

Local content development in the  
Nigerian oil and gas industry: Why it is  
not succeeding?

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## **Abstract**

This research focuses on human capacity development in the Nigerian oil and gas industry. The need for local capacity building in this industry is imperative because oil and gas proceeds are the major source of foreign exchange earnings for the country. Oil has been exploited in Nigeria for over five decades and there is still relatively poor local participation and hence the need for this research. The idea is to encourage local participation so as to promote economic growth and industrial development.

This research identifies reasons for the ineffective implementation of the Nigerian content policy and will develop a framework that will address holistically the factors needed to ensure industrial growth through proper implementation and particular attention is paid to specific factors that enhance participation of local firms in the oil and gas industry.

The experience of Norway will be used as a case study to demonstrate the means by which they were able to achieve domestically based industrial competence while exploiting their petroleum resources and also the necessary conditions that was in place that encouraged proper exploitation of their resources.

**Key words:** Content, develop, framework, industrial, implementation, oil, promote, policy, growth, gas.

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## **Glossary of Abbreviations & Terms**

ANC	African National Congress
B/D	Barrels per Day
CNL	Chevron Nigeria Limited
CNOPB	Canada – Newfoundland Offshore Petroleum Board
CNSOPB	Canada – Nova Scotia Offshore Petroleum Board
DNL	Daewoo Nigeria Limited
DOD	Department of Defense
DIP	Defense Industrial Participation
DTI	Department of Trade & Industry
EGTL	Escravos Gas to Liquids
EPC	Engineering, Procurement & Construction
FPSO	Floating Production Storage & Offloading
FPO	Floating Production & Offloading
IP	Industrial Participation
ITT	Invitation to Tender
JV	Joint Venture
LCM	Local Content Model
LWD	Logging while Drilling
LNG	Liquefied Natural Gas
MWD	Measurement while Drilling

MPE	Ministry of Petroleum & Energy
MPN	Mobil Producing Nigeria Unlimited
MPP	Master Procurement Plan
NAICOM	National Insurance Commission
NCD	Nigerian Content Division
NDT	Non Destructive Test
NIP	National Industrial Participation
NIPP	National Industrial Participation Program
NNPC	Nigerian National Petroleum Corporation
NPD	Norwegian Petroleum Directorate
OK LNG	Olokola Liquefied Natural Gas
PSA	Production Sharing Agreement
PWHT	Post Weld Heat Treatment
R & D	Research & Development
SA	South Africa
SANDEF	South African National Defense Force
STI	Science, Technology & Innovation Policy
TCF	Trillion Cubic Feet

# **CHAPTER ONE**

## **1. Introduction**

### **Overview**

This chapter gives an overview of the Nigerian local content policy and the reasons the policy was developed. It also illustrates the aims and objectives of this research, the research outline and finally the beneficiaries' of this research.

### **1.1 Overview of Nigerian Content**

The "Nigerian Content" also known as local content is a vision developed by the Nigerian National Petroleum Corporation (NNPC) which is aimed at transforming the oil and gas industry into being the economic engine for job creation and national growth. The idea is to develop in-country capacity and indigenous capabilities in such a way that a greater proportion of the work will be done in Nigeria with active participation of all sectors of the economy so as to ultimately position Nigeria as the hub for service delivery within the West African sub region and beyond.

The oil and gas industry is the backbone of the Nigerian economy which accounts for over 90% of foreign exchange earnings for the country and being a capital intensive sector with needs for highly sophisticated skills has led to the dominance of international oil servicing contractors in this sector with little or no

participation from the indigenous companies thereby adding relatively little value to the economy. This has been the case for nearly 5 decades since the discovery of oil in the country.

The current statistics concerning oil & gas production and revenue is as follows (Nigeria Energy Data-statistics & analysis oil, gas electricity and coal ([www.eia.doe.gov/cabs/Nigeria/Profile.html](http://www.eia.doe.gov/cabs/Nigeria/Profile.html)))

- Oil Revenue \$36 billion dollars / annum (2007)
- Oil Production \$2.4 million barrels / day (2006)
- Proven Oil Reserves 36 billion barrels (2007)
- Proven Gas Reserves 182 trillion cubic feet (January 1, 2007)

The Nigerian content policy was developed by the NNPC after deliberations and contributions from all stakeholders and key players in the industry.

Its main objectives are to

-Promote a framework that guarantees active participation of Nigerians in Oil and Gas activities without compromising standards in order to stimulate growth of indigenous capacity.

-Promote Value Adding in Nigeria by utilization of local raw materials and human resources for manufacturing of Goods and provision of services to the Petroleum industry.

-Promote steady measurable and sustainable growth of Nigerian Content”.

(NNPC, 2005- [www.nnpcgroup.com](http://www.nnpcgroup.com))

The policy was submitted to government to enact a bill to support its implementation. “The Nigerian Content Division was set up in March 2005 by the NNPC to work with the stake stakeholders in the industry and relevant arms of government to develop strategies, drive implementation and ensure compliance with directives being issued to the Oil companies regarding the Nigerian Content aspirations of the Government. A Nigerian Content Consultative Forum (NCCF) was also inaugurated with 8 Sectorial Working Committees covering Fabrication, Engineering, Manufacturing, Banking & Insurance, Shipping & Marine, Well & Drilling as well as Logistics services”. (NNPC, 2005- [www.nnpcgroup.com](http://www.nnpcgroup.com))

## **1.2 Problem Statement**

The Nigerian National Petroleum Corporation (NNPC), having analyzed past, present and possible future projects in the oil and gas industry, realized that out of the billions of dollars which is either spent or budgeted for projects annually, a small percentage is domiciled in the country (NNPC- Local content 2005- [www.nnpcgroup.com](http://www.nnpcgroup.com)), which is quite unfortunate since the economy is completely dependent on oil and gas proceeds. This goes to show that the nation hardly benefits from this vibrant industry.

Poor infrastructure, Limited technological know-how, Insufficient funding, inadequate government policies and a poor investment climate are some of the challenges inhibiting participation of the local companies in the industry.

These challenges have restricted the participation of local players in the industry and thus the multinational oil firms have depended heavily on importation of goods and services thereby limiting development of indigenous capabilities. This lack of active participation of the local players in this industry has given rise to little or no job creation, no value adding benefits to the economy because of non utilization of local raw materials and non provision of services to the petroleum sector.

**This research will develop a framework to promote active participation of local players in this industry with the focus of the Nigerian content policy's objective of 70% local participation by 2010.**

### **1.3 Aims and objectives of the research**

The aim of this research is to investigate the improper implementation of the Nigerian local content policy and to develop a framework to promote proper and effective implementation of the policy. The Norwegian local content model will be used as a case study to verify the merits of the proposed framework.

The objectives of this study are:

- To Identify the reasons for the ineffective implementation of the Nigerian content policy.
- Develop a framework to promote proper and effective implementation of the policy.
- To test the merits of the framework against the Norwegian local content model.

#### **1.4 Dissertation Outline**

This research is divided into six different chapters, the introduction, literature review, development of a management framework, testing the framework against the Norwegian and Nigerian experience, results presentation, data analysis and conclusion / recommendations.

The first chapter which is the introduction presents an overview of the research topic, the reasons on why this research was embarked upon and the overall objectives of this research.

The chapter two of this dissertation discusses the literature review on local content policies in some countries and their different implementation procedures.

Chapter three illustrates the proposed framework for an effective implementation of the Nigerian content policy.

Chapter four presents the empirical investigation carried out and the findings and discussions attained. It also depicts a detailed background of the Norwegian local content experience and the testing of the proposed framework against the Norwegian local content model.

This fifth chapter demonstrates the analysis of the Nigerian situation with reference to the proposed framework using a comparative analysis tool and discussions thereafter.

The sixth chapter accentuates the conclusions reached and recommendations made while carrying out this research.

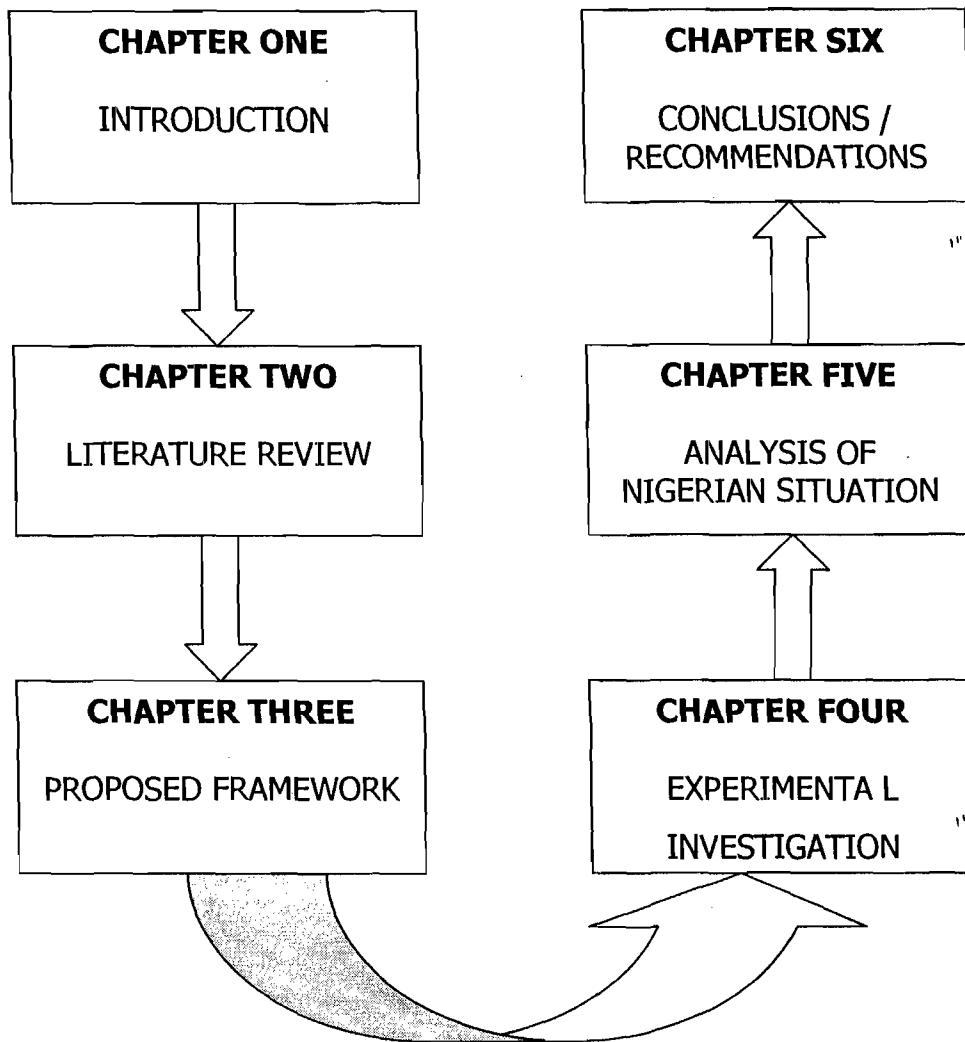


Fig 1.1 flow chart of dissertation outline

The literature review that will follow in the next chapter will examine the local content policy in general and its applicability in other countries.

The literature review aided in identifying the need for a local content policy and how it is viewed and adopted in other countries. This literature is organized in a case study format which analyzes local content policies in both oil producing and

non oil producing countries and further highlights the merits of having such a policy if it is well implemented.

## **Chapter Two**

### **2. Literature Review**

#### **Overview**

This chapter deals with previous studies concerning the local content policy in Nigeria and other countries, the peculiarities in terms of challenges, government strategies, implementation etc. This chapter also highlights the different types of the policy, the expected and actual benefits that accrue to the host country and the perception and co-operation of the international companies who are also stakeholders.

#### **2.1 What is Local Content?**

##### **2.1.1 Background**

"Local content policy stipulates that a fraction of an import's production process take place in the domestic economy" (Taylor, 2002). Another definition is that local content is a condition that "requires a given percentage of domestic value added or domestic components be embodied in a specified final product." (Grossman, 1981).

The need for local content cannot be over emphasized, local content policy in what ever form is developed by any country with the resources natural or otherwise to enable the local people harness the opportunities involved in developing these resources. These opportunities include foreign direct

investment, job creation, skills acquisition, technological transfer and wealth creation.

Many countries with natural resources especially oil and gas have already developed policies to favor the development of these resources. The idea is to enact and enforce policies that will persuade the participating companies to transfer technology, create job opportunities and at the same time patronize the local supply industry while they are exploiting resources of the host country.

### **2.1.2 Adoption of Local Content Policies**

Local content policies are usually adopted by countries that want to exploit their natural resources but don't have the relevant skills to do so, they often invite international companies with the required expertise to develop these resources while the host country creates policies to ensure active participation and development of the local players through technology transfers e.t.c

Similarly, it is not just the use of natural resources that drive the need for local content, as long as there is something to trade for, the buyer really wants the commodity then the seller can dictate certain conditions for sale that might not necessarily be cash. (Mcewan, 2002) stated that "industrial participation is used to leverage economic benefits and support the development of South African industry by effectively utilising the instrument of government procurement.

The government and industry operators are the major stakeholders that need to agree on the requirements of the policy for its implementation.

**Government:** the type of policy that any government adopts affects the way the policy is implemented in the country, therefore in initiating local content policies, the government requirements are explicitly stated and a regulatory agency is set up to enforce the policy. "In Australia relevant industry organizations are working together to facilitate participation of local industry in resources and energy projects. The Industrial Supplies Office (ISO) network has a central role in this process of matching local capability with the needs of industry. ISONET is a national body coordinating the network of ISO offices in every State and Territory of Australia and New Zealand. ISOs and ISONET are independently managed, non-profit organizations financially supported by Australian, New Zealand and State/Territory Governments." (Center for Energy Economics 2001 [www.beg.utexas.edu](http://www.beg.utexas.edu))

**Industry operators:** They play their own part by executing the policy of the host government and will strictly adhere to all the requirements.

## **2.2 Types of local content policies**

Local content is also known as either offsets or industrial participation in some countries however the objectives of local content, offsets and industrial

participation are the same which is to "stimulate domestic industry while earning foreign exchange." (Taylor, 2002)

In South Africa, the industrial participation policy used in the defense industry has similar objectives to the local content policy. The South African industrial participation policy will be reviewed to perceive the similarities with the local content policy and other case studies will also be reviewed, the Nigerian situation and the Canadian experience.

## **2.3 Case Study: South African Offset Program**

### **2.3.1 Background**

Offsets, also officially known as Industrial Participation (IP) in South Africa is a plan by the government to develop a new industrial strategy.(McEwan, 2002). It is concerned particularly with bringing new business into the country with the view to accomplishing more investments, better technology and an improved standard of living for the South Africans.

IP can be further divided into National Industrial Participation (NIP) and Defence Industrial Participation (DIP).

DIP can be further divided into direct DIP (directly connected to the system being proposed), and indirect DIP (investment / orders for the defense industry not related to the system being proposed).

"NIP is administered by the Department of trade and Industry (DTI), while DIP is organised jointly by the Department of Defence (DoD) and Armscor". (McEwan, 2002)

South Africa IP policy insists that prospective foreign clients must demonstrate value-added benefits and local job creation, technology transfer, and the long-term viability of local ventures. "For all government parastatals' purchases or lease contracts, including goods, equipment, or services, with an imported content equal to or exceeding US\$10 million, are subject to an Industrial Participation Obligation. The seller/supplier who incurs an Industrial participation obligation will be required to participate in the South African economy". (McEwan, 2002)

The mission of the IP policy is to influence economic benefits and support the development of South African industry by effectively utilizing the instrument of government procurement to achieve the following objectives:

- "Sustainable economic growth
- Establishment of new trading partners
- Foreign investment into South Africa
- Exports of South African "value-added" goods and services
- R&D (research & development) collaboration in South Africa
- Job creation
- Human resource development

- Technology transfer
- Economic advantages for previously disadvantaged communities”.

(McEwan, 2002)

### **2.3.2 Illustration**

In theory, offsets have advantages for developing and up-and-coming economies. “One of the most recent, and globally high profile, deals has been between Saab / BAE deal with South Africa whose government in September 1999 approved a R29,9 billion arms acquisition programme for the South African National Defence Force (SANDF). The supplies was divided into two tranches: the first tranche, costing R21,3 billion, will include 3 submarines and 4 corvettes from Germany, 12 jet trainers from Britain, 9 light fighters from Britain and Sweden, and 30 light utility helicopters from Italy. The second tranche, costing an additional R8,6 billion will include 12 jet trainers from Britain and 19 light fighters from Britain and Sweden”. (Brauer and Dunne, 2005)

At the time of approving the programme, government stated that the foreign suppliers had made IP offers worth R104 billion which would result in the creation of more than 65,000 jobs over a period of 7 years (Batchelor and Dunne, 2000).

“The benefits were expected to come in three forms:

- Defence –related offsets (about 20% of the total, or R14, 5bn).

Local defence firms will earn over R4 bn via direct participation in the production of the aircraft and ships being procured. In addition, the suppliers are transferring technology worth about R3 bn in royalties and license agreements to South African firms, and will direct other export orders to South African firms for more than R7 bn worth of production of defence contracts with third parties.

- Counter-purchase by the defence equipment suppliers of South African goods (about 45% or R31 bn). The goods to be procured include automotive components, furniture, fabricated metal goods and electronic goods.
- Foreign investment in South Africa by companies associated with the equipment suppliers (the remaining 35% or R24 bn)". (Mcewan, 2002)

### **2.3.3 SA Offset Benefits**

On June 11 2003, Some of the benefits that the offsets generated four years after the defense offset was signed was highlighted by Lionel October the deputy director of the Department of Trade and Industry (DTI), who stated in Cape Town that "The National Industrial Participation Programme (NIPP) has already produced more than 6 000 jobs of the 14 000 direct jobs targeted by 2011".

This was affirmed in his address to the trade and industry portfolio committee chaired by African National Congress (ANC) MP Rob Davies. The number of jobs

produced by the defense offset would rise to over 9 000 in the medium term as the companies involved went into production or expanded their production (October, 2003). He goes further to break down some of the ways this job creation has been achieved, 674 jobs were produced by offset companies associated with the French global aerospace electronics company Thales. Thales is also involved in a joint venture with Invensil and Pechinery to increase the production of three existing silicon smelter furnaces at Polokwane, Limpopo province. Two of three smelters were upgraded with Pechinery introducing efficient technologies and training and upgrading of furnaces thereby preventing the retrenchment of 390 employees and creating a further 90 jobs. The Jobs associated with offsets from the corvette platform building programme amount to 371 so far, Agusta, the Italian helicopter company, has created over 300 jobs through its offset operations which include the manufacture of gold export jewellery, 400 more jobs are to be created by the end of the year 2007. Non-defence offsets account for about 1 400 of the jobs created of which Daimler Chrysler accounts for 900 of these at the Atlantis Foundries in the Western Cape. (Pressly, 2003)

Armcor - the arms acquisition agency for the SA department of defence declared that "The offset programme related to South Africa's multibillion-rand arms deal has notched up R11.4 billion in returned investment since 1998, about R550 million more than the target set for the end of the 2007 financial year".

A breakdown of the achievements show that, the SA Navy's corvettes which carry an offset obligation of R2.9 billion by 2012, of which just less than R2 billion must be met by 2007 have already met the target of R1.95 billion, the purchase of submarines with an obligation of R1.12 billion and an offset performance target of R746 million for 2007 has achieved R741 million.

The sum of R11.4 billion was achieved out of the planned offsets of R15 billion showing an overall 105 percent performance rate up to 2007. (Pressley, 2007).

Armcor also noted that local defence-related companies had benefited from about 67 percent of the R5 billion contracted DIP programme. The main beneficiaries were Denel Aviation, which received technology transfer to set up a Gripen design and development centre, and the Grintek Group, which was contracted for the development and manufacture of electronic subsystems. (Pressley, 2007).

Armcor's 2007 financial reports points to the fact that offset has been successfully implemented so far but like the Independent Democrats leader Patricia de Lille said, the report is hard to believe except if the offsets were independently audited and monitored. She also noted that the offsets need only provide a further R3.6 billion in the next five years, taking the obligation to just more than R15 billion by the end of the programme which is a massive drop

from the region of R110 billion stated by government when the deal was struck nearly a decade ago. (Pressley, 2007).

In assessing the report, it indicates that only the government actually knows and can monitor the current situation concerning offsets which is a set back because a more accurate picture would have been provided by independent sources, furthermore there are a lot of discrepancies between expected benefits and actual benefits as stated by the government, an example is the initially sated figure of 65,000 jobs over a period of 7 years which eventually was reported in 2003 as 14,000 jobs by 2011, there is also the matter of offset obligation of R15 billion compared with R110 billion targeted at the onset.

There are certainly positive effects of the offset especially in job creation and technological transfer which are some of the ingredients for economic growth.

The economic benefits reaped by SA were aided by factors such as very good infrastructure (stable electrical power, good road network) political stability and a friendly investor climate.

The political stability in SA helps to boost investors' confidence because there is no rampant change of policies, government is predictable and so policies are not made today and changed tomorrow which would be the situation if there is an illegal change of government which automatically creates its own policies.

Good infrastructure also encourages investors to operate in the country and aid the host country in attaining their national economic goals through "reduction of unemployment, full utilization of non-labour resources and reduction of excess capacity, improving the standard of living and increasing per capita income for the citizens, ensuring price stability of goods and services and eliminating current account and balance-of-payment deficits. Other economic goals include provision of basic amenities and protection of the environment" (Milton, 1998)

## **2.4 Nigerian Local Content Policy**

### **2.4.1 Background**

Nigerian content is defined as "the quantum of composite value added to, or created in, the Nigerian economy through the deliberate utilization of Nigerian human and material resources and services in the exploration, development, exploitation, transportation and sale of Nigerian crude oil and gas resources resulting in the development of indigenous capabilities, and to encourage foreign investment and participation, without compromising quality, health, safety and environmental standards". (NNPC- 2005- [www.nnpcgroup.com](http://www.nnpcgroup.com))

The Nigerian content division was set up as a department in the NNPC to ensure the effective implementation of the policy in the oil & gas industry with the objective of 45% implementation in 2006 and 70% implementation in 2010.

The directives given by the federal government to achieve set targets are (NNPC-2005- www.nnpcgroup.com): **(Refer to appendix 1)**

The directives stated by the NNPC basically reads like a benefits plan which is similar to the Canadian-Newfoundland and Nova Scotia benefits plan, unfortunately there are lot of differences when the Nigerian situation is compared with the Canadian and the SA situation, the important differences include the poor infrastructural development, political stability in Nigeria, looking at infrastructure, most of the major the roads are in a deplorable state and electrical power generation as at 2007 was 1600 MW (mbendi, 2007) and from the political perspective, in May 1999, the country embraced democracy while prior to that, the country has been ruled by military juntas with who tried to implement erratic economic policies.

#### **2.4.2 Illustration**

Multinational companies operating in the Nigerian oil & gas industry set up local content departments to either contribute or pretend to contribute their quota to the success of the scheme.

Some publications highlight these concerns, an article by Chika Amanze-Nwachuku in 2007, Nigeria: Local content-Oil firms may miss 2010 target and a seminar: First Insurance Roundtable in Oil, Gas and Aviation Assets organised by Lagos Business School in partnership with Mutual Benefits Assurance Plc.

"It was learnt that most of these multinationals were either considering the capital intensity of their businesses or the manpower ability of Nigerian companies to be able to do the job in accordance with international standard" (thisdayonline, 2007)

"From our research as businessmen and service providers, we discovered that the oil and gas operators are looking at the local content policy as just one policy that will pipe down along the line. It is not as if they don't want to buy fully into the policy, but what they are looking at is the capital intensity of their business and the manpower ability of Nigerian companies being able to do these jobs and whether Nigerians have the technical know-how. So what they are doing is that, they are just like waiting, it is a waiting game on the part of the multinational oil producing companies, said a stakeholder". (thisdayonline, 2007)

#### **2.4.2.1 First Case Study**

Taking Daewoo Nigeria Limited (DNL) a subsidiary of Daewoo Engineering & Construction, as a case study, DNL is a Korean EPC (engineering, procurement & construction) contractor with substantial EPC contracts with the various oil producing companies operating in the country.

In the area of human capacity development, DNL has done quite well because its staff strength is made up of approximately 80% Nigerians of different categories and job specifications and they all undergo on-the job training in different areas

such as welding, fabrication, quality control & project management in the course of executing any construction contract. As an EPC contractor, DNL develops human capacity in construction disciplines especially in fabrication, there are presently five fabrication yards situated in the Niger delta area of the country and this has resulted in the massive training of welders and fitters (artisans) in those particular areas and there has also been employment and training of Nigerian engineers to supervise construction works and associated tests such as NDT (non destructive tests) on weld joints, pigging of pipe lines, Mechanical tests, PWHT (post weld heat treatment), welding certification procedures to mention a few.

DNL has done little or nothing in the training and exposure of Nigerian engineers to engineering designs in the various professional disciplines, this is an important area of human capacity development because it is the core of the industry, these disciplines include, piping designs, process engineering, electrical & instrumentation designs & mechanical designs, this could be largely because the engineering design office is situated in Seoul, South Korea and has been for over the twenty years, DNL has been operating in Nigeria.

DNL has also been quite frugal in the procurement of materials from Nigeria especially the purchase of low voltage cables, cement, bolts & nuts, valves, flanges and some other basic construction materials; these are all imported from

overseas, this has immensely undermined the manufacturing industry especially since DNL is one of the major oil & gas service providers in the country.

DNL has exposed Nigerians during the construction phase of projects in Nigeria as far as local content is concerned but in the conceptual and design stages of projects executed in Nigeria, DNL has consciously not exposed Nigerians to this aspect of engineering since most of these engineering works are done in Seoul, South Korea and the office for procurement of major materials is based in London, UK and this has definitely impacted negatively to the policy since Nigerians are not being trained in the engineering and procurement aspects.

A reason for this is partly because of the absence of infrastructure, which will make it a lot easier and cheaper for DNL to set up training facilities within the country and some of these projects requirements don't include the training of Nigerians abroad.

#### **2.4.2.2 Second Case Study**

Chevron Nigeria Limited (CNL), a subsidiary of Chevron corporation based in the United States Of America will also be used as a case study to show what has been done on local content policy so far. CNL is one of the major oil and gas companies operating in Nigeria and have been involved in local capacity building since the inception of the local content policy. Indigenous companies like Relentech, Filco, Drillog, Petro Dynamics, Hexagon Petrol Services, Weafri and

Sowsco have benefited from Chevron Nigeria joint venture contracts in drilling and other related activities. (Center for Energy Economics, 2001 [www.beg.utexas.edu](http://www.beg.utexas.edu))

CNL has been investing heavily in oil and gas projects in the country in the last few years some of these projects include Agbami deep water (FPSO), EGTL (Escravos Gas To Liquids) Project, OK (Olokola) LNG and in these projects a lot of emphasis has also been laid on human capacity building, Nigerians have been trained for oil production operations, over 200 Nigerians are also being trained in South Africa for the EGTL project, the OK LNG is still in the design stages.

The Agbami deep water FPSO was described as a local content promoter in the Nigerian Guardian Newspaper 4<sup>th</sup> August, 2008. The offloading buoy was fabricated by Nigerdock Nigeria Plc in Lagos, while part of the topsides by Daewoo Nigeria Limited in Warri, and the suction piles and some manifolds by Grinakers-LTA Nigeria in Port Harcourt. A group of Nigerians were also trained in South Korea in the operations of the Agbami FPSO.

CNL has also been training an average of a hundred Nigerians for its new operations in the industry since 2006, the service providers are also encouraged to employ and train Nigerians in various aspects of their operations.

The basic technical training of Nigerians in CNL's operations is a good scheme, the goal should be to develop these individuals further to more technically challenging aspects such as FEED ,detailed engineering designs and technical and resource management. This will result to transfer of technology and a more holistic view of the operations in the industry.

#### **2.4.2.3 Third Case Study**

Mobil producing Nigeria Unlimited (MPN) a subsidiary of Exxon Mobil Corporation based in the United States of America has also been trying to contribute its own quota in the local content policy, MPN recently completed a gas to liquid plant Known as East Area Natural Gas-to- Liquid project (NGL II) in bonny island 17 miles from Port Harcourt, Rivers State.

The project was completed at the cost of \$ 1.3 billion dollars out of which Nigerian financial institutions provided \$220 million dollars as its own local component for the project implementation. (Nigerian Guardian Newspaper July 30<sup>th</sup>, 2008- [www.ngrguardiannews.com](http://www.ngrguardiannews.com))

In the course of executing the project, MPN employed local oil servicing firms in fabrication, logistics support as well as other services. The participating companies were also involved in construction of the Bonny River Terminal expansion, installation of pipelines and fabrication of components for the offshore complex. MPN also trained and developed local employees and

contractors in line with local content policy of the Federal Government. (Nigerian Guardian Newspaper July 30<sup>th</sup>, 2008- [www.ngrguardiannews.com](http://www.ngrguardiannews.com))

MPN established a technical training center in one of its main areas of operations, this basically is used to train low level manpower in various disciplines to fill out vacancies in their operations in the country. This is similar to CNL's method of developing human capacity in the industry.

All these case studies basically show to what extent some of these oil and gas companies have been operating as far as local content is concerned, it is a start but emphasis should be also on development of the individual to the next level and not just limited to a particular area of operations and maintenance, there should be the involvement of institutions with the multinational companies so that the school curriculum will be adapted to suit the needs of the industry. Research and development is the core of every company's success, R & D collaboration with institutions is important for further capacity development. In fairness to the multinational companies their activities have also been restricted by the poor infrastructure and poor investment climate, these are areas where the government should urgently address so as to encourage industrial growth.

## **2.5 Case Study: Canadian Local Content Requirements**

### **2.5.1 Background**

Canada is an industrialized country with a significant oil and gas production. Oil and gas exploration activities mainly occur in the provinces of Alberta, Newfoundland and Nova Scotia though attention is shifting to Newfoundland and Nova Scotia because of the declining reserves in the province of Alberta.

Canada has proven oil reserves of: (Center for Energy Economics, 2001-[www.beg.utexas.edu](http://www.beg.utexas.edu)).

- 4.4 billion barrels, as of January 2002.
- Oil production average of 2.8 million barrels per day (b/d) on 2001
- 60 trillion cubic feet (Tcf) of proven natural gas reserves

Canada currently produces about 6.3 Tcf (trillion cubic feet) of natural gas per year, making it the world's third largest gas producer (after the United States and Russia) and second largest gas exporter (after Russia). (Center for Energy Economics, 2001- [www.beg.utexas.edu](http://www.beg.utexas.edu)).

An offshore accord was negotiated between the Government of Canada and the Governments of Nova Scotia and Newfoundland and Labrador and this accord necessitated the setting up of offshore boards in the relevant provinces.

In the provinces of Newfoundland and Nova Scotia, a joint federal and provincial board was set up in each of the provinces with the responsibility of ensuring that companies operating in the area submit documentation with information about

benefits for the provinces as regards employment, training and purchase of goods or services.

These boards namely Canada-Nova Scotia Offshore Petroleum Board (CNSOPB) and Canada-Newfoundland Offshore Petroleum Board (CNOPB) for the provinces of Nova Scotia and Newfoundland respectively continuously try to develop plans to increase local content requirements.

### **2.5.2 Newfoundland Local Content Requirements**

"CNOPB is responsible for the implementation of Section 45 of the Atlantic Accord Implementation Acts in the Newfoundland province; which states that before any work or activity is authorized in the offshore area, a Canada-Newfoundland benefits plan must be approved by the Board.

This generally refers to a document depicting a plan for the employment of Canadians which includes members of the labour force, manufacturers, consultants, contractors, and service companies in the province and other parts of Canada. The plan should also show ways of granting a fair opportunity for Canadians to participate on a competitive basis in the supply of goods and services. However, the Board cannot exceed its authority by forcing the operators to enter into contracts for goods or services which are not competitive.

The benefits plan must contain the following specific provisions:

Before carrying out any work or activity in the offshore area, the proponent shall establish an office in the province where appropriate levels of decision-making are to take place.

- Individuals resident in the province shall be given first consideration for training and employment.
- Expenditures shall be made for research and development to be carried out in the province and for education and training to be provided in the province.
- First consideration shall be given to services provided from within the province and to goods manufactured in the province, where those services and goods are competitive in terms of fair market price, quality and delivery". ([www.cnopb.nfnet.com](http://www.cnopb.nfnet.com))

The Newfoundland local content requirements are obviously good because the desired objectives are being achieved, Newfoundland has a low incidence of violent crime and a comfortable population density, a rich quality of life, supported by an economy that is leading Canada in economic growth. In Newfoundland, affordable housing is available, a safe and clean environment, a relaxing atmosphere, world-class health and educational facilities and unlimited career opportunities. (Quality of Life, Government of Newfoundland and Labrado, 2006- [www.nlbusiness.ca](http://www.nlbusiness.ca))

### **2.5.3 Nova Scotia Local Content Requirements**

"CNSOPB is responsible for the implementation of Section 45 of the Atlantic Accord Implementation Acts in the Nova Scotia province, a Canada - Nova Scotia Benefits Plan must be submitted and approved before any work authorization is granted. This is similar to the Newfoundland benefits plan in which first consideration is given to residents of Nova Scotia and companies in Nova Scotia.

A benefits plan must illustrate an assurance to provide manufacturers, consultants, contractors and service companies in Nova Scotia and other parts of Canada with a full and fair opportunity to participate on a competitive basis.

The plan must also indicate how the operator will provide training and employment of Canadians and in particular members of the labour force of Nova Scotia and a commitment to give first consideration to services provided from within Nova Scotia and goods manufactured in the province where those services and goods are competitive in terms of fair market price, quality and delivery.

An office is also established in the province with the appropriate level of decision making and the promotion of education, training, research and development in the province. Operators are also required to pay royalties to the provinces."

([www.cnsopb.ns.ca](http://www.cnsopb.ns.ca))

In summary the benefits plan submitted by the potential operators in the oil and gas Industry shall address the following statutory requirements in the provinces

and confirm the operator's commitments as to fulfill the following: (Center for Energy Economics 2001, [www.beg.utexas.edu](http://www.beg.utexas.edu)).

**Opportunity:** To provide a full and fair opportunity to manufacturers, consultants, contractors and service companies in the province and other parts of Canada to participate on a competitive basis in supply of goods and services used in the industry.

**Employment:** "To provide employment of Canadians, and, in particular, members of the labour force of the Province, to give individuals resident in the Province first consideration for training and employment and to provide for disadvantaged individuals or groups access to training and employment opportunities and participation in the supply of goods and services used in the industry" ([www.cnsopb.ns.ca](http://www.cnsopb.ns.ca))

**Procurement:** First consideration is given to services provided from within the Province and to goods manufactured in the Province where those services and goods are competitive in terms of fair market price, quality and delivery" ([www.cnsopb.ns.ca](http://www.cnsopb.ns.ca))

**Education & Training; Research & Development:** "Promotion of education, training and research and development in the Province in relation to petroleum resources activities in the offshore area". ([www.cnsopb.ns.ca](http://www.cnsopb.ns.ca))

**Establishment of Office:** An office shall be established in the Province where appropriate levels of decision making are to take place.

Nova Scotia and Newfoundland are highly industrialized areas with a flourishing economy and a high quality of life such as affordable housing, clean environment with a low crime rate, first-rate health and educational amenities and limitless career opportunities. Canadian local content requirements have contributed largely to the development of these provinces.

Nova Scotia local content requirements are quite similar to Newfoundland's

"The government of Nova Scotia created a Department of Energy on June 2002 to serve as focal point in the development of the province's energy resources, as outlined in the Energy Strategy. The department is a consolidation of the Nova Scotia Petroleum Directorate and the energy-related activities of the Nova Scotia Department of Natural Resources". (Nova Scotia Energy, 2006-[ns.energyresearch.ca](http://ns.energyresearch.ca))

The Nova Scotia Department of Energy helps to ensure the accountable management of Nova Scotia's petroleum resources while maximizing the gains such as industrial, financial, economic, and employment benefits in exploiting

these resources. The department works with other stakeholders to make the most of the opportunities to build an outstanding energy sector in Nova Scotia.

The main priorities of the department are to promote investment in the energy-sector, provide opportunities for local companies to meet possible joint venture partners and participate in investment tasks overseas.

The department's goal is also to increase business opportunities for local suppliers of goods and services, and identify possible areas of skill shortages so as to develop tactical approaches and embark on partnerships in training schemes and initiatives.

The situation in Nigeria is different from the Canadian –Newfoundland /Nova Scotia situation, in various ways, such as, the Canadian benefits policy is structured in a way to give a fair opportunity to Canadians to participate competitively in the supply of goods and services whereas the Nigerian benefits plan, are directives given by government to the multinational companies to ensure that local companies participate in the supply of goods and services. Standard infrastructure notably efficient and steady power is available, good roads network, world class health and educational facilities are also available. In Nigeria, the infrastructure is very poor, these include epileptic power, poor road network, poor health and educational facilities. Furthermore, in Canada, there is a proper investment climate like a clean and safe environment , relaxing atmosphere e.t.c but it is different in Nigeria, the atmosphere is not safe or

relaxing especially for investors and this is highlighted by the recent kidnappings of foreigners in the Niger Delta region.

The Nigerian content policy does not mention research and development but this is stipulated in the Canadian- Newfoundland & Nova Scotia local content requirements.

## **2.6 Case Study: Korean Science, Technology & Innovation**

### **Policy (STI)**

#### **2.6.1 Background**

The essence of the Korean STI policy was to create an enabling atmosphere to achieve technological breakthrough which will promote global industrial competitiveness and economic growth for the Korean economy. The initiative behind the policy was to increase the quality of life and sustainable development. A Science, Technology, and innovation Office is an organization that was set up by government with the responsibilities to execute the coordination of innovation administration policy such as science and technology policy, related industry, manpower / region and in addition to coordinate policies on national R&D programs.

The Korean Innovation policy was introduced in the late 1970s, it primarily took the outline of an Industrial Innovation Policy that combined Science &

Technology policy and industrial policy, "where science policy is the policy that places importance on the appropriate distribution and efficient utilization of resources on science, as well as contribution that science makes on socio-economic welfare while the technology policy is a policy that focuses on particular technology or industrial area".(Lee, Hwang, Baeg, Oh, 2008)

The innovation policy framework has since evolved over time since its inception, these changes are due to changes in understanding of the process, role, technology e.t.c and these changes encompass technological, non technological, economical and social changes.

These innovation policy framework changes are broken into the first generation, second generation and third generation innovation policy.

**First Generation Innovation Policy:** the framework of this policy was introduced in the in the late 1970s and was in place until the 1990s, it was seen to be a linear process and its focus was placed on acceleration of scientific technological progress through fundamental research as well as the enhancement of flow of knowledge in accordance with innovation chain. The policy was implemented in the form of an industrial policy that combined science & technology with industrial policy. (Lee, et al. 2008)

**Second Generation Innovation Policy:** this policy framework was introduced in the 1990s to early 2000 and it measured the innovation process as feedback

loop between the innovation phases and emphasized complex interactive processes in the innovation system. It places the “focus of technology innovation on economic performance of the nation, expands the object of policy to all economic and social areas that influence and is being influenced by innovation”. (Lee, et al. 2008)

This framework is based on the National innovation system (NIS) and “its focal point lies on system and underlying structure that supports innovation, research, commercialization and technological application” (Lee, et al. 2008)

**Third Generation Innovation Policy:** This policy evolved from the second generation innovation policy and it started from early part of 2000 and is still in place till date. Its framework defines the innovation process as interactive processes between diverse range of policy domains related to innovation.

“This framework aims to overcome the limitations of the framework of the Second Generation innovation policy and is referred to as the 'holistic innovation policy' in that innovation is being seen as the core of all policy domains at government level” (Lee, et al. 2008)

“This framework places focal point of the policy on governance and government capacity to handle decision Making process, integration, coordination and coherence of policies, and aligns the goal of innovation policy on improvement of quality of life including economic growth, establishment of strategy for long-term

socio-economic progress including sustainable development as well as institutional arrangements that can realize such goals". (Lee, et al. 2008)

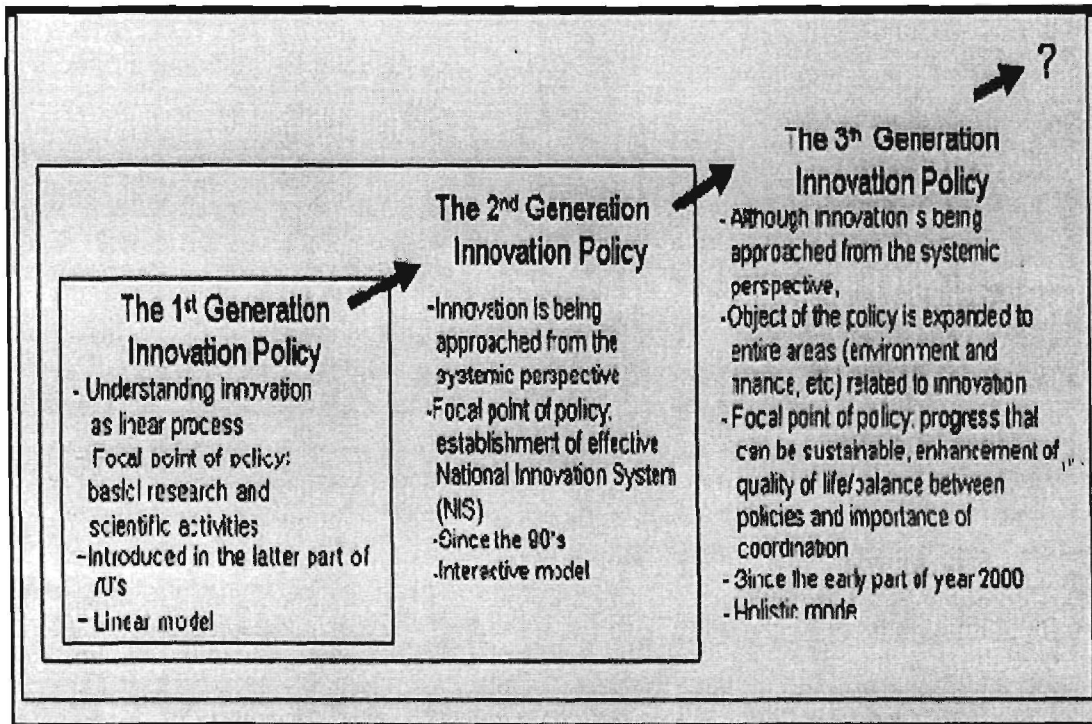


Fig 2.1 Evolutionary process of innovation policy (Lee, et al. 2008)

The third generation innovation policy framework includes horizontalization, policy coherence and establishment of new governance.

**"Horizontalization (trans-departmentalization):** refers to the policy of inducing coordination and cooperation amongst diverse range of policy domains in order to accomplish better innovation results. i.e., it refers to the level and degree of being systematically pursued in trans-departmental domain, rather than being pursued as policy at departmental level." (Lee, et al. 2008)

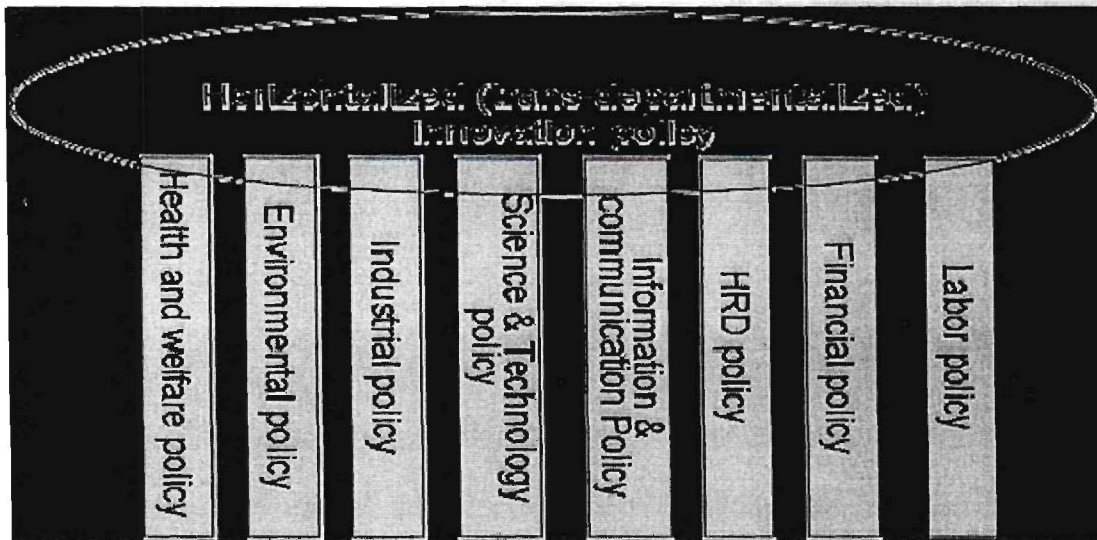


Fig 2.2 Concept of Horizontalized (trans-departmentalized) innovation policy (Lee, et al. 2008)

**“Policy coherence:** signifies interface between government departments and policies that imparts influence on state of coherent harmonization of each policy and policy means to enable accomplishment of performance of innovation policy.” (Lee, et al. 2008)

**“Establishment of new governance:** refers to "rules, processes and behavior that affect the way in which powers are exercised, particularly as regards openness, participation, accountability, effectiveness and coherence".” (Lee, et al. 2008)

### **2.6.2 R & D Evaluation**

Science and technology is imperative for industrial advancement of any country and globally there's been intense competition for science and technology amongst industrialized nations and R & D has been identified as the major factor in encouraging national competitiveness.

The Korean government is continuously investing heavily in R & D and as at 2007 has spent USD 10 billion, this has resulted in the need for proper management of these funds to ensure efficient and effective performance. An act on "Performance Evaluation and Management for National R & D programs" was established in 2005 by the Korean government and "A Basic Plan for the Management and Utilization of R&D performance" was established in 2006 and is being enforced by the ministry of science & technology (MOST). (Kim, Lee, Choi, Kim, Lee, Choi, 2008)

The importance of R & D cannot be over emphasized and equally important is an effective, transparent monitoring and evaluation system that will ensure that the R & D objectives are met.

"An effective performance monitoring and management system should be structured to bolster the domestic industrial technology innovation capabilities through the maximization of the utilization of industrial technology R&D performance" (Kim, et al. 2008)

A model of a performance monitoring and management system is shown below

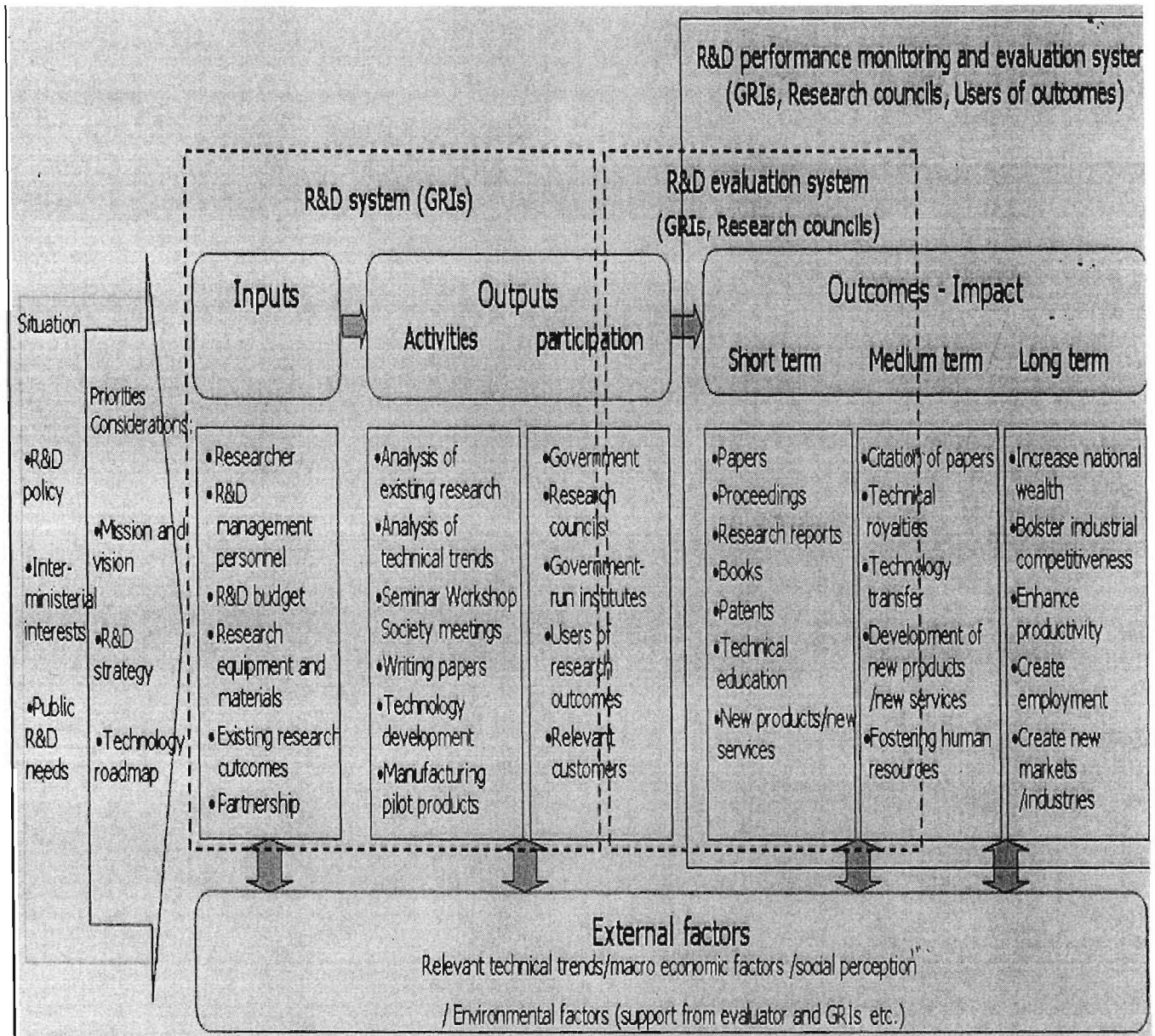


Fig 2.3 Targets and Scope of Monitoring, Evaluation and Management Model (Kim, et al. 2008)

“This system involves users of outcomes in the group of participants, thereby emphasizing the utilization aspect of research results as mid- and long-term outcomes. The system monitors the utilization of these outcomes, inputs this

information into the evaluation and management system, and enhances the utilization of outcomes by considering users of outcomes in advance from research institutes' R&D stage; if necessary, the system considers institutional support for utilizing outcomes and monitoring such utilization". (Kim, et al. 2008)

The Korean policy has been effective because the STI policy framework has continuously been modified to address the current needs of the nation, this is exemplified by the different generations of the policy, and the Koreans have also taken into consideration the importance of monitoring R & D which is also a part of the STI policy to determine if the desired needs are being met.

The evaluation and monitoring model is designed to extract performance monitoring, target to be evaluated and guidelines on execution of any R & D proposal.

## **2.7 Conclusion**

Many countries have some form of local content policy and all with the same overall objectives of attracting foreign direct investments, job creation, human capacity development, technology transfer and adding value to the economy.

The differences between the successes of the countries reported in this chapter and Nigeria include; poor infrastructure in Nigeria which cannot support industrial growth, poor investors' climate which includes security and clean environment.

Identifying the causes for the poor implementation of the Nigerian local content policy is important and the challenges will be taken into consideration while developing a framework for a more effective implementation. This will be discussed in the next chapter.

## **CHAPTER THREE**

### **3. Proposed Framework**

#### **Overview**

This chapter addresses the development of a proposed framework to promote the effective implementation of the Nigerian content policy. This framework will encompass factors that are generally necessary for industrial growth and factors that specifically affect human capacity development in industry.

#### **3.1 Framework Development**

A framework to promote the effective implementation of the Nigerian content policy will be developed. This framework will be divided into two major components known as the primary and secondary framework.

The primary framework will address issues that encourage foreign direct investments while the secondary framework will address the more specific issues that relate to human capacity building in industry.

### 3.1.1 Primary Framework Outline

The primary framework will deal with factors that encourage foreign direct investments (FDI) in an economy, this is basically capital inflow. FDI can be defined as the transfer of a package of resources including capital technology, management and marketing expertise (Ejiofor, 2002). These factors significantly increase the prospects of foreign investments. The factors include the following:

- Infrastructural Development
- Political Stability
- Social Economic factors (Good Investment Climate, Education, Transparency, e.t.c)
- Projects Financing

$$FDI = f(I, P, S, PF)$$

Where;

- FDI = foreign direct investment,
- I = infrastructural development
- P = political stability,
- S = social economic factors
- PF = project financing

### **3.1.2 Secondary Framework Outline**

The secondary framework will deal with developing a framework that will encourage local participation directly in the Nigerian oil and gas industry. The outline includes the following:

- Legal Policy
- Licensing System
- Resource Management
- Research & Development
- Fiscal Policy
- Environmental Policy

### **3.2 Primary Framework Development**

**Infrastructural Development:** "Infrastructure is the basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions including schools, post offices, and prisons" (thefreedictionary.com)

The development of proper infrastructure is definitely necessary to facilitate economic growth and thus should be a starting point in Nigeria.

**Political Stability:** this is important because a politically stable country creates a good investment climate for the flow of FDI in both the economy. The works of "Chete in 1998 states that specification of the determinants of FDI in Nigeria

produces findings that political stability is an important determinant of the inflow of capital in Nigeria” (Ejiofor, 2002). A politically stable country will ensure continuity of government policies, abiding by contractual obligations by the government, respect for the rule of law and this will in turn create investors’ confidence in investing in that economy.

**Project Financing:** Financial institutions in the country should be able to provide proper and adequate financing for large scale projects; this enables the host country to keep most of the funds for these projects in their economy.

**Social Economic Factors:** “The components of socio-economic factors such as education, health, safety of lives and property, discipline amongst the populace, transparency, probity and cost effectiveness. Nigeria needs to minimize the adverse effects of negative socio-economic factors in order to attract foreign investments” (Ejiofor, 2002)

### **3.3 Secondary Framework Development**

**Legal Policy:** Acts, provisions and regulations are enacted by the government to provide a legal basis for the regulation of activities in the oil and gas industry. This legal policy also encompasses taxation of the business by government.

**Licensing System:** Regulations are put in place by the government to guide the process of issuing oil prospecting licenses. Government should ensure that

- Discretionary licensing award system should be used during the bidding for oil licenses.
- Award of oil licenses should be paid for by investing in human capacity development.
- Tax incentives to encourage local content development.
- Penalties for default in participating in local content development.

**Resource Management:** This should address the effective management and deployment of resources that accrue from the sale of the oil and gas products. The resources should be put in use in a way such that, the people will still benefit even after oil and gas has been depleted.

The following should be incorporated in the resources management policy

- Deductions of a certain percentage from excess crude oil sales to be used to set up a special fund for future generations.
- Development of an effective and competitive indigenous firm in the oil and gas industry.
- Development of other economic sectors.

**R & D:** This is essential for human capacity development; R & D should be domiciled in-country by the industry operators. R & D collaboration with the local

institutions of higher learning should be encouraged with funding provided by the industry operators. This R & D cooperation with local institutions will ensure high standards of education in the country and industrial growth.

**Fiscal Policy:** This is the discretionary spending of government and this is very important to industry operators because the oil and gas industry development is a capital intensive venture and any government investment to aid this sector development and exploitation is always necessary. Hence, good fiscal policies to promote the development of the oil and gas industry should be pursued by government.

**Environmental Policy:** A good environmental policy ensures sustainability of the industry, a standard Health, safety and environmental policy should be developed. Proper regard and care of the environment is a responsible function because it ensures sustenance of the industry and the environment for future generations. This is necessary even before the start of operations in any of the oil fields. This policy should encompass laws on penalties for gas flaring and proper tax regime for any cubic feet of gas flared.

In summary, the proposed framework will promote factors necessary for economic and industrial growth which will in turn promote a more effective implementation of the Nigerian content policy.

A case study using the Norwegian local content model will be used to validate the proposed framework.

# CHAPTER FOUR

## 4. Empirical Investigation

### Overview

This chapter presents the empirical investigation carried out and the findings obtained. A background of the Norwegian local content experience will be detailed and a comparative analysis tool will be used to test the proposed framework against the Norwegian local content model.

### 4.1 Norwegian local content experience

#### 4.1.1 Background

"A consistent Norwegian policy for over 30 years has been to diversify from income generated from petroleum in order to reduce dependence on petroleum revenues and the ensuing risk exposure to oil and natural gas price instability."

(Noreng, 2004)

"Exploration for oil and gas offshore Norway started in the mid-1960s, and the first field came on-stream in 1971. For the last 20 years Norway has been a major producer of oil and gas on the world scene. Oil production stayed at roughly 3.0 million barrels per day in the first years of the new century.

However, oil production has peaked and was 2.8 million barrels a day in 2006, while natural gas production is increasing" (Heum, 2008).

Initially, when oil and gas exploration started, Norway lacked the specific industrial capabilities and competence to operate the business on its own; hence it was run by international oil companies and their home grown supply chains. "The rationale behind diversifying income from petroleum activities was that the petroleum industry operated on public land, and was extracting resources-in-the-ground that were in public ownership. therefore, lifting oil and gas means depleting a public capital base, for which compensation should be found in the developing of other assets so as to secure a continuity of income". (Noreng, 2004)

Norway practices discretionary licensing, awarding licenses through bargaining with oil companies over multiple objectives i.e. the government-landowner can demand more than money, depending on the situation and bargaining power. The practical solution was to develop a local supply of some competitive goods and services required by the petroleum industry and not to demand an indiscriminate use of local suppliers. (Noreng, 2004)

"Norway's has been quite successful in achieving high local content which was largely due to **government policies**, which encouraged partnerships between

foreign and domestic companies, and made **research programs mandatory**. These ensured that technology developed in Norway would be among the best of its kind. Since 1970, successive governments have regarded it as essential to promote competition in the oil industry, while at the same time actively promoting the business opportunities for Norwegian industry".(Noreng, 2004)

The oil industry generates substantial income for the Norwegian economy through its demand for goods and services; the petroleum business has been developed to an extent where it is a major factor in developing other sectors of the Norwegian economy.

## **4.2 Norwegian Local Content Model**

### **4.2.1 Vision**

The vision of the Norwegian government was not just to be a major player in the oil industry but also to develop human capacity, develop a local supply of competitive goods and services necessary in the oil and gas industry and to increase its revenues from upstream activities in foreign petroleum provinces significantly in the years to come. "To put it clearly, it is only possible to generate industrial value added capacity that will benefit the society at large if the industrial competence is domestically based and internationally competitive. Thus, it is not sufficient for local industrial competence development that it is

domestically based. It must also (at some time) prove competitive in international markets" (Heum, 2008)

**INTSOK** - the Norwegian Oil and Gas Partners - was established in 1997 by the Norwegian oil and gas industry and the Norwegian Government for this purpose. INTSOK's objective is to work with companies throughout the industry to expand the business activities in the international oil and gas markets on the basis of the industry's leading edge experience, technology and expertise. ([www.intsok.no](http://www.intsok.no))

The aim of being a global player in the oil and gas industry is evident by the fact that today, Norway has a significant share of foreign sales. In 2005 the supply and service providers based in Norway had 46 per cent of their sales to companies operating petroleum activities in other parts of the world, than Norway. This share has increased from 29 per cent in 1995. (Heum, 2008).

"International operations are broadly based among the local supply and service providers. In 2005 almost seven out of ten Norwegian based supply and service providers had at least some sales abroad; in 1995 it was four out of ten.

In 1995 close to 60 per cent of the foreign sales of the Norwegian based supply and service providers was to the nearby UK sector. By 2005 the total value of foreign sales from these companies had more than tripled in current prices. Then the UK sector made up for roughly 20 per cent of these sales, and sales to the

petroleum regions of North America, South East Asia and West Africa were of almost the same magnitude." (Heum, 2008).

In summary, the building of the Norwegian petroleum industry was intended for the benefit of the whole Norwegian society with the long term goals of:

National Control of the industry

To create value added

Building and fostering a Norwegian oil community

To create employment

#### **4.2.2 Government Policies**

The Norwegian government recommended a new administrative system after studying international experiences which was approved by the Parliament in June 1972.

The new structure was based on the creation of different organizations with different functional responsibilities such as:

- A Ministry of Petroleum and Energy which was responsible for the policy-making, for award of licences and for ensuring that proposed field development plans met the Norwegian criteria.
- A Norwegian Petroleum Directorate which was responsible for technical control, regulatory and advisory functions.

- A national oil company Statoil which was founded to take care of commercial interests on behalf of the government.

The main principles of the petroleum policy include the following:

- "The right to, sub sea petroleum deposits is vested in the State.
- The petroleum deposits shall be administered for the benefit of the Norwegian society as a whole.
- Due regard for the environment and high HSE standards
- Effective government take
- Goal: Maximize value creation:
  - legal / licensing system
  - resource management
  - R&D and industrial development" (Nore, 2008)

The Norwegian government policy had a **concessionary system for handing out licences to oil companies** which was open to any qualified oil company both local and foreign. This negotiated concessionary system, through which oil companies are granted exclusive rights to Norway's oil and gas minerals is different from a pure financially based auction system, but still includes some aspects of bidding, for example, as to how the oil companies will go about enhancing local content. (Heum, 2008)

### 4.2.3 Petroleum Industry Development

The Norwegian government decided to develop the petroleum industry using what they called local content generators ([www.mep.dep.no](http://www.mep.dep.no)) these local content generators include:

- Building National oil companies
- Developing indigenous human capital
- Targeted R & D efforts
- Petroleum legislation
  - Landing of petroleum
  - Contracting & procurement

**Building of National Oil companies:** The founding of the Norwegian oil company, Statoil was an integral part of this task, as the building up of two other Norwegian based oil companies, Norsk Hydro (which used to be 51% state owned) and Saga (which was 100% privately owned). The IOCs were positioned in the role of technical assistants and joint teams were used to accelerate the Norwegian companies into fully-fledged operators because the agreement in Norway was that **operatorship** was considered necessary to learn the business and to be able to meet foreign IOCs as equals.

**Developing Indigenous human capital:** The oil prospecting license terms for the IOCs made it compulsory to transfer skills and competence to the Norwegian

companies. Employees from Statoil, Norsk Hydro and Saga participated initially in training courses and on-the-job training schemes organized by the IOCs in their overseas operations. The IOCs also recruited young Norwegian engineers and trained them in their overseas operations for a considerable period, before they were taken home to "**Norwegianise**" their organizations. (Noreng, 2004)

Norway's petroleum policy insisted on the transfer of technology and collaboration in research and development, this was one of the most successful aspects of the policy and with the aspiration to assume the leadership role in international petroleum development, the oil companies were compelled to transfer competence and to cooperate in the development of new technology. (Noreng, 2004)

"In 1973, the requirement to transfer competence and to cooperate in the development of new technology was introduced in the third licensing round and a practical result was that the international oil company Mobil, as the initial operator at the giant Statfjord field, systematically had to train Statoil to take over the task. In 1979, the fourth licensing round introduced provisions for technology development cooperation between foreign oil companies and Norwegian research institutions". (Noreng, 2008)

These cooperation agreements made the oil companies contribute funding, insight and expertise to develop technology in Norway.

these cooperation agreements were of three types namely:

**First type of cooperation agreement** was called "**50 % agreements**": it required operators to conduct at least 50 % of the research and development needed to develop a prospect in Norway at Norwegian institutions. (Alexander's Oil & Gas connection- [www.gasandoil.com](http://www.gasandoil.com))

**Second type of cooperation agreement:** it required operators to conduct a specified research effort in advance of new licensing. (Alexander's Oil & Gas connection- [www.gasandoil.com](http://www.gasandoil.com))

**Third type of cooperation agreement** involved "**goodwill agreements**" this required the oil companies to make an attempt to conduct as much petroleum related research and development as possible in Norway, without any advance commitment as to the sum or volume of the effort. The good will programs were initially based on discussion with the industry but it was later developed to support industry needs and priorities. (Alexander's Oil & Gas connection- [www.gasandoil.com](http://www.gasandoil.com))

### **Targeted R&D effort**

R & D being an important aspect of any industry development was taken very seriously by the Norwegian authorities, they encouraged the oil companies to enter into R&D projects with Norwegian universities and research institutions as part of the local content plan. This was granted by the oil companies because it was discussed during negotiations for the concessions. Furthermore, there was a

high tax on oil and gas extraction on the margin with 85% in the early 1980s, implying that most of the additional costs incurred by the oil firms in developing local content were really covered by the state as tax revenues and were reduced accordingly.

The Norwegian authorities always insisted that R & D and project bidding and execution should always take place in Norway and the ministry of industry made sure that a Norwegian bidder was awarded the contract if the bid submitted was competitive. These R&D programs meant that the Norwegian knowledge base with regard to offshore oil and gas was very wide and deep because of the inclusion of the universities and research institutes with emphasis on scientific research and not just developmental projects.

### **Petroleum legislation**

Legislation was put in place to act as frame work for the landing of products in Norway.

"Enforcement through the Petroleum Legislation:

Principles laid down in the Royal Decree of 1972:

- Article 34: Landing of petroleum

Gas:

Technology gap of pipe laying closed.

Decisions based on commercial considerations.

Gas could be brought ashore and processed to sales quality.

- Today: 98,5 % is exported".

Oil:

Offshore loading most economic and flexible.

Norwegian ship owners developed the business.

Pipelines later built to terminals on the coast.

Terminals created a domestic construction market" (ministry of petroleum and energy –[www.mpe.dep.no](http://www.mpe.dep.no))

- "Article 54: Norwegian Content:

MPE Goods & Services Office; "watch dog" for oil companies' contracting and procurement.

Ensure equal opportunity for Norwegian suppliers and fair treatment of Norwegian bidders.

- Plan for all tenders above 1 mill NOK (150.000 USD)
- Bidders list to be approved.
- Contract award: Inform of evaluation

The Ministry collated information on coming tenders, by-annually published to Norwegian suppliers." (Norwegian Ministry of petroleum & energy-  
[www.mpe.dep.no](http://www.mpe.dep.no))

The details above analyze the Norwegian LCM which will be used to test the validity of the proposed framework for the Nigerian situation. A comparative analysis tool will be used to carry out this test.

### **4.3 Comparative Analysis Tool**

Proposed Framework		Norwegian LCM	Remarks
<b>Primary Framework</b>	Infrastructural Development	"Norway was an industrialized economy before oil & gas was discovered" (Heum, 2008)	Taking Electric power generation as an example, Norway generated 108.9 billion kilowatthours of electricity. (www.eia.doe.gov)
	Political Stability	"Norway is a vibrant stable democracy. Violent political protests or incidents are rare. There have been no recent occasions of politically motivated attacks on foreign commercial projects or property in recent years". (www.state.gov, 2005)	"Governance structure and basic guidelines for governing the oil industry in Norway have also been important for industrial growth. Rapid and unpredictable policy shifts easily become detrimental to business development" (Heum, 2008)
	Social Economic Factors <ul style="list-style-type: none"> <li>• Good Investment Climate</li> </ul>	Norway has a flourishing economy with affordable housing, good healthcare and	These are factors that propagate foreign direct investments

		effective crime prevention units (www.norwaymi.com)	
	<ul style="list-style-type: none"> <li>High Educational Standards</li> </ul>	The level of education is very high and is compulsory for all Norwegians.	"Education in Norway: Years compulsory—10 and the literacy level is 100%" (www.state.gov)
	<ul style="list-style-type: none"> <li>Transparency</li> </ul>	Business is generally conducted in a transparent manner in Norway. (www.state.gov 2005)	"There is a strong tradition for not accepting corruption among civil servants and business people in Norway, this has enhanced separation of business and politics and assured the operation of business in an efficient way" (Heum, 2008)
	Projects Financing	Norway's GDP (2007) \$391 billion which is one of the	The financial sector is a very healthy one and thus will be

		highest in the world. (www.state.gov)	able to finance large scale projects
<b>Secondary Framework</b>	Legal Policy	Certain "Acts" concerning petroleum activities promulgated by the Norwegian government to provide basis the licensing system for petroleum regulation	The Norwegians set up laws and provisions that ensured that local firms are granted a fair opportunity to participate in petroleum development activities.
	Licensing System  i) Discretionary licensing award system.  ii) Tax incentives	The concessionary licensing system is used in the Norwegian petroleum industry and is strictly different from a purely financial auction system.  Extra costs incurred by enhancing local content were	There is still an element of bidding such as "how the prospective operator will enhance local content in the industry"

	<p>iii) Penalties for non-Participation in local Content enhancement</p>	<p>paid for by the government in the form of tax deductions</p> <p>Will not get an oil prospecting license.</p>	<p>Part of the concessionary oil prospecting license bidding process.</p>
	<p>Resource Management</p> <p>i) Setting up a fund for future generations.</p> <p>ii) Development of an efficient and competitive local firm.</p>	<p>i) The Norwegian government established a petroleum fund and its revenue is from the government net cash flow from petroleum activities.</p> <p>ii) State owned Statoilhydro was developed to be competitive with the IOCs while exploiting the petroleum resources.</p>	<p>Local oil companies were developed to compete with the IOCs so as to ensure the sustainability of local participation in the industry.</p>

	iii) Development of other economic sectors	iii) The Norwegian petroleum cluster was built up and it is made up of oil companies, research institutions, supply industries e.t.c	This petroleum cluster was developed to service the petroleum industry overseas. "In 2005, the supply and service providers based in Norway had 46% of their sales to companies operating in petroleum activities in other parts of the world than Norway" (Heum, 2008)
	Research & Development	The IOC's were encouraged to enter into R & D programs with Norwegian universities and research institutions. (Heum, 2008)	R & D programs helped to increase the Norwegian knowledge base in the offshore oil and gas industry. The Norwegians insisted on R & D being localized and were

			able to help leverage R & D while executing large projects.
	Fiscal Policy	Norwegian economic policy contributes to economic stability so as to avoid cyclical fluctuations.	This is one of the main guidelines of the fiscal policy.
	Environmental Policy	<p>All aspects of oil production are subject to an environmental impact assessment</p> <ul style="list-style-type: none"> <li>-Before exploration</li> <li>-During operation &amp; production</li> <li>-Decommissioning</li> </ul> <p>Gas flaring is prohibited except for safety concerns</p> <p>Incentives for gas emission reduction</p>	It is necessary to maintain the environment as much as possible to its original condition after exploration activities in the area.

## 4.4 Findings

### 4.4.1 Primary Framework

**Infrastructural Development:** This is listed in the proposed framework as essential to industrial and economic growth and comparing with the experience of Norway, it's absolutely necessary for industrialization. Norway was a highly industrialized economy before oil was discovered (Heum, 2008), meaning that that efficient and steady power, transportation, telecommunication infrastructure, public utilities and all other installations necessary for a society to function effectively were all in place. This definitely contributed to the suitable development of their petroleum industry.

**Political Stability:** is important for industrial growth, Norway has been a stable democracy for years and thus there is political stability and there are no incidents of recent politically motivated attack on foreign interests. This is also very important for industrial growth.

**Good Investment Climate:** this is also important because if the environment is peaceful and secure with proper and affordable housing and health care, it tends to attract people and when people are comfortable, they remain there and with time begin investing in the area so as to make a living. An example is the worldwide migration to the United States of America through their diversity visa program. Norway has a thriving economy with good housing and proper health

care, clean environment and an effective crime prevention unit, thus making it a place that attracts potential investors.

**Projects financing:** it is important to be able to finance large projects because it ensures a good percentage of the funds allotted to the project to be domiciled in the country which is good for cash circulation. Norway with its healthy economy has a very good financial sector and as such the financial institutions there can finance large scale projects.

**Transparency:** this is crucial to economic growth while corruption does not support any economic growth, it rather reduces confidence in both public and private institutions, in Norway, "There is a strong tradition for not accepting corruption among civil servants and business people in Norway, this has enhanced separation of business and politics and assured the operation of business in an efficient way" (Heum, 2008)

**High Educational Standards:** This is very important especially in developing human capacity, good standard of education ensures that the trainee is easily receptive to innovative methods of training and will take a much shorter duration to be trained for a particular function. "While developing the Norwegian industry, relative high level of education was one of the starting points" (Nore, 2008)

#### **4.4.2 Secondary Framework**

**Legal Policy:** laws and acts guiding regulation of petroleum activities are to be treated with seriousness and speed and must also be enforced. In Norway, policies were implemented to enable the local firms break into the IOCs supply chain. These policies were adopted to protect inexperienced local firms so that they could be granted a fair opportunity to participate; measures were also implemented to enhance the competitiveness of the local firms.

**Licensing System:** This is the procedure by which oil blocks are allocated to firms for development, the Norwegian method was the concessionary system and the bidding for it involved "the extent by which local content will be enhanced" while developing the block by the prospective company.

**Resource Management:** The effective management of resources is a major challenge, the Norwegians were able to effectively manage the income from the generated from petroleum industry by setting up a petroleum fund. "The fund acts as a buffer which provides greater flexibility in economic policy should oil prices or activity in the mainland economy decline, and serves as an instrument for dealing with the financial challenges presented by an ageing population and the prospect of declining oil and gas volumes" (Noreng, 2004)

**Research & Development:** It is important to domicile R & D and this is emphasized by the Norwegian experience, In 1979, technology development cooperation between foreign oil companies and Norwegian research institutions was introduced. "Cooperation agreements made the oil companies contribute funding, insight and expertise to develop technology in Norway" (Noreng, 2004)

**Fiscal Policy:** fiscal discipline is necessary for a strong and sustainable economy, the Norwegian fiscal policy contributes to the efficient use of resources in both their public and private sector. This was filed in a report by the economic team "Economic policy shall be sustainable over time to avoid the need for extensive policy shifts after a period as this may weaken the basis for welfare. Petroleum revenues are expected to decline at some stage, while expenditures on pension and health care will increase sharply. In order to address these challenges without substantial fiscal tightening in the future, a large share of the petroleum revenues must be transferred to the State Petroleum Fund" ([www.eu-norway.org](http://www.eu-norway.org))

**Environmental Policy:** this is significant in the production of oil and gas because of the negative effects that result from oil production such as gas flaring and oil spillage. Norway has a strict policy on environmental concerns and they are:

"All stages in the value chain subject to environmental impact assessment include

- Prior to opening of new areas for exploration
- Development and operations (PDOs/PIOs)
- Decommissioning

Gas flaring - not allowed unless for safety reasons

Incentives for reducing emissions and discharges to sea:

- Taxes
- R&D, Technology development" (Nore, 2008)

#### **4.5 Discussions**

It is evident from the findings of the analysis that for any country to achieve industrial growth, political stability, proper infrastructure and a good investment climate are some of the factors that must be in place.

The proposed framework to promote the effective implementation of the Nigerian content policy is similar to the very successful Norwegian experience, though Norway was industrialized before the discovery of oil and as such political stability and proper infrastructure already existed, thus, emphasis was then placed on developing their petroleum industry.

The present situation in Nigeria is very challenging as regards implementing the Nigerian content policy because there are not enough basic facilities to support industrial growth, though there is a young democracy in Nigeria, infrastructure is poor and there is still a lot to be done in creating a good investment climate in the country. When all the ingredients for industrial growth are in place then the Nigerian content policy can be successfully implemented to facilitate industrial growth.

The proposed framework will be used to analyze the Nigerian situation in the next chapter the essence is to highlight the areas of importance, focus on these neglected areas so as to achieve the goals set for the development of local content in the oil and gas industry.

## **Chapter Five**

### **5 Analysis of the Nigerian Situation**

#### **Overview**

This chapter demonstrates the analysis of the Nigerian situation with reference to the proposed framework using a comparative analysis tool and discussions thereafter.

#### **5.1 Comparative Analysis of Proposed Framework against The Nigerian situation**

<b>Proposed Framework</b>		<b>Nigerian LCM</b>	<b>Remarks</b>
<b>Primary Framework</b>	Infrastructural Development	The infrastructure in Nigerian cannot presently support industrial growth, some of the infrastructural challenges include, insufficient power supply, poor telecommunication network, poor public utilities, just to mention a few.	Taking Electric power generation as an example, electrical power generation in Nigeria as at 2007 was 1600 MW (mbendi, 2007). This is definitely insignificant in terms of supporting industrial growth.
	Political Stability	Nigeria has a young democracy since (May, 1999) and since then, there have been frequent attacks on foreigners and foreign interests in the Niger Delta in the last few years.	The Niger Delta hosts the oil and gas industry and most of the politically motivated attacks on foreign interests have been in that area. This

			is certainly detrimental to industrial growth
	Good Investment Climate	The investment climate is very poor in Nigeria, besides poor infrastructure, adequate housing is not affordable, improper health care and a poorly motivated crime fighting unit.	These challenges don't encourage foreign direct investments.
	Projects Financing	Nigeria's GDP (2007) \$132.2 billion (www.economist.com). The financial sector has been undergoing reforms to make the banking industry globally competitive.	The banking industry is slowly beginning to finance large projects in the country.
	Transparency	Nigeria has a legacy of widespread corruption and absence of transparency.	The Nigerian government is trying to tackle the issue of

		The 2005 Corruption Perception Index by Transparency International in 2005 showed that Nigeria still is perceived as one of the most corrupt in the world (future in our hands research institute)	corruption and have set up various commissions to investigate and prosecute corrupt persons.
<b>Secondary Framework</b>	High Educational Standards	The standard of education in Nigeria is not very high and is characterized by incessant industrial action by the academic unions.	The literacy level is about 15% of the population. (www.devdata.worldbank.org, 2007)
	Legal Policy	"Under the Petroleum Act 1969, the entire ownership and control of all oil and gas in place within any land in Nigeria, under its territorial waters and continental shelf is vested in the state of	The Local content policy bill was introduced in 2005 to encourage local participation in the oil & gas industry. It still has not been ratified into

		Nigeria" (Future in our Hands Institute, 2006)	law by the House of Assembly (Nigerian guardian newspaper, July 09, 2008- www.guardiannewsngr.com)
	Licensing System	Joint ventures (JV) and production sharing agreements (PSA) with international players (Transparency & local content, 2006 - www.afrika.no)	Signature bonuses are also paid in the course of bidding for oil prospecting licenses.
	Resource Management	There is no proper plan in place to manage the resources both human and material. The National oil company, NNPC is not an oil prospecting company and does not manage the oil and gas resources, rather joint ventures (JV) and	This system does not ensure sustainability of local participation in the industry. There are no plans developed to address the needs of the country when oil and gas is

		production sharing agreements are formed with the multinational oil firms.	finally depleted.
	Research & Development	There is no R & D collaboration between the multinational oil companies operating in Nigeria and the universities and other institutions of higher learning.	R & D programs help to increase the knowledge base in the oil and gas industry and the government has not deemed it fit to encourage partnership between the companies and the institutions.
	Fiscal Policy	The government is currently focused on investing heavily in infrastructure, education and health with the objective of improving the lives of the people.	

		(www.cenbank.org, 2007)	
	Environmental Policy	<p>"A recent environmental evaluation review conducted by the Centre for Social and Corporate responsibility in Nigeria (Emmanuel, 2004) indicates the following: That about 300 spills occur annually in the Niger Delta Less than 50% of these spills are cleaned up Less than 25% of affected environments is remediated." (future in our hands research institute, 2006)</p>	

## 5.2 Findings

### 5.2.1 Primary Framework

**Infrastructural Development:** Inefficient and unsteady power, poor transportation and telecommunication infrastructure and non-existent public utilities are major challenges facing Nigeria.

**Political Stability:** is important for industrial growth, Nigeria has a young democracy and recently there have been politically motivated attacks on foreign interests.

**Good Investment Climate:** Insecurity, improper care of the environment and poor health care are social challenges facing Nigeria.

**Projects financing:** The recent reforms in the Nigerian banking industry have put the financial institutions in a good position to finance large projects in the country.

**Transparency:** Nigeria is a highly corrupted nation, thus government has decided to tackle this because it negates economic growth. Two commissions were set up by government to address corruption in both the government and private sector.

**High Educational Standards:** The educational standard is presently very poor and there is frequent industrial action carried out by the academic unions.

### **5.2.2 Secondary Framework**

**Legal Policy:** Policies concerning petroleum activities are to be treated with seriousness and speed which is not the case in Nigeria, an example is the local content policy bill introduced in 2005 has still not been ratified by law. (www.guardiannewsngr.com, july 2008)

**Licensing System:** Production sharing agreements, signature bonuses are in use in Nigeria.

**Resource Management:** There is no proper resource management strategy in place.

**Research & Development:** there is no R & D strategy in place.

**Fiscal Policy:** The government is focusing on investments in infrastructure so as to create a better quality of life for the people.

**Environmental Policy:** "There have been huge losses of arable land to oil spills from petroleum activity, and loss of livelihood security occasioned by oil-related

environmental devastation. The latter have become more frequent in oil producing areas such as Brass in Bayelsa state and Bonny in Rivers State in the past decade." (future in our hands research institute, 2006). There should be a more effective environmental policy to the issues of oil spillages and gas flaring.

### **5.3 Discussions**

To begin to aim towards achieving the goals of the local content policy, there are many challenges to address. Top on the list is infrastructure and the fact that power generation in Nigerian is about 1600MW, it shows clearly that appropriate power needs to be generated so as to support industrial growth. Telecommunication and all other public utility infrastructure will need to be subsequently developed, a good investment climate should be encouraged and transparency in both the government and private sector should be pursued in order to create investor confidence. The banking sector is undergoing reforms which will eventually ensure the capability of projects financing, the educational sector still face the challenge of frequent industrial action.

The factors illustrated in the primary framework must be addressed effectively before implementing the factors stated in the secondary framework so as to ensure the goals of the local content policy.

Further inferences will be made in the next chapter and recommendations will also be discussed.

# Chapter Six

## 6 Conclusions and Recommendations

### Overview

This chapter will accentuate conclusions resulting from this research and the recommendations made.

### 6.1 Conclusions

This research has revolved around the current situation concerning the improper implementation of the Nigerian local content policy, the reasons and challenges.

This research underlines the concerns of the ineffective implementation of the Nigerian content policy and emphasizes the fact that if the current trend is not amended then it would be extremely difficult for the government to achieve the set target of 70 % implementation by 2010.

Furthermore, based on the findings of this research, it would be highly unlikely if this target will be achieved unless the proposed framework developed in this research is fully adopted, to achieve industrial growth this challenge must be handled holistically which is what the proposed framework covers.

## **6.2 Recommendations**

The proposed framework should be fully adopted by the Nigerian government so as to promote proper and effective implementation of the Nigerian content policy which will aid in achieving industrial growth.

A steering committee comprising of government officials and captains of industries in the private sector should be set up by the government with the responsibility of ensuring proper adoption and execution of the proposed framework which will be the basis for the effective implementation of the Nigerian content policy, thereby leading to industrial growth.

## **Appendices**

Appendix 1: Federal government directives on implementation of the Nigerian  
content policy.

## **Appendix 1**

### **Nigerian Content Development Short Term Directives**

- 1)** FEED (front end engineering design) and detailed engineering design for all projects are to be domiciled in Nigeria.
- 2)** Project management teams and procurement centers for all projects in the Nigerian oil & gas industry must be located in Nigeria.
- 3)** Henceforth, all operators and project promoters must forecast procurement items required for operations and projects for inclusion in a master procurement plan (MPP) to be submitted to the Nigerian content division on or before 31st January of every year.
- 4)** Fabrication and integration of all fixed (offshore and onshore) platforms weighing up to 10,000 tons are to be fabricated in Nigeria. Feater than 10,000 tons, all items in directive 5, pressure vessels and integration of the topside modules are to be carried out in Nigeria.
- 5)** Henceforth, fabrication of all piles, decks, anchors, buoys, jackets, pipe racks, bridges, flare booms and storage tanks including all galvanizing works for LNG and process plants are to be done in Nigeria.
- 6)** Henceforth, all flow lines and risers must be fixed and must be fabricated in Nigeria except for special cases to be demonstrated and approved by Nigerian content Division (NCD).

- 7)** Henceforth, assembling, testing and commissioning of all subsea valves, Christmas tress, wellheads and system integration tests are to be carried out in Nigeria.
- 8)** All FPSO contract packages are to be bid on the basis of carrying out topside integration in Nigeria. A minimum of 50% of the total tonnage of FPSO topside modules must be fabricated in Nigeria.
- 9)** All third party services relating to fabrication and construction including but Not limited to (NDT. Mechanical tests, PWHT) as well as certification of Welding procedures and welders must be carried out in Nigeria. Nigerian institute of welding must certify all such tests in collaboration with international accreditation bodies.
- 10)** All operators and project promoters must ensure that recommendations for contract awards in respect of all major projects being forwarded to NNPC/ constituted boards of such oil & gas companies for approval must include evidence of binding agreement by the main contractor with Nigerian content subcontractor(s). Such agreements shall indicate the cost and detailed scope including total man-hours for engineering, tonnage of fabrication and relevant defining parameters for materials to be procured locally as well as other services.
- 11)** Henceforth all low voltage earthing cables of 450 / 750V grade and control, power, lighting cables of 600 /1000V must be purchased from Nigerian cable manufacturers.

- 12)** Henceforth, all line pipes, sacrificial anodes, electrical switchgear paints, ropes, pigs, heat exchangers and any other locally manufactured material and equipment must be sourced from in country manufacturers.
- 13)** All carbon steel pressure vessels shall be fabricated in Nigeria.
- 14)** All seismic data acquisition projects, all seismic data processing projects, all reservoir management studies and all data management and storage services are to be located in Nigeria.
- 15)** Henceforth, all waste management, onshore and swamp integrated completions, onshore and swamp well simulations, onshore fluid and mud solids control, onshore measurement while drilling (MWD), logging while drilling (LWD) and directional drilling activities are to be performed by indigenous companies or indigenous companies having genuine alliances with multinational companies.
- 16)** Henceforth, coating of all line pipes and threading of all oil country tubular goods (OCTG) are to be carried out in Nigeria.
- 17)** Henceforth, all concrete barges and concrete floating platforms are to be Fabricated in-country.
- 18)** Henceforth, operation and maintenance of offshore production units, FPSO and FSO in particular are to be performed by Nigerian companies.
- 19)** All international codes and standards used in the industry are to be harmonized to support utilization of locally manufactured products such as paints, cables, steel pipes, rods, sections, ropes etc and to improve capacity

utilization in local industries. Clauses that create impediments for / exclude participation of local companies should not be included in any ITT (Invitation To Tender).

- 20)** Operators and project promoters must ensure that recommendations for Contract award for all drilling contracts shall include a binding agreement at technical evaluation stage for the sourcing of Barite and Bentonite from local manufacturers.
- 21)** Henceforth, all projects and operations in the oil & gas industry must demonstrate strict compliance with provisions in the insurance act 2003 and submit a certificate of compliance issued by NAICOM (national insurance commission) to NCD as part technical evaluation requirements for insurance or reinsurance contracts. In this respects, NAICOM verified gross underwriting capacity of Nigerian Registered insurance companies must be fully utilized to maximize Nigerian content before ceding risk offshore.
- 22)** Henceforth, all projects and operations in the oil & gas industry must Demonstrate strict compliance with provisions of the cabotage act.
- 23)** All operators and service providers must make provisions for the targeted Training and understudy programs to maximize utilization of Nigerian Personnel in all areas of their operations. All operators must therefore Submit detailed training plans for each project and their operations.

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