purposes with compensation restricted to the value of unexhausted improvements at the date of revocation” (Ikporukpo, 2004, p. 345). Once this expropriation takes place, the enabling policies usually require that compensation is to be made to those whose interests have been revoked.

In some of the oil-rich producing countries like Canada and Australia, the land tenure system does not totally preclude the locals or individual owners from exercising some controls over their lands though the control does not include mineral rights. For example, the Surface Rights Act in Alberta province of Canada confers the mineral rights in the government of Alberta, individual land owners are permitted to control only the ‘land surface and the right to work it, in addition to any sand, gravel, peat, clay or marl that can be excavated by surface operations’ (Government of Alberta, 2014). In contrast to the situation whereby the national government wields absolute control over the right to explore and produce oil and gas in Nigeria, the mineral rights have been conferred in the government of the oil-producing provinces. Similarly, while states in Nigeria including the nine oil-producing states are severely constrained in deriving revenues directly from the oil and gas operations and the constitution also precludes them from imposing duties of customs and excise, states in Australia are empowered to impose royalty

⁴⁵ Companies do not have to negotiate a Social Licence to operate with communities or regard them as owners of the land.

usually at the rate of 10% of wellhead value on petroleum production within their territorial boundaries (Crommelin, 2009).

During the colonial era, and since independence there was little interference from the government or ruling power in traditional land tenure systems in the southern parts of Nigeria. As noted by Williams (1992) and (Francis, 2008), the LUA had no legislative precedent. According to Ebeku (2001), a dual system of customary land tenure system and land tenure under the received English law (also known as statutory land tenure system) were enacted in the southern states. To Famoriyo (1984), the traditional tenure system was “common ownership” which was either within the family or community.

As noted by Fabiyi (1984), Ebeku (2001), and Otubu (2010), the need for promulgating the 1978 LUA stemmed out of the exigency to harmonize the land tenure system in the country, to address the difficulty of land speculation, to tackle the pitfall of government (and the individual) in obtaining land for development purposes, and to halt the fragmentation of rural land emerging from allocation via conventional principles of inheritance. While the objective of the LUA is commendable, its advent has however created series of disputes today in some parts of Nigeria including the NDR. For example, the traditional authorities have lost their rights and powers over land and were unable to manage land disputes that arose. The disputes are still today very significant in the NDR.

Some commentators ascribe the resultant often violent upshots of these disputes to the fact that people have lost their land rights and they have not been fairly compensated for this loss (Ebeku, 2001; Akpan, 2010). To Akpan (2010), the “dividends of democracy” are not uniformly obtainable to the people whose land has oil. The author further observed that presently, there is competition at all levels for political power that would allow those who acquire this power to benefit from oil exploitation, depriving the real owners of this land from obtaining the benefits in oil from the land (Ibid).

7.4.4 Ineffectiveness of Policies in Performing Regulatory Functions

The ineffectiveness of policies and the weakness of some of the institutions involved in the oil and gas activities in Nigeria were further proven when it was established that there is lack of inventory of concentrations of the major air pollutants and greenhouse gases (GHGs) which is a major limitation to air pollution and carbon management in Nigeria. According to Fagbeja (2008), Nigeria has no station that contribute to data on concentrations of GHGs (CO₂, CH₄, CPCs, N₂O and surface O₃) and other pollutants such as CO, NO_x, SO₂, and VOCs based on the data obtained from the World Data Centre for Greenhouse Gases (WDCGG) website

accessed on 23 May 2008. Assessing the levels of these pollutants will help the regulators to discover whether they overshoot specific Air Quality Objectives (AQO) and take steps to improve air quality.

This study also confirms the finding of Fagbeja on the weakness of some of the institutions in discharging their oversight functions as stipulated in the policies during fieldwork. An interview with some of the regulators vested with the responsibility of monitoring air quality in the country showed that they have not been doing anything in that direction and that there is no air quality standard in the OPC. One of the officials aptly put it this way “I am sorry I don’t know the standard. Whether we have standard or not I don’t know”, (Interview with Government Official, 2013). This rightly suggests that the FMENV and NIMET do not measure concentrations of air pollutants and GHGs on a systematic and routine basis, which will enable a nationwide assessment of the air quality in the country upon which proper legislation and efforts for improvement can be based.

The ineffectiveness of the policies and the weakness of some of the institutions were also noticed in almost all the institutions. For example, while the people in the two case-study communities commended the NDDC Act and the Commission’s efforts regarding developmental projects, they however condemn in its totality the ineffectiveness of the Commission’s efforts in regulating environmental activities in the OPC. Interview with the local government official (LGO) further lends credence to the communities’ viewpoint on the ineffectiveness of NDDC policy in regulating environmental activities in the OPC. The official observed that:

“NDDC in Ilaje [Local Government] here have not been doing anything on the conservation of the environment. [...], while NDDC is only interested in projects, its emphasis has not been on the issue of environmental protection” (Interview with LGO, 2013).

Interviews with the NGOs further established the ineffectiveness of the policies in the management of the environment from the impacts of oil and gas activities in Nigeria. One of the NGOs noted that:

“The policies are not effective as there are lots of destruction of ecosystems and biodiversity in Nigeria. It’s an eye sore; it’s all over the places particularly in the OPC” (Interview with NGO, 2013).

7.4.5 Inadequate Public Participation

“In many cases, consultation with local communities focuses more on the amount to be negotiated as compensation than on establishing communication links for

managing environmental impacts throughout the project cycle” (Alba et al., 2010, p. 11).

As noted above by Alba et al. (2010), government consultation with the locals does not give priority to how environmental problems and associated issues can be effectively addressed. The reason for this is not far-fetched. Either the policies do not make provision for public participation or there is a violation in the policy. For example, the provision in Regulation 17 of the Petroleum Drilling and Productions Regulations 1969 that places some prohibition on land and provides that licensee is not permitted to enter upon or occupy or exert any rights or power regarding any area of land considered sacred is praiseworthy for protecting the cultural rights and heritage of the people. However, its provision that the determination of a land or an area of land is mainly the prerogative of the state government is antithetical to the principles of public participation and by extension of IG. This is considered a violation of the indigenous and cultural rights of the people in the region (Amnesty International, 2009). There is therefore the need for a review of this regulation.

In a related discussion, further review of the NDCC Act revealed that Section 7 (2) of the Act stipulates that in discharging its responsibilities, the Commission should recognise the disparate views and specific contributions of each member state of the Commission to the total national production of oil and gas. This underscores the significance of participation of all stakeholders, which is expected to include the views and contributions of the residents of the OPC to the production of oil and gas as well as the conservation of the environment from the impacts of oil and gas activities. However, one flaw about this policy is that it was not explicit enough to specify the category of people to be involved; this possibly explains the reason why the views and contributions of rural communities are in most cases not considered. This study further observes that when the views and opinions of people are not considered it may breed grievances and this probably accounts for the incessant youth restiveness that has characterised the NDR, though this is low in the study communities when compared to other parts of the region.

7.4.6 Persistent Environmental Problems

Given the impact of gas flaring on BES and the health and safety of the lives of the people in the NDR as established in the previous chapter and as observed by ERA (2005) that it is a violation of the human rights of the communities, conservation of BES require urgent attention. Perhaps one of the reasons why gas flaring and other oil and gas environmental-related problems have persisted in the region despite series of agitations by the host communities and its attendant impacts on BES and the lives of the people is the provision of some sections of the

policies. For example, section 3(2) (a) of the Associated Gas Reinjection Act 1979 empowers the Minister to issue a certificate to MNOCs to continue flaring where he feels that re-injection of gas is not feasible and the MNOC in question is asked to pay a nominal fee for extension of flaring.

The study found this to be another flaw of the policies as well as the problem associated with the centralisation of power in the nation where the decision to continue or discontinue flaring of gas is the prerogative of the Minister even when flaring is threatening the existence of people in the OPC. This possibly explains why gas flaring has not stopped in Nigeria. Moreover, given the level of corruption notable among the political office holders in Nigeria as noted in Aiyetan (2007) and Human Rights Watch (2008), the minister may not be immune to bribery and corruption from the MNOCs operating in the country (Gillies, 2009; Okeke, 2012). A very good case in point on the corrupt practises of the MNOCs in Nigeria is the dismissal of a chief executive officer and two others on 13 October, 2014 by Afren Plc⁴⁶ as shown in **Box 7.3** over their involvement in oil scandal involving Nigerian oil firm, Oriental Energy Resources. This came a month after a Milan prosecutor started probing the role of Claudio Descalzi, Eni's CEO, his predecessor and another executive over their role in US \$1.1 billion corruption connected to the bribing of local politicians, intermediaries and others for the acquisition of Oil Prospecting License (OPL) 245 in Nigeria (Asu, 2014).

Box 7.3: MNOCs and Corruption in Nigeria

13.10.2014

Dismissal of CEO, COO and Associate Directors

Afren plc ("Afren" or the "Company") announces today that Willkie Farr & Gallagher (UK) LLP ("WFG") has completed its independent review into the receipt of unauthorised payments by members of management and senior employees. In connection with the conclusion of this review, the Company has decided to terminate the employment and directorships of Osman Shahenshah and Shahid Ullah with immediate effect.

Source: Afren Plc. (2014).

⁴⁶ Afren Plc is an independent oil and gas company operating in Nigeria and is listed on the Main Market of the London Stock Exchange, with a diversified portfolio of production, development and exploration assets. Detail of the oil scandal is available at http://www.afren.com/news_and_media/press_releases/ [accessed 15 October, 2014].

The recognition and relevance of the issue of corruption as a bane of environmental management in most developing countries including Nigeria cannot be overemphasised, just as Eneh (2011, p. 258) notes: “corruption makes a mess of implementation of even faultless policies in Nigeria”. To Hoben *et al.* (2012, p. 2), in Nigeria “corruption remains a paramount challenge at every level of society”. Additionally, the section of the Act that gave a deadline of “not later than 01 April, 1980” and “not later than 01 October, 1980” which apparently have become outdated should be expunged from the Act for a realistic deadline and increasingly monitored plan be put in place to phase out gas flaring in Nigeria.

Further on the oil and gas operations in Nigeria, Regulation 42 of the Mineral Oil Safety Regulation prohibits the use of any explosives by any person at any oil well or in any installation where petroleum is exploited except permitted by the manager. This is also found to be inadequate given the rate of BES degradation in the NDR and moreover, the use of explosives is inevitable particularly during seismic operations. Rather, amending this regulation to indicate that at any stage or place during the exploration and production of oil and gas where the use of explosives is needed **should provide** a reasonable and adequate safety plan is desirable.

As a way of mitigating the impact of human activities on the environment, it is expected in line with the global environmental sustainability ethos that conscious efforts are made to ensure that further environmental problems are avoided by subjecting every project, programmes and policies to sustainability assessment. Prevention of environmental degradation may be achieved through the mechanisms of environmental risk assessment, life cycle assessment, environmental impact assessment (EIA), and strategic environmental assessment (SEA) (U.N. Global Compact, 2002) and it would require the full disclosure and consultation with all relevant stakeholders (UNECE, 1998). While this study found Regulation 1(2) of the Petroleum Drilling and Productions Regulations 1969 that indicates the required documents to accompany an application for an oil prospecting licence or oil mining lease is commendable, it is however necessary to amend this to include an EIA, and an environmental protection and emergency plan given the current realities in the industry.

Further on the issue of EIA as an important global policy instrument for mitigating the various impacts of anthropogenic activities on the environment that is expected to be carried out prior to the commencement of a project, it has however been observed that it is scarcely undertaken before the approval of infrastructural projects (Eneh, 2011) which may include oil and gas projects. Interviews with the government agencies in this study confirm Eneh’s finding and one of the officials expressed this issue this way:

“[...] the Commission [government] has been trying to apply clinical approach to environmental issues. For example, in most cases the government don't bother about the environment or the issue of EIA even where we [environmental officers] have raised the issue, unless it is compulsory: that is when other parties involved in the project [consultant and contractor] insisted” (Interview with Government Official, 2013).

The nonchalant and lackadaisical attitude of the government in following the EIA objectives as evinced in the views of the respondent above reveals why it is possible for any other actor outside the government to default or manipulate the process. For example, it has been established that most of the EIAs done in the NDR are usually skewed to favour the MNOCs and the baseline data of studies conducted by some scholars (Jike, 2004; Orubu *et al.*, 2004; Idemudia and Ite, 2006; Eneh, 2011) corroborates this. In light of the earlier findings of this study and eight defects in EIA process in Nigeria as provided by Nwafor (2006) which include public participation, paucity of requisite human resources, EIA report, EIA team, imperfect system of accreditation of EIA consultants, fault of the government, implementation, and agency capture, EIA report can be manipulated in favour of MNOCs.

7.4.7 Transparency and Accountability Problem

As noted in Chapter three, transparency and accountability are parts of the attributes of good governance and IG and this is expected to be explicitly embedded in policies so that it can be applied in the process of decision-making. This study however found during the course of reviewing the various oil and gas environmental-related policies in Nigeria that the source of the problem of lack of transparency and accountability that characterised the governing system is traceable to the provisions of some of the policies. For example, while some provisions in the NOSDRA Act 2006 are quite commendable, Section 20 of the Act precluded a member of the Agency's Board, Director General, any officer or employee of the Agency to be penalised for any deed undertaken in pursuance of the Act or abandonment or default in the execution of the Act. But any of them can only be penalised except action is initiated within three months following the deed, abandonment or default grumbled about or within six months following the cessation in the case of persisting damage or injury. Apart from the fact that this provision of the Act negates the principle of accountability, the limited time available for people to seek redress over a misdeed, abandonment or default of the Agency's representative appears to constitute a stumbling block to accessing environmental justice. The inability of the locals to seek redress over a misconduct of an agency's representative or that of an MNOCs is what Ogwu (2012) describes as lack of procedural justice.

Furthermore, pursuant to the provision of the NOSDRA Act, a member of the Agency's Governing Board, an employee or officer of the agency according to Section 24 shall consider as confidential any information that has come to his knowledge and not disclose same unless demanded by a court of law. Whereas the provision of the Act on response and remedy of oil spill in the oil production environment is praiseworthy, its provision that empowers staffers of the agency to consider any information at their disposal as confidential is not only antithetical to the principles of transparency or accountability but also shows the inadequacy and chasm in the general formulation of the Act. It further corroborates the earlier finding that the people are not involved in the process of policy formulation and decision-making. The NGOs interviewed confirmed the paucity of information and difficulties they usually encounter in accessing information regarding oil and gas environmental-related issues from the government and oil and gas companies. One of the NGOs presents this issue this way:

“Our access to information on oil/gas environmental-related problems such as oil spills as an NGO is limited, particularly from the government and MNOCs. We rely majorly on the information gather from the public or information they [government and MNOCs] made public, [...]” (Interview with NGO, 2013).

7.4.8 Inadequate Enforcement

The objectives of the best environmental protection policies are improbable to attain if governments solely depend on voluntary compliance as most individuals and organisations are likely to take shortcuts where possible, hence the need for monitoring and enforcement. For example, it must be noted that regulation 15 of the oil and gas Pipelines Regulation 1995 that provided for the monitoring of internal corrosion in pipelines through running of an intelligent pig and other survey instrument at least once in five years and for the report of such surveys to be submitted to DPR is admirable. Nevertheless, provisions should be made concerning the action to be taken upon the receipt of the report of the survey and the penalty for defaulting companies/licensees, which must also be enforced.

“Regulatory framework for managing protection of the environment in the Niger Delta lacks enforcement” (Human Rights Watch, 1999, p. 54).

The failure of the government to implement or enforce environmental laws particularly as it relates to oil and gas company activities has generated debates among scholars. For example, while some scholars asserted that Nigeria lacks extensive national policy or laws to protect its environment from the impacts of oil and gas activities (Emovon, 1988; Ferrari, 1988; Williams, 1988 cited in Allen, 2010), Imevbore (1991) and Elenwo and Akankali (2014) contend that there are various extant policies that if sufficiently enforced would considerably impact the

environment positively. Imevbore further argues that apart from the national policies or laws, there are various international environmental laws that have the capability of protecting the nation's environment from impacts by oil and gas activities, if rightly enforced or domesticated into the nation's policies. Using the LUA to buttress his argument (1991, p. 43) notes:

“We believe that if the provisions of the Land Use Decree [Act] were strictly observed it would not only ensure the realisation of the laudable objectives set out in the preamble to the Decree but would also aid a sound development of our environmental landscape from ecological and aesthetic perspectives”

The above statement indicates that the LUA like other policies is capable of protecting the environment from damages occasioned by human activities like MNOCs. It also shows that the provisions of the Act are not substantially enforced. That said, this chasm has been noted in this study as a point for intervention, especially in an attempt to understand what and how the lack of enforcement of these laws by the government resulted to biodiversity loss and ES degradation with social, economic, environmental and political ramifications for people in the OPC.

In a related discussion, the inadequate enforcement and ineffectiveness of the oil and gas environmental-related laws in Nigeria is also noticed under the Oil in Navigable Waters Decree which stipulates that approval of the Attorney-General of Nigeria is required before any offender could be prosecuted. This suggests that where there are political interests, the Attorney-General may be obliged to give approval to a person or group seeking to bring an action under the Act. Just as Ibidapo-Obe (1990) noted, this in a way explains the reason for the inadequate enforcement and ineffectiveness of these laws to sufficiently control oil and gas companies against pollution of the environment in the OPC. According to him:

“Government must not be seen as being hand in glove with foreign oil interests to the detriment of the welfare of her citizens. The existing regime of criminal liability for oil pollution is inadequate, haphazard, and ineffective. One can justifiably conclude that there is indeed no coherent philosophy of criminalisation of pollution offences”, (Ibidapo-Obe, 1990, p. 252).

The finding of the foregoing researchers was found to be true in this study as the lack/inadequate enforcement of the environmental policies/regulations was noted as one of the banes of the GS in the country by the various stakeholders interviewed including the government officials. One of the NGOs puts the issue this way:

“[...], we have avalanche of laws, plethora of provisions in our laws but enforcement is the problem” (Interview with NGO, 2013).

Similarly, one of the government officials notes that “[...], like I told you we have more than enough policies in the nation but the problem is implementation” (Interview 6, Government

Agency, 2013). The locals interviewed in the two case-study communities also confirmed the problem with implementation and that without strict enforcement the oil companies will not comply. One of the respondents in the FGDs succinctly present it this way:

“The MNOCs play a lot of politics and we cannot compel them to do anything against their wish in our community. They might promise they will come today and you might not hear from them again until 2015 when they will promise again that they will do it, so the MNOCs need to be forced to do things otherwise they will not do anything” (FGD, 2013).

7.4.9 Inadequate Penalties and Compensation Payments

In every nation the legislation that governs environmental policy is expected to contain provisions for appropriate penalties that may be applied in the event of contravention of the rules and regulations. This is expected to be amended where necessary to conform to existing realities in the state. For example, Nwafor (2006) reveals that the National Policy on Environment (NEPA) in United States of America that was signed into law in 1970 has been amended thrice in 1982 to show the nation’s commitment to environmental protection. However, in the case of Nigeria the penalties that are provided in some of the policies are not in tandem with the present reality in the country and hence cannot in any form mitigate the current rate of biodiversity loss and ES degradation.

The study also observed that provisions concerning sanction for environmental pollution offences are too liberal and are not responsive to current economic realities and trends. Furthermore, the compensatory regime is not only monetary with meagre amount but it is not reparative which shows that the policies are not fair, adequate and responsive to the yearnings of the OPC. In a similar vein, the policy to prohibit the flaring of gas also provided a proviso for flaring and all these possibly contribute to the environmental problems and continuous flaring of gas.

Whereas the Petroleum Drilling and Productions Regulations 1969 have been amended severally⁴⁷ to reflect the present day realities in terms of what the government generate from the fees, rents, royalty and other revenue, it is surprising why nothing has been done over the years to review the laws concerning the inadequate provisions on penalties to prevent pollution and foster environmental rights of the people that continue to suffer the deleterious impact of

⁴⁷ The regulation was amended in 1973, 1979, 1995, 1996 (Adegbe, 2012) and in 1988, 2001, 2003, and 2006 (DPR, 2014). The Petroleum Drilling and Productions (Amendments) Regulations 2001 for example, sets out new fees for prospecting licence, processing fees, mining lease and other licences and permits. Petroleum Drilling and Productions (Amendment) Regulations 2003 reviews and sets new royalties for onshore production and shallow offshore production sharing contracts; while Petroleum Drilling and Productions (Amendment) Regulations 2006 further reviews what is paid on royalties.

oil and gas activities. For example, the penalty for defaulters under the Oil in Navigable Waters Act 1968 is not only found to be inadequate but also an indirect leeway for oil pollution to continue unabated. Similarly, the fine of N100 or six months imprisonment as sanction for non-compliance under the Crude Oil (Transportation and Shipment) Regulations is not only inadequate when compared to the hazards it would cause in the environment and which does not also conform to the modern economic realities in the nation. This underscores the need for ES valuation.

While the LUA is silent on the issue of injurious affection and disturbance on land, a review of the 1969 Petroleum Act revealed that section 77 of the Act specifies that oil and gas operators will pay a fairly reasonable amount of money as compensation. The compensation will include any disturbance of the surface rights of any landowner or occupier and for any damage, removal or destruction done to surface of the land upon which oil and gas activities are being carried out and shall in addition pay the owner for any crops, economic trees, buildings or works damaged, removed or destroyed in the course of oil and gas exploitation. However, as good as this idea is for oil companies to pay compensation for damages done to the local residents, the quantum and adequacy of compensation has generated dissatisfaction in various instances, even beyond the scope of a localized context among people in the NDR (Ogedengbe, 2007).

In Ibagere (2000 cited in Ogedengbe, 2007), it was established that in most cases the compensation paid to the people in the NDR often generates a lot of controversy due partly to inadequacy or even non-payment. According to Amnesty International (2009), compensation for environmental damages out of oil and gas operations is difficult to get as cause of the spill has to be ascertained. Furthermore, compensation is only paid for trees and plants that generate economic income and not for long term damages or damage to health. Consequently, the people in the region have been relentless in their agitation for adequate compensation for their environment that has been severely degraded following the unabated oil exploitation activities in the region and the non-clarity of the section on compensation in the Petroleum Act. They remained resolute in expressing their discontent through series of demonstrations and conflicts that have taken different dimensions over the years.

The locals in the two case-study communities lamented the failure of the oil and gas companies to adequately compensate them for the hardships they are subjected to as a result of the impacts of oil and gas activities taking place in their communities. The local people believe the MNOCs have connived with the government to deprive them of their rights as residents of the OPC. This point is tersely captured by one of the respondents in the FGDs that:

“[...] We are just suffering and nothing has been done to us by the government and the oil companies for the damages we have been experiencing as a result of oil spills in our communities. Sometime they came and promised that they were going to compensate us. We took photographs of our farms/plants that have been destroyed but eventually nothing came out of it” (FGD, 2013).

The view of the respondent above was also supported by the NGOs that in spite of environmental problems being witnessed in the NDR, the people are not sufficiently compensated. In the words of one the NGOs:

“Apart from the fact that the communities are not usually being adequately compensated for the damages to their environment and where this is done it is nothing compared to the level of damage. For instance, recently after lots of damages, [...]; the company managed to give them one borehole which cannot be compared to the damages that have been done to the underground water, BES and some other things? The charges are not commensurate. [...]. At the end of the day the community may not be given anything. So obviously, what they pay for compensation is inadequate” (Interview with NGO, 2013).

7.5 Third (Meta) Order Governing: Values, Norms and Principles

This section is dedicated to the way the various governing institutions involved in the governance of oil and gas sector conceive and define BES degradation.

7.5.1 Governance Images: Problem Definition of BES Degradation among Governing Institutions in Oil and Gas Industry in Nigeria

Stone (1989, p. 282) established that problem definition “is a process of image making, where the images have to do fundamentally with attributing cause, blame, and responsibility.” IGT referred to these background ideas about problem definition as images (Kooiman *et al.*, 2005b; Jentoft *et al.*, 2010). There are several examples of such images, from the all-embracing nature of the governance challenges to its more visible institutional and instrumental aspects of how to govern a natural resource like oil and gas activities.

Governance image in the context of this study refers to the assumptions, visions, metaphors, generalisations or the way a societal problem such as the issue of degradation of BES is perceived by disparate actors. To Jentoft (2007), these images have become a norm that determines societal behaviour and as pointed out by Jentoft *et al.* (2010), governance processes are not controlled by problems per se but ideas about them. Governors are therefore expected to ask what these apprehensions are and where they emanate from. From this image follows the policy that government should develop for the conservation of BES and other alternatives that will mitigate perturbations on BES. In acknowledging the significance of images to the governing process Kooiman (2003) contends that it is ludicrous to talk about governing without

the formation of images which are required for the purpose of comprehending, communication and action:

“Anyone involved in governing, in whatever capacity or authority, forms images about what he or she is governing” (p. 29).

Oil and gas being such an intricate and sensitive sector of strategic importance for nations; government, market and civil society have crucial roles to play around the problem definition of BES⁴⁸. The picture or image of BES may not be fully understood by a single actor, particularly as different actors in the governance of oil and gas sector with regards to conservation of BES are likely to have divergent opinions that colour their perception of BES. To mitigate further degradation of BES and for the benefit of all stakeholders including the oil and gas sector, the host communities as well as the entire nation, it is important to consider how the actors define the issue of BES degradation. In doing this, it would require answering some important questions that will help to unravel the various values, norms and principles that are germane to the governance process and whose values, norms and principles overshadowed others.

The diversity of actors that are involved in the governance of oil and gas sector regarding conservation of BES in Nigeria as outlined in Chapter four and their conflicting roles will definitely contribute to degradation of BES. This will engender complexity of relations between the actors in the GS, moreover, as they operate at varied scale. However, as nations are shifting from government to governance and with the introduction of many initiatives that are taking place among state and non-state institutions to mitigate recurring issues like the one under review in this study, the stance of the actors on issues in a given context like Nigeria matters. This is considered in the following section.

Government Image of Biodiversity and Ecosystem Services Degradation in Nigeria

In Nigeria, the government does not distinguish between biodiversity and ES and this is evident in the way the issue of BES degradation is grasped. Biodiversity in Nigeria is not something different from what the concept of biodiversity has been understood to mean elsewhere, i.e. the combination of genes, species, and ecosystems that provide the society with a wide array of goods and services. As captured by the former minister of environment, Mr. John Odey and reported in the Fourth National Biodiversity Report:

⁴⁸ The definition of BES in this case will include the benefits from a healthy ecosystems and encumbrances of degraded ecosystems to all stakeholders.

“Biodiversity is essential in several aspects of human welfare, spirituality and culture, food security, health etc. For us in Nigeria, biodiversity is particularly important in the rural areas on which a large proportion of our people’s livelihood depends.” (FMENV, 2010, p. 6).

The government acknowledged that though, greater percentage of its external earnings is from oil and gas sector, about 70% of the populace rely on agriculture for their wellbeing and that the economy is characterized by extensive agrarian traditional sector (Ibid). Moreover, most of the rural poor depend on the wild species of biodiversity for their sustenance while the urban population also benefit from the exploitation of the country’s biological resources, particularly in the construction industry. From the above definition of biodiversity the government considered the value on human welfare, spiritual value, cultural value, value on food security for its citizens, and value for poverty eradication among rural communities. Based on these values and associated norms the principles adopted by the government in the governance of the environment including governance of oil and gas activities with regards to conservation of BES in Nigeria is shown in **Box 7.4**. The Nigerian government’s commitment to the issue of biodiversity conservation also manifested in the development of the National Biodiversity Strategy and Action Plan (NBSAP) in 2010 to regulate the exploitation of biological resources (FMENV, 2010b).

Oil and Gas Industry Image of Biodiversity and Ecosystem Services in Nigeria

The oil industry understands and recognises the link between biodiversity and human well-being as well as the benefits available to society as a whole including business and industry (IPIECA and OGP, 2012). For example, IPIECA and OGP (2011) established that oil and gas industry both depend and impact upon BES and the dependencies include utilising water and natural resources like timber and aggregates, and depending on natural waste assimilation and flood protection functions. Potential impacts on the other hand, appear through depleting, displacing and polluting the organisms as well as the habitats that produce the ES (Ibid). To the oil companies, degradation of BES is something that may affect their operations and the economic benefits they derive from oil exploitation.

Box 7.4: Principles Underlying Nigeria's Oil/Gas Sector Governance regarding Environment

- ✓ *The precautionary principle which holds that where there are threats of serious or irreversible damage, the lack of full scientific knowledge shall not be used as a reason for postponing cost-effective means to prevent environmental degradation;*
- ✓ *Pollution Prevention Pays Principle (3p+) which encourages Industry to invest positively to prevent pollution;*
- ✓ *The polluter pays principle (PPP) which suggests that the polluter should bear the cost of preventing and controlling pollution;*
- ✓ *The user pays principle (UPP), in which the cost of a resource to a user must include all the environmental costs associated with its extraction, transformation and use (including the costs of alternative or future uses forgone);*
- ✓ *The principle of intergenerational equity which requires that the needs of the present generation are met without compromising the ability of future generations to meet their own needs;*
- ✓ *The principle of intra-generational equity which requires that different groups of people within the country and within the present generation have the right to benefit equally from the exploitation of resources and that they have an equal right to a clean and healthy environment; and*
- ✓ *The principle of participation, which requires that decisions should as much as possible, be made by communities affected or on their behalf by the authorities closest to them*

Source: FEPA (2008, pp. 1-2).

It is instructive to note that none of the MNOCs and the LOCs operating in Nigeria was available for interview throughout the three months period of field work despite series of promises that they would contact the researcher on when to come. This may be due to their apathy to granting research interviews or discussing their activities. However, Chevron which is one of the major MNOCs in Nigeria and the only one operating both onshore and offshore within Ondo State Coastal Areas like other oil companies acknowledges the significant role biodiversity plays in its operations as well as to human wellbeing particularly local communities within the vicinity of its operations. The company further observed that biodiversity and the services it provides for businesses and human wellbeing is seriously under threat in many places across the globe. Its definition of biodiversity which is in line with the definition provided by United Nations Convention on Biodiversity⁴⁹ (Chevron Corporation, 2014c). The company further revealed that its core value for environment (biodiversity) is protecting the safety and health of the people and the environment as demonstrated in the issue of freshwater below:

“Chevron recognizes the value of fresh water as a fundamental social, environmental and economic resource. As a global company, we know that access to sufficient sources of water, including fresh water and water of lower quality, is essential for the communities where we operate as well as for our ability to produce energy around the world. As users of this critical natural resource, we must manage it responsibly. This includes improving our water use efficiency and continuing our focus on managing water-related social and environmental impacts.” (Chevron Corporation, 2014b)

The company in its 2013 CSR Reports highlights the four environmental principles that drive its commitment and operations in environmentally responsible manner: “we include the

⁴⁹ This definition is already provided in Chapter two of this thesis.

environment in decision making, reducing our environmental footprint, operate responsibly, and steward our sites.” (Chevron Corporation, 2014, p. 10). This is the same principles that guide its commitment to biodiversity issues and which informed the company’s decision to incorporate biodiversity considerations into its capital projects and operations:

“We incorporate these principles into our business by applying the Environmental Stewardship Corporate-Standard Operational Excellence process to our operations. This process is designed to identify and manage potentially significant environmental impacts and assess our activities, with the aim of improving performance.” (Chevron Corporation, 2014, p. 11)

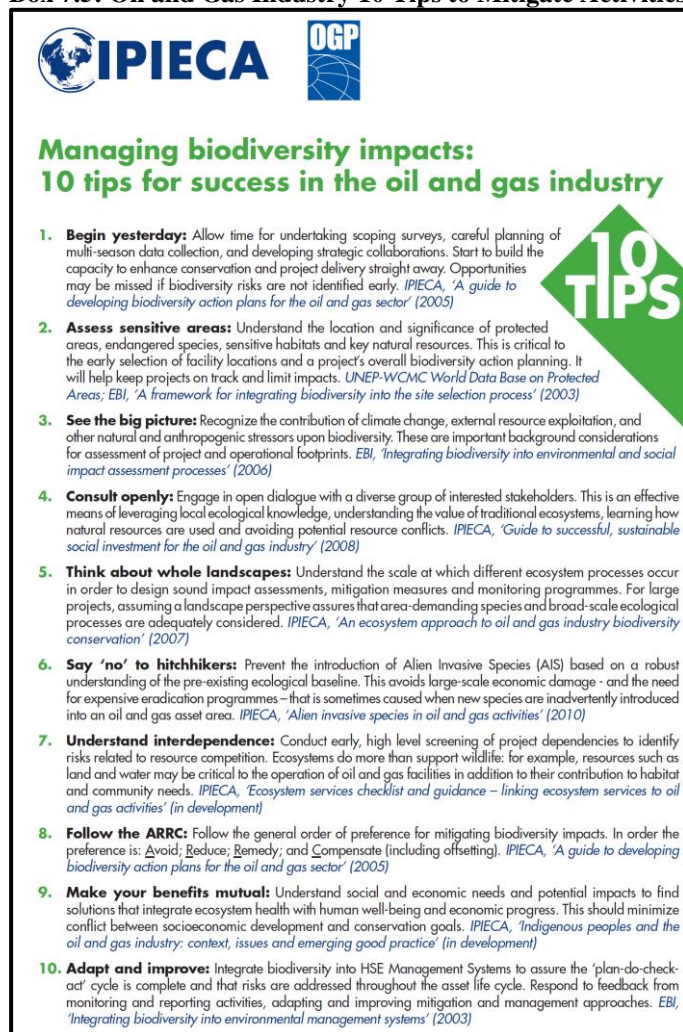
Based on the understanding and recognition of the significant role of BES to human wellbeing and the industry and the potential impacts its operations might have on BES, the oil and gas sector have devised different approaches through which its degradation can be mitigated, if not totally eradicated across the globe. As demonstrated in **Box 7.5**, the global oil and gas industry association for environmental and social issues expresses its commitment to the protection of biodiversity and achieving healthy ecosystems in any environment oil and gas activity is taking place.

NGOs’ Image of Biodiversity and Ecosystem Services in Nigeria

The NGOs who equally agree with the definition of biodiversity as provided by the United Nations Convention on Biodiversity, have been playing significant role in the conservation of biodiversity in Nigeria (FMENV, 2010b). The NGOs commitment to advocacy and enlightenment programme on the conservation of BES stemmed out of the significant role the resource is playing towards the sustenance of the world poor whose life and wellbeing is predicated on healthy environment. Having defined the perception of the local communities on BES degradation in the previous chapter, the next section considers some observations concerning the definitions provided by the actors.

Despite the governments’ and oil companies’ commitments to the conservation of BES as evinced in their definitions of BES degradation and that of the other actors which appear to be tilting towards the same goal, the values, norms and principles are not the same and consequently the same outcome cannot be achieved. To start with, the definition provided by the government and actions that follows were predicated on the values and principles earlier stated which were the same principles in the international conventions and treaties discussed in Chapter two that are different from the values, norms and principles of the communities.

Box 7.5: Oil and Gas Industry 10 Tips to Mitigate Activities Impact on BES



**Managing biodiversity impacts:
10 tips for success in the oil and gas industry**

- 1. Begin yesterday:** Allow time for undertaking scoping surveys, careful planning of multi-season data collection, and developing strategic collaborations. Start to build the capacity to enhance conservation and project delivery straight away. Opportunities may be missed if biodiversity risks are not identified early. *IPIECA, 'A guide to developing biodiversity action plans for the oil and gas sector' (2005)*
- 2. Assess sensitive areas:** Understand the location and significance of protected areas, endangered species, sensitive habitats and key natural resources. This is critical to the early selection of facility locations and a project's overall biodiversity action planning. It will help keep projects on track and limit impacts. *UNEP-WCMC World Data Base on Protected Areas; EBI, 'A framework for integrating biodiversity into the site selection process' (2003)*
- 3. See the big picture:** Recognize the contribution of climate change, external resource exploitation, and other natural and anthropogenic stressors upon biodiversity. These are important background considerations for assessment of project and operational footprints. *EBI, 'Integrating biodiversity into environmental and social impact assessment processes' (2006)*
- 4. Consult openly:** Engage in open dialogue with a diverse group of interested stakeholders. This is an effective means of leveraging local ecological knowledge, understanding the value of traditional ecosystems, learning how natural resources are used and avoiding potential resource conflicts. *IPIECA, 'Guide to successful, sustainable social investment for the oil and gas industry' (2008)*
- 5. Think about whole landscapes:** Understand the scale at which different ecosystem processes occur in order to design sound impact assessments, mitigation measures and monitoring programmes. For large projects, assuming a landscape perspective assures that area-demanding species and broad-scale ecological processes are adequately considered. *IPIECA, 'An ecosystem approach to oil and gas industry biodiversity conservation' (2007)*
- 6. Say 'no' to hitchhikers:** Prevent the introduction of Alien Invasive Species (AIS) based on a robust understanding of the pre-existing ecological baseline. This avoids large-scale economic damage - and the need for expensive eradication programmes - that is sometimes caused when new species are inadvertently introduced into an oil and gas asset area. *IPIECA, 'Alien invasive species in oil and gas activities' (2010)*
- 7. Understand interdependence:** Conduct early, high level screening of project dependencies to identify risks related to resource competition. Ecosystems do more than support wildlife: for example, resources such as land and water may be critical to the operation of oil and gas facilities in addition to their contribution to habitat and community needs. *IPIECA, 'Ecosystem services checklist and guidance - linking ecosystem services to oil and gas activities' (in development)*
- 8. Follow the ARRC:** Follow the general order of preference for mitigating biodiversity impacts. In order the preference is: Avoid; Reduce; Remedy; and Compensate (including offsetting). *IPIECA, 'A guide to developing biodiversity action plans for the oil and gas sector' (2005)*
- 9. Make your benefits mutual:** Understand social and economic needs and potential impacts to find solutions that integrate ecosystem health with human well-being and economic progress. This should minimize conflict between socioeconomic development and conservation goals. *IPIECA, 'Indigenous peoples and the oil and gas industry: context, issues and emerging good practice' (in development)*
- 10. Adapt and improve:** Integrate biodiversity into HSE Management Systems to assure the 'plan-do-check-act' cycle is complete and that risks are addressed throughout the asset life cycle. Respond to feedback from monitoring and reporting activities, adapting and improving mitigation and management approaches. *EBI, 'Integrating biodiversity into environmental management systems' (2003)*

Source: IPIECA and OGP (2010).

While adopting the principles of the international conventions and treaties is good particularly among the signatories to the conventions, it is desirable for the government to domesticate the principles to conform to the local context of the nation. Failure to domesticate the principles portends governance challenges because policies made based on the broader international conventions framework will be difficult to implement at national and even local level.

One of the NGOs interviewed confirmed this to be true:

“ [...]. There is a need to domesticate into a big broad framework. The domestication in Nigeria is what is now our job to look at how those international treaties, how those international conventions now comes down to the local people that can absorb, comes down to oil and gas and how they integrate it with their daily operations. So, that's where we have a synergy between the international treaties, between international laws that now guides local laws and actually formed basis for developing local laws, local policies that guide the operations of MNOCs concerning biodiversity. But you will agree with me based on this description that

the policies in Nigeria still find their roots in the bigger international framework agreements and conventions” (Interview with NGO, 2013).

The failure of the government to distinguish between BES as shown in its definition of biodiversity is another issue identified to be bedevilling the governance process in Nigeria. This may be due to lack of understanding of what constitutes ES and its significant role to the OPC as corroborated during interviews by one of the NGOs:

“You know ES are intangible, and you can’t hold them. Watershed, purification of the air, flood abatement, carbon sink are ES which you cannot hold on to, purification of water ecosystem does that, you’ll see the leaves doing that. Some of these things in recent times were more of, the biologists or government officials just name the habitats not understanding or looking at the ES that is a bit difficult to quantify and put monetary term on it.” (Interview with NGO, 2013).

The interview with non-governmental organisations further revealed that unlike the government officials who may not understand what is ES, the MNOCs in Nigeria understand the significant role of the ES to the OPC and to oil and gas activities. This was encapsulated by one of the NGOs that:

“[...]. But it’s like a leeway for the oil/gas sector. You know when the owner of the resources cannot even identify his resource, it’s not my problem I am in for business. So some of those things with the level you have seen the oil/gas, I think they have been sophisticated over a long time so you cannot dispute whether they know some of those things and I will tell you they have one of the best brains around.” (Interview with NGO, 2013).

While it is not the responsibility of the MNOCs to determine how things are supposed to be done in the country, as corporate citizens they are expected to be reflective in their operations. While contrasting the definitions of BES degradation above and the values, norms and principles underpinning the definitions to that of the local communities as shown in the previous chapter (section 6.4)⁵⁰, it is apparent that it is the government and the oil and gas companies’ economic values and principles that dominate. This buttresses the observation of Stone (1989, p. 299) that “problem definition is the active manipulations of images of conditions by competing political actors.”

7.6 Nigeria Oil and Gas Institutions’ Learning and Adaptation Approach

“Interactive learning requires systematic recording and reflection on experiences made throughout the governance process. How governing systems structure these exercises will determine the capacity of governors to learn and to share what they

⁵⁰ The principles include the protection of community rights and norms; transparency; accountability; effective dialogue; inclusion in decision-making; respect for traditional laws as part of oil and gas policies with regards conservation of BES; and adherence to rule of law.

learn. It is not only a question of how individuals learn” (Kooiman and Jentoft, 2009, p. 833).

Oil and gas sector governance has become one of the pivot points in sustainable environmental management efforts in developing countries and Nigeria is no exception. In the face of overlapping drivers that undermine sustainable environmental management due to oil and gas activities and taking into consideration the benefits of the resource to developing countries’ economy and the world at large, Alba *et al.* (2010) suggest that OPDC should put oil and gas sector governance high on its development agenda. To the authors, the governance of the sector will enhance their ability to protect the natural environment and guarantee that sustainable benefits of oil and gas development accrue for their citizens today and into the future. Several efforts have been put in place and are being taken by both the state and the non-state institutions to mitigate the problem of environmental [BES] degradation and other social problems associated with oil and gas activities in Nigeria.

For a substantial period of time, oil and gas sector governance (regarding conservation of BES in Nigeria) worked from the assumption that a good healthy ecosystem could be achieved and maintained by focusing attention on the ecosystem itself rather than on the social system as well. This is evident from the first formal management of oil which can be traced back to 1914 when the colonial legislation known as the Mineral Oil Ordinance was enacted⁵¹.

Following the inability of government’s past efforts to address the nation’s extensive environmental problems particularly in the OPC, government introduced some new policies that created some agencies⁵² with a view to addressing the environmental problems and poverty among the people. This was sequel to the series of continued agitation, conflicts and demand for resource control by the youths that were embittered about the state of neglect in their region as evidenced in lack of basic infrastructural amenities, increase in poverty amidst plenty (UNDP, 2006). As enshrined in the policies that established the agencies, they were expected to work in a collaborative way with the various stakeholders in fast-tracking the development of the region as well as ensuring adequate protection of the environment.

⁵¹ The 1914 Mineral Ordinance was repealed by the 1945 Mineral Act and both were colonial laws that that vested the proprietorship of oil and gas in the British Crown. The 1945 was also repealed by the 1969 Petroleum Act following the nation’s independence and it also vests ownership of the resource on the Nigerian state.

⁵² At the national level, the following government agencies were established FMENV, NOSDRA, NESREA, NDDC, FMNDA and at the sub-national level OSMENV and OSOPADEC were created. NESREA means *National Environmental Standards and Regulations Enforcement Agency* but policy that established this agency restricted it from performing any activity within the oil and gas sector.

One of the fundamental challenges hindering the governance process is the multiplicity of actors in the governance of oil and gas sector regarding conservation of BES. While the change from government to governance will inevitably increase the diversity of actors involved, it has enormous implications for the role of the state in terms of relationship with the society on the one hand, and the role of the state as opposed to other actors involved in the governing process (Büscher and Dietz, 2005). Although the recognition of the diversity of actors has increased the complexity, judging from the interactive governance standpoint it has created an opportunity, as evinced in the words of Bavinck *et al.* (2005, p. 30) that: “if the interests, agendas and capacities of these stakeholders can be harnessed and guided, then there is a possibility of creating synergy that could benefit governance”.

However, this study found that rather than collaborating fully with the communities and other stakeholders like the NGOs in a transparent manner, the government has been playing divisive role among the communities. This study also found that some of the policies formulated to establish agencies like NDDC, FMNDA and OSOPADEC appear to be part of the palliative measures of the government similar to what has been done in the past during the era of military governments to placate and manipulate the aggrieved people of the region. This is evident in the activities of the agencies that have neither been meeting the needs of the people nor been responsive enough to the yearnings of the communities. The response of one of the respondents during FGDs provides an eloquent testimony:

“What I noticed about NDDC and OSOPADEC is that they have their own agenda which is not for the benefit of the community. At times they promise to do something for the community without fulfilling their promises. For example the school building and foot-bridge [wooden walkway] in our community were built by NDDC and OSOPADEC respectively but we don’t expect this type of school and foot-bridge from them [...]. We expect something better from them like concrete foot-bridge that are sustainable. Instead for them to come to the community to ask for what we need they decide alone because of their own benefit. [...], while we continue to suffer” (FGD, 2013).

Apart from the fact that the environmental problems including biodiversity loss and ecosystem services degradation have not been adequately addressed by the agencies and other government institutions, their approach has even created intra-communal clashes in some communities in the region. The values, norms and principles of the various stakeholders that supposed to be harnessed and underpin the approach to conservation of BES have not been fully exploited due to inadequate participation of the stakeholders particularly the locals in the governing process.

7.7 Summary

This chapter has reviewed the governance system for the oil and sector in relation to conservation of BES in Nigeria. The foregoing clearly indicates that national environmental regimes are intended to address oil and gas environmental-related problems but the extent to which the national agreements establishing these regimes can effectively attend to local causes and domestic environmental impacts of such problems remains murky. The government in its endeavour to address the various environmental and socio-economic problems associated with the oil and gas activities in the nation has evolved a plethora of policies/regulations as well as being a signatory to many international conventions. Nevertheless, the implementation of these policies is challenged because of some underlying governance issues such as lack of participation, lack of transparency, overlap of responsibility, ineffective coordination, inadequate monitoring, inadequate enforcement, and corruption among others. Consequently, the policies have proved to be ineffective.

Furthermore, the analysis of the oil and gas policies regarding conservation of BES in Nigeria reveals that most of the policies are outdated and insufficient to address the contemporary challenges affecting the degradation of BES in the OPC. For example, the compensation and penalties for defaulters are not in conformity with current economic realities. It has also be shown that the governance approach has failed to identify the various relevant stakeholders particularly the local OPC, hence, their values and norms are not considered in the formulation of policies and decision-making. This is indicative of the fact that a comprehensive assessment of the policies is critical and in the lens of the IGF it will foster transparency; involvement and participation of OPC; protect rights and responsive to interest of communities; and mitigate the impact of oil and gas activities on BES. The next chapter discusses details of the interactions between the various actors in the governance system and the system-to-be governed.

Chapter 8. Governing Interactions: Interplay between System-to-be-Governed and Governance System of Oil/Gas Sector in Nigeria

8.1 Introduction

In chapter six the socio-economic, environmental and health implications of the oil and gas industry activity on the biodiversity and BES in the NDR were described. Chapter seven considered the impacts of GS of oil and gas on the conservation of BES in the NDR. This chapter explores how the interaction between the oil and gas governance actors (GS) and the oil producing communities (OPC) actors (System-to-be-Governed) help to address problems confronting the NDR including the loss of biodiversity and ES degradation.

GI is conceived in terms of the ways in which the GS acknowledge and take cognisance of the diversity, complexity, dynamics and scale of issues within the SG including, for example, how information is gathered and communicated, how representation is organized, and how stakeholders participate in governance (Kooiman *et al.*, 2005b; Kooiman *et al.*, 2008; Chuenpagdee and Jentoft, 2009; Jentoft and Chuenpagdee, 2009). To do this, it is important to analyse the interactions that exist among the various actors. The analysis is structured into four sections. The first section elaborates on the interactions between and among government actors, as the government regulator of the sector that will form the basis for other actors. Section two discusses company and government interactions, while section three considers the company-community interactions as well as the interactions with other stakeholders. In section four, a new interactive model encompassing all the stakeholders is analysed and discussed.

8.2 Government Institutions' Vertical and Horizontal Interactions

According to Osofsky (2013), interactions happen across vertical and horizontal axis among institutions at disparate levels of government and within the same level of government. Because of the crosscutting nature of the diverse activities in the exploration and production of oil and gas resource from the pre-production to post-production stage, numerous types of government agencies (actors) at the federal level and state level have legitimate and legal interests in being involved in the conservation of BES, which will require frequent interaction. Unlike in the US where the local governments play significant role in governance as the third tier of government, the local government in Nigeria usually plays a subservient role to the state government. Consequently, the assumption is that the vertical and horizontal interactions in this context are expected to be strong among the federal and sub-national agencies with little or no interactions at the local government level where oil and gas activities are taking place.

8.2.1 Lack of Coherence between and among Government Actors

Although the ownership and control of oil and gas resources including the management of environmental-related problems associated with the resource in Nigeria has been vested in the federal government (DPR) (as noted in chapter four), the state as sub-national government has institutions to monitor and protect its environment including the NDR from being polluted. This underscores the need for coherent synergy among and between the federal and state institutions.

A major governance gap that emanated in the analysis at the national, subnational and local government levels is the fragmentation and lack of coherence in the interactions among government actors. Interviews with the government officials on this subject provided divergent opinions on the quantity, type and mode of interactions that exist among the federal and sub-national actors. **Figure 8.1** summarizes the network of actors and flows of interactions among and between government actors in the governance of Nigeria’s oil and gas sector with regards to conservation of BES. The shade of arrow shows the quantity of engagement, while the darker arrow indicates frequent interaction, the dotted lines arrow suggests less frequent interaction.

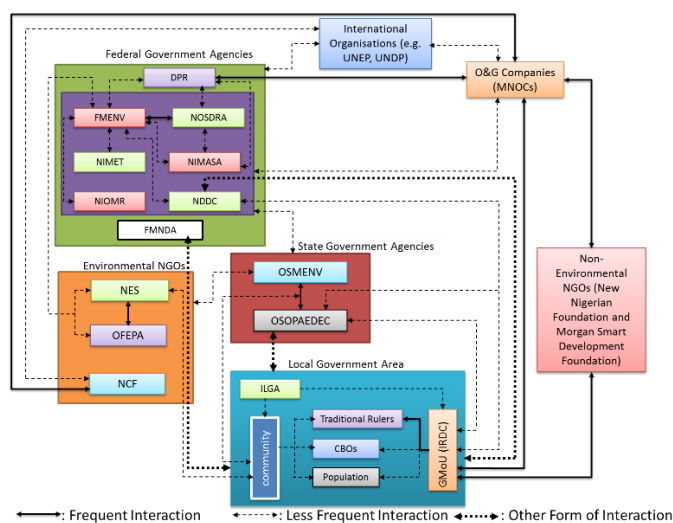


Figure 8.1: Interactions in Nigeria’s Oil and Gas Sector Governance with regards Conservation of BES

One of the government officials interviewed in relation to the interactions that exist between the federal and sub-national environmental actors noted that:

“We’ve been having good interactions with other government agencies at both federal and state level. I think the last interactive section we had was held last year [...] and it involves all the stakeholders including the FMENV, NOSDRA, NESREA, OSOPADEC, NDDC among others. Our relationship has been very cordial, more so that NOSDRA and NESREA have their offices here in Akure [state capital], we just walk into their offices and discuss issues. In most of our meetings, we’ve been working closely with NOSDRA, NESREA and FMENV and when we

discover the issue we want to discuss is broader than the immediate scope we throw the meeting open to the other stakeholders” (Interview with Government Official, 2013).

However, another government official that debunked the claim above suggested that their interactions are poor. In his words:

“In terms of the interactions between the federal and the state on environmental matters, the federal has not been relating well with the state agencies. The FMENV will come to Ondo State for instance to oversee EIA without any function been giving to OSMENV and other agencies at the state level. During initial environmental examination they [FMENV] will come and determine the TOR [Terms of Reference], the next time they will come is during public review. At the end the federal government will not have detailed information because they are not closer to the community or grassroots as does the state government, [...]” (Interview with Government Official, 2013).

It is evident from the remark above that in the vertical perspective, the multilevel interactions between the federal and state actors are not only not cordial but also take place in an environment of strong federal control. The Local Government official (LGO) when asked about their interactions with other government actors and how the governance of oil and gas sector with can be improved retorted that:

“[...]. There should be an interaction or synergy between us [local government] and the OSMENV in terms of seminar on regular basis to be organised by OSMENV. At the level of the local government, since we don’t have councillors at seat now what we have is caretaker committee members; the chairman should have a link with the commissioner of environment to ensure that provisions on oil/gas issues are being followed to the letter without waiting until there is spillage. There should be a constant community-based approach form of interaction if not on regular basis but on quarterly basis involving all stakeholders including the state, local government and communities’ stakeholders where issues about the environment would be dissected” (Interview with Government Official, 2013).

The implication of this overarching structure in the interactions between the actors raises questions about hierarchy and degree of synergy that may impede the anticipated collaborative leverage required for effective governance. This might also be interpreted to mean that the poor interactions between the federal and state actors is part of the consequences of the centralisation of oil and gas governance, overlap and fragmentation that have added up to the complex governance challenges in the governing of the sector as earlier identified in chapter seven.

This study further found that the complexity of the poor/lack of coherence in interactions identified as a governance gap among the government actors transcend the vertical dimensions to include the horizontal aspect. For the purpose of manageability, only the federal agencies

will be examined to give a sense of the horizontal interaction at that prepotent level. An interview with a director in one of the federal government agencies that has also been statutorily saddled with the responsibility of liaising with oil and gas companies operating in the region to ensure environmental protection and pollution control among others corroborate the fact that the quantity and type of interactions (vertical and horizontal) between and among government actors are poor. According to him:

“[...] as I am talking I don’t know what the FMENV, NDDC, OSOPADEC and others are doing in this state when you talk about environment and other things. They don’t know what my ministry is doing. Before I travelled to Abuja [capital of Nigeria], one of them came to my office and he was surprised when I told him these and these we are involved in. They don’t know. I could have loved a situation where there is a call for an interactive forum like this so that all the stakeholders will all meet” (Interview with Government Official, 2013).

From the foregoing findings and as demonstrated in **Figure 8.2**, it is perceptible that there is no coherence in existing interactions between the governments’ actors, raising questions about the nature of interactions with other non-state actors. The implication of this lack of coherence in interactions is that it may have significant impact on the interactions that exist among all the stakeholders including the non-state actors. Having considered the nature of interactions between and among government actors, the following section examines the interactions between government actors and oil and gas companies’ actors.

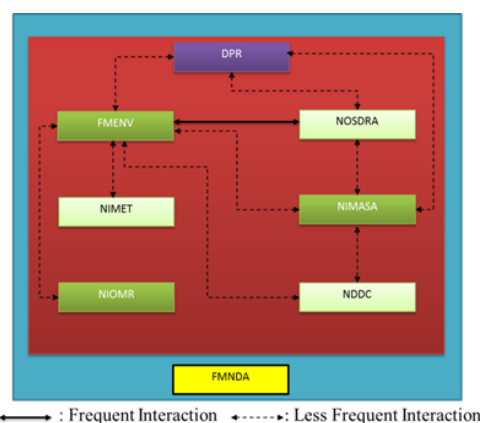


Figure 8.2: Horizontal Interactions between and among Federal Government Agencies

8.3 Company-Government Interactions

Using empirical data and oil and gas companies’ reports, this section explores how the interactions between the concerned government actors and the MNOCs have shaped or constrained the governance of oil and gas sector.

8.3.1 Limited Interactions between companies and governments on Conservation of Environment

As identified in **Figure 8.1**, it is surprising to find little evidence of existing government actors proactively engaging or interacting with the MNOCs on how to conserve BES from the impacts of oil and gas activities. Apart from DPR which doubles as the licensor and the main regulator of oil and gas activities in Nigeria that is having good and regular interactions with the MNOCs, all other government agencies/actors involved in the management of oil and gas environmental-related issues do not have regular interactions with the MNOCs. Notwithstanding the policies requiring sound interactions between the government and the oil and gas companies, there is still limited interaction. A director in one of the government institutions for example doubted if there is any interaction at all between his establishment and the latter. He remarked that:

“Well, regarding interaction with MNOCs maybe they might be having interaction with my headquarters office in Abuja, but as to this level no, they [MNOCs] don’t know me. I think there was a time the headquarters office wanted to know what is their [oil companies] responsibilities to the OPC, to even get them when I got to the OSMENV in Akure [State capital], most of the people I contacted in the ministry told me the MNOCs don’t have in Ondo State. All of them are either in Lagos [former capital of Nigeria] or Port Harcourt [Niger Delta’s principal city], so there is no MNOCs on ground for me to interact with. So I can say our organisation, the FMNDA at the state level don’t have any interaction with the oil/gas companies” (Interview with Government Official, 2013).

Interviews with the NGOs not only lend credence to the government above but established that the interaction between the government and the MNOCs is not regular as it ought to be. This is well captured by one of the NGOs:

“The interaction between the government and the MNOCs is limited. It is the government that supposed to initiate such interaction but it is only the revenue from oil that interests the government most” (Interview with NGO, 2013).

8.3.2 Oil Company’s Divide and Rule Form of Interaction

The MNOCs in recent times have devised many means to improve on their interactions with the stakeholders including the government. For example, apart from CNL sponsoring some legislatures on international training programmes on Energy Management, environment and sustainable development (as earlier noted in chapter seven), the company in its commitment to building relationships and contributing to capacity building has also organised interactive workshops with stakeholders including the parliamentarians at both the national and sub-national levels in Nigeria as depicted in **Figure 8.3** and **Box 8.1**.

From November 11 to November 15, 2013, we sponsored four legislative staff of the Committee on Gas and Petroleum Upstream to a course on Energy Management, environment and sustainable Development in the United Kingdom.



Figure 8.3: Senate Committee Members on oil/gas during Interactive Workshop Organised by Chevron

Source: Chevron Corporation (2014e, p. 19).

Box 8.1: Comment of Chairman Ondo State House Committee on Environment during Interactive Workshop with Chevron

“What Chevron has done today is commendable. We hope that other international oil companies will borrow a leaf from this. Improved communication will help both government and the company in delivering on their business and social goals.”

- Hon. Gbenga Edema,
Chairman, House Committee on Environment,

Source: Chevron Corporation (2014e, p. 19).

While the researcher felt the efforts of the MNOC in broadening the scope of its interactions with the legislature is commendable in a way, as evinced in the comment of one the parliamentarians at the sub-national level in **BOX 8.1**, this approach has been seen by some of the government actors interviewed as one of the divide and rule tactics⁵³ of the MNOCs operating in Nigeria. To them, it is one of the methods used by the MNOCs among government and community actors that have ended up creating more problems. One of the government officials interviewed contended that:

“[...], but the problem confronting the environment in the NDR is enormous. It’s not a problem that can be solved either by one agency or within one year. This will require the regular interactions of the various agencies coming together to work with other stakeholders to address the problems, but the truth is that the MNOCs are the main problem because of their method of divide and rule in their relationships/interactions with stakeholders including communities. For example, instead of interacting or carrying everybody along in a locality, they single out some group of people, relate with them and when agitations come they will say we have met with your brother and chief. Their action/method of interaction is another source of agitation, [...]” (Interview with Government Official, 2013).

⁵³ These include the failure of the MNOCs to be involved directly in the development of their areas of operations but instead give financial gains to some vocal local chiefs which often lead to crisis (Ejibunu, 2007).

The implication of this is that apart from its capability of engendering mistrust and strife among actors, the divide and rule tactics of the MNOCs may further weaken the already weakened governing system. For example, the parliament which is expected to formulate sound policies and review the outdated policies as identified in chapter seven has not only failed to do so but has also been ineffective in ensuring the executive implement policies on oil and gas environmental-related issues. Similarly, the PIB which arguably will revamp the oil and gas sector and address some of the governance challenges that characterised the sector has been sent to the parliament since 2008 but unfortunately its passage into law is still hanging in the air. Kennedy (2013) reported that the MNOCs feared that if the bill is eventually passed into law and implemented, it will affect their activities and quoting Mark Ward, the Managing Director of ExxonMobil's Nigerian unit who spoke on behalf of other MNOCs at a Nigerian energy conference: *"the terms proposed increase royalties, increase taxes, and lower allowances or incentives all at the same time"* will turn Nigeria to *"one of the world's harshest fiscal regimes."* This may therefore be interpreted to be another ploy by the MNOCs to buy the conscience of the already weakened legislatures.

8.4 Company-Community Interactions

A good interaction between communities and oil and gas companies is indispensable for the smooth operation of company activities and for the congenial co-existence between communities and oil and gas companies.

"The damage from oil and gas operations is chronic and cumulative, and has acted synergistically with other sources of environmental stress to result in a severely impaired coastal ecosystem and compromised livelihoods and health of the regions impoverished residents. Rural communities in the Niger Delta have suffered most of the environmental and social costs of 50 years of oil development, and claim to have received very little of the benefits. This is a significant contributor to the current violence, sabotage of pipelines/installations and instability in the region" (FMENV. *et al.*, 2006, p. 2)

The comment above reveals the state of the environmental practice of the oil and gas companies. This questions the effectiveness of government policies to address environmental issues and the interactions that exist between the GS and SG. Just as Luning (2012) asserts that right from the inception of exploration of oil and gas activities, dependable interactions with communities have to be established and brokered, the remark above also questions the type of interactions that exist between the MNOCs and their host communities. The MNOCs operating in the region through their interactions with the communities have evolved many approaches to address issues and according to Fox (2004) and Jenkins (2005), these types of interactions are often regarded as Corporate Social Responsibility (CSR) or an organisation's donation which is

frequently voluntary towards sustainable development and poverty mitigation. The CSR and social investment programmes archetypal of the extractive companies enclose employment via hiring of local people, environmental impact assessments and mitigation measures, local community development projects including provision of safe drinking water, constructing school classrooms, training health peer educators for community health programmes and supplying equipment; provision of micro credit schemes; and scholarships for youths and women (Van Alstine *et al.*, 2014).

8.4.1 Corporate Social Responsibility

The quintessential objective of CSR as noted by Newell and Frynas (2007) is for the private sector development interventions to augment what has been provided by government so as to circumvent a state of reliance on the private sector, and not to affect the readiness or wish of the state to develop its capacity. However, in most developing countries, due to state incapacity in providing infrastructure and basic social services, authority and control may be transferred directly or indirectly to MNOCs (Watts, 2004; Ackah-Baidoo, 2012). As a matter of fact, Cash (2012) noted that in some cases such as Nigeria and Chad where the state is helpless, the MNOCs have found themselves in a situation of virtually undertaking the government responsibilities.

Given the failures of the Nigerian government to provide the necessary basic infrastructural amenities which ordinarily would have helped to assuage the suffering of the people in the OPC from environmental and social problems that characterised the region, the expectation of the people just as Campbell (2012) noted is that the oil and gas companies operating in their communities should be able to bridge the chasm created by the absentee government. This demand for a development responsibility by the OPC was withstood for several years by the MNOCs operating in the NDR claiming that having met their statutory obligations to the State they do not have anything to do with development but rather it was the responsibility of the government (Aaron, 2012).

The failure of the oil and gas companies to heed the demands of the people in the OPC thereafter triggered series of complaints and reactions by communities and international NGOs, which culminated in environmental degradation among the people in the OPC. The fierce clashes between the communities and MNOCs over environmental degradation was documented by many commentators (Human Rights Watch, 1999; Frynas, 2001; UNDP, 2006; Amnesty International, 2009), and has drawn the attention of the international communities to the plights

of the people in the OPC. Similar experience has also been noted in the case of Papua New Guinea (Luning, 2012). This type of conflict between communities and companies has been accepted (World Bank, 2000b) as citizen strategies targeted towards changing a company's behaviour owing to the failure of the state to implement regulations concerning corporate activity.

As fallout of the crisis, the international communities beamed their search light on the MNOCs and criticised them on the way their activities are conducted in the NDR. Benner and Soares de Oliveira (2010 cited in Van Alstine et al., 2014) observed that the legitimacy of the MNOCs in developing countries was subjected to profound critical examination in the 1990s. Ultimately, the MNOCs acceded to the yearnings of the people through introduction of some rudimentary CSR practises (Ite, 2007), rather than seeing CSR in its broadest sense encompassing corporate commitments to ethical behaviour with regards to workers and environmental rights concerns as well as philanthropic actions by corporations in the communities where they operate. This possibly explains why Garvey and Newell (2005) concluded that what has been designated CSR today in developing countries emanated from many decades of squabbles over resources that comprise of the ongoing historical scuffles for corporate and state accountability. The authors noted that:

“Though the relationship between multinational companies and poorer communities in developing world clearly has a long history, the changing relationship between states, corporations, and communities over the last decade has meant that transnational companies (TNCs) and the poor encounter one another with increasing frequency and intensity”(Garvey and Newell, 2005, p. 390)

The adoption of CSR both as a business instrument as well as a development instrument in the NDR by the MNOCs has markedly stemmed out of the combination of the failure of the government in its social provisioning responsibility and the security challenge that escalated due to demands for greater share of oil wealth by the armed youths of the region (Aaron, 2012). To Frynas, the reasons for embracing CSR by the MNOCs in NDR include “obtaining competitive advantage, maintaining a stable working environment, managing external perceptions, and keeping employees happy” (2005, p. 583). The various CSR practices of the MNOCs in Nigeria are considered in the following section with a view to distilling the quantity, type and mode of interaction that has existed between MNOCs and host OPC.

8.4.2 MNOCs' Old Model of CSR Practices in Nigeria

With regards to SPDC, three clear-cut phases of corporate-community engagements were identified including Community Assistance (CA) (1960-1997), Community Development

(CD) (1998-2002), and Sustainable Community Development (SCD) (2003-2004) (SPDC, 2004 cited in (Idemudia, 2007; Ite, 2007). It is imperative to mention that all the MNOCs operating in the NDR went through the same process of transformation in terms of focus and significance, though their timing concerning the phases may not necessarily be the same.

The era of CA as practised by the MNOCs in the NDR was synonymous with one-off donations to the host communities based on what the MNOCs perceived to be the needs of the communities and not minding how the projects would be maintained. While it has been contended that project and programme maintenance is a scourge across the globe which calls for projects to be managed more effectively (Goff, 2008), the case is worse in developing countries like Nigeria where the maintenance culture is very poor. This is particularly evident in projects that have been executed by disparate defunct and extant government agencies⁵⁴ mostly in the remote communities, including the NDR, (with several billions of dollars but have been allowed to languish in their various locations across the nation). One of the government officials interviewed in the course of this study also lamented the lack of maintenance culture as one of the banes of the nation. In his words:

“[...]. Naturally lack of maintenance culture which is a major problem in this country is our problem. It has made some of our equipment like the analyser, the disposables and some cards we use that had minor problems to be abandoned and we can no longer use them. We are unable to continue work in those stations” (Interview with Government Official, 2013).

The comment from the government official above underscores the problem of non-sustainability that characterises projects execution generally in the country. It is therefore not astonishing that the projects executed in the NDR by the MNOCs through their CSR efforts during the CA era were also not immune against this lack of maintenance problem because of probably the poor quality of materials used by the contractors or the inability of the poor people in the region that are barely struggling to survive to maintain them.

Following the 1992 Rio Summit in Brazil that drew the world towards a more sustainable pattern of development, the CD and SCD phases in the corporate-community engagements were

⁵⁴ Such agencies include Directorate of Food, Roads and Rural Infrastructure (DFFRI) (1986); Better Life for Rural Women Programme (BLRWP) (1987); National Directorate of Employment (NDE) (1986); People’s Bank of Nigeria (BPN) (1989); Family Support Programme (FSP) (1994); Family Economic Advancement Programme (FEAP) (1998); Poverty Eradication Programme (PEP) (1999); National Poverty Eradication Programme (NAPEP) (2001); National Economic Empowerment Development Strategy (NEEDS) (2004); Niger Delta Basin Development Authority (NDBDA) (1976); Oil Minerals Producing Areas Development Commission (OMPADEC) (1992); Niger Delta Development Commission (NDDC) (2000); and Federal Ministry of Niger Delta Affairs (FMNDA) (2008).

projected to have mainstreamed sustainability, participation and ownership of development projects into their activities. Readings from literature and findings from the OPC have also established that projects executed during the CD and SCD were also not sustainable. For example, the 2000/2001 SPDC sponsored projects review reports revealed that less than one third of the community development projects executed by the company had been successful (Legborsi 2010; Transnational Crisis Project and United States Institute of Peace, 2010). In an attempt to improve conflict management and peace building initiatives, to assist agriculture enterprises and to tackle HIV/Aids, SPDC signed a partnership with UNDP in 2004 (Royal Dutch Shell, 2005). However, Legborsi (2010, p. 25) further contends that notwithstanding SPDC's partnership with UNDP for the latter to undertake community development projects on its behalf, limited success was accomplished. He remarked that "[...], the record after five years has been dismal, virtually the only activity undertaken by the UNDP being the publication of the Niger Delta Human Development Report."

Additionally, the outcomes of the various activities of the MNOCs in all the aforementioned phases revealed that they were devoid of the projected objectives (Frynas, 2001; 2005; Akpan, 2006; Ite, 2007). For example among the numerous problems identified with these models, Ite (2007) documents dependency complaint while Frynas (2001; 2005) noted lack of participation, ownership and sustainability of projects. Similarly, there was the problem of inter- and intra-community squabbles occasioned by the MNOCs' attempts to intervene in community development from the angle of business case reasoning (Akpan, 2006). The implication of the drawbacks of the old CSR models identified above from the IGT perspective is that the values, norms and principles of the local people from the OPC that should underpin the relationship/interaction between the MNOCs, government and OPC were not considered by the MNOCs.

8.5 MNOCs and the Global Memorandum of Understanding (GMoU) Model

Due to criticisms with the CSR models, the GMoU model was introduced as an interactive mechanism to bridge the gap in the previous models. This possibly explains why (Aaron, 2012) avers that the MNOCs initiated the new governance model because of the escalating international criticisms they received for the environmental crisis in the NDR and its detrimental ramifications on their reputation.

In 2005 Chevron Nigeria Limited (CNL) and its joint venture partner drew inspiration from the Norwegian Statoil's experience who provided development to the Akasa community, and

offered development in Bayelsa State⁵⁵. When doing so Chevron introduced a new concept that is governed by Global Memorandum of Understanding (GMOU) with the objective of establishing a firm relationship with the OPC in Nigeria. In 2006 SPDC and its joint venture partner also introduced the same governance model (Royal Dutch Shell, 2013b), although with a slightly different approach. According to Amadi and Abdullah (2011), only CNL and SPDC are the two MNOCs that adopted the GMoU concept in Nigeria. In contrast to the former top-down CSR approach, this new bottom-up governance model brings communities together under an umbrella of an ethnic group to interact and collaboratively choose projects they considered important for their wellbeing.

The advent of GMOU in the NDR fostered a new approach to corporate-community engagement/interaction where local people in the OPC are “involved” in the governance process and determine the actual needs that the company’s programme should tackle (Chevron Corporation, 2014d). The idea of this governance approach may have been informed by some of the critiques of CSR approaches, such as those advanced by Garvey and Newell (2005) who contended that CSR approaches usually underrate the significance of power between company and community actors. To Blowfield (2005), this power disparity typically presupposes that communities that lack financial wherewithal and are marginalised from decision-making, do not have a methods of holding company actors to account, and companies tend to have dissimilar understandings of what constitutes development.

The GMoU model confers project decision-making and implementation to community institutions such as the Regional Development Boards (RDBs)/Regional Development Councils (RDCs) for CNL and the Community Development Boards (CDBs)/Community Trusts (CTs) for SPDC. In contrast to MNOCs former practise of entering into Memorandum of Understanding (MoU) with separate host communities, the GMoU was advertised as having the capabilities of surmounting the drawbacks of the previous models of company-community engagement/interaction earlier discussed. The key principles underpinning the GMoU approach, include accountability, community ownership, transparency, partnership, and a single platform for dialogue (Hoben *et al.*, 2012). The summary of what the GMoU entails is shown in **Box 8.2**.

⁵⁵ Bayelsa State is one of the major oil producing states in the NDR.

As earlier indicated, the MNOCs operating in the NDR pursued of the new model. The two case-study communities of Awoye and Ojumole as well as other communities in the OPC in Ondo State fall under the Ilaje Regional Development Council (IRDC). Interview with IRDC representative suggested that this new bottom-up approach holds a better hope for the people and the development of the region, in contradistinction to the conventional method in which MNOCs share money to OPC with only few individuals including traditional rulers and some local elites benefiting. According to him:

“The period before the introduction of GMOU in our communities was ridden by series of agitations, human rights abuse, mistrust and a lot of acrimony within the system because of the way money was being shared between the traditional rulers and some local elites. Moreover, those little benefits were not traceable because they were not tied to a particular project. In partnership with the NGOs and other stakeholders and professionals from the NDR we adopted a Sustainable Livelihoods Assessment (SLA) framework to conduct a survey round the communities in the OPC in Ondo State to come up with a Community Development Plan which is being used as roadmap for sustainable development” (Interview with IRDC, 2013).

Box 8.2: The GMoU in Brief

The GMoU is a stakeholder engagement process developed around formal signed agreements with clusters of communities affected by the oil and gas companies’ on-shore operations in Nigeria. It helps to handle proactively the overall relationship between the company and impacted communities in the NDR. It is also a community development mechanism that transmits millions of dollars into community-identified projects each year. The approach is predicated on the principles of partnership and collective ownership between the company and its community stakeholders.

This new governance model has produced a variety of outcomes for the OPC in the NDR (Aaron, 2012). For example, Chevron in its first attempt has signed-in about 600,000 individuals in its eight GMoUs in the NDR (Olawari and Fidelis, 2011; Chevron Corporation, 2014d), with approximately 258 projects executed in over 400 communities (Chevron Corporation, 2014d).

A brisk examination of the financial records of the MNOCs in Nigeria on community development spending, for example, reveals an exceptional rise in budgetary allocations for community development projects. It has also been established that NNPC/CNL for example has funded about six billion naira (N6 billion) worth of projects in the NDR with N5 billion

earmarked to fund infrastructural and non-infrastructural projects⁵⁶ in some Itsekiri communities and N1 billion provided for Ilaje Communities in Delta and Ondo State respectively (Efeizomor, 2013). As shown in **Figure 8.4**, community development spending by SPDC on behalf of its joint venture partners has increased considerably from \$25 million in 2004 to \$104.1 million in 2013. The company's statutory obligation to NDDC has also increased remarkably from \$68.9 million in 2004 to \$180.6 million in 2013. Apart from the 3% of their annual budgets that oil and gas companies are expected to contribute to NDDC, the major MNOCs in Nigeria have expended over half a billion dollars each year for community development in the NDR for the past half a decade or more (Sayne and Williams, 2010).

There are other benefits attached to this new model. The study of Aaron (2012) on the review of the GMoU of the MNOCs in Nigeria reveals that the new governance model has fostered quick execution of projects from Chevron's seven out of eight RDCs, though the experience is not the same in the case of SPDC.

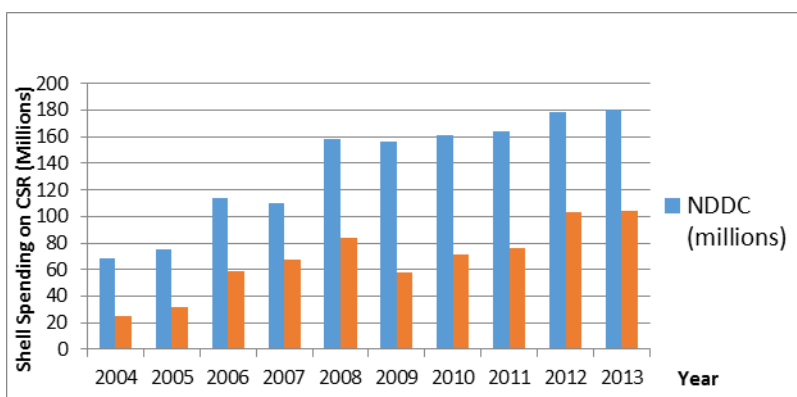


Figure 8.4: Shell Spending on NDDC and Community Development
 Source: Compiled from Shell Sustainability Reports (2004-2013).

According to Aaron (2012), SPDC in 2008 had signed GMoU with 26 out of its 67 clusters and the execution process was already afoot in 15 out of the 26 clusters signed, while in the remaining nine clusters 78 projects have been completed with some still ongoing. Furthermore, in 2013 the company reported that as of the end of 2012 it had signed GMoU with 33 out of its 67 clusters, comprising 349 communities, 723 projects completed, translating to about 35% of the local communities around the company's business operations (Royal Dutch Shell, 2013b). This shows a dismal performance on the part of a company with the highest coverage of operation in Nigeria.

⁵⁶ Based on the interview granted the General Manager, Policy, Government and Public Affairs: The projects include water supplies, rural electrification projects, school building, cottage hospital, road and drainage networks, concrete jetties, foot bridges, town halls, housing for displaced people, scholarship, micro-credit scheme and others (Efeizomor, 2013).

Generally, the GMoU model is really extending projects across the length and breadth of the host and non-host communities in the OPC in NDR. Without doubt, the CNL's execution of the GMoU represents a comprehensive departure from the past in terms of project achievements and this should be ascribed to the introduction of a governance model that favours the interactions among stakeholders in project decision-making and execution. Interview with IRDC representative during fieldwork reveals that the GMoU in Ondo State like in other states in the NDR has impacted positively on the lives of the people in the coastal communities, through implementation of various laudable projects. In the words of the spokesman of IRDC:

“[...] We have concrete town/community halls of 1,500 seating capacity in some of our principal host OPC. We also have concrete housing units given to community, science laboratory in one of the extreme secondary schools: Molutehin [one of major OPC in Ondo State] Comprehensive College. Before this time, people don't stay there the moment they get to SS1, SS2 [Senior Secondary class1 &2], they come to hinterland because of lack of science teachers and equipment as we have in hinterland. [...]. Now there is no rush of students to the upper land to go to school, [...]. [...], that is capacity building for the future of our people serving about fifty communities i.e. from Ikorigho to Oghoye [communities in OPC]. We also distribute educational/reading materials to all secondary schools within our domain. [...], we award scholarship, we are doing that annually coupled with the one Chevron is giving to the communities. We embark on quarterly medical programme for the treatment of the aged, children and pregnant women with the assistance of a consultant. We don't run it alone we run it in partnership with local government public health officers that have also been drafted into the process” (Interview with IRDC member, 2013).

It is evident from the comments above that no doubt the IRDC has executed various developmental projects including housing, community halls, health programmes, and educational development programmes among others. **Figure 8.5** shows some of the housing projects constructed in the region and **Figure 8.6** demonstrates one of the health programmes in Ondo State which further corroborates the commitment of CNL and its joint venture partner to health-related issues as part of the GMoU programmes. **Figures 8.7, 8.8** and **8.9** depict other projects implemented by IRDC in the OPC of Ondo State.



Figure 8.5: Doctors and Nurses quarters built by one of the IRDCs
Source: Chevron Corporation (2014e).

The expectation is that the GMoU model will foster understanding and the values of transparency, accountability, participation as well as sustainability in development planning and execution (Hoben *et al.*, 2012; New Nigeria Foundation, 2014). But to what degree are the values advanced in the new CSR model? Whose values and norms are considered? Research findings show that some of the problems that characterised the previous models are still persisting and these are considered in the following section.



Figure 8.6: Wife of Ondo State Governor at Chevron Health Programme (Deworming) in Ondo State

Source: Chevron Corporation (2014e)



Figure 8.7: Multi-purpose Town Hall in Awoye

Source: IRDC (2013) 'personal Communication'.



Figure 8.8: IRDC Distribution of books at Molutehin Comprehensive High School

Source: IRDC (2013) 'personal Communication'.



Figure 8.9: Skill Acquisition for Ilaje Youths
Source: IRDC (2013) 'personal Communication'.

8.5.1 Favouritism and Lack of Transparency in IRDC Interactions with Communities

The fact that many international extractive industries are more knowledgeable and economically stronger than the developing countries in which they are transacting (WWF, 2012) is no longer a hidden truth. WWF (2012) contend that the intentions of international oil companies are to build equity and maximise wealth by obtaining and producing oil and gas reserves at the lowest possible cost and highest possible profit margin. This calls for transparency in the interactions among the actors involved in the governance of the sector, should not be hindered from having access to information and the means to participate in decision-making processes. To Milkalsen and Jentoft (2008), transparency has to do with public access to information.

Based on IGT and good governance principles, the rule of thumb for governments is to permit the public to have unhindered access to pertinent information, so that they can comprehend the dynamics and challenges and be more reasonable in their expectations. Alba *et al.* (2010) contend that majority of the governments in oil producing developing countries (OPDC) lack a policy as to how information is to be communicated or disseminated to the public and affected stakeholders. This study found that despite Nigeria's enactment of the freedom of information bill (FOI) that provides public access to information, the public and stakeholders have little information about oil and gas activities. Interviews with NGOs and government establishments confirmed the limited access to information regarding oil and gas activities. For example, one of NGOs remarked that:

“Our source of information from either the government or the MNOCs is limited. It is only on request or only information that are meant to be released to the public and it takes rigorous process for any information to be released. So, our major source of information is the general public” (Interview with NGO, 2013).

The claim by one of the NGOs above was further reinforced by a government official who said:

“[...], we have difficulties in the area of accessibility to information on oil/gas activities and environment the oil companies don't give us direct access to their

information. And that is a problem but then we still forge ahead [...]” (Interview with Government Official, 2013).

The locals from the two case-study communities attested to the activities of IRDC. However, as good as this may appear, there are disparate views among people regarding these activities. While the people in Awoye made good remarks, this was debunked by the locals in Ojumole. A vocal member of the FGDs in Ojumole noted:

“[...]. What I have discovered is that the MNOCs are not sincere and they are full of lies while the government workers and IRDC representatives on the other hand are only concerned about themselves and not our feelings. We see them do some projects in other communities but nothing in our community. For long they’ve been coming to deceive us, we don’t really expect anything from them. So we just work hard to sustain our lives” (FGD, 2013).

Interview with IRDC reveals that the Council consistently organise Annual General Meeting (AGM) with a view to giving account of their stewardship and showing how transparent they are in the way they implement their activities.

“[...], to raise a standard that is radically different from what we’ve been used to in the past. Hardly will you see a community oil-based association coming to render stewardship, in 2009 when we came on board after the first executive that spent four years left we saw the need to render stewardship. We hold [sic] the first AGM with all stakeholders including the state government, communities, NGOs, and Chevron and they were so happy. We subject ourselves to audit, we have an external auditor chosen on merit and Chevron came to accept it and say this person can assess us. We’ve been doing that consistently, [...], we are looking at the second week of next month to have another AGM in Akure [the State capital]” (Interview with IRDC member, 2013).

Interview with the local government official (LGO) as evidenced in the comment below confirmed the non-transparency of IRDC and buttresses the earlier claim of the locals in Ojumole that IRDC is insensitive to their plights. The LGO retorted:

“[...]. Come to the association [IRDC] we are having here is what we call people who put themselves as a cartel of community representatives that are amazing wealth for themselves at the expense of the communities, [...]” (Interview with LGO, 2013).

Additionally, the study found that the people in Awoye have been benefiting on yearly basis from scholarship programmes being administered by IRDC on behalf of the MNOCs. The view of one of the focal member of the FGDs is shown as exemplar:

“Chevron and IRDC give scholarships to people in our community every year. The scholarships from Chevron are for 10 people in secondary schools and five in University” (FGD, 2013).

The claim that MNOCs through IRDC provide scholarships to some people in the OPC was refuted by the people in Ojumole. An outspoken member of the FGDs from the community argued quite persuasively:

“[...]. The MNOCs are not straightforward in their dealings. For example, if they shortlist our children for scholarship, the money will not be paid. This has been causing so many problems in our community as other parents found it difficult to believe that your child was not paid when her/his name was shortlisted when there is another opportunity to consider people again. So, to me there is no scholarship for our children here” (FGD, 2013).

These remarks reflect the lack of transparency and favouritism that persists in the new governance model. Moreover, when question about the communities of the people that constitute the IRDC came from was raised during the FGD, the people in Awoye remarked that “some of them are from this community [Awoye] and some from Molutehin [neighbouring community to Awoye and historically of Awoye descent]”. This issue about the composition of IRDC membership possibly explains why projects executed and scholarship opportunities as witnessed above appeared to be skewed in favour of Awoye and at the expense of other communities like Ojumole. This type of approach can engender inter- and intra-community community just as Akpan (2006) noted as part of the attributes of the old CSR models.

8.5.2 *Inadequate Participation of all Stakeholders in Decision-Making*

The GMoUs encompass a wide range of stakeholders, including representatives from the state and local governments, the NDDC, some state development agencies and NGOs (Efeizomor, 2013). Despite the claim of IRDC that all relevant stakeholders including the NGOs, government and oil companies are involved in activities, findings from this study showed that there is no adequate stakeholder participation. For example, while the environmental NGOs operating in the state confirmed their non-involvement in the GMoU model, some government agencies too were not considered. This is further confirmed by non-involvement of a local government official as shown below:

“[...], and the oil companies themselves don’t allow us [Local Government] to be involved. [...]. If the IRDC representatives are not on the same party [political party] with the ruling party they make sure they side-track the government, anything they are doing they will not involve us until when there is crisis” (Interview with LGO, 2013).

Despite the provisions of the ‘Operational Policy and Procedure Guidelines (OPPG)’ of SPDC GMoU that at least three women should be included in the CT, neither SPDC nor Chevron has adequately insured gender equality, as the membership of the model is skewed in favour of

male gender (Aaron, 2012). A situation where women are marginalised and not given equal representation to voice their views shows that the GMoU model has not been able to sufficiently address the issue of community participation in project formulation as expected.

However, recent developments show that Chevron, which is the only MNOCs operating onshore in the study area, has been able to address the issue of gender insensitiveness in all its RDCs in the NDR. For example, PPCD (2013) noted that women in all the RDCs have been mainstreamed into the operations of RDCs including the IRDC. As demonstrated in **Figure 8.10**, this study confirmed the earlier report of PPCD (2013) which established that women have been co-opted as members of accounts/audits; communications, employment, resource mobilization and project review committees in the ongoing phase of the GMoU process in Ondo State.



Figure 8.10: IRDC Women Members in Ilaje Communities
Source: IRDC (2013) 'personal Communication'.

Given the apathy inherent in the culture of people generally in the NDR about a woman holding a position or having a say on issues, the level of involvement of the women on crucial decision making is still in doubt: as it is possible to placate some of the vocal members of the women by co-opting them to have access to financial benefits that their men counterparts receive without having a say on decisions made.

8.5.3 Lack of Community Ownership and Non-Sustainability of Projects

According to Aaron (2012), there is community ownership of development projects even as RDC members were learning to engage with government for development. Although the GMoU is expected to be community-driven, recent developments revealed that there are other institutions possibly with vested interests that want to foist their ideas on the people. For example, Sowole (2014) and Gbadamosi (2014) reported the series of protests of youths and some community leaders from the OPC in Ilaje Local Government Area over the alleged

foisting of IRDC executives on the people by a paramount traditional ruler in the area in connivance with government agency. Gbadamosi quoting some of the inscriptions on placards carried by the protesters: “No to imposition”, “No to government and kingdom imposition”, “Ilaje RDC is not for sale”, “Ilaje RDC is not a political party,” among others. This shows that decisions about projects may not be totally community-owned as earlier observed (Aaron, 2012; Hoben *et al.*, 2012).

Judging from the researcher’s experience of over 10 years of working in the coastal communities of Ondo State as Planning and Environmental Officer with OSOPADEC, most of the wooden walkways constructed by the Commission and other government agencies in the region have an average life span of five years. This questions the sustainability of similar projects being executed in the region by IRDC, given the amount of money usually expended for their maintenance. Moreover, since a similar development council (EGCDF) could construct a concrete walkway for communities in their mandate area as demonstrated in **Figure 8.11**, there is no reason why IRDC could not do same.



Figure 8.11: Concrete Walkway in Opuama⁵⁷
Source: (EGCDF, 2013).

When the issue of the sustainability of the wooden walkways constructed by IRDC was discussed with the people in the two case-study communities, the people remarked that they have raised the issue with IRDC and they were told that wood was preferred over other materials because of the limited fund released to them by the MNOC. As noted by one of the respondents in the FGDs:

“We told them it would be better and sustainable to have an iron or concrete bridge/walkways instead of the wooden one that doesn’t last more than three years at most but they said the money given to them by Chevron was not enough to embark on such project. Even at that if they use *iron* wood it would be better” (FGD, 2013).

⁵⁷ Opuama is one of the communities in the NDR

The comment above suggests that some of the projects (if not all) executed in the region by the IRDC on behalf of the MNOCs under the new governance model notwithstanding the gross amount involved, are not financially and environmentally sustainable because of the type of wood used for construction. It also questions the community ownership of projects. This finding disproves the claim of Hoben *et al.* (2012) and confirms that sustainability problem as identified in the old CSR model (Frynas, 2001; 2005) has not been fully addressed in the new model.

8.5.4 Limited State and Non-State Actors' Interactions with Communities

An interesting governance chasm that emerged from the data was the lack of actors, other than IRDC, interacting at the community level on oil-related issues. Furthermore, unlike the way the MNOCs and government relate very well with local OPC in Uganda on oil-related issues, though it is a new oil nation (Van Alstine *et al.*, 2014), the experience is not the same in Nigeria (NDR). As shown in **Figure 8.1**, the study found that government at all levels in Nigeria on the one hand do not have regular interactions with the host OPC, and the MNOCs on the other hand do not have direct interactions with local communities that bear the brunt of the impacts of oil and gas activities.

Although there is interaction between non-environmental NGOs, IRDC, industry and some government officials at quarterly stakeholder meetings and formal events, there appears to be little collaboration or engagement from environmental NGOs. Similarly, most environmental NGOs in Ondo State do not appear to be significantly engaged with building local government capacity particularly on issues that relate to the problem of biodiversity loss and ES degradation and the potential for development benefits from BES conservation at the community level.

What is striking from the analysis of the interviews with the two communities is that there are no direct interactions between the communities and MNOCs; rather most of their interactions are with IRDC. One of the respondents during FGD specifically noted that the government (either at federal, state or local level) and the MNOCs only visit their communities once in a while when there is problem like oil spills and they are usually guarded with tight security that nobody dares move close to them to ask questions or interact with them. According to her:

“Apart from the IRDC members that we know and see regularly in our communities executing one project to another, we have not been having any direct interaction with the MNOCs coming to show any concern about our plights. The only time we saw the MNOCs and the government officials in our community was when there was fire outbreak and oil spill from the ruptured pipeline. Anytime they visit here, they are usually guarded by tight security of about 40 armed mobile police men. So

nobody dares try to interact with them or ask them any question. Similarly, no NGO has been coming around to render any form of assistance to us here [community]" (FGD, 2013).

Furthermore, the emergence of IRDC is not supposed to preclude the MNOCs and the government from having direct interactions with the communities. However, with IRDC in place one might be tempted to ask the type of interactions the local people expect again after having the IRDC as community representatives that interact with the MNOCs and execute projects for the communities on behalf of the MNOCs. Findings from the study showed that the people do not have absolute trust in the IRDC composition and the traditional leaders. For example, one of the vocal respondents during the FGDs noted that:

"The government has not been forthcoming and both the leaders and the MNOCs are not in any form sincere. They are not truthful in their interactions with us. Many years ago, Chevron comes directly into this community and interacts directly with the community. They talk to the traditional leader and community people but now everything is done up there [cities] and outside the confine of the community, so whatever they tell us is what we believe. Both Chevron, community leaders/representatives [IRDC], and particularly the traditional leaders are not trusted because if the king says he wants something nobody dares to question his authority. So to me, all of them are culprits in this matter" (FGD, 2013).

One of the NGOs interviewed confirmed the claim of the community that they had not been having interaction with NGOs:

"I have been to the OPC severally for various assignments either for remediation or for EIA studies. [...]. Sincerely OFEPA as an NGO has not been privileged to be there [OPC] to interact with the locals, organise seminars or sensitise them on some things but we are planning to be there soon" (Interview with NGO, 2013).

Most of the government actors interviewed in the course of the study claimed to be having regular interactions with all the relevant stakeholders including the non-state actors. As noted by one of them:

"Yes we do have interactions with all stakeholders, though it may not be as one may desire or at this local level but I know we do it at our headquarters. [...], and what they [headquarters] do is send for our officers to come. The officers from here, from the ministries, the local government and the oil companies' representatives as well as representatives of these communities meet at the headquarters to deliberate on how the environment can be preserved. [...]. So, it's a regular thing, [...], they meet at least twice a year" (Interview with Government Official, 2013).

While learning and partnering with government is not only commendable, but will also enhance the development of the OPC and help to prevent any form of duplication of efforts. However, empirical findings disprove the government's claim on their interactions with other non-state actors. Interview with IRDC and as demonstrated in **Figure 8.1** confirms there are limited

interactions between IRDC and the government and that the latter does not want such synergy to work. In his words:

“[...], we preach partnership, we have advocacy committee that say this is what we are doing, let us not duplicate efforts with little assistance and supports. What we look at to a reasonable extent, the business of wasting resources. In public sector we have abandonment [of projects] but we don't have abandonment in terms of our projects. We think synergy through advocacy which we are doing but the people in government are trying to tenor, at times they hold their responsibilities to the top, they don't think they should rank with us” (Interview with IRDC member, 2013).

Majority of the environmental NGOs also corroborate the earlier remarks from the communities and IRDC and it shows how astonishing little interactions exist among stakeholders, particularly at the local level.

“[...], we are having good interactions with co-NGOs but little or no interaction with government and MNOCs on oil-related issue. The system did not give room for such interaction unless something happens like oil spill then they [government and MNOCs] will allow for public hearing but normally there should be a process maybe quarterly where there will be discussions on issues raised by the MNOCs or the government and let people react or add to it. I am suggesting that it should be a lay down rule that quarterly there should be an interactive forum instead of waiting till something happens” (Interview with NGO, 2013).

8.5.5 Failure to mainstream environment concerns into CSR activities

The most influential international CSR instruments are the OECD Guidelines, the UN Global Compact, and the 1998 ILO Declaration on Fundamental Principles and Rights at work (Bantekas, 2004). Section 14 of the UN Norms on the Responsibilities of TNCs specifically provided for the preservation of the environment:

“Transnational corporations and other business enterprises shall carry out their activities in accordance with national laws, regulations, administrative practices and policies relating to the preservation of the environment of the countries in which they operate, as well as in accordance with relevant international agreements, principles, objectives, responsibilities and standards with regard to the environment as well as human rights, public health and safety, bioethics and the precautionary principle, and shall generally conduct their activities in a manner contributing to the wider goal of sustainable development” (UN, 2003, p. 1).

The commitment of CNL to BES conservation in Nigeria as part of its CSR activities is demonstrated in **Figure 8.12** where the company donated about \$420,000 to Nigerian Conservation Foundation (NCF)⁵⁸ in 2013 to assist in the implementation of its programmes and cater for the running of the Conservation Centre that was initiated and sponsored by the

⁵⁸ One of the environmental NGOs interviewed in the course of this study.

company. The details of the company's commitment to environmental conservation in Nigeria are shown in **Box 8.3**.

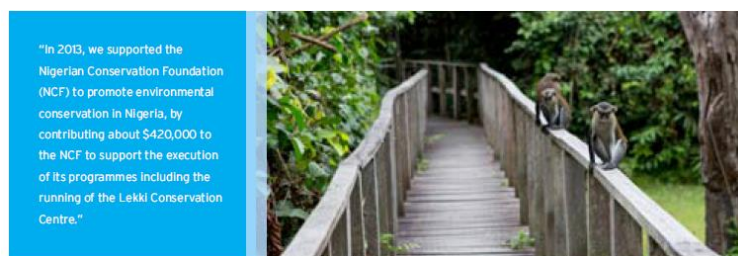


Figure 8.12: Conservation Efforts of Chevron to Lekki Conservation Centre
Source: Chevron Corporation (2014e)

Box 8.3: Chevron's Environmental Conservation Programmes in Nigeria in 2013

Our commitment to the management of the environment remains an integral part of our core business. New projects are planned and implemented in a systematic manner that takes cognisance of likely impact on the environment through application of the OE Environmental, Social, Health Impact Assessment (ESHIA) process. In 2013, we supported the Nigerian Conservation Foundation (NCF) to promote environmental conservation in Nigeria, by contributing about \$420,000 to the NCF to support the execution of its programmes including the running of the Lekki Conservation Centre – a 193-acre (78-hectare) facility dedicated to environmental research and education to promote sound environmental practices and conservation techniques. Reserved as a sanctuary for the rich flora and fauna of the Lekki Peninsula, the conservation centre is the only such facility in the Lagos area.

Chevron Nigeria, in partnership with NCF, hosted the 11th Chief S. L. Edu Memorial Lecture in Lagos. The S. L. Edu Memorial Lecture was initiated by the NCF to immortalise the founder and first president of the NCF, Chief Shafi Lawal Edu. This memorial Lecture which holds annually is aimed at stimulating broad public discourse of environmental issues and policies. We also sponsored the Chief S. L. Edu Memorial Research Grant – a scholarship grants awarded to post graduate students. In line with our commitment to the environment, Chevron Nigeria was one of the major sponsors of the 2013 Annual Walk for Nature, organised by the Lagos State Government in partnership with the NCF. The event was aimed at creating public awareness about nature and the environment.

Source: Chevron Corporation (2014e, p. 30).

When asked about the activities of the oil and gas companies to the conservation of BES in the NDR from the NGOs, only NCF [Chevron referred to in **Figure 8.10**] confirms the commitment of the MNOCs to preservation of the environment. In the words of the respondent:

“Without trying to be biased I will just try to use two major oil companies, Shell and Chevron. Shell developed an international policy which is called a Biodiversity Action Plan (BAP), the first phase was implemented by NCF and that was where we look at engaging community to own their resources which is the first, teaching them how to structure their own system. We went as far as gazetting those forest reserves in Edo State [one of the States in NDR] and the local community took over by having what they call Grassroots Consultative Committee (GCC) ... [...]. That is the policy of Shell. For Chevron, this place is a demonstration centre [NCF, Lekki, Lagos Office] which is like a laboratory of what used to be in this place before. [...], and part of their policies is to develop an environmental education

centre like this one [Lekki Conservation Centre]. For Chevron which I believe is borne out of policy, some of the funds that we [NCF] use for this centre comes all the way from the US which is the corporate headquarters of Chevron. [...], in the last 23 years we have school children up to five million visiting and being shown round. Some have never seen a monkey, a tortoise before except on carton now people see them. [...] (Interview with NGO, 2013).

While the efforts of the MNOCs [Shell and Chevron] towards the conservation of environment in Nigeria are commendable, their failure to do something similar in the coastal communities in the NDR where the environment has been despoiled due to their activities is undesirable. When confronted with the issue of why environmental issues were conspicuously missing in their GMoU projects, the IRDC representative retorted:

“[...], we do projects that are environmentally friendly, we don't embark on projects that will further pollute the environment. We don't access ecological funds; we know there are funds allocated for degradations and that one is better accessed by federal or state government and that one is not within our purview. We ensure that all our projects are tailored towards ensuring sanity of our people and other thing [...], when we have opportunity for safety moment, we do the little we can do, [...]” (Interview with IRDC member, 2013).

The response of the IRDC resonates with the initial stance of the MNOCs as earlier noted above that it is the responsibility of the government and not theirs to address developmental problems. The locals in the two case-study communities also lamented the non-inclusion of the environment in the CSR activities of the MNOCs being executed by IRDC. A member of the FGDs noted that:

“[...], when we asked our children [IRDC members] why they are not doing anything about environmental problems which is major issue affecting the sources of our livelihood, they told us that Chevron has not given them any permission to dredge the canal or to do anything on environment [...] but they have the mandate to do other projects like construction of wooden walkways that will assist free movement of people within their communities” (FGD, 2013).

Apparently, the CSR activities of the MNOCs only revolve around developmental projects and it has neglected the negative externalities of oil and gas activities, especially environmental issues that remain the cause of the problem of the people in the region. To Amnesty International (2009), this problem is a human rights tragedy with ramifications threatening the sources of livelihood and exacerbating poverty among most indigenous people in the OPC. This finding lends credence to Aaron's earlier finding that both Chevron and SPDC lack any sign of incorporating the environment into their CSR activities (2012).

Furthermore, this shows that despite the recently adopted UN Norms on the Responsibilities of Transnational Corporations (TNCs) which stresses the need for MNOs to adhere to international and national laws on protection of human rights (UN, 2003), most CSR projects of the MNOs in the NDR leave much to be desired when it comes to environmental protection

As both Global Compact and the OECD Guidelines refer to the 1948 Universal Declaration of Human Rights (UDHR) as the most appropriate standard, the British Petroleum Incorporation (Undated cited in Bantekas, 2004) noted that only few Multinational Enterprises (MNEs) have integrated a commitment to the UDHR in their management approach. While this act has generated a lot of condemnation by the human rights organisations in Nigeria (Amnesty International, 2009) and other developing countries, Bantekas (2004) points out that it must be accepted that adherence to the UDHR standard by socially responsible firms in developing countries is not a straightforward exercise. This possibly explains why the MNOs in Nigeria have not integrated environment as part of their commitment to the UDHR in their CSR practices. Just as stated in OECD Guidelines, Principle 1 of the Global Compact also stipulates that:

“Businesses should support and respect the protection of internationally proclaimed human rights within their sphere of influence” (U.N. Global Compact, 2000, p. 1).

CSR-related human rights recognises a “collective” right of host state local communities residing in or peripherally to the investment project, or which are unswervingly impacted by the project’s operations, relating to environmental and social well-being, in contradistinction to the traditional human rights law (U.N. Global Compact, 2002; OECD, 2004). The implication of this is that failure to integrate the environment into the GMoU model by the MNOs has violated the CSR-related human rights of the people in the OPC. International environmental treaties are addressed to States, who in turn address some of the obligations contained therein to natural or corporate persons in their domestic legislation. (Aaron, 2012) who claimed to draw inspiration from Bakan (2004) contends that there is bad CSR in the NDR because of the primary objective of the MNOs to maximise profit. This is due to the reasoning of profit maximisation intrinsic in the nature of MNOs that environment is not mainstreamed in their GMoU process (Aaron, 2012). In his words:

“Implicit in this is that corporate misdemeanour, which finds expression in bad corporate social responsibility practices in the Niger Delta, is not borne out of mistakes to be corrected by doing the right thing; it is rooted in the logic of the ‘pathological pursuit for profit’ inherent in the nature of the corporation.” (Aaron, 2012, p. 264).

Despite the provisions of the Nigerian Constitution and the African Charter on Peoples' and Human Rights and other procedural rules on environmental rights in the country, Ekpu (1995 cited in Ijaiya, 2012) noted that judges in Nigeria placed economic considerations above environmental issues. This perhaps explicates why environmental concerns have not been taken seriously in the nation by the government as well as the MNOCs who have not mainstreamed the environment into their GMoU governance model.

The Global Compact distinguishes between direct MNE complicity, beneficial complicity, and silent complicity in human rights violations. An MNE is engaged in direct complicity where it participates in the violation; it is beneficially complicit where it benefits from the human rights abuses committed by government agents; it is silently complicit where it fails to raise "the question of systematic or continuous human rights violations in its interactions with the appropriate authorities" (U.N. Global Compact, 2002, p. 24).

According to Royal Dutch Shell (2014), in 2013 the sum of \$104.1million was contributed towards community development projects by Shell (SPDC and SNEPCo) and its joint venture, Shell's share out of the total sum is \$32.3 million. This shows that the balance of \$71.8 would have been borne by NNPC, Total and Agip that hold 55%, 10% and 5% shares in SPDC joint ventures. The expectation is that the involvement of NGOs in partnership for development in the GMoU model will not only help to ensure that projects are implemented in a sustainable way but also help to address some of the drawbacks identified with the old interactive model.

However, the failure of the NGOs involved in this partnership that are supposed to equally act as watchdog and correct any form of unethical practice in the process such as the exclusion of environment in GMoU model confirms the finding of Aaron. As contractors, the non-environmental NGOs involved in the GMoU model are bound to be docile to their client, the MNOCs. To Aaron, what is available is not a partnership for development between stakeholders intrinsically, to midwife sustainable development in the OPC but a development model that is absolutely reliant on oil and gas companies for funding, with the NGOs acting almost as contractors (2012). It is perceptible that 'civil society' in Nigeria, although ubiquitous, is not supplying the 'opposing voice' needed for accountability to be achieved (Newell, 2005). The involvement of some NGOs or other civil society group is expected to be an adequate enough check on transparency and accountability. However, drawing from Newell (2005, p. 552) this expectation may be bedevilled by the failure to analyse the NGOs' interests, political agendas, or manoeuvrings by the prepotent elites: "Civil society groups clearly have their own agendas

as political actors, and these may not always be compatible with promoting the interests of the community.”

In line with the international policies regarding CSR practices, the current trend is for nations to put laws in place so as to hold corporations accountable to their stakeholders. For example, UK in 2003 adopted a Corporate Responsibility Bill in an attempt to hold corporations accountable to their stakeholders (The House of Commons, 2003). Specifically, Article 2 of the Bill provides for extraterritorial application concerning all crucial CSR areas of concern, requiring corporations to consult with stakeholders and to as well prepare and publish reports of their activities. Furthermore, while Articles 7 and 8 emphasise the environmental and social responsibilities of directors as well as their duties, Article 6 documents the liability of the parent company concerning its subsidiaries, mergers, disposals, acquisitions, and other restructurings “immaterial of whether the injury to persons or harm to the environment occurred within the United Kingdom” (The House of Commons, 2003, p. 3).

Similarly, in France the government in 2001 amended its Nouvelles Regulations Economiques (NRE) in a way that it imposes reporting obligations (public disclosure) on all nationally listed companies, pertaining among others to the environment, domestic and international labour relations, local community, and others. This regulation requires public companies to include information on the social and environmental consequences of their activities in their annual reports (France National Assembly, 2001). Article 116 para. 4 demands disclosures on social and environmental issues in the annual reports of corporations listed on the French stock exchange.

In July of 2010, France took another important stride towards commissioning integrated sustainability and financial reporting for all large companies with a new law called Grenelle II. Article 225 of the law demands that all listed companies⁵⁹ on the French stock exchanges should incorporate the social and environmental consequences of their activities as well as their societal commitments for sustainable development into their annual reports information. This law demands transparency from businesses on the environmental, social and governance front, hence, these three significant themes constitute what must be reported on by all companies listed on the French stock exchanges. As noted by Institut RSE Management (2012), the companies are subjected to 13 additional indicators shown in italics in the **Table 8.1**.

⁵⁹ These include subsidiaries of foreign companies listed in France, and unlisted companies as well as subsidiaries of foreign companies situated in France.

Just as Ijaiya (2014) contends that Nigeria has not put any law in place on CSR, this study found that in contrast to the practise in countries like UK and France mentioned above Nigeria has no law that holds corporations accountable for their CSR practices.

Table 8.1: Indicators for Integrated Sustainability and Financial Reporting

Environmental	<ul style="list-style-type: none"> ➤ Environmental policy (e.g., organisation and measures, certifications, preventive methods, <i>dollar amount for financial provisions and guarantees for environmental risks</i>) ➤ Pollution and waste management (e.g., measures related to the management of air, water, soil, waste, noise) ➤ Sustainable use of resources (e.g., water use and water supply based on local constraints, raw materials, energy consumption and efficiency measures, <i>land use</i>) ➤ Climate change (e.g., greenhouse gas emissions and <i>climate change adaptation</i>) ➤ Protection of biodiversity (e.g., protective measures taken)
Social	<ul style="list-style-type: none"> ➤ Employment (e.g., headcounts by geographical area, age and gender, promotions and remuneration, recruitment and dismissals) ➤ Organization (e.g., work hours and <i>absenteeism</i>) ➤ Social relations (e.g., organization of social dialogue, collective bargaining agreements) ➤ Health and safety performance (e.g., working conditions, signed agreements, <i>work-related illnesses and injuries, frequency and severity rates</i>) ➤ Training (e.g., hours and policies) ➤ Non-discrimination (e.g., age, gender, physical handicaps) ➤ Compliance with the International Labour Organization principles (e.g., <i>respecting freedom of association and collective bargaining; elimination of discrimination; elimination of forced labour; and abolition of child labour</i>)
Governance	<ul style="list-style-type: none"> ➤ Territorial impact of the activities of the company (e.g., employment, local development) ➤ Relationships with stakeholders (e.g., dialogue, philanthropy) ➤ Subcontractors and suppliers (e.g., <i>percentage of outsourced work, sourcing policy, sustainability policy in the supply chain</i>) ➤ Fair practices (e.g., <i>measures taken to fight corruption; protect consumers' health and safety</i>) ➤ Human rights (<i>actions to promote human rights</i>)

Source: Institut RSE Management (2012).

Besides the few instances of domestic legislation demanding that certain corporations submit social and environmental reports as part of their annual reports or financial reports (France National Assembly, 2001; The House of Commons, 2003; Institut RSE Management, 2012), all other reporting initiatives are voluntary (Bantekas, 2004). The observation made by Aaron (2012) that although the major MNOs operating in the NDR have policies that portrayed a commitment to sound environmental practices, in reality their conduct is the precise opposite and their environmentally insensitive procedures are the worst in the world.

Dossing (2003 cited in Bantekas, 2004) highlights three crucial generations of CSR that are generally believed to have evolved. The first concentrated on short-term corporate benefits and objectives, the second on long-term success blueprints; the current generation is targeted at tackling the responsibility of business in issues fundamentally within the public domain

including poverty, exclusion, and environmental degradation. The foregoing findings about how CSR is being practised in Nigeria by the MNOCs through their GMoU model shows the corporations have only identified with the first and second generations of CSR. It is against this backdrop that Hilson (2012) contends that contemporary evidence from extractive industries in the contexts of developing country enormously reveal the inadequacy of CSR, given its minimal impact, and in some cases causing more problems for local communities. This possibly clarifies why most studies on CSR implementation in the NDR conclude that MNOCs have failed to fulfil their promises (Human Rights Watch, 1999; Akpan, 2006; Idemudia, 2007; Ekwo, 2011a; Aaron, 2012). It may therefore be methodical to conclude that the CSR as performed in the NDR by the MNOCs has failed to produce the expected outcomes.

8.6 Summary

This chapter has assessed: (i) the interactions between and among government (State) actors, (ii) company-government interactions; (iii) interactions between company/government actors and civil society/host OPC. Generally, the interactions between the governing system and the system-to-be-governed on the governance of oil and gas sector with regards conservation of BES are poor. One innovative means of linking and implementing national environmental regimes to local problems is the notion of interactions or partnerships/public participation. This concept of partnership is predicated on the 2002 World Summit on Sustainable Development (WSSD), which prescribes the coming together of multi-stakeholder including voluntary, multilateral, international, and market institutions in a non-negotiated way to collaboratively tackle issues.

Over the years due to the crises that erupted as a result of the outcome of the interplay between the GS and the system-to-be-governed, the interactions between the MNOCs and NNPC their joint ventures partner on the one hand and the OPC on the other hand have taken another form. As highlighted above, the new form of interactive model that emerged is the GMoU concept which to an extent has increased the scope of actors but in the real sense has not been able to increase the interactions among the actors. Evidence suggests that in spite of the rhetoric of interaction between the governance actors in the GS and the SG in the GMoU model, the desired outcome is yet to be actualised with regards to conservation of BES. The interaction is not only federal controlled but also fragmented and lack coherence among the federal actors. Interactions between the federal, state and local levels were also less frequent.

The general principle of GMOU model aligns with IGT through the concept of ‘interaction’ between stakeholders in the SG, between governing actors and between GS and the SG (Kooiman *et al.*, 2005b; Kooiman *et al.*, 2008; Chuenpagdee and Jentoft, 2009). It holds the key to achieving the desired governance process that will help all stakeholders to collaboratively work together towards the effective conservation of BES and attainment of environmental sustainability in the NDR. However, its present *modus operandi* as shown in the interactions (**Figure 8.1**) among and between the governance actors cannot help in actualising sustainable conservation of BES except it is rejigged to mainstream environment into the GMoU concept and carefully reconsider the norms, values of participation particularly that of the host OPC, transparency, accountability, and sustainability in all its ramifications.

Chapter 9. Interactive Governance Approach: Towards Sustainable Oil and Gas Exploitation and Effective Conservation of BES in the Niger Delta

9.1 Introduction

This chapter considers a way in which the governance of oil and gas sector in Nigeria could be improved to help effectively mitigate BES loss and degradation in the study area and in the entire NDR. Considerations are also given to the extent to which current policies address IG concerns and principles. The potential improvements that could make oil and gas environmental conservation policies to be responsive to the plights of the OPC are also discussed.

9.2 Governance Framework

In chapters six, seven and eight the analyses of the current trend in the governance of the oil and gas sector and its implications for BES loss and degradation in the NDR was presented. As demonstrated, the governance approach to the conservation of BES from the impacts of oil and gas activities in Nigeria has not been effective. It is against this backdrop that this study argues that there is a need for a governance approach that is transparent, responsive to the community, inclusive and builds consensus. If the status quo is maintained or a “do nothing” approach is contemplated as an option, the negative externalities of the oil and gas sector on the BES in the NDR will be sustained.

Additionally, as the issue of poverty, environment and food security that characterises the communities in the NDR are inextricably linked to national security (Onduku, 2004; Owolabi and Okwechime, 2007; Afinotan and Ojakorotu, 2009; Emuedo and Emuedo, 2014), the continued exploitation and degradation of BES that the inhabitants of the OPC rely on for their livelihood and well-being will pose major threats to human security in that region and, by extension, the Nigerian state. Onduku (2004) contends that governance plays a significant role in engendering an enabling environment for peace, security and progress. To the author, sincerity and transparency of the MNOCs operating in the NDR are the cardinal issues to be tackled for peace, security and progress to be achieved. As Afinotan and Ojakorotu (2009, p. 191) noted, the region is “a hot bed of violence, insurgency, kidnapping, hostage-taking, oil pipeline sabotage, crude oil theft, gang wars, internecine struggles and so much else by way of anarchy and chaos”, so a do nothing approach is likely to further heighten existing security problems.

As discussed in chapter three, IGF is a concept that fosters the recognition of the various systems and the governing actors in the NDR and the interactions that exist between them in such a way that the exploration and production of oil and gas resource will not further exacerbate BES degradation in the region. Accordingly, IGF as applied in this study has four fundamental objectives: First, to promote the sustainable exploration and production of oil and gas as a national resource in a way that will mitigate the negative externalities of the resource on BES. The second is to recognise the relevant oil and gas actors/stakeholders with regards to conservation of BES and involve them in decision-making as this will help to have a holistic view of impacts of oil and gas activities on BES and the various values, norms and principles to be considered for the effective conservation of BES. The third is to promote regular interactions among stakeholders/actors in a way that will foster learning which will ultimately build the capacity of actors in addressing the various challenges in the GS as well as creating opportunities for stakeholders. The fourth focuses on encouraging the implementation of the policies and regulations regarding the monitoring of oil and gas activities; maintenance of oil and gas infrastructures and conservation of BES from the impacts of oil and gas activities in Nigeria.

9.3 Crucial Action for the Oil and Gas IGF

The literature review in chapters two and three and the opinions of some interviewees in chapters six, seven and eight clearly demonstrate the possibility of attaining sustainable conservation of BES in the NDR through the application of IGF. However, to achieve this, IGF requires some actions to be taken at the SG level, GS level and at the GI level.

The imperative of accommodating more stakeholders to include local citizens of the OPC in the governance of oil and gas activities in Nigeria would be taken care of under the IGA as it recognises the various sub-systems in the society. It also accords well with the GMoU model already introduced in the region by the MNOCs and their joint venture partner, although it would still require some modifications in order to achieve the interactive governance objective. The following section considers such crucial areas that need improvement for the IG objective to be achieved.

9.4 System-to-be Governed

The contention between pursuing economic activities to foster development and protecting the environment is a recurring dilemma for mineral dependent countries (Olomola, 2005; Schwartz, 2006) like Nigeria. This study observes that, while it is frequently easy to cite the economic

benefits that will accrue from economic development project like oil and gas activities, it is not usually easy to measure the benefits of conservation and in this case BES. The demand for oil and gas resource by the government and MNOCs in the NDR with a view to generating foreign exchange for the country on the one part and provide a source of livelihood for the local communities on the other part have put a lot of pressure on the natural system in the region.

9.4.1 NDR Natural System

While oil and gas activities as a major economic activity in the region has continued unabated, it has also continued to generate devastating effects on the globally significant BES. Mangroves which are prevalent in the coastal intertidal areas and are subject to stranding and trapping of oil are regarded as the most sensitive of all ecosystem types to oil spills and are susceptible to long-term impacts due to the very high organic content of sediments and anoxic conditions that could keep pollutants in their original state for decades (IUCN Niger–Delta Panel, 2013). Natural reformation of mangroves is extremely difficult under the stress conditions that are prevailing in the NDR including several human activities like dredging, oil theft, illegal refining/transport of oil; continuous use of speed boats, operational spills and accidents. Added to these, is the cutting of pipeline right-of-way and seismic lines without instant hydrological restoration (Ibid). According to one of the NGOs interviewed:

“The problem of environmental degradation in the NDR will persist as long as long as oil exploitation continues without any conscious effort to mitigate or restore the degraded areas” (Interview with NGO, 2013).

This is a clear demonstration of how economic activities are pursued at the expense of conserving the environment.

Despite the call for the need to secure development it is also of paramount importance to sustain the productivity of the natural vegetation, protecting wildlife, maintaining genetic diversity and avoiding forest and soil destruction in the National Policy on Environment (NPE) (1989, para. 3&4) (FEPA, 1989). In Nigeria, various species of fauna and flora that the nation is naturally endowed with have gone into extinction or are in peril of the extinction due to economic growth and development (Planet Report, 1998 cited in Oluduro and Gasu, 2012).

As noted in chapter seven, there is inadequate attention to the issue of BES in Nigeria and this is reflected in the extant legal and policy framework governing the oil and gas sector in Nigeria as well as the policies/regulations shaping environmental issues in the nation including BES conservation. In the words of one of the NGOs interviewed “[...], for biodiversity to be

appreciated and its benefits maximised in Nigeria we need to properly identify what ES are and also put value on them and without that you won't be able to protect" (Interview with NGO, 2013). This possibly explains why Fagbohun (2002) lamented the inability of the nation to reap the full benefits of its rich resource endowment but rather operating below its potential.

9.4.2 NDR Socio-economic System

It is surprising to note that the OPC, which are mainly occupied by people of low income and lack inadequate infrastructure, could only acquire oil and gas resource for local consumption from the illegal black market at extortionate rates (Onuoha, 2008). This has often triggered some detrimental proclivities from the local communities towards oil and gas infrastructures as well as the oil and gas companies (Ibid) such as pipeline vandalism and kidnapping of expatriates among others. One of the youths in Awoye noted during group discussions that:

"The government and the MNOCs have not been sensitive to our plight because we don't vandalise oil/gas infrastructures like people in the other parts of NDR" (FGD, 2013).

This study ascribes this to the fact that local communities are neither given the proper recognition nor are they involved in the governance of the oil and gas sector. The expectation of this study in line with the IGF principles is that the diversity of actors whose activities and livelihoods revolves around the healthy ecosystems in this region must not only be recognised and involved in the governance of the oil and gas sector, but also having regular interactions on how issues of concern to all stakeholders can be addressed. This will help to stem the rate of biodiversity loss and ES degradation in the region.

9.5 Governing System

As presented in chapter seven, there are issues of unclear mandates, conflict of interest, and lack of effective coordination among the diversity of governing actors, there is also paucity of public participation in policy formulation and accountability in decision-making. Added to these are lack of transparency and unresponsiveness of polices. These governance lacunae have not only created some complexities within the governing system but are also attributed to the failure of the various oil and gas environmental policies to address the issues at either the formulation or decision-making stage. Additionally, it implies the awareness not only of the limitations of the hierarchical form of governance that characterises the governance of the sector in Nigeria, but also underscores the significance of the other means of governance such as co-governance in which other governing actors/stakeholders are involved.

There should be an enabling legislation for oil and gas environmental-related issues that will guarantee the conservation of coastal BES. A lesson can be drawn from the developed countries, where the impacts of oil and gas on the environment have been considerably reduced through effective regulatory actions and a good case in point is Norway. For example, Nurakhmet (Undated, p. 8) noted that: “Norway brings one of the best examples of successful oil production policies as well as environmental protection.” This environmental policy reform should make adequate provisions for uncomplicated incentives for all relevant stakeholders/actors towards sustainable conservation of BES from the impacts of oil and gas activities in the NDR.

9.5.1 Third Order Governance

Vital issues like the precautionary principle, inter/intra-generational equity, and liability for environmental damage are not integrated explicitly as part of the policy framework for conservation of biodiversity and other natural resources management in Nigeria. These international sustainable development principles are supposed to be domesticated and translated into concrete policy with management measures that can be easily grasped and action undertaken in a particular context. As established in chapter seven, most of the existing policies/regulations are not only consistent with current realities in the country but reflect the colonial vestiges as they fail to take into consideration the values, norms and principles of all the actors particularly those of local communities.

From the Meta or third-order governance perspective, this study recognises the need for the review of almost all the existing oil and gas policies/regulations with a view to reflecting the values, norms and principles of all the relevant stakeholders/actors particularly people in the OPC where the policies/regulations are to be implemented. This is in contrast to the situation where the existing policies/regulations represent only the values of the government and MNOCs. This would require the recognition and involvement of all the relevant stakeholders/actors including the disadvantaged in the society in the formulation of policies and decision-making (Kooiman and Jentoft, 2009). This shows the complexities as well as opportunities inherent in the governing process.

Since interactions among governing actors/stakeholders that would produce such policies for the conservation of BES are never straightforward, as these are intensely political, and hence contested processes (Ibid), stakeholders’ images as well as values, norms and principles about BES must be deliberated in an open/transparent arena before a decision is made. This will not only help to forestall the recurrence of governance problems like lack of transparency,

accountability but also to secure healthy social and natural systems. Recognising and involving the community actors will at least guarantee the protection of community rights, values, norms and principles. It would also offer opportunity for effective dialogue and conciliatory negotiations among actors/stakeholders prior to formulation of policies and decision-making. Furthermore, it will guarantee respect for legal pluralism through institutionalising and strengthening traditional/customary laws as part of the oil and gas environmental management as well as adherence to the rule of law.

9.5.2 Second Order Governance: Institutional Weaknesses

The issue of BES which is yet to reflect in all the current oil and gas environmental policies as well as in the other conservation policies/regulations should be mainstreamed as is the case in most industrialised world where BES has not only been introduced into the national policies but also mainstreamed into various sectoral policies. For example, Ecosystem services are the life sustaining processes that offer the goods and services on which human life is conditioned and which intensify the quality of life. In acknowledgement of this, the UK government has in recent years been encouraging the adoption of an Ecosystem Services Approach (ESA) to its environmental assessment and management largely based on the Defra guidance (DEFRA, 2007), the supplementary Green Book Guidance (Dunn, 2012) and the UK National Ecosystem Assessment (UKNEA, 2011).

Notwithstanding the lack of BES-definite provisions in Nigerian oil and gas environmental policies/regulations, and other extant relevant environmental policies that give scant attention to the issue of BES, these laws and policies/regulations do hold sufficient provisions that would permit the development and incorporation of BES into the governing of the oil and gas sector and building stakeholders' capacity. For instance, the NPE demands for "restoring, maintaining and enhancing the ecosystems and ecological processes essential for the functioning of the biosphere ..." however, there are no feasible regulations to operationalise this noble objective. Generally, there is scant level of comprehension of what constitute BES and how to start building and using tools to conserve and sustainably maximise its benefits.

For effective conservation and sustainable use of BES in a way that maximises benefits, this study recommends mainstreaming BES management priorities into oil and gas sector development policies/regulations as well as the operations of the oil and gas companies in the NDR. This would require introducing BES as part of issues to be taken seriously whenever any

prospecting oil company is preparing EIA for oil and gas exploration and production, before licences are issued to them.

Additionally, the reform should equally painstakingly consider the issue of compensation in all the relevant policies/regulations so that the issue of fines/compensation which has been the major source of problems pitting the communities against the MNOCs should be reviewed upwards from its present meagre amounts that is not in tandem with current realities in the society. The reform should also stipulate in unambiguous terms the amount to pay and what compensation should be paid on and the maximum time an oil and gas company can delay before paying as well as the penalty for non-compliance. This would go a long way to address the problem of inadequate compensations which often lead to protests and destruction of oil and gas infrastructure.

Furthermore, this environmental policy/regulations improvement should offer distinct incentives for all relevant stakeholders to stimulate them to work towards sustainable conservation of BES as well as continued oil and gas exploration and production in the NDR. As shown in chapter seven, lack of transparency and accountability in decision-making are parts of the governance gaps that characterise the oil and gas sector in Nigeria.

Lack of implementation of the numerous extant environmental/conservation policies/regulations is one of the governance gaps and findings of this study. While several reasons may be adduced for the failure of the government actors to implement the policies/regulations, this thesis calls for the involvement of the relevant actors/stakeholders as this would engender coordinated and consistent approach to mitigate the impact of oil and gas activities on BES and foster sustainable conservation of BES.

The customary laws and practices that are used to govern environmental management including BES in the NDR are based on cultural norms, traditions and beliefs (taboos) that together ensure that trees, rivers, fishes and animals are protected. However, the promulgation of 1978 Land Use Act (LUA) that vested ownership of all lands on the governor has eroded the communities' right of ownership, and has weakened the control of the traditional institutions over their lands. The traditional institutions should be recognised and provisions should be made for the accommodation of customary laws in the existing laws.

9.5.3 First Order Governance: Day-to-day Conservation Management

It is evident from the analysis in chapter seven that part of the governance chasms that bedevil the governance of oil and gas sector in the NDR are administrative shortcomings and inadequate monitoring. The implication of this is that in the absence of requisite facilities that stimulate the regulators in their day-to-day activities, their performance will be hampered. Environmental monitoring, is difficult in the NDR because the vastness and the difficult terrain of the region can make it prohibitively expensive, particularly in the absence of adequate infrastructure and incentives. Local, state and regional environmental agencies in the NDR should be empowered with the necessary incentives such as providing them with adequate vehicles/boats for effective monitoring of oil and gas activities, financial provisions for the day-to-day running of the offices and monitoring.

In addition, provisions should also be made for internet facilities through which online interactions can be established among stakeholders. There is need for the provision of a vast and sophisticated network of the national environmental monitoring system such as Sensornet technology capable of not just monitoring environmental outcomes but able to discover where site-specific discharge violations are happening. Furthermore, application of GIS technology in the mapping of the important BES of the region will also assist in the monitoring and conservation strategies.

Another fundamental issue again is the inability of the government regulators to provide up-to-date baseline information about the biodiversity of the region. The question then, is on what basis the regulators carry out their monitoring activities. Baseline data gathering involving all the relevant stakeholders/actors is urgently needed as this would help to update the existing information about the state-of-the-art of the biodiversity in the NDR and involving the communities with historical knowledge of the area is fundamental in this regard. This information will not only be useful in the effective working of oil and gas IGF, but will also assist in building an accurate data bank of the biodiversity in the NDR.

It is also important to note that the present policy framework in the oil and gas sector with regards to environmental-related issues does not tackle crucial BES issues like scientific capacity, capacity building, access and benefit sharing, and financial resources. Another issue of utmost importance is the issue of capacity of lead institutions and it has been shown from the findings that there is little or a virtual absence of any capacity related to BES among the government organisations saddled with the responsibility of reviewing EIAs at both Federal and State levels. While there is inadequate training among government personnel generally, the relevant regulators in the case of environmental-related oil and gas activities are under-trained

to comprehend what BES is, let alone how to incorporate BES management objective into oil and gas sector policies such as EIA process. This study recommends that competent staff in the area of BES conservation, oil and gas activities and other aspects of environment should be employed with good remuneration package and with a view to exposing them to regular quarterly trainings. Furthermore, it would require building the capacity of the government regulators through regular training and re-training them on issues of BES as well as making adequate provisions for infrastructures with which they would be able to conduct their day-to-day monitoring of oil and gas activities independently of the oil and gas companies.

Analysis of the empirical data in chapter seven and eight further reveal that both the preventive and mitigation measures in the oil and gas sector in Nigeria have not yielded the desired results. This could be due to the lack of requisite human and institutional capacity on the part of the government regulators at various levels which often thwart the efforts to manage the environment in such a way that the impacts of oil and gas activities on BES can be mitigated. The recommendation made by IPIECA and OGP (2011) and IPIECA and OGP (2005) that BES should be an intrinsic part of environmental conservation concerns in the oil and gas sector has not yet received much or even any attention in Nigeria's oil and gas sector. The MNOCs would therefore need to incorporate BES into their day-to-day environmental management approach which is often referred to as Environmental Management System (EMS) or their Health, Safety, and Environmental Management System (HSEMS) in line with the recommendation of IPIECA and OGP (2012). The government agencies must ensure the MNOCs comply.

Fundamental to the optimal performance of the governing system is the capacity of the environmental NGOs in this region. However, with the exception of some few NGOs like LENF and NCF, there is lack of capacity on the part of the environmental NGOs operating in the area on the subject of BES. For example, the lack of capacity of the NGOs to act as watch-dog to check the practices of MNOCs operating in the case-study communities was revealed by the NGOs interviewed. According to one of the NGOs:

“[...]. We can talk about spillage, about deforestation but not into that aspect of BES which are germane. Our interactions with the communities have been on the general theme of sustainable development but much less on BES. That is the area we want our people/research to focus now, [...]” (Interview with NGO, 2013).

The involvement of other relevant stakeholders including the private sector, and academia is lacking. The lack of an adequate neutral engagement platform through which a joint strategic base for the main actors to interact and engage in proactive, collaborative BES conservation in

the NDR is a major hindrance for local communities. Current praxis has the MNOCs under the banner of corporate social responsibility (CSR) developing a GMoU with the various oil producing communities (OPCs) in the NDR and which has been viewed as a total departure from the former practice where the MNOCs formulated disparate MoU with OPCs (Aaron, 2012). At the global corporate level, all the MNOCs that operate joint ventures with NNPC in the NDR exhibit some commitment to BES conservation.

Although the MNOCs involvement with the region's BES and local communities is still developing and improving in the NDR, building on the GMoU model in place in the region will make oil and gas IGF in Nigeria achievable. While some of the MNOCs have exhibited some commitments to biodiversity conservation at the local level such as the Biodiversity Action Plan (BAP) introduced by Shell in Edo State, there is much more that could be done. Why there is inadequate biodiversity action plan in the region may be traceable to the legacy of the oil and gas companies licences to operate that transcends decades before biodiversity was on the agenda. Nevertheless, this provides a strong policy footing for developing MNOCs' commitments to BES conservation in the NDR. The failure of the MNOCs operating in the NDR to fully comply with the international best practice and the low level of accountability for outcomes in BES actions have undermined the MNOCs commitment to BES conservation. The implication of this may be in three folds: likely reducing the benefits to the MNOCs, to local communities, and to the NDR's globally important BES. Additionally, the present BES-related work by the MNOCs is not subjected to independent review and international best practice and inadequate grasping of the costs and benefits of creating and conforming to higher BES standards. Such costs and benefits would be well explored through interactive governance of oil and gas sector where all relevant actors/stakeholders would be afforded the opportunity to contribute more meaningfully and proactively in the BAP process.

The implementation process will facilitate local communities' active involvement in fundamental decision-making across the multi-stage oil and gas exploration and production value chain. The process will not just be one of enabling contribution from local communities regarding their knowledge, traditional norms, rights, values and principles. It will also be one of capacity building with local communities to facilitate their active involvement in decision-making processes with regards to BES, including those by the industry.

This study recommends the establishment of Niger Delta Biodiversity and Ecosystem Services Trust (NDBEST) to enhance oil and gas companies' adoption of best practice and to invest in BES projects connected to their own BAPs. Using the existing Global Memorandum of

Understanding (GMoU) arrangements as an exemplar, NDBEST will act as a vehicle to foster effective platform for stakeholders' participation in the oil and gas IGF. It will help support long-term BES conservation in the NDR through interactive mechanisms that will offer opportunities for the diversity of actors/stakeholders including government regulators, oil and gas companies, CBOs, environmental NGOs, and local communities to be involved in the implementation of BES conservation strategies such as restoration and remediation. Regular interactions among the relevant actors in an open/transparent arena where images, values and principles about BES are shared and joint values and principles are reached will help to mitigate further threats and risks to BES from the impacts of oil and gas activities in the NDR. Additionally, it will help improve BES conservation in the region and help unearth many opportunities associated with BES that abounds in the region.

There are sizeable challenges involved in responding to new oil spills such as issues of security, occasional fire delays, delays in obtaining freedom to operate in some communities, setbacks caused by access to spill sites/location because of the nature of the terrain and the inadequate communication, and insufficient coordination between communities, regulators and companies (IUCN Niger–Delta Panel, 2013). This therefore calls for a constant review of methods to oil spill response so as to maintain current response timeframes and perhaps improve effectiveness in the future. Additionally, the present intervention levels for pollutants, remediation standards and monitoring approaches are insufficient to accomplish rehabilitation and restoration of biodiversity and habitats. For example, IUCN Niger–Delta Panel (2013) found that the remediation management systems that was prepared by SPDC for environmental standards and remediation of oil spill impacted locations were in conformity with the revised DPR-EGASPIN (2002), but this is however higher than international standards for Total Petroleum Hydrocarbon (TPH) in countries like USA and Canada. This shows the inadequacy of the subsisting regulatory environmental standards in the nation which would continue to exacerbate problems in the region as long as the state as the only actor continues to take crucial decisions regarding the governance of the sector.

9.5.4 Modes and Elements of Governance

Strengthening environmental conservation systems within the governance process: From images to action

Images

Despite intentions to move towards co-governance and to ensure sustainable environmental management of the impacts of oil and gas activities, this study identified some challenges with

regard to dealing with biodiversity loss and ES degradation. One of the key challenges in this respect includes the pervasiveness of environmental problems in the NDR of Nigeria, which the existing conservation management mechanisms were unable to minimise successfully. Second, there are the weak institutional structures in the government agencies, in terms of inadequate field staff and poor logistics to fulfil its statutory mandates. Three, there is weak collaboration between and among the relevant government agencies including failure to recognise the traditional governing system in oil and gas governance sector and this leads to weaknesses in law enforcement and sanctions. This study ascribes this to the supremacy or prevalence of hierarchical governance style in the oil and gas sector as opposed to the co-management approach stated on paper and inherent in the decentralised structures in the various states. Although recent developments in the region like the GMoU concept and some of the programmes of government agencies like NDDC, FMNDA and OSOPADEC are tilting towards co-management but there is still much to desire as far as co-management is concerned.

An equally important challenge is resource (oil and gas) ownership and management among separate actors (*i.e.* traditional authorities and governments respectively) with the former having no role in supporting conservation management. This makes it difficult to reconcile statutory and customary systems to manage BES conservation constructively. As an adjunct to implementation shortfalls, the capacity for effective enforcement of laws and policies is limited, thus expectations for compliance are often unrealistic. This in part reflects some of the problems identified in chapter seven including the principle enforcement threats and drivers of compliance such as fines and penalties for violating pollution standards that are relatively low. This study sees this as a significant challenge being orchestrated by inadequate political and administrative, of the influence of politicians and powerful MNOCs. Insofar as the sector promotes collaboration among key oil and gas sectors' stakeholders, implementation of co-governance is often difficult as none of the actors has the sole power to decide.

The aforementioned challenges can be overcome by using a combination of strategies including: (i) A decentralised and interactive approach to oil and gas sector governance with feedback loops during implementation; (ii) Due recognition should be paid to BES conservation approaches for oil and gas regulators/practitioners; (iii) Since DPR is the government agency responsible for issuance of licences to prospective oil and gas companies and ancillary activities within the sector including oil and gas production, FMENV should be empowered to coordinate environmental issues including BES conservation; (iv) There is urgent need for a clearly defined position of customary laws within the statutory oil and gas environmental laws with

defined roles for traditional authorities; and (v) Given the impact of the non-implementation of the policies in the NDR, the government will need to develop the political and administrative will to address most of the lingering societal problems such as kidnapping of expatriates, bunkering, destruction of oil and gas infrastructures and pipeline vandalism that are associated with oil and gas activities.

Instruments: BES Conservation Strategies and Challenges

The legal and policy instruments for governing the oil and gas sector provide scant strategic guidance with regards to mitigating impacts of oil and gas activities on BES. For example, the EIA guidelines in Nigeria do not provide a succinct standards and management objectives for BES. Furthermore, the very significant EIA process in Nigeria presently is not reinforced by an understanding of how to assess impact of project like oil and gas activities on BES. As revealed in chapter five, the different stages in the oil and gas exploration and production chain cycle portend potential impacts on BES but the EIA Act in Nigeria was unable to provide a strong connection between the EIA process and the various stages in the oil and gas project cycle. Regarding issues of lack of accountability, transparency and inadequate or inaccessibility to information in the EIA process, the IGF will help address all these as well as other critical issues of BES conservation.

The subsisting EIA process in Nigeria plays down BES largely because there is limited expertise in Nigeria. There are few experts who know how to mainstream biodiversity concerns into EIA process. Biodiversity is still a new concept in Nigeria and this newness also is evinced in the scant attention given to biodiversity through EIA process (IUCN Niger–Delta Panel, 2013). Most oil and gas policies in Nigeria have centred on organising and governing oil and gas exploration and production and had ancillary provisions to meet instant problems of disturbance to human health largely, and some form of compensation for damage to buildings, profitable trees or crops, and loss in value of land or interests in land.

In terms of mitigating measures, IOCs, NGOs and government agencies are accused of carrying out remedial environmental work on a piecemeal basis (Imoobe and Iroro, 2009), but there is no comprehensive restoration strategy in place for the NDR (FMENV. *et al.*, 2006). Shell, for instance, undertakes about 30 EIAs every year in the Niger Delta (IUCN Niger–Delta Panel, 2013) but Dadiowei (2009 cited in Oluduro and Gasu, 2012) claims the environmental impacts of SPDC’s activities on the Gbarain oil field communities of Bayelsa State are at least in part attributable to the company’s inadequate use of EIAs.

Given the inadequacy of the EIA to effectively mitigate the BES loss and degradation in the NDR from the impacts of oil and gas activities, this study recommends the application of Strategic Environmental Assessment (SEA) as a tool that will assist to in mitigating the impacts of oil and gas activities in the entire region. The call for SEA becomes necessary because it not only has a broader scope than EIA but also helps to account for the cumulative effects of multiple, successive projects in a particular area or help to focus on strategic choices that EIA's scope cannot cover (Therivel and Partidario, 1996; Connor and Dovers, 2004). The authors argued further that if the cumulative effects of multiple projects had been taken into account in strategic decision-making, it would have prevented the need for some projects considered in EIA (Ibid). Similarly, a 2004 intergovernmental forum on environmental assessment indicated as "core premises ... that SEA will lead to fewer and/or simpler EIAs and will be more effective in identifying issues of cumulative impacts" (CEAA, 2004b cited in Ahmed and Sánchez-Triana, 2008).

In a related discussion, the Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGASPIN) that was last reviewed in 2002⁶⁰ centres on the control of pollutants from oil and gas activities. However, this does not cover to any extent the BES of the NDR and how to mitigate and counteract impacts of oil and gas activities on BES. The Petroleum Regulations of 1969 among others is the main policy governing restoration of areas degraded and compensation for damages suffered due to impacts of oil and gas activities. A critical review of these policies/regulations revealed that a number of provisions guiding compensation and restoration failed totally to value BES and specify compensation for facilitating restoration and conservation work when applicable.

As discussed earlier in this chapter, there are serious constraints that oil and gas governors are facing in their day-to-day management of oil and gas environmental-related problems. In order to improve the way they deal with the various stakeholders, this study recommends the need to promote the application of some soft instruments that could complement the existing legislation as this will help to create opportunities favourable for the accommodation of the multiplicity of actors and for promoting effective interactive oil and gas governance. For such implementation to be effective, the following joint actions and strategies are required:

- ✚ Provide the relevant government agencies at all levels with adequate human, financial, technical and logistic resources for the implementation of policy strategies, laws and regulations;

⁶⁰ The DPR has planned a revise of EGASPIN standards since 2010, though this has not yet been concluded (DPR, 2010) and yet to be concluded.

- ✚ Strengthen capacity development of all the frontline staff including the environmental monitoring officers, their supervisors/managers, particularly in the area of BES conservation. This will enable them to strengthen existing CBOs and IRDC (from the hybrid institution) in terms of education to perform their duties.
- ✚ Create a common platform that occasionally redresses issues about biodiversity loss and ES degradation through cross diffusion and fertilisation of ideas;
- ✚ Ensure participatory formulation and implementation of management plans with relevant oil and gas stakeholders.
- ✚ Strengthen the stakeholders' forum at all levels so that it can play a 'broker' role between the resource managers and coastal BES users.
- ✚ Create spaces for people's empowerment through regular interaction and participation in decision making.

Action

The findings in chapter six have demonstrated that the long-term impacts of oil and gas pollutants on the BES of the NDR is far-reaching and conservation of BES requires deep understanding of the region's systems, the governance system as well as the interactions between the two systems. This reinforces the significance of IGF as an effective and sustainable governance framework capable of tackling the myriad of problems associated with the impacts of oil and gas activities on BES and position the region on the path to sustainable conservation of BES in the NDR of Nigeria.

Fundamental to the successful adoption of the IGF as a concept in the governance of oil and gas sector in Nigeria is the need to review and update the various conservation approaches for biodiversity in the NDR and this will inevitably require the collaboration of all actors. Just as IUCN Niger Delta Panel (2013) and this study found that actual community involvement in governance in the NDR has not been effectively achieved, credible community involvement is a *sine-qua non* to the long-term success and sustainable conservation of BES' efforts. This becomes imperative as the policy of using community-based contractors and/or selective involvement of community personnel which in most cases are at the detriment of important community stakeholders like women and youths that drive community development has not translated to meaningful community participation.

In order to ensure that constructive BES conservation becomes an integral component of the oil and gas governance process, strategies which could be embedded in the governing system with a view to strengthening both second and third order governance (i.e. respectively institutions

and underlying principles) are required. To strengthen the institutional arrangements there is need to institutionalise constructive BES conservation options in the oil and gas regulatory sector. Apart from the need for oil and gas companies to have a BES conservation unit in their companies, this study is advocating for a unit within the government cycle. The BES conservation unit within the government establishment should be specifically designed to manage BES conservation issues and enforce laws, to arbitrate, to engage in adjudication, to mediate, educate and remain in constant dialogue with other stakeholders, oil and gas industry and other relevant stakeholders. A periodic assessment of the performance of such a unit is essential in order to identify weaknesses and apply the necessary remedy on time.

Additionally, this study calls for an inter-sectoral planning and a strengthening of collaboration among coastal BES users/stakeholders. This would require the exploration of international best practices in managing BES conservation. There is also need to define roles and responsibilities of the various actors and to create schemes for equitable benefit sharing among stakeholders in oil and gas governance and the above mentioned suggestions could be actualised as part of the critical review of extant policies/regulations and procedures and institutional reforms. This clarification in roles and responsibilities will help to address the problem of duplication of duties and unclear mandates between many government agencies like DPR and FMENV, NOSDRA and NIMASA, NDDC and FMNDA among others. Similarly, the DPR responsibility of developing environmental guidelines and standards for the oil and gas industry apart from being the licensor and regulatory agency in charge of oil and gas activities should be transferred to NESREA which is the environmental standards regulatory agency in Nigeria. The agency has been exempted from performing a role in the oil and gas sector.

The Petroleum Technology Development Fund (PTDF) is part of the Nigerian governments' efforts at building capacity of young people in the nation and helping them to occupy the various technical fields with a view to bolstering oil and gas industry in Nigeria but this has not given adequate attention to the aspects of BES conservation. None of the scholarships funds have yet gone to help the nation better comprehend and manage the unique BES in the NDR of Nigeria. There is need for PTDF to specifically incorporate studies in the areas of BES under its environmental studies priority area so as to increase human capacity that will enhance the conservation and mitigation of BES degradation from the impacts of oil and gas activities.

As shown from the empirical data, meagre funding has been committed to the conservation of the biodiversity in the NDR and this is a situation of chronic underfunding of biodiversity

management in the region despite the huge revenue that is being generated from the region from oil and gas activities. For example, in 2006 the FMENV allocated \$3,859,062 for forestry development work across the nation while no fund was allocated to the region in 2006-2008 (UNDP *et al.*, 2012). In 2009, about \$150,000 was budgeted for “Natural resources conservation and development of management plans for wetlands” in the NDR and an additional \$66,400 was earmarked to endangered aquatic species conservation and management and to conservation of coastal ecosystems in the Guinea Current Large Marine Ecosystem (GCLME) (Ibid). Similarly, in 2009 FMNDA affairs allocated \$60,000 for the purpose of rehabilitating degraded ecosystems in Rivers and Bayelsa States. The position of this study is that both the government and the MNOCs should earmark more money to environmental issues beyond their past efforts while special attention is paid to the issue of BES conservation. This will help to strengthen the GS and its institutions.

Integrating BES priorities into the oil and gas decision-making will help ensure that oil and gas companies’ internal systems are fit for purpose and much more responsive in terms of the conservation of BES from the impacts of oil and gas activities. The thesis proposes a number of in the following section, all with an eye on the longer-term vision for improved oil and gas sector governance and BES conservation.

Decision-making

The involvement of the community-based NGOs in the conservation/management of the environment and public infrastructure including oil and gas activities has made tremendous contribution to the improvements in environmental management in Russia (Wernstedt, 2002). When activated, this kind of public-private collaborative arrangement would make virtual monitoring and conservation of BES possible. This also provides the potential to providing an alternative concept for finding a sustainable means of addressing BES degradation issues such as coastal erosion and problem of invasive alien species being presently witnessed in the NDR. The importance of a joint decision-making on environmental protection and crucial environmental issues in Nigeria was underscored by FEPA (1991), who noted that tremendous success was recorded when applied in the management of critical state-owned infrastructure.

In addition, decision-making in Nigeria has historically been viewed as hierarchical and top-down. This complicates attempts to provide information and encourage community involvement in several ways. In all matters around oil and gas activities, BES and the various groups in the study communities, there are needs for information about whose values matter? Who is valued and who is not valued? The expectation as embedded in the principles of IGF is

that all relevant stakeholders/actors should be recognised and involved in the IGF for it to be effective. Furthermore, in line with the argument of Langley (1995) on Paralysis by Analysis, it will give room for careful study and synthesis of relevant stakeholders' values in decision-making. Recognising and involving the local communities as stakeholders/actors in the governance of oil and gas sector will provide the locals the required impetus to intensify efforts in the conservation of BES through the traditional institutions and knowledge.

Furthermore, this study recommends that the MNOCs should recruit more locals from the region particularly those with requisite or minimum qualification in line with the Local Content Act (2010). The government should inject lives into the existing national parks in the region, so that they just don't exist on paper. Further the study recommends that the MNOCs should establish more parks within the NDR similar to what Chevron did in Lagos in another part of the country. This will not only create employment opportunities for the youths in the region but it will further show that the MNOCs really care about the people of the region.

The governance of oil and gas sector in Nigeria requires involvement of all levels of government. The local government authority is the custodian of the oil and gas activities and any detrimental impact from oil and gas activities will first of all be borne by the local communities. So the local government is the first place of call for the communities affected. The constitution of Nigeria recognises the local government as a third tier of government but the local government has not been involved in the governance of the sector. At the level of the state, the ownership of land (including lands in the OPC) has been vested on the Governor of a State and apart from this, the environmental protection and state security rests with the State. This explains why there is OSMENV and OSOPADEC in Ondo State, hence, this justifies their involvement in the governance of the sector. Since the ownership and responsibility for all mineral resources in Nigeria, EIA for major projects, environmental protection, and other marine/coastal affairs including oil and gas activities, navigation and national security are within the purview of the national government, its involvement in the governance of the oil and gas sector cannot be downplayed.

Given the fact that the environmental degradation in the NDR has been a continuous process for about forty years prior the enactment of formal environmental legislation in Nigeria (Emoyan *et al.*, 2008), previously degraded areas must be identified and rehabilitated. This is consistent with the major goal of the National Policy on Environment (NPE), which is to “restore, maintain and enhance the ecosystems and ecological processes essential for the functioning of the biosphere to preserve biological diversity and the principle of optimum

sustainable yield in the use of living natural resources and ecosystems” (FEPA, 1991 Section 2c).

9.6 Governing Interactions

In the delivery of CSR projects by the oil and gas companies, failure to institute lucid exit strategies and embody community ownership has resulted into deterioration, damage or failure, causing grave damage on company reputation, consequently precipitating the perception of company neglect and resultant resentment by communities. Although there is some evidence that this problem has been minimally addressed by some of the MNOCs who have already been recognising and utilizing the existing community governance structure particularly with the introduction of the GMoU concept (Aaron, 2012) as shown in chapter seven, there is still much to desire especially on the interactions with different community groups.

Sound policies/regulations and decision-making demands precise information (Patin, 2009); however, in the NDR information collection, analysis, management and dissemination have been found to be a problem. For example, some of the government regulators cannot provide detailed information on the quantity of oil produced, on the locations of oil infrastructures and rely on the information from the MNOCs. As earlier observed the inability of the government regulators to provide up-to-date baseline information about the biodiversity of the region is a major problems occasioned by inadequate interactions among the stakeholders.

In Nigeria, there are no structured mechanisms through which information is communicated between the regulatory agencies and local communities in all levels of governance (national, state and local). The communities do not have access to information regarding the state of the environment and the only available source of information is at the time of public review of draft EIA documents, but this has been found to be ineffective.

Access to information in Nigeria is not supposed to be a problem because information provision in principle has been an important part of the official Nigerian environmental apparatus, and citizen access to information is a right provided by the Constitution of the Nigerian Federation⁶¹. Nigeria is also obliged by the African Union Declaration of Principles on Freedom of Expression in Africa and Article 10 of the African Charter on Human and People’s Rights to make information accessible to its citizens. In addition, the 2011 Nigerian Freedom of Information Act provides citizens the right to public information including information about oil and gas activities as well as oil and gas environmental-related pollution problems. However,

⁶¹ Section 36 of the 1999 Constitution provided for the citizens’ right to access information.

in practice access to government data has long been problematic, even for technical specialists working in government agencies. The overarching Official Secret Act often restricts these freedoms (Dada, 2009).

The IGF will address such information requirements through the following crucial areas and help improve the governing of the sector and by extension mitigate further degradation of BES. Information about oil and gas activities, oil and gas infrastructures, oil spill incidents, gas flaring issues should be made public as this would help to put many issues in contention about what is being generated from a given community that more often than not have pitted the community against the MNOCs on the one side and the government on the other. This will help the MNOCs to redeem their already battered corporate image and it would afford civil societies such as environmental NGOs at both local and international levels to have an objective critique of activities in the region.

Additionally, it will assist in building reliable data bank about oil and gas activities in Nigeria, its impacts on biodiversity and communities, most impacted communities and reasons as well as responses to address the problems among others. It will also assist the government regulators in performing their monitoring activities. The OPC that do not have access to modern technologies like computer or internet should be taken into consideration by making hard copies of such information available to them. Similarly, the values of each oil and gas infrastructure in the region should be made public so that the local communities can also appreciate the cost of their actions on the government and MNOCs that operate joint venture, whenever the oil and gas infrastructures are destroyed. This will help to drastically reduce the rate of sabotage and vandalism among the irate youths as they are expected to be better informed about issues and implications of their actions.

One significant problem which has been identified in this study that cut across almost all the actors/stakeholders is their capacity in terms of knowledge/contribution towards BES conservation but this problem can be addressed through regular interactions among the actors in which trainings can be organised as part of their interactive sessions. The training is necessary to enable the government actors including the Federal, State and Local Government staff, as well as the oil and gas company Health, Safety and Environment (HSE) managers, environmental NGOs in the region and local community leaders/representatives acquire new ideas, knowledge and skills required for effective BES conservation in the NDR. It will also create opportunities for stakeholders, particularly the local communities. For example, part of the drivers of biodiversity loss and ES degradation in the region is the problem of invasive alien species (IAS) like *Nypa palm* and water hyacinth which none of the actors has seen their

benefits/usefulness. However, it has been discovered that these IAS can provide some wealth benefits/opportunities for the unemployed people in the OPCs. According to ITDG (Undated) the practical applications of water hyacinth include fertilizers, water purifications, animal fodder, fish feed, fibre board, yarn and rope, basket work, biogas production, charcoal briquetting, and paper production. All these opportunities can be maximised through oil and gas IGF through regular interactions and part of ways of empowering the local communities.

While the company-engineered or science-based sustainable development efforts cannot be separated from rehabilitation, remediation and restoration or conservation efforts of BES, a holistic approach involving the interactions among relevant actors including recognition of the communities' actors as co-actors in the governance of the oil and gas sector cannot be jeopardized. Just as Kooiman (2008) contends that many of the solutions to societal problems transcend the capability of a single actor especially the state, IUCN Niger-Delta Panel (2013) noted that many of the solutions to biodiversity rehabilitation in the NDR is beyond the ability of a single actor in the oil industry. Given the extensive footprint of oil and gas activities on the BES in the NDR, and the fact that many oil and gas companies are operating in this region, it is necessary and expedient to have a strategy to tackle the conservation and management of the biodiversity loss and ES degradation involving all relevant stakeholders/actors. A common agenda with collaborative effort, joint responsibility and mutual benefits will engender the success of conservation, management and rehabilitation/restoration of BES in the NDR.

A final significant point would be that for good and sustainable outcomes to be generated from the foregoing without hitch, a new paradigm of leadership that is transparent, responsive and reflexive is needed. This is reckoned to have a critical role to play as Achebe (1983, p. 1) points out that:

“The trouble with Nigeria is simply and squarely a failure of leadership. There is nothing basically wrong with the Nigerian land or climate or water or air or anything else. The Nigerian problem is the unwillingness or inability of its leaders to rise to the responsibility [and] to the challenge of personal example which are the hallmarks of true leadership”.

Achebe's remarks about the Nigerian state was corroborated by Fayemi (2015b) as he notes that power in Nigeria is believed to be “for self-aggrandizement, then public office and leadership is marked by hyper-authoritarianism, corrupt enrichment and dysfunction” (pp. 2-3). The author who also observes that Nigeria leadership promotes the affluence of a privileged minority rather than preserving the common good contends elsewhere that in Nigeria “leadership is seen as being vested in a single authority figure rather than as a function diffused

among several empowered actors” (Fayemi, 2015, p. 7). The author therefore conclude that “as the old order that never worked for us is becoming obsolete, we need to embrace the emerging order of servant leadership [...]” (Fayemi, 2015b, p. 3).

Unfortunately, over three decades after Achebe’s theory of leadership, the notion of an overarching leadership failure as the root of the nation’s ills still persist. However, with the passage of the Freedom of Information Act in 2013 by the National Assembly which is reckoned as a significant milestone in the nation, the expectation is that it would obfuscate the opaque approach that characterised the oil and gas sector in Nigeria (Müller, 2010).

In order to clearly illustrate how the governance of oil and gas sector can mitigate BES degradation from the impacts of oil and gas activities, a schematic framework has been developed to provide insight into how institutional rules and behaviour can be modified in order to enable BES conservation roles. As shown in **Figure 9.1** below, this framework has been designed based on three components that embody the institutional and contextual environment.

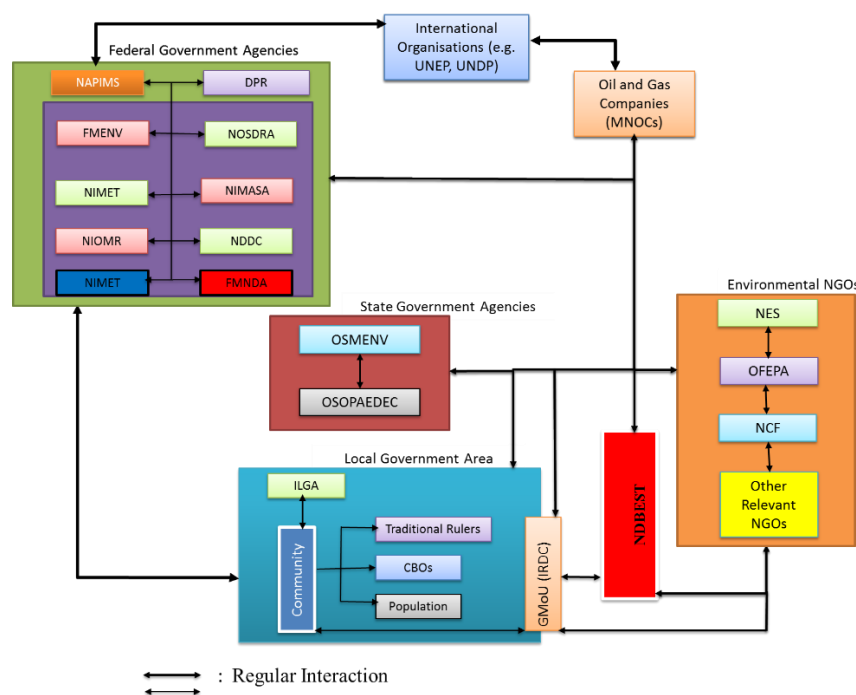


Figure 9.1: Schematic Framework for Oil and Gas IG

9.7 Summary

This chapter outlines the requisite conditions necessary for the implementation of the oil and gas IGF for a sustainable conservation of BES to be achieved and guaranteed in the NDR of Nigeria. By considering the interactions between the natural and socio-economic system within

the system-to-be governed, this study emphasises the need for the protection of the globally important BES in the NDR of Nigeria. The need for urgent protection of BES in the NDR becomes imperative given its importance in not only supporting the continuous exploitation of oil and gas resource that the nation depends on but also supporting the livelihoods and wellbeing of the OPC. As such, it specifically makes a case for regular interactions among relevant stakeholders/actors within the GS and the SG including the local communities particularly the women and youths and involve them in an open/transparent arena in the governance of the oil and gas sector and even at the meta-level. Furthermore, to achieve the laudable objectives of IGF, institutional reform including mainstreaming BES into oil and gas environmental policies among others is called for at the second order level of the governing system with a view to address governance lacunae within the governing system. In view of the continuous oil and gas activities taking place within the NDR on daily basis, regular monitoring of both negative and positive impacts of the resource on the fragile ecosystems of the region cannot be overemphasized.

To some extent, environmental NGOs are fighting this convention. Rather than relying absolutely on single actors and technical solutions for decision-making which is a cultural tradition and pervasive praxis, this chapter calls for interactive approach that recognises and involves the multiplicity of actors including non-experts in decision-making. The next chapter which is the concluding chapter summarises the research findings, provides answers to the research questions of this study and discusses the theoretical contribution of the study to the wealth of knowledge as well as areas for further research.

Chapter 10. Conclusions

10.1 Introduction

Making BES issues an integral part of environmental governance practice is a challenge that faces most nations fraught with frequent and severe environmental hazards particularly from the impacts of oil and gas activities. Yet, while efforts to promote a joint vision to tackle this challenge are now well advanced in a number of countries particularly in the developed countries, many oil producing developing countries (OPDCs) are yet to initiate action.

The oil and gas rich areas of the coastal communities of Ondo State provide a useful microcosm of the situation confronting environmental managers across the NDR of Nigeria. The sector as a whole is strategic to the national economy, a key contributor to the nation's GDP and providing over 90% of export earnings to the nation (Karl, 2007). Throughout the country, oil and gas enterprises have largely been dominated by the MNOCs with Nigerian government having 55% share in their joint ventures projects which is been managed by NNPC. Although with the enactment of the Local Content Act in 2010, some LOCs are coming on board.

Having discussed (in Chapter Nine) the interlocking issues that were drawn together from the various analysis chapters (Chapters Six to Eight) of this study, this final chapter reaches its conclusions by first re-engaging with the research questions to reveal how the aims and objectives which have guided this work were followed through to its findings and conclusion. The chapter also makes some relevant suggestions for policy and further research. The chapter concludes with some final thoughts on the theoretical basis of this research and on the significance of increasing efforts to mitigate further degradation of BES from the impact of oil and gas activities. The next section considers the summary of findings.

10.2 Summary of Findings

Situated in four theoretical strands related to GG, IG, oil and gas environmental management and biodiversity and ecosystem services (political ecology) (see Chapter 2 and 3), this study provided answers to four main research questions. Theoretically, the analysis in this research is grounded in IGT (Kooiman, 2008). This signified, first, that a difference was made between the system-to-be-governed (Nigeria's oil production region, consisting of a natural (biodiversity and ecosystems) and socio-economic (oil and gas activities) sub-system and the interactions between them), a GS and the GIs between them. Both were analysed in terms of complexity, diversity, dynamics and scale. The NDR which is the oil and gas production region in Nigeria and is equally endowed with rich biodiversity and ecosystems that is of global and national

importance. This region is also a major source of agricultural livelihood for coastal communities in the area who are predominantly involved in fishing and farming for income and domestic. It is the area where the oil and gas activities is having deleterious impacts on the biodiversity and ES despite government's and oil and gas companies' efforts at mitigating the impacts. The study therefore set out to investigate how the oil and gas sector is governed with regards to BES conservation in two communities (Awoye and Ojumole) in the Ondo State axis of the NDR.

It is a nested continuum of sub-systems existing across nine states in Nigeria at two levels of geo-political scale. The NDR is diverse as it holds a mixture of ecological vegetation types ranging from evergreen rainforest to mangrove forest characterised by a wide range of flora and fauna species and some of the species are not only endemic but also endangered. The interdependency and interaction within and among the various parts of the system brings to fore the complexity of the system and this complexity prevails in the socio-economic system in which coastal BES users (oil and gas operators, fishermen/women, farmers, and forest product collectors) utilised and impact BES. Additionally, complexity is related to the disparate management regimes that each have their own specific GS and institutions that regulate the conservation of BES from the impacts of oil and gas activities. In terms of dynamics, changes in policies governing oil and gas sector activities and environmental conservation policies over the years and conflicting interactions particularly oil and gas activities with the natural system have increased the vulnerability of the coastal BES to extensive degradation.

Second, it implied the centrality of the concept of interactions in grasping governance defined as 'the whole of public as well as private interactions that are initiated to solve societal problems and create societal opportunities' (Kooiman *et al.*, 2005a, p. 17). It also considers governability which is defined as 'the overall capacity for governance of any societal entity or system (Kooiman, 2008, p. 173). Third, the IG viewpoint allowed the deconstruction of the GS in terms of (a) governance orders (first order or day-to-day management, second order or institutions, and third order or meta-governance which includes the normative values and principles that guide first and second order processes); (b) governance modes (hierarchical governance, co-governance and self-governance); and (c) governance elements (images, instruments and actions). Finally, the study sought to find means on how the oil and gas IG help improve the existing governance process with a view to mitigating biodiversity loss and ES degradation.

The study employed qualitative method with varied research techniques in the data collection process, encompassing document analysis, in-depth interviews, FGD and validation workshop. The key rationale for the adoption of qualitative method research in this study was because of

its ability to provide in-depth understanding of complex social phenomena where context plays a significant role and its ability to reinforce what is already known through previous research. The next section synthesises the empirical findings from the research with respect to the key research questions and thereafter the theoretical implications of the study are outlined, with a focus on the IG, oil and gas environmental management and BES conservation.

10.3 Oil and Gas Activities and the Issue of BES Degradation: The Challenge for Conservation

This section presents the important issues that have emerged from the analysis chapters with regards to the relevant theoretical strands examined through the literature review in Chapters 2 and 3. An important aspect of this discussion is to highlight how the findings of this research either agree with or differ from current knowledge. Critical to this discussion is the suggestion of clues about what may have contributed to the societal constraints upon individual and organisational behaviour – both material and non-material elements. The discussion commences with an overview of the main BES concerns for NDR that should be taken into account in oil and gas sector governance.

10.3.1 The major impacts of oil and gas activities on Biodiversity Loss and ES Degradation Concerns for NDR

Investigating the biodiversity loss and ES degradation concerns from the impacts of oil and gas activities for the NDR of Nigeria was the first objective of this study. This objective was achieved by conducting an investigation of the impacts of oil and gas activities on the globally important biodiversity and various ES in the NDR. Specifically, the investigation talks about the outcomes of the interactions between the natural system (biodiversity and ecosystems) and socio-economic system (oil and gas activities) within the SG. The study has however established that while there are many drivers of biodiversity loss and ES degradation in the NDR of Nigeria, oil and gas developmental activity taking place on daily basis in the region remains a key source.

The decades of oil and gas exploitation in the NDR have clearly degraded environmental quality and contributed to the problem of biodiversity loss and ES degradation in the coastal communities of the region. Direct contamination of water bodies from spilled oil and brine along pipelines and at well sites is readily observable, native forest cover is heavily stressed, local air quality has deteriorated, and development at extraction sites, and coastal communities has significantly altered the hydrology of the area. These changes have probably had some negative consequences for the socio-economic and public health of local residents within the

OPCs. For example, interviewees during the FGDs in the two case-study communities perceive that poverty, social vices and chronic illnesses in their communities are due at least in part to poor environmental conditions. It is, however, difficult to establish the actual species of plants and animals that have gone into extinction in the NDR due to the impacts of oil and gas activities, owing to the lack of up to date baseline data about the biodiversity in the region. The nonexistence of such important information from the varying data sources demonstrates the lack of capacity in government institutions with regards to BES conservation in the NDR.

One important factor which may have contributed to the increase in biodiversity loss and ES degradation in the NDR is the lack of adequate interaction or collaboration among the various oil and gas actors/stakeholders and lack of collaboration among regulatory bodies charged with oil and gas environmental-related issues have compounded the issue. The empirical data reveal that this situation has not only added to the problem of biodiversity loss and ES degradation but also contributed to the socio-economic and political challenges in the NDR. The lack of basic infrastructural facilities such as electricity, safe drinking water and health care centres among others has exacerbated the condition of living of the people in the oil producing region.

10.3.2 How Effective is the Existing Oil and Gas Sector Policies in the Conservation of BES?

The inadequacies of the institutional structures for managing the various environmental problems from the impacts of oil and gas activities in the NDR are having implications for BES conservation. This is in view of the constraints being witnessed in the implementation of policies and these constraints have been aggravated by the isolated decision-making processes that characterise the key oil and gas environmental-related regulatory agencies in Nigeria. On the basis of these constraints, it can be assumed that this same divide, which has long impeded the embedding of environmental protection issues into oil and gas governing processes, will remain one of the biggest challenges to making BES concerns an integral part of oil and gas activities.

In terms of policy and regulatory issues relating to the conservation of BES from the impacts of oil and gas activities, it is interesting to find that to date Nigeria has no specific policy or legislation on BES. Although some of the country's leading legislation on the environment and oil and gas activities encompasses a range of specific issues which relate to biodiversity, nearly all these laws were made long before the issue of BES received a global attention and problematised in the NDR of Nigeria. They are therefore neither sufficiently adequate nor robust enough to effectively address most of the emerging challenges that BES presents.

As its second objective, this study sought to investigate how the existing oil and gas GS help to shape or constrain the conservation of BES that both the oil and gas companies and the coastal communities depend upon for exploration and production and sustenance respectively. To accomplish this objective, Chapter seven investigated the way BES degradation has been problematised in the NDR of Nigeria, the key response activities carried out at the national, state and local level, the nature of the management structure and the factors that will enable or potentially constrain the integration of BES issues in oil and gas activities.

The study found firstly, that the framing of BES in Nigeria has been strongly influenced by the UNCED and Agenda 21 and that this representation has determined the way biodiversity response actions have been undertaken in the country. The second finding was that even though Nigeria has no specific law on BES, there are a number of other important laws in the country which apply to some of the main concerns associated with BES. These laws are however very general in scope. The study found thirdly that the current management framework for biodiversity conservation from the impacts of oil and gas activities is very problematic because it is very complex and blurred, with the decision-making process being limited to only a few groups, existing predominantly at the national level. Fourthly, it was found that there are already an immense range of institutional and technical constraints which will potentially hinder the identification of BES concerns and their integration in oil and gas activities in NDR.

One consequence of concentrating the governance of oil and gas framework at the national level is the lack of inclusiveness of local level actors, since apart from a number of government ministries and agencies that are involved at the national level, no evidence of involvement by local organisations was observed. This exclusion of voices particularly at the local level may have contributed immensely to the degradation of BES in the NDR of Nigeria. This work has identified a number of capacity constraints characteristic of the disparate institutions that have responsibility for addressing BES degradation problems from the impacts of oil and gas activities and for overseeing or integrating BES concerns into oil and gas activities.

There is also the problem of unclear responsibilities among the statutory governing institutions, therefore rendering the GS to be ineffective. These constraints which have been examined in Chapter 7 have validated the research argument - that whilst it is easy to urge OPDCs to integrate BES concerns into their environmental conservation decisions and processes, it may not be possible to do so if the institutions responsible for providing the relevant BES knowledge, and for embedding such information into oil and gas sector decisions, are not fit for purpose.

This study has demonstrated that framework conditions such as the existence of a BES policy, a clear definition of roles, an inclusive governance framework, and a strong capacity (technical, institutional and resource) that IGF will offer are very crucial for addressing the problem of biodiversity loss and ecosystem services degradation from the impacts oil and gas activities.

10.3.3 The main Impacts of the Oil and Gas Governance System on BES in the Niger Delta

Results in Chapter 6 show the level of biodiversity loss and ES degradation due to the impacts of oil and gas activities in the NDR which this study sees as fallout of the governance lapses as shown in Chapters 7 and 8. The following section considers some key lapses areas in the governance system.

Responsiveness of Governance Modes (Hierarchical, co-governance and self-governance)

Hierarchical governance, co-governance and self-governance co-exist in Nigeria, and this lends credence to the earlier identification made by Kooiman and colleagues (2005) of such modes of governance in fisheries GS. However, within the formal oil and gas regulatory sector a combination of hierarchical and co-governance frequently dominates, with the hierarchical mode of governance gravitating to dominate over co-governance. This study identified this as one of the weaknesses in oil and gas sector governance process. Prior to the enactment of the Land Use Act (1978), self-governance was found to dominate when ownership of community lands and conservation of their environment were under the traditional structure/institutions. This still exists in a way at local levels where the traditional authorities manage civil dispute and discipline offenders in different ways without government interference. With respect to the responsiveness of these modes to the needs of the actors/stakeholders, this study found that even though on paper most governance initiatives including policies in the oil and gas sector have promoted co-governance in terms of actors'/stakeholders' participation and decision-making but in practice it is hierarchical governance mode that prevails. In line with IGF, unless the sector undergoes reforms which will remove most of the hierarchical notions that are enshrined in the policies/regulations and embrace as an integral part of oil and gas environmental management, the sustainability of the governance initiatives will remain a challenge.

Another equally important challenge is the vesting of ownership and management of oil and gas resource on the national government (statutory sector) and at the exclusion of traditional sector. This has made it difficult to reconcile statutory and customary systems in the day-to-day constructive conservation of BES from the impacts of oil and gas activities. From the self-

governance standpoint, the relevant oil and gas policy on ownership of oil and gas resources and the constitution have vested the ownership of this resource in the statutory government, consequently, local communities was given little recognition and involvement in the governance of the resource.

Fitness of Governance Elements with Oil and Gas Environmental Conservation

Despite intentions to move towards co-governance and sustainable environmental conservation as stated on paper, this study identified some challenges in relation to dealing with day-to-day BES conservation from the impacts of oil and gas activities. A major challenge inherent in Nigeria's GS is the pervasiveness of BES degradation due to impacts from oil and gas activities, with inadequate environmental management (BES conservation) mechanisms being in place. This is as a result of the weak institutional structures in terms of staffing and logistical equipment of the regulators, inadequate knowledge of staff about BES and oil and gas-BES dynamics, and inadequate interactions/lack of coordination among the regulators resulting to poor implementation of policies. Another challenge is the predominance of the top-down governance style that exists in the statutory governance sector and which overshadows the co-governance style expected to be witnessed in the decentralised government agencies in the States across the region.

Lack of baseline data on the state of the art of biodiversity and ecosystems of the region is another challenge that makes it difficult for regulators to effectively address BES conservation from the impacts of oil and gas activities. Other challenges found from the empirical data is the inadequate political and administrative will to tackle oil and gas-BES conservation problems because of the influence of the politicians and MNOCs, unclear mandates/duplication of responsibilities in policies for regulators, and diffusion of decision-making power in some co-governance cases. This suggests a misfit between stakeholders' images of the problem (i.e. biodiversity loss and ES degradation), the instruments they have to solve the problem (i.e. BES conservation strategies) and actions that are required to address problem (i.e. integrated BES conservation approach).

This study identified some actions that have the potentials to strengthen oil and gas-BES conservation in the governance process including soft instruments that could complement the current legislation such as the capacity development of the environmental health officers/managers in the government agencies and the establishment of a platform for stakeholders to interact and air their voices on issues. It is the expectation of this study that this

will create new opportunities that will help to accommodate the multiplicity of stakeholders/actors and foster effective interactive oil and gas governance. In addition to the soft instruments, this study also identified the need for SEA as hard instrument to complement the existing EIA instrument being used so as to achieve constructive BES conservation from the impacts of oil and gas activities in the NDR.

In order to ensure that constructive BES conservation becomes an integral part of the oil and gas governance process, this study further proposed strategies to be embedded in the GS with a view to strengthening both the institutions and their underlying principles respectively (second and third-order governance). Regarding the strengthening of institutional arrangements and instruments, this study called for the institutionalisation of constructive BES conservation strategies in the oil and gas sector. This will require mainstreaming BES into every phase of the oil and gas project cycle and a unit within the FMENV which would be specifically designed to manage BES conservation issues including implementation/enforcement of policies, educate and constantly interact/engage with other stakeholders. A periodic assessment of the performance of such unit is highly desirable in order to discover weaknesses and apply the required remedy on time. This should be predicated on the underlying principles that the respondents considered important and which emerged from the good (oil and gas) governance discourse including accountability and public participation, transparency, stability of oil and gas-environmental institutions and BES conservation; quality of oil and gas administration, coherence of oil and gas legislation and rule of law; equity and incentives.

10.3.4 The Practicality of the concept of Oil and Gas Interactive Governance in exploring oil and gas activities' impacts in a context such as Nigeria

There has been growing recognition of the role which governance can play in limiting the effects of oil and gas activities on BES that both humans and businesses depend on. The existing governance system does not recognise the various sub-systems as shown in the empirical findings, hence this study calls for the adoption of IGF. Understanding the various sub-systems in the social system (SG and GS) and the interactions that exist between and among them will help to shape or constrained the effective conservation of BES in an oil producing region like the NDR. This involves examining the values, norms and principles of the various governing actors/stakeholders and the technical and policy issues which both enable and limit individual and collective (including inter-organisational) actions.

An oil and gas IGF, in which the state institutions and the MNOCs recognise and encourage regular interactions with the local OPC as well as the CBOs and NGOs in policy formulation and decision-making require a new institutional framework where local images of issues regarding BES and its degradation can be shared with other actors' images before a decision is made. The significant contributions of the local environmental NGOs to such participatory tasks particularly in their capacity as environmental watchdogs, technical advisers, trainers as well as advocates, educators and negotiators on behalf of the communities for financial resources to address issues cannot be over-emphasised. The present governance system does permit this form of interaction and this thesis would like to stress the need for the recognition of all stakeholders and regular interactions so that BES issues can be addressed without delay.

This work has drawn from two streams of literature to discuss the various theoretical perspectives used in this study: first, the literature on BES as it relate to oil and gas activities (see Chapter 2) and secondly, the governance literature (see Chapter 3). Most of this research has tended to assume that the regulators already have knowledge about BES and that the government ministries and agencies that address environmental conservation including BES have the requisite capacity to take effective action. The main area that this study has aimed to contribute to is the role that the local context and institutional conditions play in shaping BES conservation, including the ability of the various relevant actors including the state, MNOCS, NGOs, CBOs and local communities to address the impacts of oil and gas activities on BES. For this reason, GG theory and the IGF were discussed to highlight important issues and principles on governance and the IGF was later followed in the analysis and discussion of oil and gas-BES conservation.

Using IG theory, this thesis has argued that to mitigate biodiversity loss and ES degradation from the impacts of oil and gas activities in the NDR, there is need to understand the interactions between the system-to-be-governed (natural system and human system) and the interaction between the SG and the GS. The various governance challenges that characterised the GS of the oil and gas sector in relation to conservation of BES are shown in **Box 10.1** below.

10.4 Discussion of Contributions to Existing Body of Knowledge

The distinctive contributions of this study to knowledge have been noted. In so doing, the research aim and questions earlier articulated in chapter one were compared with the lacuna in knowledge gained through literature review and the findings from the case studies. This body of knowledge and the findings show that this research contributes to knowledge from both a

theoretical and practical applications. However, the study has met with some challenges. This section catalogues the contributions of this research to knowledge and offers an account of the research challenges.

Box 10.1: Summary of Actions and Inactions of Oil/Gas Actors that hamper the Governing System

Government

- ✚ Inadequate involvement of all relevant stakeholders particularly locals in the OPC in oil/gas resource management
- ✚ Formulates policies that are not responsive to the interests of some stakeholders particularly the locals in OPC.
 - ✚ Too many regulatory institutions with overlapping functions and lack of coordination
 - ✚ The policies are unclear as regards implementation
- ✚ Formulates policies and regulations in a non-transparent way
- ✚ Poor enforcement of oil/gas environmental-related policies
- ✚ Inadequate monitoring of oil/gas sector activities
 - ✚ Penalties for contraventions are too liberal, meagre and not in conformity with present economic reality
- ✚ Centralisation of ownership and control of oil/gas resource at the expense of sub-national and local governments.
 - ✚ Fail to empower and develop staff
 - ✚ Vests ownership of land in the State
- ✚ Inadequate funding for environment-related issues
- ✚ Fail to address the problem of corruption
- ✚ Lack the political will to implement stringent sustainable oil/gas environmental management system
- ✚ Inadequate policies on oil/gas as regards conservation of the environment

Oil/Gas Companies

- ✚ Destroy BES and disregard local norms and culture
- ✚ Destroy farmlands, trees, crops and fishing grounds with no or inadequate compensation
- ✚ Do not comply with international exploratory standards and domestic laws
- ✚ Often take the law into their hands due to the lax governing system in the country
 - ✚ Involvement in corrupt practices

NGOs

- ✚ Fail to educate local stakeholders on oil/gas environmental related policies.
- ✚ Fail to educate local stakeholders about BES

This study has made five significant contributions to knowledge. One, the research contributes to work in oil and gas governance theory (a subset of environmental governance) that promotes the idea of regular interactions within the two sub-systems of a societal system. The interactions between the natural system (biodiversity and ecosystems) and the socio-economic system (oil and gas activities, coastal communities and their activities) reveals the causes of biodiversity loss and ES degradation (as already analysed in chapter six) in the NDR of Nigeria.

While the expectation is that the governing actors should work towards mitigating the impacts of oil and gas activities on the globally important BES of the region, lack of interaction or adequate interaction between the GS and the SG has further exacerbated the problem of BES degradation in the NDR. This lack of interaction between the GS and SG is evinced in the failure to recognise and involve the local communities that are most affected by the degradation of BES, particularly the most vulnerable people like the women and youths. The failure to recognise and involve the locals in policy and decision-making has obviated the locals from expressing their voices, sharing their images of BES, and expressing their values, norms and principles to be considered in the extant oil and gas policies/regulations. This explains in part some of the inadequacies of the existing policies/ regulations in the governing of oil and gas activities in Nigeria.

Where the efforts of the government at conserving the environment were to yield some positive impacts, lack of regular vertical and horizontal interactions among the regulatory agencies at all levels; their opaque systems of operation and lack of coordination among the agencies have further aggravated the problem of BES degradation in the region (Chapter eight). Similarly, the MNOCs operating in the region are not trusted by the people in the communities and even where they have genuine intentions to assist their efforts are thwarted and this is due to lack of regular interactions between the MNOCs and the OPCs in the region which has made the region conflict-ridden.

Two, the research applies the IGF in the context of the NDR of Nigeria by developing an IGF for the governance of the oil and gas sector that will assist in the conservation of BES. It is also instructive to note that this framework could guarantee continued oil and gas exploitation in the region as well as addressing most of the socio-economic problems of the region by opening up the yet untapped opportunities associated with BES. The application of the IGF in addressing BES-oil and gas related issues is a total departure from the legacies of the proponents of IGT

which have been predominantly in the fisheries sector, though Kooiman (2003) earlier noted the adaptability and applicability of the concept to addressing any societal problem.

Three, the research further contributes to knowledge through the need to mainstream BES into EIA of oil and gas companies before environmental permits (EP) or licences are issued to prospective oil and gas companies in Nigeria. EIA is a major governance instrument being used to mitigate human perturbations on the environment but evidence abounds that adequate consideration has not been given to the aspects of BES in EIA reports of oil and gas activities in Nigeria. In line with the arguments of the governance theorists (Kooiman and colleagues), this suggests that the GI is not fit for purpose. In recognition of the inadequacies of the EIA as a governing instrument to adequately address the problem of biodiversity loss and ES degradation in the NDR, this research advances the need to introduce SEA into the operations of oil and gas activities because of its wider coverage and scope. SEA in this case is to compliment EIA and not to replace it because of its ability to strengthen and streamlines project EIA through early identification of potential impacts and information needs, thereby assist in clearing strategic issues related to justification of proposals and lessening the time and effort required to conduct individual EIA reviews (Dusik *et al.*, 2001).

BES should also be incorporated into the HSE management systems and decision-making processes of the oil and gas companies and this must be evident in the different aspects of the plan-do-check-act cycle of their day-to-day operations and project management. For example, mainstreaming of BES into the HSE management in Teak-Samaan-Poui (TSP) Offshore oil and gas Production Block operated by Repsol Exploration and Production T&T Limited in Trinidad and Tobago has improved the quality of data used in the preparation of EP and EIA studies (IPIECA and OGP, 2013). This has ultimately enhanced the quality of information utilised for stakeholders in decision-making towards environmental conservation and assisted in providing new knowledge of commercially significant areas in the TSP Block and locations of areas of ecological importance (Ibid).

Four, this study also contributes to knowledge in the area of the methods utilised for data collection which assisted to address some fieldwork challenges. As shown in chapter four, some of the challenges included gaining access to the people in the communities, recruiting the right interviewees or getting the right representations among the locals for interviews and understanding the culture of the people. Rather than relying alone on telephone calls and previous contacts made by the research assistants, the researcher on arrival in Nigeria had to

visit the communities in line with the culture of the people before the actual date scheduled for the fieldwork interviews. The deliberative methodology adopted in conducting FGDs in volatile communities in this study could also be replicated in similar communities.

Five, the research also contributes to knowledge in the area of the CSR that the MNOCs use as an avenue to contribute to the environment where they are operating in the region which to this study find expression in IG with the goal of sustainable development and, particularly, within the purview of Agenda 21. Although the MNOCs have not included environmental activities in their CSR programmes, looking at it from the interactive governance perspectives this would help to mitigate the harsh socio-economic and environmental conditions that underpin the myriads of problems in OPCs. It will further open up new opportunities that are yet to be tapped within the system and guarantees sustainable relationship between the MNOCs and the local communities.

Drawing from above, the research argues for the recognition and involvement of all relevant stakeholders/actors in the governance of oil and gas sector in Nigeria as it relates to the conservation of BES in the NDR. In line with the arguments of IGTs, it propounded a rationale for regular interactions among all the stakeholders in an open/transparent arena where all values, norms and principles of all stakeholders including the communities can be deliberated and harmonised without any fear/intimidation to make a joint decision about BES concerns. From the IG perspective, the above arguments are normative and the research argues that the knowledge of the holistic meaning of BES is crucial for the conservation of BES from the impacts of oil and gas activities. The next section considers the theoretical implications of the study.

10.5 Theoretical Implications

Employing an IGA enabled the researcher to analyse the interactions between coastal BES users (i.e. local communities and oil and gas companies) and BES as means of livelihood and source of raw materials by local communities and MNOCs respectively. It also assisted in the studying of the interactions between the SG and the GS.

Two, political ecology accentuates the politics of these interactions and the power disparities involved (Peet and Watts, 1996; Dietz, 1996 cited in Büscher and Dietz, 2005; Gezon, 1997). This research has shown these politics and power disparities by analysing the interactions between various actors/stakeholders within and beyond the local level which added up as both the direct and indirect causes of BES degradation from the impacts of oil and gas activities. It

also suggested that power plays by either politicians or other important actors/individuals like the MNOCs with stakes in oil and gas resource may weaken the political and administrative will to handle effectively issues related to pollution from oil and gas activities and thus hinder implementation/enforcement of laws and policies. Consequently, this study has revealed that political ecology aligns well with IGT developed by Kooiman (2003; 2008) and (Kooiman *et al.*, 2005a).

Scholarly literature on BES explains how humans and businesses rely on BES for sustenance and effective performance respectively (MEA, 2005; MEA, 2005a; TEEB, 2010; Wattage, 2011; IADB, 2012; IPIECA and OGP, 2012; UNEP-WCMC *et al.*, 2012; UNGC and IUCN, 2012). The intangible benefits of BES are not widely recognised in Nigeria, with the exception of the locals in the NDR that have benefited immensely from BES in the past and some of those benefits are no longer available such as regular swimming in water which they no longer enjoy due to pollution of the water. It is the expectation of this study that this may change in the near future if ES become a source of cash income through carbon credit schemes and payments for ecosystem services (PES) under REDD+ schemes, as a recompense for keeping the ecosystems unimpaired.

This study further revealed that IGT developed for the fisheries sector (Kooiman *et al.*, 2005b), can easily be applied in oil and gas sector context. IGT demonstrates that BES conservation can be conserved constructively if societal problems are identified and analysed jointly by actors/stakeholders with a view to creating opportunities. By combining IGT (from both analytical and a normative point of view) with BES analysis, this study has shown a better understanding of the governance context of Nigeria's oil and gas sector, the nature of BES and BES conservation strategies, and recommendations for their improvement. However, this study has also established that in Nigeria, and other countries within the Sub-Saharan Africa, stakeholders/actors supposed to transcend the typical division between the state, market and civil society as employed by Kooiman and Bavinck (2005) as well as (Kooiman *et al.*, 2008). This study consequently proposes that a distinction be established between state, customary, market, civil society and a hybrid governing structure, rooted in an all-embracing transnational governing structure.

From the foregoing, the research advanced two theoretical arguments. One, all the relevant actors/stakeholders must be valued, respected and involved in the governance of oil and gas sector. Two, involving them must include interacting at meta-level where their values, norms

and principles are not only respected but incorporating them in decisions for the overall benefits of all actors/stakeholders, though trade-offs are inevitable but it must not be at the expense of one party.

10.6 Integrating oil and gas into the Interactive Governance road map: contributions to environmental governance studies and conservation

The central objective of this study was attained through the establishment of the proposition that incorporating oil and gas into the IGF can effectively mitigate biodiversity loss and ES degradation as well as other environmental issues in the NDR. However, the study observes with dismay that there is scant involvement of the locals in the region in the governance of oil and gas sector by the government and MNOCs particularly as it relates to decision-making on oil and gas activities which have contributed immensely to the loss of biodiversity and ES degradation that the people depend on for sustenance. The only area of involvement is noticed in the nascent GMoU concept introduced by some of the MNOCs in collaboration with their joint venture partner (the government) as well as the non-environmental NGOs, though it has criticisms too. Involving the communities and other relevant stakeholders in policy formulation and decision-taking in an open and transparent arena where images including values, norms and principles will be deliberated will contribute to the effective implementation of oil and gas IG in Nigeria. This will require a change of attitudes in the leaderships or governing actors in both the SG and the GS.

10.7 Limitations and Areas for Future Research

This research, like other case study research, has limitations associated with it. The first are some methodological limitations associated with the research like the representativeness of the data of the case studies selected and of the sampling within these and the potential impact of this on the research findings. Because the subject matter of the research is the implications of the governance of oil and gas sector on BES in the coastal OPC in Nigeria, it is practically impossible for a piece of doctoral research to collect data from the diversity of stakeholders with multicultural beliefs in all the seven coastal States of the NDR. Although efforts have been made to extrapolate the data and the findings, it cannot be said to be entirely free of possible bias.

Secondly, given the exigencies of the doctoral research, a substantial part of the data for the research was generated from secondary sources. This introduced the possibility of missing out the tacit knowledge first hand data provides, because secondary data may have undergone transformation, with implications for its veracity.

Generally, the limitations above do not contradict nor lessen the importance of the findings of the research but only indication that there is more work to do. The researcher hopes this study will contribute to widespread recognition of the importance of this key building block of oil and gas governance.

This thesis has presented and analysed a number of important issues relating to a broad field of study. It has not, however, been possible to address all aspects of research concerning governance of oil and gas sector-BES conservation, since that body of knowledge is by itself inexhaustible. The following areas have therefore been identified as requiring further research that could increase our understanding of oil and gas-BES degradation and offer more insights into IGT and its applicability in the oil and gas sector.

Firstly, assessment of BES conservation capability among environmental officers/managers. Prior to the building of the capacity of the environmental officers/managers in BES conservation and other governance concepts, an assessment of their competency in this field is necessary. Similarly, a needs assessment could serve as a baseline for capacity and curriculum development in oil and gas-BES conservation.

Secondly, more detailed research on BES can be carried out at the regional scale (entire NDR), giving more attention to the wider regional context of oil and gas exploration and production in Nigeria. Exploring governing processes on this wider scale would be useful for providing information about how humans interact with BES at this scale. Such information will not only provide a baseline data for the region but can also be integrated into environmental conservation and policy decisions at different scales including oil and gas sector.

Thirdly, explore opportunities to improve conservation and income security from the IAS in the region. There is a need to improve conservation strategies using some IAS such as vetiver grass system to control the problem of coastal erosion which has been tested in many places and found useful without any detrimental impact of the indigenous species. For example, while vetiver has been successfully utilised in Australia to stabilise mining overburden and very saline, sodic and alkaline (pH 9.5) tailings of coal mines and very acidic (pH 3.5) tailings of a gold mine, it has also been used in South Africa to stabilise diamond mine slams (Truong and Baker, 1988) and for further application of vetiver system across the globe (see Truong, 1999; Truong *et al.*, 2007; Truong and Tran, Undated). The increasing awareness of the significance

and application of vetiver in controlling erosion in Nigeria has also been documented recently (Babalola *et al.*, 2007; Edem *et al.*, 2012; Edem *et al.*, 2012a). In view of the present problems associated with IAS such as water hyacinth and *Nypa* palm, further studies on how these species that the locals considered as menaces could be utilised to contribute to income security for some unemployed youths as the case in Cambodia should be explored. The findings will not only help in mitigating the problem of BES degradation but also help in empowering or building the capacity of some of the unemployed youths in the region.

Fourthly, a further study could be carried out that uses place-specific (downscaled) oil spills and gas flaring data to assess and analyse the future vulnerability of BES and coastal settlements based on a range of scenarios. This could be relevant for policy making because it provides more detailed and reliable information from which to identify the different pathways for dealing with potential oil and gas impacts on BES.

Fifthly, exploring the practicality of how PES can help improve conservation of BES in the context of the NDR from the impacts of oil and gas activities. This will go a long way to help address the problem of compensation that characterises the region.

Lastly, despite the endowment of the region with the globally important BES there is no designated Marine Protected Area (MPA) or Coastal Zone in any of the States in the region to protect the BES. The designation of these areas would ordinarily have assisted to protect the environment and its resources and foster the recovery or restoration of the degraded ecosystem to allow effective performance of its natural functions. However, selecting suitable locations for a MPA will require detail studies to be conducted and which this study considers as an issue for further research.

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Publications, Papers and Conferences Attended by the Author

Papers

Ogele, F. O. “The Impacts of Oil/Gas Activities on the Biodiversity and Ecosystem Services in the Coastal Communities of Ondo State, Nigeria” Paper Submitted to Journal of Interdisciplinary Environmental Review, Paper submitted in July, 2015. In review

Ogele, F. O. “Governance of Oil/Gas Sector in Nigeria: Impacts on Water Resources in the Niger-Delta Region” Paper submitted to Journal of Environmental Indicators, Paper submitted in June 2015. In review

Conferences/Workshops and Papers Presented

Ogele, Felix. O. (2015) “The Nigerian Governance of oil/gas Sector: Threats to Biodiversity and Ecosystem Services in Niger Delta Region” Paper presented at The 21st International Interdisciplinary Conference on the Environment; 10 – 13 June, 2015, San Juan, Puerto Rico, USA.

Ogele, Felix. O. (2014) “Interactive Governance of Oil/gas sectors: Implications for Biodiversity and Ecosystem Services in Nigeria” Paper presented at Royal Geographical Society-Institute of British Geographers (RGS-IBG) Annual Conference; 26 – 29 August 2014, London, Imperial College London, UK.

Ogele, Felix. O. (2013) “Governance of Oil/Gas Sector in Nigeria: Implications for Biodiversity and Ecosystem Services in the Niger Delta Region” Paper presented at British Academy Workshop: From Local Wellbeing to Global Justice; 4 July, 2013, Northumbria University, UK.

Appendix 1: Sample Letter to Government Agencies/Oil Companies



23rd July, 2013

The Director
Nigeria Delta Development Commission (NDDC)
ONDO STATE OFFICE
Plot 11, GRA, Igbokoda
Ondo State
Nigeria

School of Architecture, Planning
and Landscape

Claremont Tower
Claremont Road
Newcastle upon Tyne
NE1 7RU United Kingdom



To whom it may concern:

RE: Felix Ogele, student number 079050746

I write with regards to the above named student who is currently undertaking a PhD within the School of Architecture, Planning and Landscape at Newcastle University.

His research investigates the governance of oil/gas sector in relation to biodiversity and ecosystem services in Nigeria. As part of the PhD requirements, he is due to embark on fieldwork and collect data in the Ondo State and in Abuja.

I would be grateful if you could assist Mr Ogele with the necessary logistics and data during his fieldwork in Nigeria.

Please do not hesitate to contact the School with any queries you may have.

Yours faithfully,

A handwritten signature in cursive script that reads "Paola Gazzola".

Dr Paola Gazzola
PhD Supervisor
School of Architecture, Planning and Landscape
Newcastle University

tel :+44 (0) 191 222 5831
switchboard :+44 (0) 191 222 6000
fax :+44 (0) 191 222 8811

www.apl.hcl.ac.uk

The University of Newcastle upon Tyne trading as Newcastle University



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Appendix 2: Sample Letters to Traditional Rulers/Communities and CBOs/NGOs



**School of Architecture, Planning
and Landscape**

Claremont Tower
Claremont Road
Newcastle upon Tyne
NE1 7RU United Kingdom

23rd July, 2013

To whom it may concern:

RE: Felix Ogele, student number 079050746

I write with regards to the above named student who is currently undertaking a PhD within the School of Architecture, Planning and Landscape at Newcastle University.

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Please do not hesitate to contact the School with any queries you may have.

Yours faithfully,

Dr Paola Gazzola
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2005

Appendix 3: Interview Schedules/Guide

Focus Group Discussion: Communities

What has been the impact of oil/gas activities in your community?

What effects/changes on environment can be attributed to the activities of oil/gas industry?

How has your community contributed towards the conservation of the environment?

What do you do to protect the environment from being degraded by oil/gas activities?

What are the things preventing you from protecting the environment?

To what extent does your community interact with government agencies and oil companies on the conservation of BES in your environment/community? How does the interaction take place and how often?

Do you think the mechanisms for public participation in policy and decision-making regarding conservation of BES is effective?

Has the government and oil/gas companies been helpful in mitigating the impacts of oil/gas activities on the BES in your community?

Government Agencies

What role does your establishment perform in oil/gas sector governance and particularly with regards to conservation of BES in the NDR?

What are the national and international laws that govern your organisation's activities in the protection of BES from oil/gas activities?

What role does your establishment perform in oil/gas sector governance and particularly with regards to conservation of BES in the NDR?

In your opinion, to what extent do government policies/regulations define clear responsibilities and authority for the various actors responsible for oil/gas sector governance with regards to BES?

In your opinion, who are the key actors/stakeholders that should be involved in the governance of oil/gas sector with regards to BES?

In your opinion, do you think the process of public participation in policy and decision-making regarding conservation of BES is effective and if not why?

To what does your organisation interact with other actors/stakeholders in the conservation of BES from negative impacts of oil/gas activities in the NDR and how?

To what extent does your establishment has the capacity (know-how, training, expertise, finances) to protect BES from negative impacts of oil/gas activities? How can this be improved?

In your opinion, to what extent is there effective coordination between the various agencies that play a role in the governance of oil/gas sector with regards to BES?

Oil and Gas Companies

What role does your establishment perform in oil/gas sector governance and particularly with regards to conservation of BES in the NDR?

What are the internal regulations that govern your organisation's activities in the protection of BES from oil/gas activities?

To what extent has Environmental, Social and Health Impact Assessment (ESHIA) influenced your practices in mitigating BES degradation in the NDR?

To what extent has corporate social responsibility assisted your practices in addressing the problem of BES degradation?

To what does your company interact with other actors/stakeholders in the conservation of BES from negative impacts of oil/gas activities?

In your opinion, to what extent do government policies/regulations define clear responsibilities and authority for the various government actors responsible for oil/gas sector governance with regards to BES?

To what extent do you provide information to the public regarding the governance of oil/gas sector with regards to conservation of BES?

In your opinion, who are the key actors/stakeholders in the governance of oil/gas sector with regards to BES?

In your opinion, do you think the process of public participation in policy and decision-making regarding conservation of BES is effective and if not why?

In your opinion, how effective and efficient are the oil/gas policies/regulations in the conservation of BES?

To what extent does your company has the capacity (know-how, training, expertise, finances) to protect BES from negative impacts of oil/gas activities?

To what extent is there effective coordination between the various government agencies that play a role in the governance of oil/gas sector with regards to BES in the NDR?

In your opinion, to what extent are environment-related funds managed transparently and effectively?

In your opinion, to what extent is there an effective system for monitoring, implementing and enforcing pollution activities and charges?

Civil Society Organisations: NGOs and CBOs

What role does your establishment perform in oil/gas sector governance and particularly with regards to conservation of BES in the NDR?

What are the national and international laws that govern your organisation's activities in the protection of BES from oil/gas activities?

Do you consider the government and oil/gas companies' efforts in mitigating BES degradation effective and if not what can be done to improve it?

In your opinion, to what extent do policies/regulations define clear responsibilities and authority for the various government actors responsible for oil/gas sector governance with regards to BES?

To what extent do you think you have access to information provided by government and oil companies regarding the governance of oil/gas sector with regards to conservation of BES?

In your opinion, who are the key actors/stakeholders in the governance of oil/gas sector with regards to BES?

In your opinion, to what extent is there effective public participation in policy and decision-making regarding conservation of BES is effective and if not why?

In your opinion, how effective and efficient are the oil/gas policies/regulations in the conservation of BES?

To what extent does your organisation has the capacity (know-how, training, expertise, finances) to protect BES from negative impacts of oil/gas activities?

To what does your organisation interact with other actors/stakeholders in the conservation of BES from negative impacts of oil/gas activities in the NDR and how?

To what extent is there effective coordination between the various government agencies that play a role in the governance of oil/gas sector with regards to BES in the NDR?

In your opinion, to what extent do government and oil/gas companies have the relevant expertise necessary to effectively implement oil/gas laws/policies with regards to conservation of BES?

In your opinion, to what extent are environment-related funds managed transparently and effectively?

In your opinion, to what extent is there an effective system for monitoring, implementing and enforcing pollution activities and charges?

Appendix 4: List of Government Staff and NGOs/CBOs Interviewed in this Study

List of Government Staff Interviewed

Title	Responsibility	Date Interviewed
Comptroller	He coordinates the activities of FMENV in Ondo State	12 August, 2013
Director	He coordinates the activities of FMNDA in Ondo State	36 August, 2013
Director	He oversees environmental activities of NDDC in Ondo State	09 September, 2013
Director	He supervises agricultural and fisheries programmes of NDDC in Ondo State	15 August, 2013
Commissioner	Political Appointee and Head of OSMENV	20 August, 2013
Deputy Director	She assists the Director in coordinating the work of the OSMENV	22 August, 2013
Senior Environmental Officer	She assists the Director in coordinating environmental activities of DPR	05 September, 2013
Director	He coordinates NOSDRA activities in Ondo State and reports to the National Director in Abuja	16 August, 2013
Senior Environmental Officer	He assists the Director in executing the environmental functions of NIMASA	06 September, 2013
Principal Environmental Officer	Head of Environmental units and coordinator of environmental activities in OSOPADEC	12 August, 2013
General Manager	He coordinates NIMET's activities in Lagos	04 September, 2013
Liaison Officer	He is in charge of oil and gas activities in ILGA	27 August, 2013
Director	He was the head of department of fisheries research in NIOMR, Lagos	28 August, 2013

List of NGOs Interviewed

NGOs	Date Interviewed
NGO 1: NES	16 August, 2013
NGO 2: OFEPA	22 August, 2013
NGO 3: NCF	27 August, 2013

List of CBOs Interviewed

CBOs	Date Interviewed
CBO 1: AICECUM	15 August, 2013
CBO 2: IRDC	26 August, 2013

Appendix 5: List of Group Discussions and Feedback in the Research

List of Group Discussions Conducted in this Study

Group Discussions	Number of Respondents	Date Conducted
Group Discussion 1	10	06 August, 2013
Group Discussion 2	9	06 August, 2013
Group Discussion 3	10	08 August, 2013
Group Discussion 4	10	08 August, 2013

List of Feedback Presentations made in this Study

Feedback Presentation	Date Conducted
Feedback Presentation	09 September, 2013

Appendix 6: Sample of Consent Form Used in this Study

Consent Form

I, LOTO AKINDEKO.....agree to participate in Felix Ogele's research study.

The purpose and nature of the study has been explained to me in writing.

I am participating voluntarily.

I give permission for my interview with Felix Ogele to be tape-recorded.

I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.

I understand that I can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising my identity.

I understand that disguised extracts from my interview may be quoted in the thesis and any subsequent publications if I give permission below:

(Please tick one box:)

I agree to quotation/publication of extracts from my interview

I do not agree to quotation/publication of extracts from my interview

Signed.....

Date.....2/9/13