



**THE NORWEGIAN PEOPLE'S AID**

**PETROLEUM EXPLORATION  
STUDY**

**A BASELINE SURVEY REPORT**

Submitted by:



**Economic and Social Research Foundation**  
51 Uporoto Street (Off. Ali Hassan Mwinyi Rd.) Ursino Estate  
P.O.Box 31226 Dar es Salaam  
Tel +255 22 2760260, Fax +255 22 2760062

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## TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	VIII
1.0. INTRODUCTION .....	VIII
1.1 BACKGROUND AND OBJECTIVE .....	VIII
1.2 RESEARCH TEAM AND COMPOSITION .....	VIII
1.3 METHODOLOGY, APPROACH AND WORK PLAN OF THE STUDY .....	VIII
2.0 MAJOR FINDINGS .....	X
2.1 <i>Social, Economic and Political Reforms</i> .....	<i>x</i>
2.2 <i>Increasing Petroleum Exploration and Development Activities</i> .....	<i>x</i>
2.3 <i>Constraints, Risks and Challenges</i> .....	<i>x</i>
2.4 <i>Policy Framework</i> .....	<i>xi</i>
2.5 <i>Legal and Regulatory Framework</i> .....	<i>xi</i>
2.6 <i>Institutional Framework</i> .....	<i>xii</i>
2.7 <i>Human Resource Development in Petroleum Exploration</i> .....	<i>xiii</i>
2.8 <i>Taxation and Fiscal Framework</i> .....	<i>xiii</i>
2.9 <i>Environment Issues</i> .....	<i>xiv</i>
3.0 GENERAL AND SPECIFIC POLICY RECOMMENDATIONS .....	1
3.1 <i>General Policy Recommendations</i> .....	1
3.2 <i>Specific Policy Recommendations</i> .....	1
<b>CHAPTER ONE INTRODUCTION .....</b>	<b>4</b>
1.1 BACKGROUND .....	4
1.2 OBJECTIVES OF THE STUDY .....	5
1.3 RESEARCH TEAM AND COMPOSITION .....	5
1.4 METHODOLOGY, APPROACH AND WORK PLAN OF THE STUDY .....	6
1.4.1 <i>Desk Study - Literature Review</i> .....	6
1.4.2 <i>The Field Surveys</i> .....	7
1.4.3 <i>Data and Information Sources</i> .....	7
1.4.4 <i>Data and Policy Analysis</i> .....	7
<b>CHAPTER TWO PERFORMANCE OF PETROLEUM EXPLORATION IN TANZANIA</b>	<b>9</b>
2.1 OIL EXPLORATION IN EAST AFRICA .....	9

2.1.1	RISK AND COSTLY PETROLEUM EXPLORATION.....	9
2.1.2	<i>Policy, Legal and Regulatory Framework in Place</i> .....	9
2.1.3	<i>Institutional Framework is Appropriate</i> .....	9
2.1.4	<i>Tanzania Participation in the Exploration Activities</i> .....	10
2.1.5	<i>Petroleum Exploration Risks and Constraints</i> .....	10
2.1.6	<i>Factors Determining Future Petroleum Exploration</i> .....	11
2.2.1	<i>Tanzania’s Current Social Economical and Political Efforts and Results</i> .....	13
2.2.2	<i>Phase I: 1952-1965, Post Independence Phase</i> .....	14
2.2.3	<i>Phase II: 1966-1979, Arusha Declaration Era</i> .....	15
2.2.4	<i>Phase III: 1980-1985/86 Economic Crisis Era</i> .....	16
2.2.5	<i>Phase IV: 1986/87 – 2008. First and Second Generation Reforms</i> .....	17
2.3	CURRENT PETROLEUM EXPLORATION AND DEVELOPMENT STATUS .....	18
2.3.1	<i>Active PSA’s and Applications</i> .....	18
2.3.2	<i>Optimal Use of Gas</i> .....	19
2.4	PETROLEUM EXPLORATION FIRMS AND OPERATIONS .....	19
2.4.1	<i>Petroleum Exploration Firms</i> .....	19
2.4.2	<i>International Petroleum Exploration Companies</i> .....	20
2.4.3	<i>Establishment of Local Petroleum Exploration Companies</i> .....	23
2.4.4	<i>Common Shares Traded On International Stock Exchange Market</i> .....	23
2.4.5	<i>Searching and Acquiring Operational Control of Upstream Properties</i> .....	23
2.4.6	<i>Farming Out as a Financial Strategy for Risk Petroleum Exploration Activities</i> 24	
2.4.7	<i>Few Seniors and Majority are Junior International Petroleum Firms</i> .....	24
2.4.8	<i>Big Junior Firms Joining Small Junior Firms</i> .....	25
2.4.9	<i>Junior African Firms Active and Strategic</i> .....	25
2.5	LARGE SCALE INTERNATIONAL PETROLEUM EXPLORATION .....	26
2.5.1	<i>Finding Oil and Gas</i> .....	26
2.5.2	<i>Field Development Planning</i> .....	27
2.5.3	<i>State of the Art Drilling Technology</i> .....	27
2.5.4	<i>Producing Oil and Gas</i> .....	28
2.5.5	<i>Flaring</i> .....	29
2.5.6	<i>Decommissioning</i> .....	29
2.6	RISKS ASSOCIATED WITH PETROLEUM ACTIVITIES .....	30
2.6.1	<i>Risk Relating to the Hydrocarbons Market</i> .....	30
2.6.2	<i>Exchange Rate and Price Risks</i> .....	30
2.6.3	<i>Counterparty Risk</i> .....	30
2.6.4	<i>Social Political Risks</i> .....	31
2.6.5	<i>Risks Relating to the Regulatory Procedure for Obtaining Some Permits</i> .....	31
2.6.6	<i>Risks Related To Legal Disputes</i> .....	32
2.6.7	<i>Risks Related to the Reserves</i> .....	32
2.6.8	<i>Capitalized Production</i> .....	32
2.6.9	<i>Oil and Gas Exploration</i> .....	33

2.6.10	<i>Risks Related to the Reconstitution of Reserves</i> .....	33
2.6.11	<i>Competition Risks</i> .....	33
2.6.12	<i>Industrial and Environmental Risks</i> .....	33
2.6.13	<i>Systematic Impact Studies</i> .....	34
2.7	PERCEIVED PROBLEMS FACING EXPLORATION COMPANIES.....	34
2.7.1	<i>Global Financial Crisis</i> .....	34
2.7.2	<i>Investment Centre for Petroleum Exploration</i> .....	35
2.7.3	<i>Ignorance of Local Authorities and Localities in the Field Area</i> .....	36
2.7.4	<i>Tax Exemptions</i> .....	36
2.7.5	<i>Contradiction between TRA administration and Provisions of PSA</i> .....	36
2.7.6	<i>Political interference in the Petroleum Exploration</i> .....	36
2.8	GENERAL PERCEPTIONS FROM OIL COMPANIES.....	37
2.9	FACTORS DETERMINING FDI FLOWS AND OPERATIONS.....	38
<b>CHAPTER THREE.....THE POLICY FRAMEWORK</b>		
<b>39</b>		
3.1	INTRODUCTION.....	39
3.2	THE NATIONAL ENERGY POLICY, 1992.....	39
3.3	THE NATIONAL ENERGY POLICY, 2003.....	40
3.3.1	<i>Vision and Mission</i> .....	40
3.3.2	<i>Policy Objectives</i> .....	41
3.3.3	<i>Market Economy and regulatory Regime</i> .....	41
3.3.4	<i>National Interest versus Market Forms</i> .....	41
3.3.5	<i>Specific Policy Objectives for Petroleum Sector</i> .....	42
3.3.6	<i>Natural Gas</i> .....	43
3.4	NATIONAL INVESTMENT POLICY, 1997.....	43
3.5	POSITION, INTERESTS AND RIGHTS OF INDIGENOUS TANZANIA.....	43
<b>CHAPTER FOUR.....THE LEGAL AND REGULATORY FRAMEWORK</b>		
<b>45</b>		
4.1	INTRODUCTION.....	45
4.2	CONSTITUTION OF THE UNITED REPUBLIC OF TANZANIA.....	45
4.3	SUBSTANTIVE LEGAL FRAMEWORK FOR PETROLEUM.....	46
4.3.1	<i>Exploration and Production Act of 1980</i> .....	46
4.3.2	<i>Objective of the Petroleum Act of 1980</i> .....	48
4.3.3	<i>Weakness of the Petroleum Act of 1980</i> .....	48
4.3.4	<i>Effectiveness of the Petroleum Act of 1980</i> .....	49
4.4	TANZANIA INVESTMENT ACT OF 1997.....	50
4.4.1	<i>Application of the Act</i> .....	50
4.4.2	<i>Objective of the of the Tanzania Investment Centre</i> .....	51
4.4.3	<i>Function of the Centre</i> .....	52
4.4.4	<i>Strength of Tanzania Investment Act</i> .....	52
4.4.5	<i>Weakness of the Act</i> .....	52

4.5	ENERGY AND WATER UTILITIES REGULATORY AUTHORITY (EWURA).....	52
4.5.1	<i>Effectiveness or Strength of the EWURA Act Of 2001</i> .....	53
4.5.2	<i>Weakness of EWURA Act of 2001</i> .....	54
4.6	THE PETROLEUM CONSERVATION ACT 1981.....	54
4.7	PETROLEUM ACT OF 2008.....	55
4.7.1	<i>Strength of the Petroleum Act of 2008</i> .....	55
4.7.2	<i>Weakness of Petroleum Act of 2008</i> .....	56
4.8	GENERAL WEAKNESS OF PETROLEUM ACTS IN TANZANIA.....	56
4.9	PEOPLES POSITION, RIGHTS AND INTERESTS TAKEN CARE BY TPDC.....	57
<b>CHAPTER FIVE INSTITUTIONAL FRAMEWORK OF PETROLEUM</b>		
<b>EXPLORATION IN TANZANIA..... 59</b>		
5.1	INTRODUCTION .....	59
5.2	THE GOVERNMENT .....	59
5.3	MINISTRY OF ENERGY AND MINERALS.....	60
5.3.1	<i>Mission</i> .....	61
5.3.2	<i>Vision</i> .....	61
5.3.3	<i>Functions of the ministry</i> .....	61
5.3.4	<i>Commissioner for Petroleum Affairs</i> .....	62
5.4	TANZANIA PETROLEUM DEVELOPMENT CORPORATION .....	63
5.4.1	<i>Background</i> .....	63
5.4.2	<i>TPDC's Mission</i> .....	63
5.4.3	<i>TPDC Goal</i> .....	63
5.4.4	<i>The Functions of the Corporation</i> .....	64
5.4.5	<i>Practices, Efficiency and Effectiveness Issues</i> .....	65
5.4.6	<i>Zanzibar Equation</i> .....	66
5.4.7	<i>The Need of TPDC Restructuring</i> .....	67
5.5	ENERGY AND WATER UTILITY REGULATORY AUTHORITY .....	67
5.5.1	<i>Vision</i> .....	67
5.5.2	<i>Mission</i> .....	67
5.5.3	<i>Core Values</i> .....	67
5.5.4	<i>Regulated Services</i> .....	67
5.5.5	<i>Environment Regulations</i> .....	68
5.5.6	<i>Technical Regulation</i> .....	68
5.6	PRIVATE PETROLEUM EXPLORATION AND DEVELOPMENT FIRMS .....	68
5.6.1	<i>Organizational Structures</i> .....	68
5.6.2	<i>Model Production Sharing Agreement</i> .....	69
5.7	GENERAL INSTITUTIONAL PROBLEMS AND ISSUES AFFECTING PETROLEUM	
	ACTIVITIES .....	70
5.7.1	<i>Frequent Institutional Changes and its Impact</i> .....	70
5.7.2	<i>Lack of TPDC presence in Zanzibar</i> .....	70
5.7.3	<i>Regulation of the Petroleum Exploration and Development</i> .....	71

**CHAPTER SIX HUMAN RESOURCE DEVELOPMENT ISSUES IN THE  
PETROLEUM EXPLORATION..... 73**

6.1	HUMAN RESOURCE DEVELOPMENT ISSUES .....	73
6.1.1	<i>National Employment Policy</i> .....	74
6.1.2	<i>Employment of Non-Citizens</i> .....	74
6.1.3	<i>The National Investment Policy 1997</i> .....	75
6.2	LEGAL AND REGULATORY FRAMEWORK ON HRD .....	75
6.2.1	<i>The Petroleum Act of 1980 on HRD</i> .....	75
6.2.2	<i>Product Sharing Agreement on HRD</i> .....	76
6.3	LABOUR MARKET CHARACTERISTICS.....	77
6.3.1	<i>Occupational Demand</i> .....	77
6.3.2	<i>Occupational Supply</i> .....	77
6.3.3	<i>Employer and Industry Comments/Current Labour Market</i> .....	78
6.3.4	<i>Labour Market Outlook</i> .....	78

**CHAPTER SEVEN ..... TAXATION AND INVESTMENT INCENTIVES  
79**

	GENERAL PETROLEUM TAXATION POLICY.....	79
7.2	CLASSICAL PETROLEUM SECTOR TAXATION REGIME .....	81
7.2.1	<i>Corporate Income Tax</i> .....	82
7.2.2	<i>Value Added Tax</i> .....	82
7.2.3	<i>Withholding Taxes</i> .....	83
7.2.4	<i>Import Tariff</i> .....	84
7.2.5	<i>Stamp Duty</i> .....	84
7.2.6	<i>Road Fund and Fuel Tax</i> .....	84
7.3	ROYALTY.....	85
7.4	EMPLOYMENT TAXES.....	86
7.4.1	<i>Pay As You Earn (PAYE)</i> .....	86
7.4.2	<i>Benefit (or Fringe Benefits) Tax</i> .....	86
7.4.3	<i>National Social Security Fund (NSSF)</i> .....	87
7.4.4	<i>Director’s Tax</i> .....	87
7.4.5	<i>Skills and Development Levy</i> .....	87
7.5	ADDITIONAL PROFITS TAX.....	87
7.6	COST RECOVERY.....	90
7.7	LOCAL GOVERNMENT TAX.....	90
7.8	OTHER TAXATION .....	90
7.9	OTHER INCENTIVES .....	90
7.10	PRODUCTION SHARING .....	91
7.11	CORPORATE SOCIAL RESPONSIBILITIES.....	91
7.12	ZANZIBAR EQUATION AND SHARES .....	91

**CHAPTER EIGHT..... ENVIRONMENT ISSUES  
94**

8.1	THE NATIONAL ENERGY POLICY, (2002).....	95
8.2	NATIONAL INVESTMENT POLICY (1997).....	96
8.3	NATIONAL ENVIRONMENTAL POLICY, (1997).....	96
8.3.1	<i>Technology</i> .....	97
8.3.2	<i>Sectoral Policies</i> .....	98
8.4	PETROLEUM ACT 1980 .....	99
8.5	ENVIRONMENTAL MANAGEMENT ACT OF 2004, ACT NO 20 OF 2004.....	100
8.5.1	<i>Application of the Act</i> .....	101
8.5.2	<i>General Principle of the Act</i> .....	101
8.5.3	<i>Objectives of the Act</i> .....	101
8.5.4	<i>Petroleum under Environment Management Act</i> .....	101
8.5.5	<i>Contribution Of Environmental Management Act Of 2004</i> .....	102
8.6	PRODUCTION SHARING AGREEMENT ON ENVIRONMENT .....	103
8.7	MARINE ENVIRONMENT ISSUES.....	104
8.7.1	<i>Institutional and Legal Framework</i> .....	104
8.7.2	<i>Marine Protected Areas In Mtwara (Msimbati) And Pemba</i> .....	105
8.8	NATIONAL AND INTERNATIONAL ENVIRONMENT ISSUES .....	105

**CHAPTER NINE .OTHER PETROLEUM EXPLORATION AND DEVELOPMENT ISSUES 107**

9.1	PRICING AND QUANTITY DETERMINATION OF PETROLEUM PRODUCTS.....	107
9.1.1	<i>Petroleum Price Changes</i> .....	107
9.1.2	<i>Discovery and Development</i> .....	108
9.1.3	<i>Valuation of Crude Oil</i> .....	108
9.1.4	<i>Lifting, Marketing and Domestic Supply Obligation</i> .....	109
9.1.5	<i>Price and Quantity Determination</i> .....	109
9.1.6	<i>Public and Community Interests</i> .....	110

**CHAPTER TEN .....THE CONCLUSION 112**

10.1	MAJOR FINDINGS .....	112
10.1.1	<i>Social, Economic and Political Reforms</i> .....	112
10.1.2	<i>Increasing Petroleum Exploration and Development Activities</i> .....	112
10.1.3	<i>Constraints, Risks and Challenges</i> .....	113
10.1.4	<i>Policy Framework</i> .....	113
10.1.5	<i>Legal and Regulatory Framework</i> .....	114
10.1.6	<i>Institutional Framework</i> .....	115
10.1.7	<i>Human Resource Development in Petroleum Exploration</i> .....	116
10.1.8	<i>Taxation and Fiscal Framework</i> .....	117
10.1.9	<i>Environment Issues</i> .....	118
10.2	GENERAL AND SPECIFIC POLICY RECOMMENDATIONS .....	119
10.2.1	<i>General Policy Recommendations</i> .....	119
10.2.2	<i>Specific Policy Recommendations</i> .....	119

## EXECUTIVE SUMMARY

### 1.0. Introduction

#### 1.1 Background and Objective

Norwegian People’s Aid, (NPA), has a great interest in land and resource rights and policy issues in many countries where it operates as a development partner and Tanzania being one of them. There is currently a lack of knowledge among civil society organizations and the general public on how oil companies operate in Tanzania. The Norwegian company Statoil Hydro signed, in April 2007, an agreement on petroleum exploration on Block II offshore. They agreed to spend a minimum of 65 million USD during the first phase of 11 years and promised to use all the available expertise and technology to perform the task. The objective of this background survey is to understand the status of the oil and petroleum exploration and development industry in Tanzania. Specifically the study aimed to;

- Assess the oil and petroleum exploration activities in the country.
- Assess the primary and secondary constraints affecting the performance in oil and petroleum exploration.
- Assess the policies, legal, regulatory and institutional frameworks affecting the performance of the industry
- Assess the environmental impact and measures that have been undertaken by the government and the private companies in exploring petroleum in Tanzania.
- Perceptions of people on the petroleum and oil industry

#### 1.2 Research Team and Composition

The ESRF core research team was composed of one lead research economist who shall also served as team leader Dr Haji Semboja, and three ESRF researchers, namely Mr. Mellow Livoga, Mr. Festo Maro and Ms Irene Alenga. The team reported to the Director of the Economic and Social Research Foundation.

#### 1.3 Methodology, Approach and Work Plan of the Study

In view of the composition of the research team, and so as to accomplish the objectives of the study that flowed from the objectives, four independent but complementary methodologies were used. The main research activities were outlined in the Work Plan as follows. These were [1], major desk study, [2] minor field surveys in Dar er Salaam and Zanzibar; and [3] data and policy analysis and report writing, [4] internal consultative workshop and

meetings. There were field research interviews on some of key informers such as individuals, Non-government Organization (NGO) and Non-state actors (NSA) umbrella groups with the aim of getting peoples perceptions on petroleum benefits and limitations.

## **2.0 MAJOR FINDINGS**

### **2.1 Social, Economic and Political Reforms**

The study found that, the country has during 1985/6 – 2008/9 taken major reforms in political, social, economic and monetary policies with the view of enabling international private oil companies among others, to invest, explore and develop in the petroleum sector. Tanzania has excellent opportunities for oil and gas exploration and development in its mostly unexplored but highly potential sedimentary basins. The government has been offering competitive business terms for would-be investors. These include economic, legal and fiscal incentives. The terms are contained in the Model Production Sharing Agreement, (MPSA), of 1995 and the Petroleum (Exploration and Production) Act of 1980.

### **2.2 Increasing Petroleum Exploration and Development Activities**

The study found that the number of operators and licensees have been increasing during the last twenty years. Both internationally known and unknown private and public firms are participating. There are few new and unknown junior private and international oil companies. These international oil companies and / or contractors with PSA operate under the command and ownership of TPDC. TDPC is the owner, main partner and active licensee holder on behalf of the government and the people of Tanzania. It is noted that increasing number of firms may indicate that Tanzania is also a frontier hydrocarbon province, particularly in terms of oil and of the deeper shelf and deep sea.

The study found that that there are no local/indigenous private firms involved in the petroleum exploration and development. This is due to the fact that petroleum exploration and development is a complex function of financial capital sizes, levels of economic development, financing framework, technological advancements and other international input and output market systems which are risk and uncertain. It is important to note that lack of direct indigenous participation limit their roles, interests and rights over resource use. There will also be minimum direct social economic linkages, impacts and benefits to the people and Tanzanian domestic private sector.

### **2.3 Constraints, Risks and Challenges**

The baseline study found that there are increasing number of complex primary and secondary constraints and risks affecting the performance in oil and petroleum exploration in Tanzania. The petroleum exploration results are sensitive to various risks, the most significant ones being the hydrocarbon price expressed in dollars and the euro-dollar exchange rates. Nevertheless, it should be noted that the operational currency is the dollar as its sales, a major portion of its operational expenses, and a significant portion of its investments are all denominated in that currency. Main risks included social political risks

related with behavior of the governments, legal disputes, resource related to the reconstruction of reserves, market competition, industry, health, social and public security related risks.

#### **2.4 Policy Framework**

The baseline survey found that neither Tanzania (Mainland) nor Zanzibar has an explicit national petroleum exploration and development policy. The government of URT has a National Energy Policy (1992 and 2003) and other several national development policies facilitating the promotion of the development of the petroleum industry in Tanzania. The government of Zanzibar, (GOZ), does not have an explicit energy policy. The GOZ is in the process of finalizing its own Zanzibar Energy Policy. The most important and current is the National Energy Policy of 2003 formulated by the Ministry of Water, Energy and Minerals. Other complementary national development policies include National Environment Policy 1997, National Investment Policy 1996 and National Trade Policy, 1998. These policies are very clear on matters related with investments, production, private sector participation and development in a liberalized market environment. However, these policy developments do not guarantee the position, interests and rights of indigenous Tanzanians with respect to petroleum resources. It is assumed that the URT and GOZ governments will represent people's interests when dealing with petroleum exploration and development firms.

#### **2.5 Legal and Regulatory Framework**

The baseline survey found that Tanzania has put in place a comprehensive legal and regulatory framework affecting the performance of the petroleum exploration industry. The government of United Republic of Tanzania, has various substantive and subsidiary laws which are affecting performances and activities of petroleum development, starting with the [1] Constitution of the United Republic of Tanzania, [2], the Petroleum Exploration and Production act of 1980 and [3] EWURA Act of 2001.

Similarly, the government of Zanzibar has a number of substantive and subsidiary laws which may be affecting performances and activities of petroleum development in Unguja and Pemba. These are related with company registration, environment, land, investment and local government authorities. However, there are still controversial legal and regulatory matters. Article 4(3) of the Constitution indicates that matters of natural resources such as oil and gas are under the management of the United Republic of Tanzania, and there is provision providing that for the purposes of the efficient conduct of public affairs in the United Republic and for the allocation of powers among the organs specified in this Article. The study noted that both the current Act and Product Sharing Agreement are silent on whether the indigenous population or natives have legal right of ownership their land and petroleum resources explored, exploited, and they are also further silent on whether the

natives have rights of the sharing revenues derived from the sales of resources after the extraction of those resources. The PSA treats TPDC as the owner of the resources and all PSA contractors enter into the agreement with TPDC in everything such as granting of license and many incidental matters arise when the contract is on going.

## **2.6 Institutional Framework**

The baseline survey found that the government of the United Republic of Tanzania has a functional institutional framework that facilitates, promotes and governs development of petroleum exploration and production activities. Section 4 of the Petroleum Act vests the entire property in and control over oil and gas in any land to the United Republic of Tanzania. Private parties (including foreign parties) can be licensed to conduct exploration or production. Through the Ministry of Energy and Minerals, the Energy department is mandated to administer the petroleum exploration and production in Tanzania.

Tanzania Petroleum Development Corporation (TPDC) was created to oversee, among other things, the exploration operation in the country as a licence holder on behalf of the Government. TPDC is a national oil company and has a monopoly in terms of petroleum exploration and development in Tanzania. By conventional definitions, national oil companies hold the majority of petroleum reserves and produce the majority of the world's supply of crude oil. However, TPDC is facing a number of institutional problems and challenges.

As a corporate entity, TPDC's goal is to explore for and develop oil and gas in Tanzania and thereby contribute to the national income and economic growth of the country. TPDC is a national institution with responsibility of spearheading the development of the petroleum industry in the country with due regard to developing and providing quality products and services with high safety standards to protect people, property and the environment. TPDC is a player and a coach in the petroleum exploration and development.

TPDC is also the major regulator on the petroleum matters but also the laws have empowered EWURA to execute function of TPDC as the regulatory body for petroleum sector. Thus EWURA has acquired the status of regulatory body like TPDC but the only difference is that TPDC is the one recognized in PSA and EWURA is not recognized by the PSA. Thus both have the status of regulatory body in the petroleum sector. This makes TPDC as a very strong and strategic partner in the petroleum exploration and development. However, in practice, there are problems of TPDC assuming different and multiple roles as a player, coach and referee. Its capacity is very limited.

Consultations with people in Zanzibar suggest that TPDC has been neglecting the role and

importance of GOZ in participating in determining petroleum activities in Zanzibar. TDPC has ignored the need to establish an office and operate in Zanzibar

## **2.7 Human Resource Development in Petroleum Exploration**

The baseline survey found that Tanzania has complex policy and legal framework facilitation optimal utilization of domestic human resource in the petroleum exploration industry in Tanzania. The human resource is certainly the most important factor of production because it is capable of transforming all the other factors for the betterment of human life and human welfare. One way of taking care of position, interest and rights of people is through developing and utilizing indigenous human resources. This can in turn effectively increase labour productivity, ownership, income and its capital value.

It is complex because the government has adopted a set of sector specific approaches through PSA that are more in line with the liberalized labour market, socio-economic realities of Tanzania and that of the contemporary world. This requires that citizens to compete for jobs in employment on the basis of their skills and work experience or their own ingenuity. However, on the other hand it is aware of our human resource constraints, that Tanzanians do not have qualifications, experience and skills to compete in this market. That is, the country has very few trained, skilled, experienced and professional local manpower to support increasing petroleum activities. This implies that rights of Tanzanians to be recruited, engaged and developed are limited.

## **2.8 Taxation and Fiscal Framework**

The baseline survey found that like other resource-based sectors, petroleum is typically subjected to classical and substantial taxation systems in Tanzania. In addition to conventional profits or corporate taxes, petroleum companies are required to pay royalties, revenue taxes, and excess profit taxes and like other economic entities are subjected to a variety of other forms of taxations. Tanzania has many, complex and heavily burdened taxation system. Consultations with private firms suggest that there are negative effects of various revenue-raising taxes, and in particular, the extent to which the imposition of such taxes changes in the off-shore exploration activities.

The current taxation and fiscal incentive systems in Tanzania no doubt are impacting on the investment decisions of private companies in both mainland and off-shore petroleum exploration sectors. Petroleum taxation regime in this sector has been receiving less attention over years, compared with the booming gold mining sector. It is a well-recognized fact that government intervention through macroeconomic and tax policy instruments is essential for optimal exploration of petroleum reserves, maximization of petroleum revenues,

maintenance of environmental standards, and for providing incentives for reinvestment of petroleum activities.

Despite these limitations, the government of Tanzania has been giving ad hoc favourable fiscal incentives to the petroleum firms. In principle, apart from taxes of a minor nature of general applicability, the oil companies are exempted from all other taxes. These include import and export tax exemptions on exploration equipment, materials and goods. In practice, there are, options available within the Model PSA and local government systems. Other attractive fiscal incentives are under PSA including no requirement for bank guarantee against Work Program, no restrictions on repatriation of foreign exchange, negotiable training fund, fast track negotiations for concluding PSAs and availability of previous exploration data on request at no cost.

The revenue interests of people are stipulated under the PSA. The product to be shared in value terms, or Profit Oil (i.e., production in excess of Cost Oil) is shared between TPDC and the Oil Company in varying proportions determined by incremental production rates. The sharing percentages and the associated production bands varying and are negotiable. This can be complex and corruptive. First, there is no one in the Tanzania government machinery system is aware, informed and has the capacity to determine the final actual Profit Oil to be shared. Second, there is no apriori understanding and agreement between TPDC and URT or and GOZ on how much should be used in TPDC for further investments and capital accumulation and for government consumption. Third, the local community and common people in the street are not in these sharing mechanisms. They may or may not be benefiting for exploitation of petroleum products.

## **2.9 Environment Issues**

The baseline survey found that Tanzania has adequate environmental policies; legal, regulatory and institutional systems supporting the government and the private companies in exploring petroleum in Tanzania. The exploration, development, and transportation of gas may have serious impacts on fragile mainland ecosystems and wildlife communities. Sizeable oil and gas reserves have led to increased investments and exploration activities in some parts of Tanzania.

The study noted that the overall objectives of the National Environmental Policy relevant to the petroleum exploration and development included the need [1] to ensure sustainability, security and equitable use of resources for meeting the basic needs of the present and future generations without degrading the environment or risking health or safety; [2] to prevent and control degradation of land, water, vegetation, and air which constitute our life support

systems; and [3] to conserve and enhance our natural and man-made heritage, including the biological diversity of the unique ecosystems in the country. Also the Petroleum Act 1980 demands all the petroleum companies to take all reasonable steps necessary to secure the safety, health and welfare of persons engaged in those operations in or about the exploration or development area. This suggests that people's interests have been taken care.

## **3.0 General and Specific Policy Recommendations**

### **3.1 General Policy Recommendations**

The Government of the United Republic of Tanzania in collaboration with the Government of Zanzibar has first and foremost to design, plan, arrange and implement sustainable third generation reforms with the view of enabling both international and national oil companies among others, to invest and explore in the petroleum sector for the benefit of all parties in Tanzania. This involves, among others, continuation and intensification of the first and second generation social, political and economic reforms. Secondly, these generic national policy reforms and objectives should focus on optimal utilization of petroleum resources for sustainable development of Tanzanians. This will involve review of national and sector policies, laws and regulations to ensure that indigenous populations are actively involved and participate in petroleum exploration activities. The positions, interest and rights of indigenous Tanzania, URT and GOZ must be clear by design. Some of the general national policy recommendations include maximum mobilization and utilization of domestic capacity including cooperation with other neighboring countries such as Kenya and Uganda and the enhancement and harmonization of investment, taxation and fiscal matters between Zanzibar and Tanzania Mainland.

### **3.2 Specific Policy Recommendations**

The specific national policy recommendation focuses on the promotion of both local and foreign investments include the optimum utilization of the nation's natural human and other resources. The following are some of specific policy recommendations based on the baseline survey;

- Design policy strategies and lines of activities to enhance political leadership and URT and GOZ government commitments at central and local levels in terms of strategic resource management and development.
- Design policy strategies and lines of activities aimed at promoting, facilitating and support increasing participation of indigenous public, private sector firms and individual in the petroleum exploration and development businesses.
- Design policy strategies and lines of activities aimed at promoting, facilitating and support increasing participation of indigenous private sector firms and individual in the financial capital and common shares traded on the International Stock Exchange markets
- Design policy strategies and lines of activities aimed at promoting, facilitating and support large scale international petroleum exploration and development firms to

increase investments and thereby participate into more integrated gas projects. These efforts will enhance gas to power and fertilizer projects in Tanzania.

## LIST OF ABBREVIATIONS

AUPEC	-	Aberdeen University Petroleum and Economic Consultants
BP	-	British Petroleum
CCM	-	Chama Cha Mapinduzi
EARS	-	East African Rift System
EROEI	-	Energy Return Over Energy Invested
ESRF		Economic and Social Research Foundation
EWURA	-	Energy and Water Utilities Regulatory Authority
GOZ	-	Government of Zanzibar
FPDIL	-	Fertilizer Planning & Development India Ltd
KILAMCO	-	Kilwa Ammonia Company Ltd
MEM	-	Ministry of Energy and Minerals,
MPSA	-	Model Production Sharing Agreement
NSGRP	-	National Strategy for Growth and Reduction of Poverty
NGO	-	Non-government Organization
NPA	-	Norwegian People's Aid
NSA	-	Non-State Actors
ONGC	-	Oil and Natural Gas Commission
PSA	-	Production Sharing Agreement
PSC	-	Production-Sharing Contract
SGBP	-	Shell General Business Principles
TDV	-	Tanzania Development Vision
TANESCO	-	Tanzania Electric Company Limited
TANU	-	Tanganyika African National Union
TIC	-	Tanzania Investment Centre
TRA	-	Tanzania Revenue Authority

TPDC	-	Tanzania Petroleum Development Corporation
VAT	-	Value Added Tax
ZDV	-	Zanzibar Development Vision
ZIPA	-	Zanzibar Investment Promotion Authority
ZSGRP	-	Zanzibar Strategy for Growth and Reduction of Poverty
URT	-	United Republic of Tanzania

# CHAPTER ONE INTRODUCTION

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## 1.1 Background

The future economy of Tanzania depends on petroleum resources - not only for transportation but for thousands of products people use on a daily basis. Together, oil and natural gas may allow us unprecedented mobility, help generate electricity, and are used to produce everything from agriculture fertilizers to synthetic clothing to product packaging and countless other items. Currently, Tanzania depends on imported oil for transportation, power generation, equipment, machineries and household energy uses. Each year, more and more fuel is needed for the ever-increasing national transportation needs and the demand for natural gas climbs as more and more industries and homes are built. As a result, the demand for both fuels continues to increase.

Petroleum, in the form of crude oil is a thick and black liquid, consisting mainly of hydrocarbons. It is mainly found in the Middle East, North America, and Russia. It is the most important world commercial energy source. It supplies 38% of the world's energy at present. Due to its high energy density, easy transportability and relative abundance, it has become the world's most important source of energy since the mid-1950s. Petroleum is also the raw material for many chemical products, including pharmaceuticals, solvents, fertilizers, pesticides, and plastics; the 16% not used for energy production is converted into these other materials.

Petroleum is found in porous rock formations in the upper strata of some areas of the Earth's crust. There is also petroleum in oil sands (tar sands). Known reserves of petroleum are typically estimated at around 190 km<sup>3</sup> (1.2 trillion (short scale) barrels) without oil sands, or 595 km<sup>3</sup> (3.74 trillion barrels) with oil sands. Consumption is currently around 84 million barrels (13.4×10<sup>6</sup> m<sup>3</sup>) per day, or 4.9 km<sup>3</sup> per year. Because the energy return over energy invested (EROEI) ratio of oil is constantly falling as petroleum recovery gets more difficult, recoverable oil reserves are significantly less than total oil-in-place. At current consumption levels, and assuming that oil will be consumed only from reservoirs, known recoverable reserves would be gone around 2039, potentially leading to a global energy crisis.

However, there are factors which may extend or reduce this estimate, including the rapidly increasing demand for petroleum in China, India, and other developing nations like Tanzania; new discoveries; energy conservation and use of alternative energy sources; and new economically viable exploitation of non-conventional oil sources.

## 1.2 Objectives of the Study

Norwegian People's Aid, (NPA), has a great interest *in land and resource rights and policy issues in many countries* where it operates as a development partner and Tanzania being one of them. There is currently a lack of knowledge among civil society organizations and the general public *on how oil companies operate in Tanzania*. The Norwegian company Statoil Hydro signed, in April 2007, an agreement on petroleum exploration on Block II offshore. They agreed to spend a minimum of 65 million USD during the first phase of 11 years and promised to use all the available expertise and technology to perform the task.

The current assignment serves to be a background survey or study to understand the status of the oil and petroleum exploration and development industry in Tanzania. This is a baseline survey with objective of investigating the state of oil and petroleum exploration in Tanzania. Specifically the study;

- Assess the oil and petroleum exploration activities in the country.
- Assess the primary and secondary constraints affecting the performance in oil and petroleum exploration.
- Assess the policies, legal, regulatory and institutional frameworks affecting the performance of the industry
- Assess the environmental impact and measures that have been undertaken by the government and the private companies in exploring petroleum in Tanzania.
- Perceptions of people on the petroleum and oil industry

## 1.3 Research Team and Composition

For proper execution of the assignment as stipulated above, The Economic and

Social Research Foundation (ESRF) core research team was composed of one lead research economist who shall also served as team leader Dr Haji Semboja, and three other ESRF researchers<sup>1</sup>. The team leader reported to the Director of the Economic and Social Research Foundation.

For the purpose of internal quality control of work and final reports, ESRF assigned one Senior Research Economist, for peer review to ensure that the final output is up to standards and meets the clients' expectations. The research team consisted of people with knowledge, information and experiences of natural resource economics; environment, industry and institutional economics and relevant international comparative experience in the economic policy issues which in turn are keys issue to the discussion on role and impact of petroleum exploration activities in Tanzania.

## **1.4 Methodology, Approach and Work Plan of the Study**

In view of the composition of the research team, and so as to accomplish the objectives of the study that flowed from the objectives, four independent but complementary methodologies were used. The main research activities were [1], major desk study, [2] minor field survey and [3] data and policy analysis and report writing, [4] consultative workshop and meetings.

### **1.4.1 Desk Study - Literature Review**

*First*, the main study research methodology was the desk study to review the current issues pertaining to the role of petroleum exploration and development as well as all relevant documents concerned with the institutional, planning and project issues of natural resources and other relevant secondary data and information. There was a review of all available documents including reports of the key government ministries such as Ministry of Energy and Minerals and Tanzania Petroleum Development Corporation, (TPDC). Secondary data was collected during literature review and some during fieldwork interviews by collecting relevant documents/statistics or literature, as they are made available. The study carried out through a review of available official and academic sources of information and discussions with key informants among stakeholders.

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<sup>1</sup> Mr Mellow Livoga, Mr Festo Maro and Ms Irene Alenga

#### **1.4.2 The Field Surveys**

*Second*, with particular reference to the study objectives, the team carried out the field research surveys at three levels whereby the *first level* focused on secondary data and information about current level, composition, institutional framework, and effectiveness of petroleum exploration and development in Tanzania.

The *second level* were the field research surveys done in Dar es Salaam and Zanzibar which also included interviews with senior and top executive government officials from ministries that have been beneficiaries of petroleum exploration and development in order to determine the extent to which natural resources have been towards achieving objectives and the adequacy of the objectives in relation to the category of the foreign resources.

The *third level* were the field research surveys pertaining to petroleum activities whereby interviews were carried out with senior and top executives from private oil companies in order to determine the impact of these activities directly through employment and indirectly through other linkages. There were field research interviews on some of key informers such as individuals, Non-government Organization (NGO) and Non-state actors (NSA) umbrella groups with the aim of getting peoples perceptions on petroleum benefits and limitations.

#### **1.4.3 Data and Information Sources**

Conventionally two types of data were envisaged: primary data and secondary data. The former were undocumented information and data that obtained from the field-work surveys (i.e., through non-structured questionnaire) and some unprocessed information from official' data files. The latter were documented and/or processed information obtained from key government ministries, private firms and other published or unpublished sources from the Ministry of Energy and Minerals containing data over time. These included economic surveys, national budget documents, estimates of government expenditure and revenue, quarterly production reports, company reports Bank of Tanzania and TPDC Annual and Operation Reports.

#### **1.4.4 Data and Policy Analysis**

The research team conducted data and policy analysis involving social, legal,

regulatory, institutional and financial issues. This study used different approaches as benchmarks for qualitative and quantitative analyses of the overall performance of petroleum sector in the economy in terms of impact on social economic activities.

## CHAPTER TWO: PERFORMANCE OF PETROLEUM EXPLORATION IN TANZANIA

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### 2.1 Oil exploration in East Africa

#### 2.1.1 Risk and Costly Petroleum Exploration

It is acknowledged that oil exploration is an expensive, high-risk operation. Offshore and remote area exploration is generally only undertaken by very large corporations or national governments. Typical Shallow shelf oil wells (e.g., North Sea) cost USD\$10 - 30 Million, while deep water wells can cost up to USD\$100 million plus. Hundreds of smaller companies search for onshore hydrocarbon deposits worldwide, with some wells costing as little as USD\$100,000.

#### 2.1.2 Policy, Legal and Regulatory Framework in Place

Tanzania has a well elaborated national energy policy, whereby the vision is to effectively contribute to the growth of the national economy and thereby improve the standard of living for the entire nation in a sustainable and environmentally sound manner, (Semboja, 2007). The core legal framework for petroleum is governed by the Exploration and Production Act of 1980, known as the Petroleum Act, (TPDC, 2007). The Petroleum Act 1980, which applies to any naturally occurring hydrocarbon, whether in gaseous, liquid or solid state, or any mixtures thereof, vests title and control over petroleum in any land to which the Petroleum Act applies in the state. The Act is the basis for granting of exploration and development licenses. It spells out the broad terms and conditions of the licenses.

#### 2.1.3 Institutional Framework is Appropriate

The Act vests the entire property in and control over oil and gas in any land to the government of the United Republic of Tanzania, (Act 1980, URT, 2003). Private parties (including foreign parties) can be licensed to conduct exploration or production.

The Act permits the Government to enter into a petroleum agreement under which an oil company may be granted exclusive rights to explore for and produce petroleum. Under the Production Sharing Agreement (PSA) regulations currently in

place in Tanzania, TPDC is granted the licence under the Act with the Government and Tanzania Petroleum Development Corporation, (TPDC), enters into PSAs with interested oil companies. The terms of the PSAs form the basis of the licences, (TPDC, 2007). The legislative framework offers considerable flexibility to the Government in negotiating acceptable terms with oil companies.

TPDC is a national oil company and has a monopoly in terms of petroleum exploration and development in Tanzania. By conventional definitions, national oil companies hold the majority of petroleum reserves and produce the majority of the world's supply of crude oil. However, in the event of commercial discovery, the holder of an Exploration Licence has a right to a development plan ensuring the most efficient and beneficial use of the petroleum resources.

#### **2.1.4 Tanzania Participation in the Exploration Activities**

TPDC's maximum participation share is determined by actual total production rates in the Contract Area. In the event TPDC exercises its option, it will contribute its proportionate share of costs (except for exploration and appraisal). The progressive scale of participation shares indicated in the Model PSA is negotiable (no greater than 20%) and it is not intended that the share will be substantial. Few international large, medium and small scale private companies have started-up oil and gas exploration activities with a solid foundation of assets comprising of modern exploration technologies and have well defined developmental drilling prospects. Many adopt best strategies and focusing primarily on shallower drilling prospects and utilize the best science available to "high grade" the locations near existing oil and gas production.

#### **2.1.5 Petroleum Exploration Risks and Constraints**

Exploration and production of hydrocarbons is a high-risk venture. Geologic concepts are uncertain with respect to structure, reservoir seal, and hydrocarbon charge. On the other hand, economic evaluations contain uncertainties related to costs, probability of finding and producing economically viable reservoirs, and oil price. Even at the development and production stage the engineering parameters embody a high level of uncertainties in relation to their critical variables (infrastructure, production schedule, quality of oil, operational costs, reservoir characteristics, etc.). These uncertainties originated from geological models and

coupled with political, economic and engineering models involve high-risk decision scenarios, with no guarantee of successfully discovering and developing hydrocarbons.

#### **2.1.6 Factors Determining Future Petroleum Exploration**

The future trends in oil resources availability in Tanzania depends largely on the balance between the outcome of the cost-increasing effects of depletion and the cost-reducing effects of the new technology, (Semboja, 2007). Based upon that scenario new forms of reservoirs exploitation and managing will appear where the contributions of risk and decisions models are one of important ingredients. This trend can be seen in the last two decades. The new internationally focused exploration and production strategies are driven in part by rapidly evolving new technologies. Technological advances allowed the exploration in well- established basins as well as in new frontier zones such as ultra-deep waters. Those technology-driven international exploration and production strategies combined with new unique strategic elements where risk analysis and decision models represent important components of a series of investment decisions.

The attractiveness of Tanzania for petroleum exploration and development investment depends upon the perception of its prospectivity, which broadly speaking, refers to the technical attributes (source rock, reservoir, cap rock, etc.) as well as economic, political, legal and fiscal arrangements for the commercial exploitation of the petroleum resources. The technical prospectivity of our country is important, since if the potential of an area for supporting hydrocarbon discovery is considered low, our country will not be very attractive for foreign direct investments. The determinants of a commercial discovery depend in part on the results of the initial exploration program (the size and location of the field, the complexity of the reservoir structure, the quality and type of hydrocarbons, etc.), existing infrastructure in the country, and the fiscal conditions that govern revenue sharing. Other conditions such as the rule of law and geopolitical factors also play important roles in assessing a region's prospectivity.

This Chapter assesses performances of oil and petroleum exploration activities in the country. We also indicate perceptions of people on the petroleum and oil industry. There are reports suggesting that most of the East African countries, Tanzania and

Uganda, have increased petroleum exploration and development activities in the recent years, 2000/1 – 2008/9. Geographical, Tanzania is the largest and has greatest potentials for petroleum discoveries. Tanzania has been intermittently explored over the last 50 years. Most of the multinational petroleum companies are represented, in the area, at one time or another. Significant gas discoveries are still going on at Songo Songo and Mnazi Bay.. The petroleum Exploration in Kenya begun in the 1950's with the first well being drilled in 1960. British Petroleum (BP) and Shell began exploring in Kenya in 1954 in the Lamu Embayment where they drilled ten wells. None of the wells were fully evaluated or completed for production despite several indications of oil staining and untested zones with gas shows.

Uganda is a small land locked country with small potentials compared with Tanzania and Kenya. However, Uganda has a longer history of geological field expeditions which were first carried out by E. J. Wayland in the early 1920s and are documented in the publication 'Petroleum in Uganda', 1925. Wayland reported up to 52 oil and gas seeps in the graben. Between 1936 and 1956, several shallow stratigraphic wells drilled by the African-European Investment Company revealed numerous shows. The Waki B-1 well drilled in 1938 was the deepest well, reaching a total depth of 1,237m. The well confirmed the presence of source, seal and reservoir rocks and recovered free oil on test.

Burundi and Rwanda are other smaller landlocked countries in the East Africa region. Exploration for petroleum in Burundi started in 1959. So far there are not yet production activities; all oil products for its consumption are imported. Various studies which have been done both on the Rusizi basin and in the Lake Tanganyika, which are part of the western arm of the East African Rift System (EARS) comprise of: Gravity survey on the Rusizi basin in 1959-1960 and Seismic survey on the Rusizi basin in 1968.

Of these East African countries, Uganda is the ahead and leader in terms of petroleum exploration. Since the confirmation of huge oil deposits in mid-western Uganda, the country is bracing for better economic prospects. A lot of foreign exchange is expected in the country, and many Ugandans are hoping it will better their living standards. But while the government of Uganda has promised oil production will begin in 2009, the real work depends on the oil companies that will

produce the oil, global market, infrastructure and nature of crude oil. Heritage Oil Corporation, which has been doing oil exploration in Uganda 1997 is one such company that Ugandans are looking forward to.

Consultations with different people suggest that large resource potentials and endowment are not main determining factors. People argue that, discoveries and development of petroleum in East African countries is a complex function of resource potentials, policy, legal, regulatory, financial, technical and institutional factors, (Semboja, 2007).

Like other EA countries, Uganda is faced with both internal and external factors affecting performances of petroleum exploration and development. It is important to acknowledge that the small size and location of discovered petroleum resources might have contributed to the early and Uganda successes. Other factors may include political leadership and government commitment in terms of strategic resource management and development.

## **2.2 Petroleum Exploration in Tanzania**

### **2.2.1 Tanzania's Current Social Economical and Political Efforts and Results**

The government of Tanzania has during 1985/6 – 2008/9 taken major reforms in political, social, economic and monetary policies with the view of enabling international oil companies among others, to invest and explore in the petroleum sector for the benefit of all parties. Tanzania has excellent opportunities for oil and gas exploration and development in its mostly unexplored but highly potential sedimentary basins, (URT, 2003 and TPDC, 2007).

The government offers competitive terms for would-be investors. These include economic, legal and fiscal incentives. The terms are contained in the Model Production Sharing Agreement (MPSA) of 1995 and the Petroleum (Exploration and Production) Act of 1980, (TPDC, 2007). The political, social and security stability in the country is one of the best investment environments in the Sub-Saharan Africa. To-date, several companies are exploring for hydrocarbons in Tanzania. The MPSA and the Petroleum Act are continually being reviewed to match the changing climate and meet investors concerns. The following is a brief social economic history and its impact on the development of petroleum exploration and development in Tanzania.

### 2.2.2 Phase I: 1952-1965, Post Independence Phase

Although the history of petroleum exploration in Tanzania started long time ago, this report starts with the post independence era, which was turning point and the most political active era in the following senses. *First*, there was need to create new political institutions and organization to handle new social economic responsibilities occasioned by the country's new statehood. *Secondly*, the independence brought about the political responsibility for maintaining national sovereignty and security, which are necessary inputs for sustainable petroleum development. The newly political independent government attempted to spearhead development in the economic and social spheres to respond to the expectations of the country's overall population. This entailed not only setting new organizational units at the centre; it also involved setting up structures. *Thirdly*, there were concerted efforts to improve human resource development and creation of employment for nationals and as well as putting them in senior government positions. Specific human resource development efforts included capacity building from scratch a cadre of public service personnel to man new and expanded government and public functions. However, little was done to change social economic ownership and market systems. During the first five post-independence years, (1961-66) Tanzania adopted capitalistic economic strategy with both private sector and market economy. This strategy conceived development within the conventional framework of maximizing growth in a predominantly market-led economy. It was envisaged that foreign and local private investments would have been attracted to catalyze development.

These post independence efforts did not change much the petroleum exploration and development efforts. Very little foreign capital was forthcoming. However, FBP and Shell were awarded concessions along the coast, including the islands. Extensive geological work was conducted including the drilling of more than 100 stratigraphic shallow boreholes, gravity, aeromagnetic, and reflection and refraction seismic surveys. A thick sedimentary section was identified and four wildcats were drilled, one each on Zanzibar, Pemba, and Mafia Islands and another onshore, in the Mandawa Salt Basin. Although the wells did not encounter significant hydrocarbon shows, they confirmed the presence of reservoir and source rocks in the stratigraphic column.

### 2.2.3 Phase II: 1966-1979, Arusha Declaration Era

A few years after independence, in 1967 up to about 1979, President Nyerere also led the new nation in launching an ambitious program to transform Tanzania to a “socialist state”, guided by the Arusha Declaration of 1967. The Ujamaa program involved inter alia; the nationalization of all modern economic and social development and production entities (from commercial enterprises to church sponsored schools and health facilities); the collectivization of peasants and small holder farming through establishment of collective (ujamaa) villages; and the domination of national political and social initiatives by the ruling party (then Tanganyika African National Union - TANU, and now the Chama Cha Mapinduzi - CCM) which has monopolized political power to this day.

It was during this period when Tanzania Petroleum Development Corporation was established as strategic public institution responsible for petroleum development, (TPDC, 2007). TPDC is a fully Government-owned Parastatal organization under the Ministry of Energy and Minerals. It was established under the Public Corporations Act No. 17 of 1969 of the laws of Tanzania (repealed and replaced by the Public Corporations Act CAP. 257 R.E.2002 of the Laws of Tanzania), through Government notice No. 140 of 30<sup>th</sup> May, 1969. The Corporation commenced operations in 1973. The social economic and corporate functions of the TDPC as laid down in the Government Notice included promotion of the development of the petroleum industry and the production of petroleum and to carry on its business, operations and activities either within the United Republic. Both political interferences and direct government involvement in day to day technical and operational matters affected the behavior, functions and consequent results of TPDC.

For example, in 1974 TPDC in collaboration with AGIP Spa discovered gas by the drilling of the well SS # 1. By then the gas deposits were found to be uneconomical and M/S AGIP Spa later relinquished the block. Again, between 1975 and 1979 TPDC took over the same field and with the assistance of the Oil and Natural Gas Commission (ONGC) of India drilled onshore wells SS # 2, 3 and 4. The wells confirmed the presence of a large reservoir of gas. SS # 2 blew out after encountering shallow gas at 850 meters depth.

In 1978/79 M/S Fertilizer (Planning & Development) India Ltd (FPDIL) were

commissioned by the Government to carry out a study on the best economic use of natural gas. The FPDIL study recommended the production of fertilizers as the best use of natural gas and recommended a small plant for the production of ammonia and urea. In 1980 M/S Agrico Chemical Company of USA proposed to the Government and TPDC for the construction of a World scale ammonia/urea plant to be operated by a joint-venture company (Kilwa Ammonia Company Ltd or KILAMCO). The proposal was accepted and the project company formed. The planned plant capacity was 1560MT per day of Ammonia and 1725 MT per day of urea.

In the 1980s, like other public projects, the KILAMCO project stalled and was later shelved because of high capital costs, failure by the Government of Tanzania to raise the required equity and worldwide slump in the price of fertilizers in the mid 1980s to early 1990s.

#### **2.2.4 Phase III: 1980-1985/86 Economic Crisis Era**

Tanzania faced first deep economic crisis in the early 1980s. By the early 1980's it was clear that Tanzania was heading towards a serious economic crisis. Many factors contributed to worsening of economic situation in the early 1980s. *First* and foremost was uncontrolled growth in the public sector and in government spending, combined with corruption and poor productivity formed one part of the equation, (URT, (Economic Surveys (several issues)). *The second factor* was political interference and state involvement in the economy and resistance of the peasantry to the coercion that created the village system, leading to declining low capacity production in all manufacturing activities and poor agricultural productivity. *A third factor* was related to bad weather, in form of alternating droughts and floods that wracked the country at the time, reducing exports and foreign exchange earnings.

The difficult conditions of the economy were reflected in low economic growth rate, the depreciation of the shilling by 25% in 1984, while wage levels declined and inflation soared to nearly 40%. Foreign currency reserves plummeted dramatically from US\$ 281.8 million in 1977 to US\$ 20.3 million in 1980. The effects of these economic crises were not that very serious on the development of petroleum sector. In fact, the government through TPDC was not discouraged with the economic crisis. Instead the government put in place a new legal framework. Adoption of The

Petroleum (Exploration and Production) Act of 1980 and high oil prices encouraged increased activity. It is surprising to note that most of the serious drilling in Tanzania started during this period, including the delineation of the Songo Songo Gas Field and the gas discovery at Mnazi Bay (1982) by AGIP.

#### **2.2.5 Phase IV: 1986/87 – 2008. First and Second Generation Reforms**

Since the mid 1980s, Tanzania has introduced a series of policy reforms intended to restore macroeconomic balance, stimulate economic growth and facilitate social and political development (URT, 1996 and Semboja, 2004). Experience with the *first generation reforms* in 1986 - 1996 suggests that individual initiative and market-oriented economic systems propel higher growth rates than centrally planned economic systems. These broad based measures included the fiscal, liberalization of internal and external trade, the removal of restrictive tendencies, the liberalization of the foreign exchange market and the institution of a general policy environment, which is more favourable to private sector expansion.

Based on the experiences of implementation of first generation macro-reforms, the government has been conscious of the need for long term perspective development plans and has made a more comprehensive review of its micro-economic and sector policies to resolve social economic problems, which are still inherent in the sector and to also ensure that the current interest by investors in the economy is enhanced and sustained. *These second generation reforms* occurred between 1996/7 and 2007/8, when many of these sub-Saharan economies were facing huge debt problems making poverty an important policy issue.

It is noted that the second-generation reforms are still focusing on macro-micro linkages subject to intensification of first generation reforms in terms of continuation of fiscal, monetary, legal, regulatory and institutional reforms, (URT, (Economic Surveys (*several issues*)). It is interesting to note that net impacts of these social economic reforms have been an increasing globalization, trade liberalization, institutional reforms, increasing participation of private sectors and expansion of petroleum exploration and development activities in Tanzania.

At the start of this phase there were no active concessions and little activity except for various studies, and a dedicated effort by the authorities to achieve fiscal and

technical agreements for the development of the Songo Songo gas field. TPDC participated in Songo Songo development drilling, two wildcats at Kimbiji and several seismic programs, (TPDC, 2007). Increased interest in the interior rifts, partially as a result of Project PROBE, resulted in Amoco drilling two wells in the Rukwa Rift Basin. Shell drilled Dira-1, in the Mafia Channel in 1991 and relinquished the license in the same year. TPDC, TANESCO, and a consortium of private investors, are actively working on the Songo Songo gas field development, transmission and utilization.

Beginning in 1995 a number of international companies acquired exploration licenses in the coastal basins. Tanganyika Oil Company, in 1996/97, drilled two wells in the Mandawa Basin. Exploration agreements were also signed with Antrim and CanOp, both of Calgary, Alberta, Canada, Gulf Western Mining of Cyprus, and Ndovu Resources of Australia. Agreements to develop the Mnazi Bay gas discovery and to build a power generation plant were being negotiated by early 2009.

## **2.3 Current Petroleum Exploration and Development Status**

### **2.3.1 Active PSA's and Applications**

The current petroleum exploration and development performance is measured by looking at the active PSA's and applications under the TPDC. Table 2.1 presents the names of licensee holders, names of operators, area involved, date signed and current status. Table 2.1 suggests that the number of operators and licensees have been increasing over time. Both internationally known and unknown are participating. The new international oil companies include Statoil Hydro of Norway. Shell Oil Company is also an active old partner since 1952 in Tanzania, (TPDC, 2007). There are few new and unknown private and public international oil companies. This suggests that, forms of ownership are not a major determining factor. What is important is the form of corporate governance. All these international oil companies operate under the command and control of TPDC. TDPC is the owner and main partner and active licensee holder on behalf of the government and the people of Tanzania. An AUPEC Study (2008) suggests that Tanzania is a frontier hydrocarbon province, particularly in terms of oil and of the deeper shelf and deep sea. In contrast to some other frontier areas, however, table 2.1 suggests that Tanzania has successfully licensed a substantial acreage.

### **2.3.2 Optimal Use of Gas**

Table 2.1 suggests that, Tanzania has both petroleum and gas potentials. However, it can be ascertained that Tanzania has more gas potentials. The most important policy issue is how can gas be used activate our long time awaited social economic development. The discovered gas reserves are limited, while medium term utilization options are increasing and many including electricity generation, thermal industrial applications and petroleum industries. The National Energy Policy, (2003) argue that exploration and optimal use of natural gas remains a national priority. The government is likely to support, facilitate and allow allocated gas from inefficient to more efficient thermal power projects for making optimal use of the limited indigenous resources. The second set of policy issues will be directed to environmental sound technologies and reduction of low thermal efficiencies

Consultations with various stakeholder including TDPC and government officials confirm that there are four gas discoveries and two gas developments have already been made and both have been slated for power generation in the country as a result of above efforts. The development of the Songo Songo gas field, with approximately one (1) Tcf of proven gas reserves, is at a development and commercialization stage, (TPDC, 2007).

## **2.4 Petroleum Exploration Firms and Operations**

The following is a brief exposition of main features, characteristic, patterns and developments of petroleum exploration firms operating in Tanzania based on Table 2.1, several websites and consultations with various stakeholders, including senior and top government officials, chief executives officers of some selected petroleum exploration firms in Tanzania.

### **2.4.1 Petroleum Exploration Firms**

There are no local/indigenous private Tanzanian firms involved in the petroleum exploration and development (see Table 2.1). Consultations suggest that indigenous firms are not active in engaging in this business. Many have the view that petroleum exploration and development is a complex function of sizes and levels of economic development, financing framework, technological advancements and other international input and output market systems which are risk and uncertain. Lack of direct indigenous participation may limit their rights over resource use. There will

also be minimum direct social economic linkages, impacts and benefits to the people and Tanzanian domestic private sector.

There are only two private petroleum firms operating in Unguja and Pemba. These are Atrium Resources (since 1997) and Shell EP (since 2002)(see table 2.1). However, Both have stopped exploration activities due to current TPDC-GOZ institutional conflict on how to conduct petroleum activities in Zanzibar. Although Shell EP has an interest on offshore petroleum exploration, it does not have PSA. However, they have memorandum of understanding, (MoU), between them and TPDC and GOZ.

#### **2.4.2 International Petroleum Exploration Companies**

Most of these private petroleum exploration companies are large scale international energy producers focusing on monetizing their hydrocarbon reserves in both onshore and offshore in Tanzania. For example Tullow Oil plc is one of the largest independent oil and gas exploration companies in Europe. The Group has over 90 licences in 23 countries, with operations in Africa, Europe, South Asia and South America. Aminex is an international oil and natural gas exploration and production company with operations in the US, Africa, and North Korea. In the US it operates along the Texas Gulf Coast area

Most of these scale international energy firms have common interests and objectives of creating significant wealth for their investors and shareholders through the discovery, production and sale of oil and gas. Strong revenue generation coupled with strategic partnerships ensure that the companies maintain financial and operational growth. By exploring, developing, producing and commercializing known petroleum systems, these international petroleum companies are poised to deliver a optimal rate of return for their stakeholders while creating minimum social and economic opportunities for the people of Tanzania.

**Table 2.1 Active PSA's and Applications**

NAME OF LICENSEE	NAME OF COMPANY	AREA	DATE SIGNED	STATUS
Songo-Songo Development License	East Coast (Pan-Africa Energy Co.)	Songo Songo in Kilwa	2001	PSA-Active with Gas-Production
Artumas Mnazi Bay Development License	Artumas Group	Mnazi-Bay in Mtwara Region Southern Tanzania	2004	PSA-Active with Gas-Production
Antrim Resources License	Antrim Resources of Calgary	Zanzibar and Pemba Islands	1997	PSA-Exploration Program
Ndovu PSA License	Aminex Co. Ltd	Nyuni East Songo Songo Block	2000	PSA-Active with Exploration Extension Program
Mandawa	Dominion Oil & Gas Ltd of UK	Kilwa	2005	PSA-Active
Kisangire	Dominion Oil & Gas Ltd of UK	Bigwa	2005	PSA-Active
Selous Basin	Dominion Oil & Gas Ltd of UK	Selous	2006	PSA-Active
Tanga & Latham Area	Petrodel Resources Ltd, UK	Tanga & Latham Blocks	September 2006	PSA-Active
Ndovu Resources License	Aminex Co. Ltd	Ruvuma Block in Mtwara Region	29th October 2005	PSA-Active
PETROBRAS License	PetroBras of Brazil	Block 5 of Deep offshore basins	2004	PSA-Active
Shell PSA Application	Shell Exploration Co.	Block 9,10,11 & 12 deep offshore, East of Zanzibar and Pemba Islands	2002	PSA-In process of being ratified
Maurel & Prom License	Maurel & Prom	Mafia Block	2004	PSA-Active
Statoil Psa Application	STATOIL as of Norway	Block - 2 Deep Offshore Basin	Signed on 18th April 2007	PSA -Active
Ophir Energy Company L Limited	Ophir Energy Company Limited Of Uk	Block - 1 Deep Offshore Basin	29th October 2005	PSA-Active
Ophir Energy Company L Limited	Ophir Energy Company Limited Of Uk	Block - 3 Deep Offshore Basin	19th June 2006	PSA-Active
Ophir Energy Company L Limited	Ophir Energy Company Limited Of Uk	Block - 4 Deep Offshore Basin	19th June 2006	PSA-Active
Petrobras	PetroBras of Brazil	Block 6 of Deep Offshore Basin	5th December 2006	PSA -Active
Dodsal Resources	Dodsal ResourceS	Ruvu Basin	September 2007	PSA - Active
Ras Al Khaimah Gas - Tanzania	Ras Al Khaimah Gas - Tanzania	East Pande Block (Mandawa East)	23rd November 2006	PSA - Active

NAME OF LICENSEE	NAME OF COMPANY	AREA	DATE SIGNED	STATUS
Tullow Oil	Tullow Oil	Lake Tanganyika-(East - Block A)	To be signed first quarter of year 2007	PSA Application

Data Source: TPDC Website, February 2009

#### **2.4.3 Establishment of Local Petroleum Exploration Companies**

There are a number of locally registered petroleum exploration companies in Tanzania. For example Ndovu Resources Ltd. provides oil and natural gas exploration and production services in Tanzania. The company is locally based in Dar es Salaam, Tanzania. Ndovu Resources Ltd. is a subsidiary of Aminex plc.

#### **2.4.4 Common Shares Traded On International Stock Exchange Market**

Most of the international petroleum companies have diverse sources of financing. These include own financial capital and common shares traded on the International Stock Exchange markets. For example Antrim is based in Canada with offices in Argentina and the United Kingdom. The Company is inter-listed on the senior Toronto Stock Exchange under the symbol "AEN" and on the London Stock Exchange Alternative Investment Market under the symbol "AEY. Aminex PLC is an established upstream oil and gas company, listed on the London and Irish Stock Exchanges, which has operated internationally since 1991. Aminex PLC began trading in its present form in 1991 and its shares were listed on the London and Irish Stock Exchanges in 1995.

#### **2.4.5 Searching and Acquiring Operational Control of Upstream Properties**

Most of these international petroleum companies have been searching and acquiring operational control of upstream properties that they believe hold significant development and exploration potential. In particular, they are focused on increasing their holdings in fields and basins in which they can leverage existing infrastructure and discovered hydrocarbon resources. For example the Government of Tanzania approved Dominion to farm-in with Heritage Oil Limited to the Kisangire production sharing agreement ("PSA"), which was previously announced on 21 April, 2008.

The Kisangire PSA comprises two licences, Kisangire and Lukuliro, which cover an area of 7,280 square kilometres and 8,828 square kilometres respectively. The PSA was originally awarded to Dominion in May 2005 with an exploration period of four years followed by one extension of four years, a further extension of three years and the right to a development licence with a term of 25 years.

Most of them (e.g., Petrobras, Shell EP and Artumas) are conducting an active

technology-driven exploration program focused on prospects with material resource potential, to compliment their property acquisition and appraisal and development drilling efforts that are directed to commercial exploitation of known hydrocarbon accumulations.

Furthermore, these international petroleum companies tend to acquire assets and pursue developments that have positive social impacts as well as profit generation capabilities and upside potential for their shareholders, and will seek commercially attractive solutions for gas off-take through development of additional gas markets in the country.

#### **2.4.6 Farming Out as a Financial Strategy for Risk Petroleum Exploration Activities**

Aminex PLC its wholly owned Tanzanian subsidiary, Ndovu Resources Ltd., signed an agreement with Key Petroleum Ltd. to farm out an interest in the Nyuni East Songo Songo license ("Nyuni"), offshore Tanzania. Aminex also provided an update on the status of all its East African projects. Key Petroleum is an Australian company based in Perth, has agreed to farm into Nyuni for a 20% working interest. In order to earn its 20% interest Key Petroleum will:

- Contribute 30% towards the costs of two exploration wells on Nyuni, the first of which is due to be spudded in the second quarter of this year and the second of which will be drilled later in the year;
- Issue 2 million new, fully-paid shares in Key to Aminex or such number of shares which will be valued at the time of its forthcoming admission to the Full List of the Australian Stock Exchange at A\$600,000, whichever number of shares is the greater; and
- Contribute 10% of all license costs arising in addition to drilling with effect from 1 November 2006 to the date of this agreement, estimated to be USD 2.5 million, which will include the current seismic program. This suggests that there are diverse means of financing petroleum exploitation activities. Farming out is one of them and this minimizes potential losses and risks associated in preliminary petroleum exploration activities.

#### **2.4.7 Few Seniors and Majority are Junior International Petroleum Firms**

Consultations and Table 2.1 suggest that Tanzania has few senior companies. These

include Shell EP, Statoil and Petrobras. The rest are international junior international petroleum exploration firms depending on subcontracting main services. For example, The Calgary-based Canadian company, Antrim Energy Inc. (Antrim) is a fairly typical junior explorer, in that it has assembled a clutch of assets spread across the globe (U.K., Tanzania, Argentina, and Australia), with the aim of proving up potential opportunities.

#### **2.4.8 Big Junior Firms Joining Small Junior Firms**

Heritage Oil Limited, an independent upstream exploration and production company, announced the signing of documentation to farm-in to two exploration licences in Tanzania. Heritage is listed on the Main Market of the London Stock Exchange. Heritage operates in Africa, the Middle East and Russia.

The licences, known as the Kimbiji and Latham Areas, cover approximately 9,300 square kilometres and are held under one production sharing agreement ("PSA"). The PSA was awarded by way of a competitive tender process to Petrodel Resources Ltd ("Petrodel") by the Tanzanian Government in September 2006 with exploration periods of four years, followed by extensions of four years and three years respectively, with the right to a development licence with a term of 25 years. Under the terms of the farm-in agreement with Petrodel, Heritage has the right to earn a 70% working interest in the Kimbiji Area, and a 29.9% working interest in the Latham Area. In order to earn the working interests, Heritage will fund all seismic costs of the required work programmes on both blocks, comprising the acquisition of both 2D and 3D seismic data, and the drilling of two exploration wells within the Kimbiji Area. Heritage will be appointed operator upon drilling the second exploration well in the Kimbiji Area. Total exploration costs for the initial exploration term for the two licences are estimated at approximately US\$17.5 million for the Kimbiji Area and between US\$5 million and US\$12 million for the Latham Area.

#### **2.4.9 Junior African Firms Active and Strategic**

As already mentioned, there are no indigenous Tanzanian firms operating in the petroleum exploration sector. The closest African petroleum exploration firm is Ophir Energy plc (Ophir). Ophir Energy plc (Ophir) was established in 2004 as an international oil and gas exploration and gas exploration and production company.

Ophir is a largely African owned company with a strategic relationship with Mvelaphanda Holdings (Proprietary) Limited (Mvelaphanda), one of South Africa's pre-eminent Black Economic Empowerment (BEE) investment groups. Ophir Energy plc (Ophir) is the UK incorporated holding company of a group of companies (the Group) with oil and gas exploration assets in a number of African locations. The Group's headquarters are located in London, England, with operational offices in Perth (Australia), Malabo (Equatorial Guinea) and Port Gentil (Gabon). Since its foundation in 2004, the Company has acquired an extensive portfolio of exploration interests consisting of 16 projects in 8 jurisdictions in Africa. The majority of these interests lies offshore in water depths greater than 250m and is thus classified as "deepwater". Ophir is the Operator of 12 deepwater exploration licenses in Africa and is a participant in an additional two licenses.

The company has innovative financial instruments created by Standard Bank to support the Company in entering into these arrangements. Privately owned African oil and gas exploration company Ophir Energy has secured GBP 168 million from private investors to finance its drilling programmes until 2009. The majority of the funding is from Mittal Investments, the Luxembourg-based investment firm headed by steel mogul Lakshmi Mittal. Mittal is contributing GBP 118 million in two tranches, the second of which will close by May 2009, while UK investment bank JPMorgan Cazenove is supplying the balance of GBP 51 million. Both investors purchased shares at 250p. Ophir will also convert a GBP 49.8 million bond into 21.7 million new ordinary shares, at a price of 230p per share. Following these transactions the company will have an implied capitalization of GBP 558 million, giving Mittal Investments a stake of approximately 21 per cent.

## **2.5 Large Scale International Petroleum Exploration**

The following are main large scale petroleum exploration and development using modern technological steps and activities.

### **2.5.1 Finding Oil and Gas**

The first and foremost is searching for or finding oil and gas step. Drilling for oil and gas is a highly complex operation, carried out both offshore and onshore, often in remote or difficult terrain. If a find is promising and commercial conditions are right, the field will be developed and brought into production.

Drilling is the only way to be certain of what is contained in the underground structures, and to determine whether a well would produce oil, gas or both. It also provides additional information on which to base both further exploration activities, and a future field development plan.

The first well drilled in an area that has good geological potential is called an exploration or 'wildcat' well. If the exploration well is successful and oil or gas (or both) are found, then one or more appraisal wells may be drilled to get a better understanding of the reservoir. These wells help to decide how (or if) to develop the field.

### **2.5.2 Field Development Planning**

Once a successful exploration programme has been discovered promising amounts of hydrocarbons, the next step is to formulate a development and production plan for the reservoir. This involves an integrated effort between geologists and petrophysicists, reservoir, production, design, and drilling engineers, and production operations staff.

Reservoir characterization is achieved by the construction of complex, quantified geological models, using sophisticated modeling programmes run on powerful super-computers. Multi-component reservoir simulation programmes are then used to assess alternative field development schemes and recovery methods. The field development plan will define a requirement for a specific number of "development wells" required to produce and drain the reservoir effectively.

### **2.5.3 State of the Art Drilling Technology**

Drilling accounts for a major proportion of oil industry expenditure, and the need to reduce exploration and development costs has focused attention on drilling research and the development of new drilling technology.

As well as using the most effective technology for drilling, most large scale firms focus attention on how efficiently wells are planned, drilled and managed and a process, called "Drilling the Limit "TM.

This process seeks to ensure that each and every well drilled in company uses 'best practice' from all over the world - whether inside or outside the company. No stone is left unturned to ensure that at any given level of technology, efficiency is maximized. "Drilling the Limit "™ is a team focused process, and involves the managers, supervisors and employees of Shell, our contractors, suppliers and other partners. The results have been outstanding, with significant cost reductions being achieved.

Rock cuttings, core samples and geophysical data from well surveys are used to gain information during the drilling process. Rock cuttings brought to the surface by the drilling mud and core samples; enable geologists to understand the geological setting and, the nature of the reservoir. Key physical properties of the rocks drilled are obtained. Drilling is halted and a recording device, known as a logging tool is lowered down the bore hole on an electric cable. Alternatively, formation data can now also be measured during drilling with down hole logging tools included in the drilling assembly.

By measuring the electrical, acoustic and radioactive properties of the rocks, the presence of hydrocarbons can be detected and information collected from the different formations.

Key physical properties of the rocks drilled are obtained from wire-line logs. Drilling is halted and a recording device, known as a logging tool is lowered down the bore hole on an electric cable. Alternatively, formation data can now also be measured during drilling with down hole logging tools included in the drilling assembly. This information then helps decide the next course of action.

#### **2.5.4 Producing Oil and Gas**

The discovery of an economically viable oil and/or gas field is the goal for a successful exploration programme. A field might typically produce for between some 20 and 50 years, compared with three to seven years to find and develop it. Teams of geologists and engineers - with skills and technologies from a wide range of disciplines - re-evaluate each field many times during the process of finding, developing, producing and finally decommissioning.

Economics govern the life of every oil or gas field. The field development plan must therefore be matched to the anticipated economic climate of the lifetime of the field. Production is usually at its highest in the early stages of a field's development when operating costs are only a small part of expenditure. However, the cost of producing each extra barrel from a maturing field increases as production declines and maintenance becomes more extensive.

Production operations have changed dramatically in the last two decades. Continuous innovation and technological development have made possible new ways of producing more oil and gas from a field. In some cases this has resulted in facilities needing to be operated for much longer than originally envisaged, putting particular attention on the management of safety and the environment. The demand for the exploration and production industry to provide additional volumes of oil and gas continues. Extending its reach into deeper waters, better exploration tools and the opening of new parts of the world to capital and expertise may enable the industry to find and develop significant new resources. Nevertheless, much of the additional volumes must come through industry's ability to increase recovery from existing and increasingly mature production areas.

#### **2.5.5 Flaring**

When oil is brought from below the ground to the surface, associated light gas that is trapped with the oil also comes out. In many locations where oil is found there is no local market for gas and no facilities, such as gas liquefaction plants, to prepare the gas for export. Hence, the gas is burnt near the well, resulting in the flare that is often associated with oil production. Continuous flaring around the world results in the emission of large quantities of carbon dioxide into the atmosphere.

#### **2.5.6 Decommissioning**

Once an oil or gas field has reached the end of its economic life it has to be decommissioned. For onshore operations, the land is returned to its original state - or to whatever use is defined by host governments. For offshore fields, there are more complex issues. A number of international laws and regulations apply, and guidelines and standards have been published by the International Maritime Organization. However, in some circumstances, a case-by-case approach may be adopted. In all cases, health, safety and environmental considerations are essential

elements in decommissioning.

## **2.6 Risks Associated With Petroleum Activities**

The present primary and secondary constraints and risks affecting the performance in oil and petroleum exploration as perceived by private oil companies and other stakeholders operating in Tanzania are presented as follows. The petroleum exploration results are sensitive to various risks, the most significant ones being the hydrocarbon price expressed in dollars and the euro-dollar exchange rates. Nevertheless, it should be noted that the operational currency is the dollar as its sales, a major portion of its operational expenses, and a significant portion of its investments are all denominated in that currency.

### **2.6.1 Risk Relating to the Hydrocarbons Market**

Many company policies are to hedge a portion of its future production against any decline in prices thus taking advantage of a possible rise thereof for the portion of the production that is not hedged. The hedging policy is part of the management of bank credit lines available to the petroleum exploration companies. In fact, the latter are increased if the price of the hedge exceeds the price used by the banks in determining the Borrowing Base.

### **2.6.2 Exchange Rate and Price Risks**

Even though the dollar is the operational currency of many petroleum exploration companies, fluctuations in the euro-dollar exchange rate affect petroleum exploration companies results when revaluation of liquidities held in that currency is undertaken in relation to the year-end closing of the accounts. To minimize this risk, most petroleum exploration companies employ hedging strategies through the use of derivatives (forward foreign exchange hedging and options).

### **2.6.3 Counterparty Risk**

The petroleum exploration companies are exposed to counterpart's risk through [1] Loans granted to third parties and receivables from third parties in the context of its operating activities, and [2] Short-term cash investments with banking institutions and transactions involving derivatives revalued at positive fair value.

Based on its method of operation, petroleum exploration companies may consider

that it does not have counterparty risk exposure, as the production is sold on the market through traders who use letters of credit issued by first-rank international banks. Because of its cash surplus position and its method of operation in relation to the sale of crude, which is paid for with letters of credit issued by first-rank international banks, the counterparty risk exposure of the Company is minimal.

#### **2.6.4 Social Political Risks**

A significant part of the petroleum exploration activities and hydrocarbon reserves are in countries which may in some cases be considered to present the risk of social, political or economic instabilities. For example, more than ten years now, 1997/8 – 2008/9, there are misunderstands related with product and revenue sharing arrangements between TPDC, URT, GOZ and private petroleum exploration firms with PSA in Pemba. In one or more of these hosting countries, the petroleum exploration companies could in the future face risks such as the expropriation or nationalization of its assets, the renegotiation of Production Sharing Contracts through amendments, exchange control restrictions, losses due to armed conflicts or terrorist action, or other problems arising from those countries' political or economic instability.

#### **2.6.5 Risks Relating to the Regulatory Procedure for Obtaining Some Permits**

The international business of oil and gas exploration and extraction must comply with various national regulations applicable in this regulated sector (oil industry code, law on the exploitation of hydrocarbons) in the countries in which they operate, particularly concerning the allocation of drilling rights or the obligations concerning minimum work programmes.

Within the oil and gas businesses, particularly for production sharing procedures, operational decisions, recording and limitation of oil costs, certain tax issues in connection with operations and the rules of cooperation between the petroleum exploration companies and their partners who hold oil or gas exploration or exploitation permits on the one hand, and the host country, on the other hand, are usually defined in a "Production-Sharing Contract" (or "PSC") between these parties and the host country's Minister responsible for hydrocarbons. In addition, a "Joint Operating Agreement" (or "JOA") defines the relationships between the parties other than the host government.

In addition to the PSCs, permits are granted by the host government which authorizes the Group to carry out its hydrocarbon exploration and production activities. The duration of these permits is limited in time with renewal periods and they include obligations regarding surface area rehabilitation during the exploration period.

The impact on the PSCs (or more generally the ways of putting these permits into production) that might arise from a downturn in the political or economic situation in one or more of the countries in which the petroleum exploration companies currently hold oil exploration or exploitation permits is a difficult risk to assess.

#### **2.6.6 Risks Related To Legal Disputes**

In some cases, petroleum exploration companies may be involved in various legal actions and claims during the normal course of its business activities. Risks have to be assessed on the basis of the analysis of past experience by the company legal departments and counsels. The legal disputes are reviewed regularly, particularly when new facts arise and provisions are set aside, if required, on the basis of those assessments. The companies have to ensure that they have the legal resources to defend their interests.

#### **2.6.7 Risks Related to the Reserves**

The proven reserves are according to known economic conditions and using existing geological and engineering data to assess the quantities of hydrocarbons that can be produced. The valuation process involves subjective judgments and may lead to later revaluations as knowledge of the oilfields improves.

In addition, it is impossible to guarantee that new crude oil or natural gas resources will be discovered in sufficient quantities to replace the reserves that are currently being developed, produced and marketed by the petroleum exploration companies.

#### **2.6.8 Capitalized Production**

The petroleum exploration companies' oil production may be restricted, delayed or cancelled for many reasons, including production plant malfunctions, administrative delays, in particular with the development project approval procedures of host

countries, shortages, and late deliveries of equipment or weather conditions. Such restrictions, delays or cancellations could have an impact on the petroleum exploration companies' earnings.

#### **2.6.9 Oil and Gas Exploration**

This type of activity, which implies that the hydrocarbons can be discovered and extracted, requires the implementation of major preliminary operations. These operations of geological and seismic analysis are prior to exploration drilling. This type of operation is used to decide where to perform the exploration drilling, move on to the production stage or continue exploration when encountering a mediocre result as to the quality of the hydrocarbons and the uncertainty of being able to extract them. Furthermore, once extraction has started, the knowledge of the reserves may sometimes be uncertain as it emerges only as extraction progresses. Finally, the practical conditions of extraction and its cost may vary while the reserves are being extracted.

#### **2.6.10 Risks Related to the Reconstitution of Reserves**

The petroleum exploration companies cannot guarantee that any investments will be successful and that it will manage to rebuild its reserves and/or increase its production to a level comparable to the level prior to the sale.

Risks related to the possible dependence of petroleum exploration companies on customers, suppliers or subcontractors. Most junior petroleum exploration companies have no major down stream commercial relations which could result in a situation of dependence.

#### **2.6.11 Competition Risks**

The petroleum exploration companies are in competition with other oil companies when acquiring rights on oil permits for the exploration and production of hydrocarbons. Because of its positioning and financial resources, the petroleum exploration companies' main competitors are "junior" or "mid-size" oil companies.

#### **2.6.12 Industrial and Environmental Risks**

Within its oil business activities, petroleum exploration companies have to pay constant attention to prevent industrial and environmental risks and take the utmost

care to respect the regulatory requirements of the countries in which it operates. It also constantly monitors the legal and regulatory, national and international trends concerning industrial and environmental risks. Most petroleum exploration companies are also constantly seeking to improve its safety, security and risk prevention resources on the production sites.

Nevertheless, there are environmental risks associated with the features of oil and gas fields. These risks include crude oil or natural gas blow-outs, well side collapses, seepage or leaks of hydrocarbons causing toxic, fire or explosion risks. All these are likely to damage or destroy the hydrocarbon wells in production and the surrounding installations, endanger human lives or goods, interrupt work and cause environmental damage with direct consequences on the surrounding populations' health and economic life.

#### **2.6.13 Systematic Impact Studies**

Pursuant to applicable regulations in the countries where the petroleum exploration companies operate, all must carry out systematic impact studies before starting specific work, examines and assesses the safety risks and the impact on the environment. In order to identify, quantify and prevent the onset of risks, most petroleum exploration companies rely on their own expertise as well as on that of external experts.

## **2.7 Perceived Problems Facing Exploration Companies**

The following are some of perceived problems limiting performance of private petroleum firms operating in Tanzania based on our field research survey, which generally relate to the effect of the financial crisis, investment climate in Tanzania support from local authority etc

### **2.7.1 Global Financial Crisis**

First and foremost is the current global financial crisis that now is affecting global economic activities, investment, production, trade and consumption. During late 2008 and early 2009, the oil industry witnessed a financial crisis as well as a dramatic fall in the price of crude oil and petroleum products. This unprecedented drop in the price for oil and limitations on international financial resources may reduce drilling activities in many countries including Tanzania, to its lowest recorded level,

resulting in a major threat to the petroleum reserve base due to a lack of major new discoveries and or an increase in the country dependence on imported oil. As a result, Tanzania economy is again susceptible to concerted market failures or further social economic crisis

The drilling areas that will be hardest hit by the financial crisis and free-fall in oil prices are the high-cost, high-potential frontier areas. Exploration and development in areas such as in the deeper waters of the Tanzania such as in Pemba require enormous amounts of capital. Because of the current world market and the uncertain revenue sharing structure, the risks inherent in exploration and development in these frontier areas are unacceptable. Yet these areas are the most promising for producing our nation's future reserves.

Currently, many petroleum exploration projects may be delayed or cancelled because of uncertainty in the international financial and petroleum markets. Under the current price forecasts, exploration would not accelerate again in earnest until 2010 which is approximately the same time that new phase government would be installed. Further delays in the exploration and development in Tanzania will increase the lead-time required for the industry to find new reserves to replace what is being used up now. Our nation cannot afford to delay exploration of these areas nor can we afford to rely on foreign governments to provide the oil necessary to fuel the Tanzania economy. By allowing ourselves to be lulled by temporarily low oil prices, Tanzania is limiting its options for choosing its own means of meeting the nation's energy demands.

### **2.7.2 Investment Centre for Petroleum Exploration**

Tanzania Investment Centre, (TIC) or / and Zanzibar Investment Promotion Authority, (ZIPA) are supporting, facilitating, and promoting private sector investment activities, such as those in gold mining sector. It is unfortunate that there is no similar institution catering for petroleum exploration in Tanzania. This has always been a major constraint, as TDPC is more skilled and concerned with professional, operation and technical matters. There are various investments, fiscal, financial and other social economic operational limitations the companies face in dealing with different institutions while conducting their activities in Tanzania.

### **2.7.3 Ignorance of Local Authorities and Localities in the Field Area**

Local government authorities and communities are not well informed, consulted, involved in petroleum exploration and development activities. They have very limited data, information and knowledge about the sector. Problems start when the exploration companies have concluded everything in Dar es Salaam and firms are planning and preparing to start their operational activities as agreed in the PSA. In some cases, local authorities do interfere with petroleum exploration activities. Also, the local communities have over expectations on the projects. They can not distinguish between petroleum exploration and development phases. They know that any petroleum activity is money making activity. Many of these international petroleum firms are aware of this problem. Many participate and contribute towards community development projects, such as building schools, health centres and rural roads as part of their corporate social responsibility.

### **2.7.4 Tax Exemptions**

PSA and legal framework of petroleum in Tanzania stipulate that there is tax exemption to the investors due to the risky nature of exploration of petroleum and cost undertaken by the companies. In practice the companies complain that they do not enjoy exemption of tax as provided. Many firms argue that the taxation system is not conducive for the offshore petroleum activities.

### **2.7.5 Contradiction between TRA administration and Provisions of PSA**

Some private firms have the opinion that TRA is not aware or not well informed or do not agree with the fiscal and financial provisions provided under the Act and PSA.

This happen most of times that Tanzania Revenue Authorities doesn't agree with some of provision of Profit Sharing Agreement which the companies have legally acquire from proper authority. Thus this brings confusion to the companies and they think that justice is not dispensed to them.

### **2.7.6 Political interference in the Petroleum Exploration**

Tanzania is a multiparty democratic country. There are various political parties with different political ideologies and perceptions. There are those advocating for direct state participation and others through PSA arrangements. There are those who consider active participation and increasing role of private indigenous firms and

individuals in owning, managing and operating petroleum activities, whereby foreign private firms come as joint venture partners. These are other operational, product and revenue sharing systems have been fundamental political issues. Petroleum exploration has been affected with these politics in Zanzibar.

## **2.8 General Perceptions from Oil Companies**

Consultations with some senior and top executive officers of petroleum firms suggest that exploration and production of hydrocarbons in Tanzania is a high-risk venture. Geologic concepts are uncertain with respect to structure, reservoir seal, and hydrocarbon charge. On the other hand, economic evaluations contain uncertainties related to costs, probability of finding and producing economically viable reservoirs, and oil price. Even at the development and production stage the engineering and marketing parameters embody a high level of uncertainties in relation to their critical variables (infrastructure, production schedule, quality of oil, operational costs, reservoir characteristics, etc.). These uncertainties originated from geological models and coupled with market, political, economic and engineering models involve high-risk decision scenarios, with no guarantee of successfully discovering and developing hydrocarbons. It is for these reasons some petroleum exploration failed to ascertain discoveries of crude oil in Tanzania. Some companies, like Artumas are facing both political and market constraints with respect to the use of gas in power generation. The government has failed to facilitate their plans to hook their power project to the national grid, where it could have been economical feasible for them at the same time solving the current power crisis in Tanzania. Both lack of political will and government support are major reasons for the failure of Artumas to proceed with its gas-power project in Mtwara.

The future trends in oil resources availability and discoveries will depend largely on the balance between the potential outcome of the cost-increasing effects of depletion, revenue flows, product sharing arrangements and the cost-reducing effects of the new technology. Based upon that scenario new forms of reservoirs exploitation and managing will appear where the contributions of risk and decisions models are one of important ingredients. This trend can be seen in the last two decades. The new internationally focused exploration and production strategies were driven in part by rapidly evolving new low cost technologies. Low cost technological advances

allowed the exploration in well- established basins as well as in new frontier zones such as ultra-deep waters. Some observers are opportunistic on the potential exploration and discoveries in the Lake Tanganyika. Those technology-driven international exploration and production strategies combined with new and unique strategic elements where risk analysis and decision models represent important components of a series of investment decisions in the off-shore exploration in Tanzania.

## **2.9 Factors Determining FDI Flows and Operations**

The attractiveness of Tanzania for petroleum exploration and development investment depends upon the perception of its prospectivity, which broadly speaking, refers to the technical attributes (source rock, reservoir, cap rock, etc.) as well as economic, political, legal and fiscal arrangements for the commercial exploitation of the petroleum resources. The technical prospectivity of our country is important, since if the potential of an area for supporting hydrocarbon discovery is considered low, our country will not be very attractive for any foreign direct investments. The determinants of a commercial discovery depend in part on the results of the initial exploration program done by TPDC (the size and location of the field, the complexity of the reservoir structure, the quality and type of hydrocarbons, etc.), existing infrastructure in the country, and the fiscal conditions that govern revenue sharing. Other conditions such as the rule of law and geopolitical factors also play important roles in assessing a region's prospectivity. In the case of Pemba, the current geopolitical factor has played a detrimental role for continuation of Shell EP and Atrium petroleum exploration work programs.

## CHAPTER THREE : THE POLICY FRAMEWORK

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### 3.1 Introduction

This Chapter assesses major policies affecting performance of the energy industry in Tanzania. Energy is critical for the attainment of the Tanzania Development Vision (TDV) -2025 Zanzibar Development Vision (ZDV) 2020, National Strategy for Growth and Reduction of Poverty, (NSGRP), Zanzibar Strategy for Growth and Reduction of Poverty, (ZSGRP) and Millennium Development Goal, (MDG) targets. Energy is important for productive activities in industry, agriculture, transport and water supply and in the provision of social services such as education and social services. However, effective energy supply falls short of the required levels and quality (considering environmental effects of certain sources, such as firewood). Unreliable and high cost power has been discouraging private sector investments. In rural areas there are no alternative commercial energy sources that would reduce the burden on women and children and health hazards (e.g., from smoke) or the unsustainable exploitation of forestry resources. Consultations with stakeholders reveal that the energy sector has been facing a number of complex constraints such as lack of political commitment and government support and direction, lack of sub-sector specific policy, inadequate investments in the energy sector and of limited affordable alternative energy technologies.

Neither Tanzania (Mainland) nor Zanzibar has an explicit national petroleum exploration policy. However, exploration aspects are partially covered in the National Energy Policy (1992 and 2003) and several other national development policies targeted to the development of the petroleum industry in Tanzania. Zanzibar government does not have an explicit energy policy. GOZ is in the process of formulating a Zanzibar Energy Policy. The most important and current is the National Energy Policy of 2003 formulated by the Ministry of Water, Energy and Minerals. Other complementary national development policies include National Environment Policy 1997, National Investment Policy 1996 and National Trade Policy, 1998.

### 3.2 The National Energy Policy, 1992

The first National Energy Policy for Tanzania was formulated in April 1992. Since then, energy sub-sectors as well as the overall economy have gone through social economic and institutional reforms where the role of the Government has changed, markets have been liberalized and private sector initiatives encouraged. Hence, the policy document has been revised taking into account structural changes in the economy and political transformations at national and international levels. However, the national policy objective of 1992 for the development of the energy sector remains valid to provide an input to the development process by establishing an efficient energy production, procurement, transportation, distribution, and end-user systems in an environmentally sound manner and with due regard to gender issues.

The National Energy Policy 1992 had several general policy objectives. These included the need [1] for the exploit the abundant hydro-electric sources; [2] to develop and utilize natural gas resources; [3] to develop and utilize coal resources; [4] to step up petroleum exploration activities; [5] to arrest wood fuel depletion by evolving more appropriate land management practices and more efficient wood fuel technologies; [6] to develop and utilize forest and agricultural residue for power and cooking energy production; [7] to minimize energy price fluctuations in order to contribute to stability of prices in general through strengthening and rationalization of energy supply sources and infrastructure and a rational energy pricing structure; [8] to develop human resources for development of energy technologies development, and [9] to ensure the continuity and security of energy supplies.

### **3.3 The National Energy Policy, 2003**

The National Energy Policy 2003 is the current policy guiding development of petroleum sector and it is a revised version of the National Energy Policy of 1992, (URT, 2003).

#### **3.3.1 Vision and Mission**

The Vision of the energy sector is to effectively contribute to the growth of the economy and thereby improve the standard of living for the entire nation in a sustainable and environmentally sound manner. The Mission for the energy sector is to create conditions for the provision of safe, reliable, efficient, cost-effective and environmentally appropriate energy services to all sectors on a sustainable basis.

### **3.3.2 Policy Objectives**

The national energy policy objectives are to ensure availability of reliable and affordable energy supplies and their use in a rational and sustainable manner in order to support national development goals, (URT, 2003). The national energy policy, therefore, aims to establish an efficient energy production, procurement, transportation, distribution and end-use systems in an environmentally sound and sustainable manner. There are fundamental features and considerations, which determine the development directions and structures of the energy sector. The following are some of the key issues to take into account:

### **3.3.3 Market Economy and regulatory Regime**

In line with the overall economic policy of the country, the market-oriented concept shall apply to the supply of energy products and services. Implicitly, medium and long-term services of independent economic actors should determine allocation of resources. Competition on a fair and equitable basis among independent actors forms the basis for market efficiency.

In order to ensure that the market functions without distortions, there will be an independent regulatory regime for the energy sector. While the institutional framework and the regulatory mandate may vary in the different energy sub-sectors, the regulatory regime will be characterized by its autonomy, transparency, predictability and stability. To safeguard this, the regulatory regime shall be anchored in legislation

### **3.3.4 National Interest versus Market Forms**

The reliance on market forces in order to achieve the national development objectives of economic growth and poverty reduction. There is a need to limit the role of the state to intervene when and where market forces fail to deliver decked results. Keeping its role as facilitator of an environment for the market, the state shall or deregulate the market in order to enhance the Benefits of development for the economically weaker communities and groups. The state needs to unconditionally protect and promote the interests of society as a whole. Thus, the state wilt apply transparent fiscal (taxes, duties, levies) and non-fiscal (fees, subsidies, concessional credit, guarantees) measures to direct market forces and, when necessary, correct market failures.

The Government shall balance between the use of the energy sector for revenue generation and the need for affordable energy by limiting the impact of high taxes, levies and other duties on energy production costs. This balance could include strict cost pricing in markets of major energy products, as well as the requirement of the sector for subsidies, incentives and other costs, which need to be covered within the sector itself or by the national state budget. The cost of energy represents a significant part of the total cost structure of companies. Consequently, it affects the competitiveness of products in domestic as well as export markets.

Cost effectiveness in the production and supply of energy may be achieved through continued opening up and liberalization of energy markets and further introduction of competition at all levels of the sector. The elimination of cross- subsidization from large energy consumers to households and other smaller consumers will go a long way towards improving product competitiveness at the market place.

### **3.3.5 Specific Policy Objectives for Petroleum Sector**

The following are some of specific policy objectives and issues of the petroleum sector.

- There is a need to supply petroleum products on a sustainable basis and cost effectively with due consideration to environment, health and safety.
- Further, it is a national priority that exploration of oil is given the highest possible emphasis although there are limited local resources available for exploration activities.
- Safety, health and environmental concerns should be considered in accordance with good petroleum industry practices. There is a need to adopt, adjust and develop technical and product quality in accordance with internationally accepted standards and norms, e.g. bio coding of petroleum products, etc.
- The sector needs an efficient regulatory framework in order to safeguard the interest of stakeholders and create a level playing field for the petroleum product suppliers and retailers.
- Further, there is a need to review fiscal regimes, which burden petroleum

product prices. This needs to be done with a long-term perspective, taking into account the consequences to the petroleum sub-sector, which would affect other sectors.

### **3.3.6 Natural Gas**

Exploration and the optimal use of this resource remains a national priority. Markets and investment in infrastructure for natural gas are underdeveloped. There is a need to introduce regulatory mechanism in order to protect other stakeholders. There is also a need for intensive gas exploration and development of markets and infrastructure for optimal use of the resource. It is essential to formulate a long-term strategy for rational utilisation of natural gas resources.

## **3.4 National Investment Policy, 1997**

The National Investment Policy, 1997 acknowledges that, Tanzania has substantial proven natural gas reserves that can be exploited for industrial use and power generation. Other hydrocarbon reserves are also noted to exist but these require further exploration.

The overall long-term goal of Tanzania's socio-economic development is to attain a society with sustainable human development, i.e., a society of educated and healthy individuals, a culturally-dynamic and economically-sustainable society. The society that is needed is the one that rejects under-development and braces itself to the task of raising the living standard of its people to the level of a typical medium-income level country that focuses on human development. The main components of Tanzania's development include the need to optimally utilize the nation's natural and other resources and to balance accelerated economic growth with a more efficient management of the environment and use of the country's natural resources in ways which will ensure. Given the resources and other intangible advantages that Tanzania enjoys, and taking into account the point that development is a dynamic process; in order to meet the challenges facing Tanzania to make its socio-economic aspirations a reality, the government will promote the various policies, strategies and actions so as to achieve the pronounced national investment objectives.

## **3.5 Position, Interests and Rights of Indigenous Tanzania**

Chapter Three has shown that Tanzania has an adequate energy policy framework

to cater for the development of petroleum exploration and development activities, (URT, 2003). The national development policies are specific on matters related with investments, production, private sector participation and development in a liberalized market environment. The current political ideology and policies do not advocate for nationalization or confiscation of private capital by either the state or local communities. However, these policy developments have not guaranteed the position, interests and rights of indigenous Tanzania with respect to petroleum resources. It is assumed that the government will take into consideration these interests and rights of their citizens when dealing with petroleum exploration and development activities. Both the current National Energy Policy, (2003), and the draft GOZ Energy Policy (2009) do not adequately cover relevant petroleum exploration and development issues. These include policy objectives and strategies to build capacities of communities, private and public companies in petroleum exploration. These policies are not clear on whether petroleum and gas issues are Union Matters.

## CHAPTER FOUR: THE LEGAL AND REGULATORY FRAMEWORK

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### 4.1 Introduction

Chapter Four assess legal and regulatory frameworks affecting the performance of the petroleum exploration industry. The government of United Republic of Tanzania, has various substantive and subsidiary laws which are affecting performances and activities of petroleum development, starting with the [1] Constitution of the United Republic of Tanzania, [2], the Petroleum Exploration and Production act of 1980; EWURA Act of 2001, [3], the Petroleum (conservation) Act of 1987 which has now been repealed by the Petroleum Act of 2008, [4], Public Corporation Act No.17 of 1969 repealed and replaced by the Public Corporation Act (Cap 257 R.E 2002) of the Laws of Tanzania through GN No 140 of 30 May 1969 and [5], other business and cross cutting laws and regulations.

Similarly, the government of Zanzibar has a number of substantive and subsidiary laws which may be affecting performances and activities of petroleum development in Unguja and Pemba. These are related with company registration, environment, land, investment and local government authorities. However, the current baseline will focus on URT legislation affecting petroleum sector. The Zanzibar legislation is important and must be used when handling offshore petroleum exploration in Pemba and Unguja.

### 4.2 Constitution of the United Republic of Tanzania

Article 152 (3) of the Constitution of the United Republic of Tanzania provides for the application that the Constitution shall apply to Mainland Tanzania as well as Tanzania Zanzibar. Article (2) provides that any person has a right to be informed at all times of various important events of lives and activities of the people and also issue of importance to the society. Also Article 27(1) provides the duty to protect the natural resources of The United republic. This Constitution provision requires individual and the government to protect natural resource of the state such as petroleum and gas.

Article 9(c) of the Constitution elaborates that the state authority and all its agencies

are obliged to direct their policies and programmes towards ensuring that public affairs are conducted in such a way as to ensure that the national resources and heritage are harnessed, preserved and applied for the common good and also to prevent the exploitation of one person by another. Also the same Article under subsection (i) provides that the use of national resources places emphasis on the development of the people and in particular is geared towards the eradication of poverty, ignorance and disease.

Article 30(2)b of the United Republic of Tanzania Constitution it make provision for ensuring the defense, public safety, public order, public morality, public health, rural and urban development planning, the exploitation and utilization of minerals or the increase and development of property or any other interests for the purposes of enhancing the public benefit.

Article 4(3) of the Constitution indicate that matters of natural resources such as oil and gas are of United Republic of Tanzania (Union), where by this provision provides that for the purposes of the efficient conduct of public affairs in the United Republic and for the allocation of powers among the organs specified in this Article.

There shall be Union matters as listed in the First Schedule and there shall also be non-union matters which are all other matters not so listed. Thus Para 15 of the first schedule of the Constitution as referred under Article 4 state that Mineral oil resources, including crude oil and natural gas are Union Matters thus it is nascence to debate whether petroleum is the matter of Republic or not.

### **4.3 Substantive Legal Framework for Petroleum**

#### **4.3.1 Exploration and Production Act of 1980**

The core legal framework for petroleum is governed by the Exploration and Production Act of 1980, known as the Petroleum Act. The Petroleum Act 1980, which applies to any naturally occurring hydrocarbon, whether in gaseous, liquid or solid state, or any mixtures thereof, vests title and control over petroleum in any land to which the Petroleum Act applies in the state. The Act is the basis for the grant of exploration and development licenses. It spells out the broad terms and conditions of the licenses and also vests petroleum resources in the government. It defines the administrative and the powers of the Minister and the Commissioner of

Petroleum Affairs, including those of formulating regulations.

However, the Act makes provisions for licensing by the Minister of Energy and Minerals. Section 13 (a) of the Petroleum Act provides that “a license will be granted to an individual who is a citizen of Tanzania”. On the face of it, this provision appears to exclude foreigners from the petroleum industry. However, the correct interpretation seems to be that it only excludes purely foreign businesses that have not been incorporated or registered under Tanzanian company law. The Act distinguishes two types of licenses, namely an Exploration License and a Development License.

Any application including application for license must be made to the Minister. If an application has been made, the Minister may require an applicant to furnish in writing any information that can be reasonably required. The Minister may also cause investigations, negotiations or consultations to be made or carried out as considered necessary and is empowered by the Petroleum Act to grant the application on the conditions the Minister determines, or refuse to grant an exploration license in respect of any land blocks. While in force, an exploration license confers on its registered holder the exclusive right to explore in the licensed area for petroleum and to carry out any operations and execute any works necessary for that purpose.

The exclusive right is, subject to conditions specified in the license or to which the license is otherwise subject. An exploration license remains in force for four years, starting on and including the date on which it was granted, but the Minister can extend it. The Minister is further required by the Petroleum Act to direct the holder of an area declared to be a petroleum location to carry out investigations and studies to assess the feasibility of the construction, establishment and operation of an industry for the recovery of petroleum in that location. Among the matters to investigate and study is the physical impact of that industry on the environment.

The Petroleum Act enjoins the Minister to make regulations prescribing all matters that are required or permitted to be prescribed for carrying out or giving effect to it, including regulations on conserving and preventing the waste of the natural resources, whether petroleum or otherwise, of the land to which the Act applies.

#### **4.3.2 Objective of the Petroleum Act of 1980**

One of the foremost objectives of the petroleum act of 1980 is to regulate of exploration of petroleum in both Zanzibar and Tanzania Main land. Also another objective of the Act is to make control of petroleum exploration so that to make it profitable to the state and the citizen of the united republic of Tanzania. To provide license to the individual or corporation that will qualify the standard lay down by the act through TPDC. Another objective is to provide punishment to those who will be guilty of any offence provided under the Act.

#### **4.3.3 Weakness of the Petroleum Act of 1980**

Consultations suggest that the Act has some inadequacies, gaps and weaknesses. The Act makes provisions for licensing by the Minister of Energy and Minerals. Section 13 (a) of the Petroleum Act<sup>2</sup> provides that “a license will be granted to an individual who is a citizen of Tanzania”. On the face of it, this provision appears to exclude foreigners from the petroleum industry. However, the correct interpretation seems to be that it only excludes purely foreign businesses that have not been incorporated or registered under Tanzanian company law.

The Act distinguishes two types of licenses: [1] an Exploration License and a [2] Development License. This is another weakness because this could be integrated it could hasten the development of petroleum industry in Tanzania in exploration and developing the industries.

The Minister has been given too much power in granting of licensing thus it is more likely for the Minister to act ultra-vire (abuse the power given to him) and this is because the Act provides that, any application including application for license must be made to the Minister. If an application has been made, the Minister may require an applicant to furnish in writing any information that can be reasonably required. The Minister may also cause investigations, negotiations or consultations to be made or carried out as considered necessary and is empowered by the Petroleum Act to grant the application on the conditions the Minister determines, or refuse to grant an exploration license in respect of any land blocks.

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<sup>2</sup> Petroleum Act of 1980

Part VI of the Act<sup>3</sup> provides for Financial Provisions such as paying for royalty in respect of petroleum by the license holder but it did not provide how much percent to be paid as a royalty. This is among major problem which lead for Tanzanians to not benefit from their natural resources.

Petroleum Act of 1980 has some confusion on division of financial responsibility since it gives more powers to the Commissioner and forgets the role of Permanent Secretary. The Commissioner is less knowledgeable and has limited capacity to evaluate and monitor financial and fiscal matters affecting the sector and firms. For example, at the moment many private companies are complaining about the taxation system and administrating done by TRA. Neither the Commissioner nor TPDC have proved effective in handling import tax matters. There are serious delays and costs imposed by poor and inefficient taxations system. The taxation system is not pro-offshore petroleum operations.

Also the investors urge that some provision of PSA should be reviewed to face the actual economic situation thus its of great merit that TPDC, the Government and the investor should seat and look on the way out of balancing interest in the PSA since the exploration business is the risk one The act do not provide in capital what measure shall be undergone when the license holder cause grievous pollution and human right abuse. Because from experience many places where the exploration of oil took place there was happenings of environmental problems and abuse of human rights as it was observed in the case of *Wiwa v. Royal Dutch petroleum*, *Wiwa v. Anderson* and *Wiwa v. Shell petroleum development company* where by the petroleum companies above cited as defendant violated human rights against the Ogoni people in Nigeria whose area was explored with those companies<sup>4</sup>

The petroleum act was designed to be applicable in Tanzania mainland and Zanzibar but in practice it seems that the Petroleum Act of 1980 is more applicable in Tanzania Mainland and not in Zanzibar.

#### **4.3.4 Effectiveness of the Petroleum Act of 1980**

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<sup>3</sup> Petroleum Act of 1980

<sup>4</sup> [www.centerfor human right.com](http://www.centerforhumanright.com)

The Act gives the opportunity to native to subscribe licensing of exploration of Petroleum so that citizen and Tanzanians in general can benefit from the natural resource of the Nation as it is a constitutional right to every Tanzania as provided under Article 18(d) and 27(1)<sup>5</sup>. The Act has put the matter of petroleum as a Union matter thus wherever exploration can be undertaken whether is in Tanzania Mainland or Zanzibar the benefit will be of the URT this is impliedly provided under preliminary provision of the Petroleum Act of 1980 where by it provides that the Act shall apply to Zanzibar as well as mainland Tanzania.

#### **4.4 Tanzania Investment Act of 1997**

The commitment of the Government of Tanzania to encourage foreign investment in the productive sectors is reflected in legislative changes, particularly the introduction of the Tanzanian Investment Act 1997, which sets out the legal criteria for all investors. This, together with the public sector reform programmes and the establishment of Tanzania Investment Centre, (TIC), have clearly instilled confidence among foreign investors, who can enjoy certain fiscal incentives and many indirect tax breaks in the early years of investment.<sup>6</sup>

The Tanzania Investment Act of 1997 sets out the minimum criteria that must be met by any prospective foreign investor. There must be a minimum investment of US \$300,000, for which the foreign investor is entitled to 100% control of the Tanzanian entity. Unlike Tanzanian investors, foreign nationals must obtain a permit from TIC in order to be able to invest.

##### **4.4.1 Application of the Act**

The Tanzania Investment Act of 1997, its application shall be to any business enterprise which meets the requirement specified in Section 2 Subsection (2) of the Investment Act. But, Section 2(1) (a) to (c) of the Act exempts under its umbrella, the following business hereunder;

*First it exempts a business enterprise which is authorized to conduct reconnaissance, prospecting or mining operation under the Mining Act, 1979, or is seeking*

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<sup>5</sup> The constitution of the United Republic of Tanzania of 1977 as amended from time to time

<sup>6</sup> Gateway to foreign investments in Tanzania. Mkono & Co. Advocates, Dar es Salaam

authorization to conduct any such operation as provided under section 2(1)(a) of the Act.

*Second*, a business enterprise which is authorized to conduct exploration or production operations or to construct or operate a pipeline under the petroleum (Exploration and Production) Act, 1980, Or is seeking authorization to conduct any such operations; as provided under subsection 2(1)(b) of the Act.

*Thirdly*, a business enterprise which is engaged in manufacture, marketing or distribution of hazardous chemicals, armaments or any types of explosives. As provided under section 2(1) (c).

In accordance of the provision provided above it can be construed that the Tanzania Investment Act of 1997 does not cover exploration and production of petroleum but it recognize the appropriate laws which deals with specific matter of petroleum .

In the contrary section 2(3),2(4) and 2(5) shows that Investment Act of 1997 also is one among the laws that govern petroleum exploration in Tanzania where by section 2(3) provides that Notwithstanding the provisions of subsection (1)(a) and (b), the provisions of Section 21 which relates to guarantees of transfer of capital, profits and dividends and Section 22 which relates to the guarantees against expropriation, shall apply to any business enterprise which holds a mineral right granted under the Mining Act, 1979, or a license granted under the Petroleum (Exploration and Production) Act, 1980, as though the holder has for the purpose of those provisions been granted a certificate of incentives and protection.

Nothing in Section 22 relating to expropriation shall be read or construed as limiting or qualifying the right of the Minister or the Commissioner acting under and in accordance with the Petroleum (Exploration and Production) Act, 1980 or the Mining Act, 1979, to terminate licences granted under those laws. This is provided under Section 2(4) of the investment Act of 1997.

#### **4.4.2 Objective of the of the Tanzania Investment Centre**

The Investment Act under section 4 establishes the body known as Tanzania Investment Centre and whereby section 5 of the Act provides the objective of the

centre. The section provides that the Centre, which shall be a one-stop centre for investors, shall be the primary agency of government to co-ordinate, encourage, promote and facilitate investment in Tanzania and to advise the Government on investment policy and related matters

#### **4.4.3 Function of the Centre**

Section 6 of the Act provides for the function of the Centre which among others, is to assist all investors. Including those who are not bound by the provisions of this Act, to obtain all necessary permits, licences approvals consents. Authorizations, registrations and other matters required by law for a person to set up and operate an investment; and to enable certificates issued by the Centre to have full effect. This is provided under section 6(d). Under Section 6(a) it provides that the Centre shall initiate and support measures that will enhance the investment climate in the country for both local and foreign investors.

#### **4.4.4 Strength of Tanzania Investment Act**

Section 7(3) of the Act provides that the member of the Board shall be appointed by their qualification such as their knowledge and experience this helps to avoid risk or any kind of negligence which will bring loss to the Nation. The Act through the Tanzania Investment centre facilitates foreign investments also It does facilitate opportunities for native to invest.

#### **4.4.5 Weakness of the Act**

Through the provision of the Act many private sector investors enjoy fiscal incentives such as tax breaks. The Act is silent to provide generic fiscal incentives to petroleum firms when importing capital equipment, machineries and other intermediate inputs. The Act is not certain on the matters of petroleum exploration because under section 2(1) (a) and (b) the provision provides that the Act doesn't cover petroleum business and stipulate that any petroleum business is covered by the Petroleum (Exploration and production) Act, 1980. While section 2(3), 2(4) and 2(5) shows that the matter of petroleum or petroleum business are covered by the petroleum Act of 1980.

### **4.5 Energy and Water Utilities Regulatory Authority (EWURA)**

The Energy and Water Utilities Regulatory Authority, (EWURA), is an autonomous

statutory body created under Cap 414 of the laws of Tanzania. It is responsible for the technical and economic regulation of the electricity, water, petroleum and natural gas sectors. The function of the Authority include, among others, licensing, tariff review, monitoring performance and standards with regard to quality, safety, health and environment.

The Petroleum Conservation Act of 1981, as amended; further confirms EWURA's powers to regulate the petroleum industry in Tanzania. Section 4 of the Act requires persons carrying out the business of importing, unloading, transporting, storing, transforming or selling petroleum to obtain a license issued by the Authority.

The Energy and Water Utilities Regulatory Authority Act, of 2001 under Section 6 provides for the duties of EWURA, the duties of the Authorities include, among others, promoting effective competition and economic efficiency.

Section 7 provides for the function of the body such as to issue, renew and cancel licenses as it is provided under section 7(1)(b)(i) of the Act, to monitor the performance of the regulated sectors in various aspect and one among is to make sure on availability and quantity of service as it is provided under section 7(1)(c)(i) to (v).

In the case of Petroleum and Natural Gas EWURA has the function of regulating Transmission and Natural gas distribution as provided under section 7(1)(d) and Part III of the Act provides for the powers and proceeding of the Authority such as delegation power which makes the Authority flexible, this has been provided under section 22 of the Act.

#### **4.5.1 Effectiveness or Strength of the EWURA Act Of 2001**

There are so many positive merits of the Act such as the Act facilitate the Resolution of complaints and disputes as it is provided under section 7(1)(e) also the Act Adhere the Constitution of the United Republic of Tanzania by Providing constitutional right to appeal for any aggrieved party by the Authority. This is provided under section 29(1) where by any person can appeal to Fair Competition Tribunal against the decision of the Authority

Through the EWURA Act the authority makes sure availability and quantity and standard of services as provided under section 7(1)(c) (ii) where by in practice is current seen by the current announcement made by EWURA in reducing the price of petroleum.

The Act guides and protects professionalism by providing the code of conduct which member should adhere as provided under section 11(1) of the Act.

The Act provides for the caring out Annual Report in order to enhance monitor and evaluation of the Authority, this is provided under section 48 of the EWURA Act of 2001. The Act under Section 48(1) provides that before 30<sup>th</sup> September each year, the Authority shall prepare an Annual Report in respect of that year up to the immediately preceding 30<sup>th</sup> June and submit to the Minister.

#### **4.5.2 Weakness of EWURA Act of 2001**

Section 7(2) of the Act restrains the Authority to perform its functions in contravention of any international agreements to which the United Republic is a party. This makes the Authority lack some power to help the nation due to limitation like this.

In granting Major or Exclusive licenses the Authority shall not perform its function unless it consults the minister responsible. Thus herein above make the function of the Authority to not be absolute and thus persuasive. The Minister on his/her own peril or merit can act in his/her cause and bias is more likely to happen. This is seen under section 7(3) of the Act.

Section 25 of the Act put some confidentiality nature within the Authority which by this is more likely the cause to defeat the general perception of transparency and flexibility of the Authority hence the public can loose trust on the way the body conduct its activities.

## **4.6 The Petroleum Conservation Act 1981**

This Act has been enacted to provide for the regulation of the import, transport, storage, distribution, sale and use of petroleum and petroleum products, and

connected matters

The Act empowers the Minister to make regulations restricting and regulating the import, landing, loading, shipping, transport and storage of petroleum. It also contains provisions regarding a system of licensing for those purposes, the manner in which the application for any such license should be made, the authorities that may grant the license and the fees that may be charged for it and any other connected matters. Thus the Act doesn't provide for the provision of exploration of petroleum rather than other activities concerning petroleum.

#### **4.7 Petroleum Act of 2008**

The Petroleum Act of 2008 was enacted by the Parliament of the United Republic of Tanzania to make provisions for importation, exportation, transportation, transformation, storage and wholesale and retail distribution of petroleum products in a liberalized market and to provide for related matters. The Act was designed to only be applied in Tanzania Mainland only excluding Zanzibar this is provided under section 2(1) of the Act which provides that the Act shall apply to Mainland Tanzania relation to the importation, exploration, transformation, Transportation, storage, distribution, wholesale trade and retail sale of petroleum and petroleum products and related activities. The following hereunder is the strength or effectiveness of the petroleum Act of 2008 and the weakness of the same based on peoples perceptions.

##### **4.7.1 Strength of the Petroleum Act of 2008**

The Act provides good modeling of solving disputes in friendly manner, the dispute between two hostile parties can be referred to mediation before the Fair Competition Commission and also issue may be referred to Fair Competition tribunal for determination as it is provided under Section 51(1) and (2) of the Petroleum Act of 2008

The Petroleum Act of 2008 has repeals the Petroleum (Conservation Act) cap 392 of 1981 as provided under section 55(1) (2). That the Petroleum (conservation Act) Cap 392 is hereby repealed, notwithstanding the repeal of the petroleum (conservation) Act, all subsidiary legislation, rules or exemption made or given or deemed to have been given under this Act, and shall remain in force until revoked by subsidiary

legislation made under this Act or until otherwise expire or cease to have effect.

The Act Apply in Retrospective manner as it is provided under section 56(1) that where any lawful Act or thing required or permitted to be done by or under this act was done before the effective date of this Act, it shall be deemed to have been done under or by virtue of this Act( petroleum Act of 2008). The Act makes the Provision to guide or enhance National security by exempting military and other entities for the reasons of national security.

#### **4.7.2 Weakness of Petroleum Act of 2008**

The Petroleum Act of 2008 emphasizes that petroleum matters are not Union matters for the application of petroleum Act of 2008 which repeal petroleum (conservation) Act Cap 392 is only in Tanzania mainland and it doesn't applied in Zanzibar. The Act is bias in its application for the provision of this Act may not bind military and other entities for the matter of National security. Thus the act provide privilege the above named institution as provided under section 2 (2) of the Act. The Act is not dealing with exploration of Petroleum directly but rather than dealing with supply operation and other activities concerning petroleum.

### **4.8 General weakness of Petroleum Acts in Tanzania**

Consultations reveal that Tanzania has adequate legal and regulatory framework facilitating, supporting and promoting petroleum exploration activities in the country. However, there seem to be many laws, regulations and regulatory institutions, which at times may be conflicting. There are also gaps and missing legal and regulatory institutions. For example, the sector does not enjoy TIC facilities.

Many laws have not stipulated whether petroleum is a URT matter or not and this is why there are political debates on whether exploration of petroleum should be separate matter or the republic matter.

Also the laws have not made capital provision concerning how royalties are going to be shared and this is what made the nation to not enjoy the privileged of exploring minerals such as diamond and tanzanite. Tanzanians do not have the rights and are not benefiting from their own natural resources.

More over the power which has been vested to the Minister responsible is too vague,

excessive and this can jeopardize the everything concerning petroleum since is more likely the minister to act ultra vire, to abuse the powers confers to him of acting bias for his own reason.

There is another technical complication with respect to the powers of the Minister. The current Ministry responsible for PSA is not one of the Core Union Ministries. The URT Ministry of Energy and Mineral is concerned with Mainland. The GOZ has its own Ministry responsible for energy matters. In this case a Non Union Minister has been granted responsibility of governing a Union matter. In our view we think this is an institutional problem. In the short run, we may require the President of URT in collaboration with President of GOZ to provide an instrument that directs that the Minister responsible for petroleum affairs in Zanzibar should be considered as the Minister when signing PSA in Unguja and Pemba. In the long run, when need arises, we recommend that a Ministry of Petroleum Affairs to be established with exclusively union powers and functions and that the responsibilities under the 1980 Act be given to the Minister in charge of that Ministry (AUPEC, 2008).

In general many operating firms have not found Act or PSA as stumbling block to their performances. Many argue about lack of TRA to understand and use the Act for the benefit and interests of private petroleum firms.

Both Atrium Resources and Shell EP may face multiple laws and regulations when operating in Zanzibar. This may complicate their day to day operations and increase cost of doing business in Zanzibar. However, both are international petroleum exploration firms with experience in African politics and it can be argued that they will manage to balance and operate smoothly.

#### **4.9 Peoples Position, Rights and Interests Taken Care by TPDC**

The Petroleum Act 1980, other Acts and Product Sharing Agreement are silent on whether the indigenous population or natives have the right of ownership their land and petroleum resources explored, exploited, and they are also further silent on whether the natives have rights of the sharing revenues derived from the sales of resources after the extraction of those resources. The PSA treats TPDC as the owner of the land and all PSA contractors inter into the agreement with TPDC in

everything such as granting of license and many incidental matters arise when the contract is on going. Natives, communities and individuals have no rights, positions and direct control or and ownership on underground resources. TPDC acting as a government agency takes care the resource rights on behalf of the government and people of Tanzania.

# CHAPTER FIVE INSTITUTIONAL FRAMEWORK OF PETROLEUM EXPLORATION IN TANZANIA

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## 5.1 Introduction

Chapter Five highlights an institutional framework that governs development of petroleum exploration and production activities in Tanzania. The country can not exist without three basic institutions, which are; the social, the people (stakeholders), the political (the government agencies, and organizations) and the legal institutions which set of laws or regulations. Section 4 of the Petroleum (Exploration and Production) Act, Cap. 328 ('Act') vests the entire property in and control over oil and gas in any land to the United Republic of Tanzania. Private parties (including foreign parties) can be licensed to conduct exploration or production.

Through the Ministry of Energy and Minerals, the Energy department is mandated to administer the petroleum exploration and production in Tanzania. Tanzania Petroleum Development Corporation (TPDC) was created in 1969 to oversee, among other things, the exploration operation in the country as a licence holder on behalf of the Government. Besides administering the legal and fiscal regimes the energy department is also responsible for reviewing and updating the regimes to suit the local and global developments in the industry.

## 5.2 The Government

Tanzania has two government systems. There is the government of the United Republic of Tanzania, (URT) and the government of Zanzibar, (GOZ). With the on-going economic reforms, the roles of these Governments have been narrowed down to the provision of clear policy guidelines, the stimulation and promotion of investment sectors; and overseeing the general development, rather than directly engaging itself into productive activities within investment sector. Therefore, the Government's role is limited to guiding, promoting and facilitating, and being a service provider for investments in productive sectors. Recognizing the importance of both local and foreign investments in the social and economic development of Tanzania the Act provides provision for the URT Government, as a regulator, and

expected to put in place:

- Conducive macro and micro-economic policies;
- Competitive fiscal regime which articulates and clearly states the taxation packages;
- Environmental protection standards in line with the countries socio-economic policies;
- Provision and maintenance of law and order;
- Stable and predictable petroleum sector development policies; and
- Supportive regulatory framework to support private sector investment.

The URT Government has an institutional framework constituting of the President, Cabinet, Parliament, government ministries and other state machineries. This government system act as a promoter and facilitator of both local and foreign investments has been putting in place conducive legal framework for protecting, promoting, facilitating and guaranteeing investments.

The GOZ has more or less similar institutional organizational framework, objectives and roles. However, GOZ is relatively very weak. It lacks effective and specific institutional mechanisms such as own TPDC or regulator. Like TIC, ZIPA have very little to do with promoting petroleum exploration activities. The Directorate responsible for petroleum affairs has very few technical and operation staff (about 4). The Zanzibar institutional framework suggests that GOZ has limited direct role and capacity. However, in practice the URT is expected to perform above functions in collaboration with the GOZ. *If not, then GOZ may have the right and responsibility of stopping any petroleum exploration that considered not beneficial, problematic or and risky in Zanzibar.*

### **5.3 Ministry of Energy and Minerals**

The fundamental responsibility of the government, i.e., the Ministry of Energy and Minerals, (MEM), is to coordinate and put in place appropriate policies, laws and regulations and provide their oversight to ensure sustainable development. The energy department under the Ministry of Energy and Minerals is mandated to administer the legal and fiscal framework for petroleum exploration and production in Tanzania. Section 8 of the Petroleum (Exploration and Production) Act of 1980,

establishes the office of the Commissioner for Petroleum Affairs ('Commissioner'). The Commissioner is appointed by the President of the United Republic of Tanzania and has powers to carry out general administration of oil and gas exploration and development activities.

The Act empowers the Minister to grant, renew, suspend or cancel licenses for oil and gas exploration or development. The licenses normally do not cover surface rights although the Act limits the rights of the third parties over surface rights in a licensed area. In case third party surface rights interfere with exploration or production, Section 74 of the Act allows the licenses holder to remove third parties after making compensation. In addition to licenses, agreements can be entered by private persons and the Government adding conditions or benefits to a license. Licenses are transferable subject to approval of the minister responsible for petroleum.

As noted above, the legal and fiscal framework governing exploration and production in Tanzania is set out in the Petroleum (Exploration and Production) Act of 1980. It defines the administrative and the powers of the Minister and the Commissioner for Petroleum Affairs, including those of formulating regulations. According to Petroleum Act, the Commissioner for Petroleum Affairs shall be appointed by the President.

### **5.3.1 Mission**

The Ministry aspires to be the highest contributor to GDP through sustainable exploitation and utilization of energy and mineral resources in Tanzania by 2020.

### **5.3.2 Vision**

To spearhead sustainable development of energy and mineral resources by providing best services and conducive investment environment to our customers through competent and satisfied staff.

### **5.3.3 Functions of the ministry**

The Ministry has a section called the "Petroleum and Gas Section". The functions of this section are to:

- Monitor the performance of the petroleum section and institutions involved

in petroleum procurement, processing, storage and distribution;

- Monitor petroleum products' prices, issuing licenses to petroleum exploration and marketing companies, and inspection of petroleum facilities (for technical, health, safety and environmental compliance);
- Promote Tanzania's petroleum potential to foreign investors and oil companies, and overseeing oil and gas exploration activities;
- Promote and coordinating the development and utilization of the country's natural gas resources.

The Ministry of Energy and Minerals' role in the energy sector will be restricted to the development of a policy, legislative and regulatory framework and of an institutional setting. Zanzibar petroleum exploration is facilitated, supported and promoted by the Zanzibar Ministry of Water, Construction, Energy and Land. The Director responsible for energy matter is the chief government administrator of petroleum exploration and development activities in Zanzibar. The Director participates in various management and technical bodies and committees in TPDC.

#### **5.3.4 Commissioner for Petroleum Affairs**

There is a Commissioner for Petroleum Affairs and is appointed by the President. The President may appoint such other persons as he may consider necessary to be officers for the administration of this Act. Anything required or permitted by or under this Act to be done by the Commissioner may be done by any public officer who is authorized, either specially or generally, in that behalf in writing by the Commissioner, and for the purpose of doing so that officer shall be deemed to be the Commissioner. The Commissioner may designate any person in the service of the United Republic to be an authorized officer for the purposes of this Act. No person shall disclose any information obtained by him in, or in connection with, the administration of this Act, unless the disclosure is made for or in connection with the administration of this Act;

Where an area has been, but no longer is, subject to a licence, nothing in subsection (1) shall operate to prevent the disclosure by or on behalf of the Government of any geological information or matter concerning that area. Where, pursuant to the regulations, the TPDC is given the custody and care of any records or reports, that

does not constitute a disclosure of information for the purpose of this section.

## **5.4 Tanzania Petroleum Development Corporation**

### **5.4.1 Background**

Tanzania Petroleum Development Corporation is a fully Government-owned Parastatal organization under the Ministry of Energy and Minerals. It was established under the Public Corporations Act No. 17 of 1969 of the laws of Tanzania (repealed and replaced by the Public Corporations Act CAP. 257 R.E.2002 of the Laws of Tanzania), through Government notice No. 140 of 30<sup>th</sup> May, 1969. The Corporation commenced operations in 1973. Its activities according to the act include petroleum exploration, production, transportation, refining, marketing and distribution of petroleum products. These activities can be performed autonomously or in association with foreign companies. This association is through Production Sharing Agreements, (PSAs).

### **5.4.2 TPDC's Mission**

In order to contribute to the growth of the national economy, TPDC shall develop into Tanzania's best operating company in the oil and gas industry by profitably and efficiently satisfying market needs with the right products and services, and at the same time developing quality and safety standards to protect people, property and the environment.

### **5.4.3 TPDC Goal**

TPDC's goal is to explore for and develop oil and gas in Tanzania and thereby contribute to the national income and economic growth of the country. TPDC will spearhead the development of the petroleum industry in the country with due regard to developing and providing quality products and services with high safety standards to protect people, property and the environment.

TPDC has worked with the Government of Tanzania and investors to develop the field by installing a gas processing plant and gas transmission pipeline to Dar es Salaam, where natural gas is being used as a fuel for power generation. Several industries have converted to use natural gas and are so saving forex and environmental damage. Tanzanians are profiting from the Songo Songo project. TPDC has been the sole importer and refiner of crude oil in the country during early

eighties, thus enabling the national economy to save immensely through economies of scale. Currently, TPDC continues to undertake oil exploration by promoting acreage to oil exploration companies for onshore and deepwater acreage. TPDC in cooperation with private investors continues to hook in new industries to change from liquid fuel to natural gas.

#### **5.4.4 The Functions of the Corporation**

The functions of the Corporation include:

- To promote the development of the petroleum industry and the production of petroleum;
- To carry on the businesses of prospectors, producers, refiners, stores, suppliers and distributors of petroleum;
- To conduct or engage in petroleum prospecting operations including exploration, drilling, testing, appraisal, extraction, producing, treatment, storing, transportation and such other activities relating thereto as the Board may from time to time decide;
- To acquire by agreement and hold interests in any undertaking, enterprise or project associated with the exploration and prospecting for, or the production of petroleum and for such purposes to obtain, exercise, carry out and use any mining lease, licence, concession, franchise, authority, power, right or privilege which any government, corporation, public body or other authority may be empowered to grant;
- To manage the affairs of any corporation, company, firm or other body the interests of which are transferred to or acquired by the Corporation under the provisions of the Act or this Order;
- To carry on its business, operations and activities either within the United Republic or elsewhere, whether as principal, agent, contractor or otherwise, and either alone or in conjunction with any other persons, firms or bodies corporate;
- To do all such acts and things as may be necessary to uphold and support the credit of the Corporation and to obtain and justify public confidence, and to

avert or minimize any loss to the Corporation;

- To do any thing or enter into any transaction which, in the opinion of the Board is calculated to facilitate the proper and efficient carrying on of its activities and the proper performance of its function as specified in this paragraph.

#### **5.4.5 Practices, Efficiency and Effectiveness Issues**

TPDC is a national oil company and has a monopoly in terms of petroleum exploration and development in Tanzania, (Robert, 2007). By conventional definitions, national oil companies hold the majority of petroleum reserves and produce the majority of the world's supply of crude oil. Since national oil companies generally hold exclusive rights to exploration and development of petroleum resources within the home country, they also can decide on the degree to which they require participation by private companies in those activities.

However, experience suggests that the national oil companies typically do not operate strictly on the basis of market principles, (Robert, 2007). Because of their close ties to the national government, in many cases their objectives might include wealth re-distribution, jobs creation, general economic development, economic and energy security, and vertical integration. Although these objectives might be desirable from the point of view of the nation's government, they are unlikely to be equivalent to the maximization of shareholder value, the stated objective of the private international oil companies. Differing objectives might be considered to be important only if they lead to different characteristics and outcomes, which is the case for the national oil companies.

However, some of these companies have been found to be inefficient, with relatively low investment rates. They tend to exploit oil reserves for short-term gain, possibly damaging oil fields, reducing the longer term production potential, (Robert, 2007). Some also have limited access to international capital markets because of poor business practices and a lack of transparency in their business deals.

Variations in oil prices during 2008 and 2009 have marked effects of some of these characteristics in the flow of oil revenues. However, if the price of oil moderates, the

potential supply constraint related to the inefficient operations of the national oil companies may be a destabilizing factor in the world oil market. *Many private petroleum firms and general public have the opinion that TPDC is weak, ineffective and has failed to operate and deliver as a national oil company.*

There are several complex constraints limiting performance of TPDC. These include lack of political will and support from central government ministries in both URT and GOZ. The politicians and senior government officials are not aware of the importance of TPDC operating as an independent corporate national oil company. The current fiscal and financial arrangement forces TPDC to operate as one of the government departments. It does not have legal power to generate, maintain, save and control own financial resources. These two factors have led to weaken internal operational arrangements and systems, forcing management and staff to operate on short-term HRD objectives and goals.

Consultations with various stakeholders suggest that TPDC is a toothless lion, that it doesn't help much the private companies with PSA in the process of exploration. It is like a rubber stamp institution proclaiming that it has legal powers, while in reality is impotent. This brings confusion to the operating private companies on their roles and position given serious petroleum development.

#### **5.4.6 Zanzibar Equation**

Consultations with people in Zanzibar suggest that TPDC has been neglecting the position, interests, role and importance of GOZ in owning, managing and participating in determining petroleum activities in Zanzibar. As a Union institution, TPDC has ignored the need to establish an office in Zanzibar. The TPDC office in Zanzibar would have solved all controversial, conflicts and misunderstandings between private firms, URT and GOZ. The office would have recruited, trained and used local Zanzibarians in petroleum activities. Most of problems related with operational, product and revenue sharing issues would have been minimized. There are few people and institutions who are aware, involved and have perfect knowledge and information on petroleum exploration activities in Zanzibar. Many discussions and decisions are based on hearsay and information collected from ill-motivated people.

#### **5.4.7 The Need of TPDC Restructuring**

Above legal and institutional analysis suggest the need for restructuring and reforming TPDC. Our suggestion is TPDC should be reconstituted by legislation clearly applying to the whole of the United Republic (perhaps by way of amendment to the Petroleum (Exploration and Production) Act, 1980) as reformed and an independent corporate body whose board adequately reflects the interests of and the level of all stakeholders, private development, market liberalization and efficient petroleum exploration and development activities in both Mainland Tanzania and Tanzania Zanzibar. It would then have the necessary authority to act as licence holder in relation to exploration and production throughout the United Republic, (AUPEC, 2009) and thus represents the rights and interests of the people in Tanzania.

### **5.5 Energy and Water Utility Regulatory Authority (EWURA)**

The Energy and Water Utilities Regulatory Authority (EWURA) commenced its operations on the 1st day of October, 2005 vide the Energy and Water Utilities Regulatory Authority (Date of Commencement) Notice, 2006. As an autonomous multi-Sectoral regulatory authority, EWURA is responsible for technical and economic regulation of the energy and water sectors in Tanzania.

#### **5.5.1 Vision**

The important vision of EWURA is quality, affordable and sustainable energy and water services for all.

#### **5.5.2 Mission**

To champion the delivery of energy and water services through world-class regulation for the enhancement of the welfare of the Tanzanian society.

#### **5.5.3 Core Values**

The main core values of EWURA are Transparency, Integrity, Responsiveness, Diligence, Accountability, Court, Honesty, Excellency and Equity.

#### **5.5.4 Regulated Services**

EWURA has a number of regulated activities. These include importation, oil transformation, transportation, distribution, storage, sale and handling of petroleum

products. EWURA issues wholesale, retail, storage installations, refinery, road petroleum tankers and pipeline transportation licenses. It also issues petrol station and depot construction permits. Licence application forms, rules, regulations and guidelines can be downloaded for appropriate usage.

#### **5.5.5 Environment Regulations**

EWURA is responsible for monitoring any environmental impact in respect of the petroleum sector.

#### **5.5.6 Technical Regulation**

EWURA is responsible for carrying out technical regulation in the petroleum sub-sector. Technical regulation include benchmarking standards; codes of practice; levels of investments; planning and procurements for major projects; health, safety and environmental issues. In case of petroleum products transportation by pipeline Economic regulations include but not limited to reviewing and setting rates and charges. Tariff Review Guidelines can be downloaded for appropriate usage. Prices, rates and charges of any other regulated activities under petroleum sector are governed by market forces, but where the activity is predominantly the Petroleum (Exploration and Production) monopoly; EWURA may intervene and set the rates.

### **5.6 Private Petroleum Exploration and Development Firms**

#### **5.6.1 Organizational Structures**

We noted that private exploration and development companies are in practice holders of exploration and development license holders using the Act 1980 and PSA. These being exploration licenses or more specific agreements, are granted as a body corporate registered under the Companies Ordinance; or a corporation incorporated by or under a law (other than the Companies Ordinance) in force in Tanzania. The Act permits the Government to enter into a petroleum agreement under which an oil company may be granted exclusive rights to explore for and produce petroleum. Under the Production Sharing Agreement (PSA) regulations currently in place in Tanzania, TPDC is granted the license under the Act with the Government and TPDC enters into PSAs with interested oil companies. The terms of the PSAs form the basis of the licences. The legislative framework offers considerable flexibility to the Government in negotiating acceptable terms with oil companies.

An Exploration License normally consists of 60 blocks (each block being a 5 minute x 5 minute graticular unit) but the Act does provide flexibility for more than one license to be granted and, in certain cases, for a license to comprise more than 60 blocks. The Act also provides for exploration, appraisal, development and production periods. In the event of commercial discovery, the holder of an Exploration License has a right to a development plan ensuring the most efficient and beneficial use of the petroleum resources.

### **5.6.2 Model Production Sharing Agreement**

Tanzania's Model PSA serves as the basic document for negotiations between foreign oil companies, the Government and TPDC. It sets out in detail the terms under which exploration and production can take place. The Government's flexible approach allows for the negotiation of the important issues (such as Area, Work Program and Economic terms, etc.) within the framework of production sharing arrangements.

The Government's objective is to negotiate terms with the oil industry, which are fair and balanced, recognizing the usual risks associated with exploration and the State's legitimate desire for revenues as owner of a depleting, non-renewable, natural resource. The following is a summary of key terms in Tanzania's Production Sharing Agreement:

An Exploration period of up to 11 years divided into an initial period of 4 years and two renewal periods of 4 and 3 years respectively. An Appraisal period of 2 years is normally allowed but more can be considered, if necessary. Development and Production Agreements are for a period of 25 years with the possibility of an extension for a further 20 years.

All private petroleum exploration and development firms have to furnish a work plan to the government. The minimum work (and expenditure) obligations for each Exploration License period are negotiable. Items include seismic coverage, the number of wells to be drilled, and any other exploration activities. Tanzania's PSAs provide an option for TPDC to participate. TPDC's maximum participation share is determined by actual total production rates in the Contract Area. In the event TPDC exercises its option, it will contribute its proportionate share of costs (except for

exploration and appraisal). The progressive scale of participation shares indicated in the Model PSA is negotiable (no greater than 20%) and it is not intended that the share will be substantial. Few private companies have started-up oil and gas exploration activities with a solid foundation of assets comprising of modern exploration technologies and have well defined developmental drilling prospects. Many adopt best strategies and focusing primarily on shallower drilling prospects and utilize the best science available to “high grade” the locations near existing oil and gas production

## **5.7 General Institutional Problems and Issues Affecting Petroleum Activities**

### **5.7.1 Frequent Institutional Changes and its Impact**

Frequent changes in the government institutional leadership have been an issue with respect to consistencies in policy decision making processes and determination in Tanzania. There have been three major institutional changes of ministers. Until 2005, Mr. Daniel Yona was then a Minister responsible for Energy and Minerals. Then came Dr. Ibrahim Msabaha in 2006 and Mr. Nazir Karamagi was in 2007. Now, 2008 and 2009, Mr. William Ngeleja is the current Minister. These changes in faces have a negative effect in slowing policy decision making processes. It takes time for new leaders to learn and be able to catch up with the momentum. Some leaders introduce new styles of government governance and this may not necessarily support on going technical processes, such as bidding and contracting of oil companies. However, it is fortunate that the TPDC top management has not changed. Mr. Yona Killagane has remained as the Managing Director of TPDC, for some time.

### **5.7.2 Lack of TPDC presence in Zanzibar**

The current havoc and conflicts between private oil firms, TPDC and GOZ is a result of long term negligence on the part of URT and TPDC to understand the importance of establishing a TPDC office in Zanzibar. This general carelessness has no excuse; taking into account that other similar URT public institutions have established and maintaining their mini-offices in Zanzibar. These include Bank of Tanzania, Tanzania Revenue Authority, Tanzania Communication Regulatory Authority and others. Lack of TPDC office has complicated this matter and considered as a Union Issues (known as Kero za Muungano). TPDC had an opportunity and capacity during their “good days” to establish this small office in Zanzibar. This could have

taken to be one way of sharing Union assets and providing an opportunity to increase participation of Zanzibar people and institutions in petroleum exploration activities.

### **5.7.3 Regulation of the Petroleum Exploration and Development**

We noted that the Energy and Water Utilities Regulatory Authority (EWURA) is an autonomous statutory body created under Cap 414 of the laws of Tanzania. It is responsible for the technical and economic regulation of the electricity, water, petroleum and natural gas sectors. The function of the authority included, among others, licensing, tariff review, monitoring performance and standards with regard to quality, safety, health and environment.

Petroleum (Conservation) Act, 1981 (as amended) further confirms EWURA's powers to regulate the petroleum industry in Tanzania. Section 4 of the Act requires persons carrying out the business of importing, unloading, transporting, storing, transforming or selling petroleum to obtain a license issued by the Authority.

Section 7 of the Act 1980 provides for the function of the body such as to issue, renew and cancel licenses as it is provided under section 7(1)(b)(i) of the Act, to monitor the performance of the regulated sectors in various aspect and one among is to make sure on availability and quantity of service as it is provided under section 7(1)(c)

In the case of Petroleum and Natural Gas EWURA has the function of regulating Transmission and Natural gas distribution as provided under section 7(1)(d) and Part III of the Act provides for the powers and proceeding of the Authority such as delegation power which makes The Authority flexible , this has been provided under section 22 of the Act.

Tanzania Petroleum Development Corporation (TPDC) is the National Oil Company of Tanzania established under the Public corporation Act No.17 of 1969 repealed and replaced by the public corporation Act (Cap 257 R.E 2002) of the Laws of Tanzania through GN No 140 of 30may 1969. Its activities according to the act include petroleum exploration, production, transportation, refining, marketing and distribution of petroleum products. These activities can be performed autonomously

or in association with foreign companies. This association is through Production Sharing Agreements, (PSA).

As a corporate entity, TPDC's goal is to explore for and develop oil and gas in Tanzania and thereby contribute to the national income and economic growth of the country. TPDC is a national institution with responsibility of spearheading the development of the petroleum industry in the country with due regard to developing and providing quality products and services with high safety standards to protect people, property and the environment. TPDC is a player and a coach in the petroleum exploration and development.

However, TPDC is also the major regulator concerning to petroleum matters but also the laws have empowered EWURA to execute function of TPDC as the regulatory body for petroleum. Thus EWURA has acquired the status of regulatory body like TPDC but the only difference is that TPDC is the one recognized in PSA and EWURA is not recognized by the PSA. Thus both have the status of regulatory body in petroleum sector. This makes TPDC as a very strong and strategic partner in the petroleum exploration and development. However, in practice, there are problems of TPDC assuming different and multiple roles as a player, coach and referee.

Above suggests that Tanzania has put in place an institutional framework catering for the development of petroleum exploration sector in the Tanzania Mainland. However, the current institutional framework in Tanzania Zanzibar has been very ineffective, inefficient and it lacks overall control and coordination.

# CHAPTER SIX HUMAN RESOURCE DEVELOPMENT ISSUES IN THE PETROLEUM EXPLORATION

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## 6.1 Human Resource Development Issues

Chapter Six assess human resource development issues affecting the performance of the petroleum exploration industry in Tanzania. The human resource is certainly the most important factor of production because it is capable of transforming all the other factors for the betterment of human life and human welfare. Developing and utilizing this resource effectively increases its productivity and its capital value. Thus, human resources development in the petroleum exploration is one of the strategic objectives on the nation's long term development agenda. The improvement of the people's welfare was the overriding objective underlying the various measures and programmes have been embarked by the government.

Today, the government has adopted another set of sector specific approaches that are more in line with the socio-economic realities of Tanzania and that of the contemporary world. The government realizes the various demands of a market oriented economy put on the nation. One such demand is that citizens compete for jobs in employment on the basis of their skills and work experience or their own ingenuity. This approach is based on the new policy objectives i.e. to reflect the increasing significance of the private sector, to give greater attention to manpower requirements at the sectoral and organizational level and finally to leave the market forces to play a bigger role in order to link manpower planning efforts to social demand for manpower.

Secondly, this recognition on the part of the government underscores another important policy requirement of ensuring that education and vocational training at all levels as basic needs of the labour market in terms of the practical application of the knowledge and skills acquired through education and training.

Petroleum exploration sector is relatively new and technological, knowledge and information sector. With regard to the contribution of technical assistance in human resources development in the petroleum sector, the dominant approach has been to

fill the gaps in high and middle level manpower requirements, and to help in the training and development of local capacities. This has been accomplished through the use of foreign experts in specific projects and through various forms of training programmes. There have been a number of drawbacks which have prevented Technical Assistance (TA) from being effective in the development of human resources. These include poorly designed training programmes, great differentials in pay between foreign experts and local counterparts, unqualified TAs, unfamiliarity with work and cultural habits by foreign experts, distrust of local experts, lack of suitable local trainees and constraints resulting from the strings that are sometimes attached to the TA packages by donors.

At present, there is no comprehensive multi sectoral policy on human resources development. However, there are fragmented policies in different sectors which touch on issues of human resources development. Tanzania has a number of national policies for the human resource development in the petroleum exploration sector. These include National Employment Policy 1995, National Investment Policy 1997. From the fragmented policies, one can deduce the following human resources development objectives.

#### **6.1.1 National Employment Policy**

The overall objective of the National Employment Policy 1995 is to stimulate employment growth in order to reduce unemployment and underemployment, with the ultimate goal of attaining full employment and improving the standard of living of the people. The specific objectives include the need to promote equal employment opportunities and treatment in employment between men and women and address the specific needs of special groups such as the youth and people with disabilities in employment and to advocate for pro-employment investments in the country.

#### **6.1.2 Employment of Non-Citizens**

The National Employment Policy requires that employment of non-citizens, including technical assistance personnel, to be controlled and monitored and guidelines for employment of non-citizens. The policy has specific measures to be observed in connection with the employment of non-citizens.

Employment of non-citizens to occupy positions in which local skilled manpower is

unemployed will not be allowed, even when such engagement is under technical co-operation terms. Also, foreign nationals may only be employed in categories of employment that the Government has not declared as employment in which citizens only may be employed. On the other hand, care will be exercised to recruit workers who possess required skills that are not easily available in the country. Also the Directorate of Immigration Services will intensify implementation of immigration legislation for foreign workers in the country.

Where a foreign national takes up employment, such employment shall be in accordance with the work permit issued to him/her. The institution that employs a foreign national shall have the responsibility of establishing training programmes to produce local experts who will later take over the duties of the foreign national. In the Public Services, foreign nationals may only be considered for employment if there is no suitably qualified Tanzanian citizen

### **6.1.3 The National Investment Policy 1997**

The National Investment Policy of 1997 demands for investors to be assured the right to employ expatriate personnel required for the enterprises development and for the use of technology and skills that are not available locally particularly if such personnel will facilitate the adoption and acquisition of skills by local personnel. The policy has a objective of undertaking investment activities in a manner that best contributes to consumer and environmental protection, industrial harmony, the creation of gender balance, and the development of the human resources.

## **6.2 Legal and Regulatory Framework on HRD**

The Petroleum Act of 1980 and Product Sharing Agreement (PSA) provide a legal and regulatory framework for the development of human resources in the petroleum exploration and development in Tanzania.

### **6.2.1 The Petroleum Act of 1980 on HRD**

The Petroleum Act of 1980 provides a legal framework for effective use of human resource in the petroleum exploration sector. Section 20.1 requires that Exploration Licence applicant to provide information on particulars of the technical and industrial qualifications of the applicant and of his employees and proposals with respect to the training and employment of citizens of Tanzania. In the case of

Development License, Section 36 of the Act requires the applicant to provide details with respect to the training and employment of citizens of Tanzania.

#### **6.2.2 Product Sharing Agreement on HRD**

Also article 18 of Product Sharing Agreement (PSA), [1] gives preference to the purchase of Tanzanian goods, services and materials provided such goods and materials are of an acceptable quality and are available on a timely basis in the quantity required at competitive prices and terms; [2] make maximum use of Tanzanian service companies, where services of comparable standards with those obtained elsewhere are available from such contractors at competitive prices and on competitive terms; [3] maximize usage of local goods and services, businesses, financing and the employment of nationals of the United Republic of Tanzania.

Article 19 of the PSA provides guidance and regulations on the employment, training and transfer of technology. Subject to the requirement of any law relating to immigration, the Government shall provide the necessary work permits and other approvals required for the employment of expatriate personnel by the Contractor in the United Republic of Tanzania for the purposes of this Agreement. TPDC shall assist the Contractor in that regard. Without prejudice to Article 17, in the conduct of the Petroleum Operations, the firms shall employ Tanzanian citizens having appropriate qualifications to the maximum extent possible.

In this connection the petroleum firms shall, in consultation with Government and TPDC, propose and carry out an effective training and employment program for Tanzanian employees in each phase and level of operations, taking into account the requirements and need to maintain reasonable international standards of efficiency in the conduct of the Petroleum Operations. Such employees may be trained in the United Republic of Tanzania or abroad as required by the training programmes prepared by the Contractor.

During each year of the term of the Exploration Licence or any renewal thereof the Contractor is required to spend a minimum of money to provide TPDC personnel with on-the-job training in the petroleum operations in the United Republic of Tanzania and overseas, and/or practical training at institutions abroad, particularly in the areas of natural earth sciences, engineering, technology, petroleum accounting

and economics, economic analysis, contract administration and law as related to the fields of oil and gas exploration and production and to send suitable Tanzanian personnel selected by the Government and by TPDC on courses at universities, colleges or other training institutions mutually selected by the Contractor, the Government and TPDC.

### **6.3 Labour Market Characteristics**

Above suggests that Tanzania has an adequate policy, legal and institutional framework to support, facilitate and promote optimal use of local human resource in the petroleum exploration sector. However, in practice there are various labour market challenges and constraints. The country has very few trained, skilled, experienced and professional local manpower to support increasing petroleum activities.

There are more serious HRD problems in Zanzibar. Zanzibar has no human resource development policy or and plan for energy sector. There are very few Zanzibarians trained in geology in the mainland. Retention and development of local manpower have always been a challenge in Tanzania. Good and top class professionals in this petroleum exploration and development field run away for green pastures. Some of well trained Zanzibarians from Pemba are in the Mainland and some are outside Tanzania.

#### **6.3.1 Occupational Demand**

The demand for workers in the petroleum exploration and development in Tanzania is determined by the size of the gas production and reticulation infrastructure and the number and size of petroleum production and processing firms or operators in the country. The current labour market in the sector is found in offshore gas and petroleum exploration production in Tanzania Mainland and Zanzibar. Demand is expected to remain unstable in the short to medium term due to global financial crisis and unstable petroleum prices.

#### **6.3.2 Occupational Supply**

Petroleum exploration sector generally requires trade level skills. The most common career path is completion of a trade, commonly electrician, electronic instrument maker, fitter or diesel mechanic. There are some installations where high levels of

automation and less complicated processing see employers use semi-skilled operators. Employers generally accept that they will be lucky to find the exact skill set they require for a vacancy, and generally aim to recruit applicants with trade qualifications and experience in production environments. Employers then provide on-the-job training as per PSA.

### **6.3.3 Employer and Industry Comments/Current Labour Market**

The degree of specializations in the workforce appears to depend on the skill differential between the operation and maintenance roles. A number of employers interchanged staff with workers rotating between the two roles. Where the exploration process is more complex, control room operator positions are seen as a career progression from the maintenance shift. Where the production process is simpler, operators are less likely to be trade qualified and repairs are left to specialist maintenance staff. The consensus amongst employers is that although it is difficult to find the exact local skill sets required, it is not a major obstacle. They concentrate on providing on-the-job training to trade qualified staff with experience in a production environment.

Employers reported good responses when they attempted to recruit outside Tanzania labour market. The industry has a reputation for paying well and providing an opportunity for overseas travel once experienced.

### **6.3.4 Labour Market Outlook**

The demand determinants and supply characteristics of the occupation are relatively stable compared to other industry sectors. This, combined with the fact that trade qualified applicants actively seek out positions in the industry, should see most employers able to fill vacancies in the short term.

# CHAPTER SEVEN TAXATION AND INVESTMENT INCENTIVES

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## 7.1 Introduction

Chapter Seven assesses taxation and investment incentives affecting the performance of the industry in Tanzania. The current taxation and fiscal incentive systems in Tanzania no doubt are impacting on the investment decisions of private companies in both mainland and off-shore petroleum exploration sectors. The potential endowments of petroleum resources coupled with a stable political environment, security, consistent macro-economic policies and an attractive fiscal regime have attracted the desired level of investment in the Tanzanian petroleum sector. With the increasing number of countries that are open for petroleum exploration and development giving investors a wide range of options in deciding where to invest, it is instructive for Tanzania to continue attracting foreign direct investment and yield a sustainable tax base, to make their fiscal terms competitive in global terms.

## General Petroleum Taxation Policy

Petroleum taxation regime in Tanzania has been receiving less attention over years, compared with the booming gold mining sector. It is a well-recognized fact that government intervention through macroeconomic and tax policy instruments is essential for optimal exploration of petroleum reserves, maximization of petroleum revenues, maintenance of environmental standards, and for providing incentives for reinvestment of petroleum activities, (Padmore, 1992). In each country, there exists a gamut of taxes and levies, each with a plethora of components, along with other methods such as product sharing arrangement, (PSA). These taxes and non-taxes systems may facilitate or impinge on the petroleum sector at various stages of exploration, development, production, trade and final consumption, (Otto *et al*, 2000).

The high risks, variable crude oil prices, high capital-intensity characteristics coupled with long gestation lags involved in petroleum exploration and development activities call for special tax and fiscal investment incentives and treatment of the sector. As inter-sectoral and international capital flows are guided by the prevailing fiscal regimes, there is a need for achieving some degree of

harmonization. In this context, it is important to know what types of taxes can be expected on the petroleum sector activity in general, and what is the scope for harmonization of the levies across the countries. While taxing the petroleum sector, three types of objectives can be envisaged, (Sarma and Naresh, 2001).

*The first set of objectives* emanates from the role of government as an agent responsible for achieving economic and social development, (Padmore, 1992, and Otto, et al, 2000). Here, government has the responsibility to ensure that the petroleum extraction is socially optimal and equitable, and at the same time, the sector makes due contribution to public revenues in the same manner as other sectors of the economy to promote sustainable economic development. To fulfill these goals, the system of petroleum levies should be characterized by the generally acclaimed principles of certainty, fiscal stability, and administrative convenience apart from neutrality.

As petroleum sector operations involve high risk, high capital intensity and long gestation periods, fiscal stability and certainty characteristics are all the more important. Ensuring reasonable stability in the fiscal environment and reducing variability and uncertainty is essential if private sector participation is to be encouraged. The risk that future governments may change the contractually agreed-upon fiscal rules has an adverse impact on investment decisions and therefore, should be minimized.

*The second set of tax objectives* arises from the role of government as owner of natural resources that requires the government to secure an appropriate share in the petroleum rent. If valuable petroleum is extracted, the government should receive not only the regular tax but also a separate payment over and above it. Maintaining the neutrality characteristic of petroleum taxation is all the more important in fulfilling this objective. The appropriation of the petroleum royalty and income taxes should be, as far as possible, without disturbing the allocative decisions of economic agents involved, unless there is need for deliberate measures to resolve conflicting interests between the objectives of private agents and social welfare considerations, (Phillips, et al, 2001). Traditional efficiency considerations also lead to a choice of fiscal instruments that do not distort investment and production decisions.

*The third set of objectives aims at minimizing the damage to the environment and ecological balance, (Sarma and Naresh, 2001).* Given these three types of motivations for petroleum taxation, the specific issues in the taxation of petroleum resources faced by government in any country are: (a) how much to tax, (b) whether a separate tax regime is needed for the petroleum sector, and (c) how to combine different taxes and levies in a multi-tax-levy system.

## **7.2 Classical Petroleum Sector Taxation Regime**

This section presents an overview of the Tanzania petroleum sector taxation regime. Like other resource-based sectors, petroleum is typically subjected to classical and substantial taxation systems. In addition to conventional profits or corporate taxes, petroleum companies are required to pay royalties, revenue taxes, and excess profit taxes and like other economic entities are subjected to a variety of other forms of taxations, (Dasputa and Heal, 1978). In many cases these are many, complex and heavily burdened. It is known that there are negative effects of various revenue-raising taxes, and in particular, the extent to which the imposition of such taxes changes the patterns of resource use. The bias or distortion introduced by these tax measures may include fast depletion of petroleum resources with no long term positive economic benefits to nationals.

As in many resource producing jurisdictions, incomes earned in Tanzania from the petroleum of gold and gemstones has historically been subject to complex taxation regime. This taxation regime has been stipulated under the investment and petroleum policies and acts. In a nutshell there were considerations to facilitate recovery and promotion of petroleum activities by having more friendly taxation region. The reasons underlying the special characteristics of petroleum taxation regime may be classified into three categories, (Semboja, 2006): The need to mobilize and attract direct foreign investments and economic assets; and the potential and characteristics of resource exploration and extraction.

Tanzania is literally a 'virgin' country with plenty of unexploited resources both above ground and underground making it, the ideal business destination of the millennium for any serious investors; and regional competitive pressures, particularly relevant for Tanzania in a SADC context. Article 14 of the PSA specifies that like other private firms, all petroleum exploration firms are subjected to the Tanzanian general taxation system. The classical features of the main taxes

applicable to the petroleum sector in Tanzania are briefly described below.

### **7.2.1 Corporate Income Tax**

The corporate income tax is the most important levy on the petroleum sector although it is levied as part of the government's general tax power. Generally, the income tax system comprises a basic rate structure (usually one rate), provisions for deduction of certain items from the tax base, supplementary levies, tax incentives and withholding provisions. The corporate income tax in Tanzania is administered according to the current Income Tax Act (2004).

The current corporate income tax rate is 30%. No windfall tax or additional profits tax is applicable to the petroleum sector<sup>7</sup>. The tax depreciation allowance for the petroleum sector is very generous. A depreciation allowance of 100% of all petroleum capital expenditures is available at the very outset. Losses incurred by a petroleum company can be carried forward for an unlimited period of time. After a recent amendment, however, losses in the petroleum sector cannot be adjusted against profits in other sectors (manufacturing or tourism).

### **7.2.2 Value Added Tax**

The Value Added Tax, (VAT), Act was passed in 1997 and became effective from the fiscal year of 1998-99. It replaced the Sales Tax Act No 13 of 1976. The VAT is a consumption type VAT and is based on the destination principle. The credit or invoice method is used for computing tax liability. Tax rate is 20% and exports are zero-rated.. In general, the producers of zero-rated commodities ultimately do not have to pay any taxes; they are either exempted from VAT on their inputs, or if they have paid VAT on their inputs, they are entitled to claim VAT refunds. To relieve the burden of delay in VAT refund, The VAT Act provides an incentive to the petroleum industry in the form of VAT exemption of selected inputs. However, the procedures for exemption of VAT input, and a VAT refund is complex and cumbersome. The whole process often involves several different authorities and takes a lot of time.

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<sup>7</sup>With effect from September 10, 1990 the windfall profits from petroleum and petroleum products imported or sold by a dealer are taxed at the rate of 100 percent. See the consolidated Income Tax Act (1973) and its amendments (section 13C).

According to petroleum exploration firms, the level of taxes is not a problem; it is the poor administration that is driving the existing business and new investments away, (Semboja, 2006). Dasputa and Heal, (1978) have demonstrated that imposition of specific sales taxes (e.g., VAT) introduces no alteration in the pattern of extraction, since the consumer prices schedules remain the same and adjust accordingly to the general price movement. To put it more general terms, the entire tax is absorbed by the final resource owners. It can be noted that such taxes introduces no distortion and is equivalent to proportional tax on the value of deposits.

### **7.2.3 Withholding Taxes**

Tanzania has a general withholding tax on goods and services on business transactions in the country. Therefore, this withholding tax is also applicable to transactions in the petroleum sector if firms are registered under TIN, then on the payments to non-residents. There is 0 % on interest on a foreign currency loan from a third party. The objective behind the relief is to reduce cost of borrowing for the petroleum projects, which are invariably dependent on significant third party debt funding. There is 3% on management fees not exceeding 2% of operating costs and technical services. These technical services include earthmoving, engineering, construction, geological and metallurgical. Under the Income Tax Act 2004, the withholding tax relief for petroleum company is abolished other than for those companies with guarantees of such relief in petroleum developments in place as at 30th June 2004. The standard non-resident rate of withholding taxes on services has however been reduced from 20% to 15 % for all tax payers. And there is 10% on dividends for all firms.

Under the Income Tax Act 2004, there is no general withhold tax on goods and services for the payments to residents. However, there is still a withholding tax payment by petroleum companies for technical services and the withholding tax is now at a higher rate of 5%. For the rest of the economy, a buyer has to withhold 2% of the gross sales from the seller and deposit the money with the TRA. Since it is a withholding tax, the seller should get back this withheld amount when (s) he files the tax return. In case, however, where no tax return is filed and taxes withheld are not adjusted, they become the final tax payment. The lower threshold per transaction for this withholding tax is Tshs. 100,000. Above suggests that there are no longer special withholding tax relief's for the petroleum sector (except to the extent guaranteed in existing development agreements).

#### **7.2.4 Import Tariff**

The Customs Tariff Act of 1976 has been recently amended by the Financial Laws (miscellaneous amendments) Acts of 1997. Some of the main features of this new law as applicable to the petroleum sector are complex. For petroleum operations, after the first anniversary of the commencement of commercial production, the rate of import duty on items to be used in carrying out of petroleum operations is capped at 5%. If the company is not yet at the operating stage, imports are exempted from customs duties. However, like the VAT on inputs, the exemption from import duties is not automatic and the company has to claim exemption in every transaction. Import duty on capital goods imported by the holder of a certificate of incentives issued by the Tanzania Investment Center is import duty free.

#### **7.2.5 Stamp Duty**

Since the introduction of the VAT system in 1998, those who have not registered for VAT will pay stamp duty at the rate of 1.2 percent of the gross sales. A stamp duty has to be paid on each receipt issued in the course of a business transaction. It is, therefore, also applicable to the transactions in the petroleum sector. However, unofficial source suggests that most large-scale firms negotiated under development agreement and fixed the rate at about 0.3 – 0.35 percent.

At the time of sale, the seller has to fix a stamp of 1.2% of the gross sales on the receipt before issuing it to the buyer. This naturally becomes quite cumbersome for any business. As an alternative, a dealer or any businessman can make a composition agreement with the TRA under which he gets a seal from the tax department that can be used to stamp every receipt issued at the time of making a sale. When the sales return is submitted at the end of the month, the total stamp duty is calculated and deposited.

#### **7.2.6 Road Fund and Fuel Tax**

Like other economic entities, the petroleum firms contribute to the road fund tax. The road toll has been renamed Road and Fuel Tax. According to the amended Roads Tolls Act 1985, the Roads Fund will receive all monies collected as road tolls imposed on petrol and diesel, or from any other sources at rates to be determined by parliament from time to time. At present the mainstay of the Road Fund is the road

toll of Tshs 100 charged, at source, on every litre of petrol and diesel sold. Effective July 1999, the money collected by the Tanzania Revenue Authority from such activities are submitted to the Treasury for specific allocation to the Fund. The money is then allocated and used exclusively for construction, rehabilitation, maintenance and repair of trunk and core roads, in accordance with proposals for design survey or other requirements related to roads.

### **7.3 Royalty**

Almost as ubiquitous as profit taxation is the requirements that, petroleum companies pay royalties to the government of the country in which they operate. Royalties are either specific levies (based on volume of petroleum extracted) or ad valorem levies (based on the value of petroleum extracted). They secure revenue for the government as soon as production commences, are considerably easier to administer than most other fiscal instruments, and ensure that companies make a minimum payment for the petroleum they extract. No royalty is imposed on the Oil Company. All royalties and Income Tax are paid by TPDC through its share of Profit Oil. That is, TPDC on behalf of itself and the Contractor shall discharge the obligation to pay Royalty under Section 81 of the Petroleum Act of 1980 in respect of petroleum obtained from the Contract Area, by delivering to the Government 12.5% of total Crude Oil/Natural Gas production (prior to Cost Oil and/or Cost Gas recovery) at such location as the Minister may direct and the Government may require TPDC to dispose of such royalty otherwise to be delivered to the Government in such manner as the Government may direct. Royalty as provided for in Article 14(c) of the PSA shall be charged first on total production from the Contract Area. The royalty shall be reckoned at the well head before recovery of costs.

Dasputa and Heal, (1978) have demonstrated that high royalty introduces distortion and in particular, results in higher product prices and consequently greater conservation. It is noted that effect of high royalty is to reduce the value of the deposits. Royalties raise the marginal cost of extracting petroleum, as they are based on the volume or value of production (Naito, *et al*, 2001). A royalty set too high may discourage investments of marginal deposits and lead to early closure of high cost gas and oil operations. Nevertheless, a regular minimum payment is usually necessary to justify extraction of the resource in the public mind, to assure stability

of the fiscal regime, and to broaden the tax base. Investors are resistant to the use of substantial royalties even on potentially rich deposits on the grounds and royalties are deductible rather than a creditable item for tax purposes in the home jurisdictions of investing companies.

## **7.4 Employment Taxes**

There are multiple types of employment taxes applicable to all businesses including the petroleum activity.

### **7.4.1 Pay As You Earn (PAYE)**

Private sector firms operating in this sector are expected to collect and deposit Pay As You Earn (PAYE) from employees whose tax liability depends upon their particular tax bracket, highest bracket being 35%. The Ministry of Finance introduced some changes in the personal income tax law from the Fiscal Year of 1999/2000. Changes included reduction of the number of tax brackets from 11 to 4 and reduction of highest marginal income tax rate from 35% to 30%. Record keeping for this tax basically implies maintenance of a muster roll. As far as the employees are concerned, PAYE is their final tax and no annual return etc. is required. However, all employers have to follow a rather complex procedure and have to use numerous forms for the purpose of PAYE.

### **7.4.2 Benefit (or Fringe Benefits) Tax**

The fringe benefits are combined with the employee's salary to form the tax base for personal income tax. Total taxable income of any employee will be estimated as sum of both official salary and fringe benefits. If the benefits are in kind, the value of these benefits are to be estimated by either employer or assessed by TRA on the basis of current market prices. Employment Tax Department of TRA is responsible for the enforcement of this aspect of income tax. There may be cases in which employers do not report fringe benefits. The TRA would send tax officials for random check on a limited basis. Tax officials also routinely check annual accounts of expenses of companies to cross check if any fringe benefits were claimed. If firms fail to report fringe benefits given to employees, they will have to pay an additional fine, which is 25% of the principal tax liability. According to the petroleum companies, in practice this type of tax is imposed in an arbitrary fashion and is not based on any systematic assessment.

#### **7.4.3 National Social Security Fund (NSSF)**

There is a 10% contribution on behalf of the employer in addition to the 10% from employees to National Social Security Fund (NSSF). NSSF is a sort of national pension plan. It is the responsibility of the employer to deposit both the employee's share and his own share. One return has to be filed every month and then there is an annual return at the end of the year.

#### **7.4.4 Director's Tax**

A directors' tax has to be paid to the TRA on salary paid to directors of the company and is deducted at source. The gross-of-tax amount of salary is subtracted from gross revenues before profits calculated. There is a monthly return as withdrawal takes place and then one final annual return.

#### **7.4.5 Skills and Development Levy**

There is a 6% of payroll tax on gross emoluments payable every month for skills or vocational training and development if an establishment has more than four employees. Part of collected funds is designed for the purposes of training new workers who do not necessarily work for that employer. About 2% money goes to VETA agency every month. The funds are used for general vocational and educational training, (VET) of the work force in the country. There is one return every month and one annual return at the end of the year. The other part of funds, about 4% is treated as development levy. It has to be paid by all employers including the petroleum sector. This goes into the Ministry of Finance and Economy for other development purposes.

### **7.5 Additional Profits Tax**

Article 15 of the PSA defines the concept of Additional Profits Tax. All private sector petroleum exploration and development firms are subjected to an Additional Profits Tax (hereinafter referred to as "APT") that shall be calculated on a Development Area basis in accordance with the provisions of this Article 16. APT will be calculated for each Calendar Year and will vary with the real rate of return earned by private firm or contractor on the net cash flow from the Development Area in question. If, for any Development Area, either: (i) the "first accumulated net cash position, (FANCP)," (as calculated in the manner set out in Annex "E" of PSA. Or (ii) each of the FANCP and

the "second accumulated net cash position, (SANCP)," (as calculated in the manner set out hereafter and a sample hereinafter and referred to as the "SANCP") is a positive amount, then the APT from the Development Area in question for any Calendar Year shall be either, in case (i): twenty five percent (25%) of the FANCP for that Year, or in case (ii): the aggregate of twenty five percent (25%) of the FANCP for that Year and thirty five percent (35%) of the SANCP for that Year. If in any Year the FANCP or the SANCP is a negative amount then no APT shall be due with reference to that FANCP or SANCP.

(b) The FANCP on any Development Area for any Calendar Year shall be calculated according to the following formula:

$$* \text{ FANCP} = A (100\% + B) + C$$

Where:

"A" equals the *FANCP* denominated in US dollars at the end of the Calendar Year preceding the Calendar Year for which the calculation is being made

"B" equals twenty percent (20%) plus the percentage change, for the Calendar Year for which the calculation is being made, in the annual average level of the United States Industrial Goods Producer Price Index (USIGPPI) as reported for the first time in the monthly publication "International Financial Statistics" of the International Monetary Fund (IMF) in the section "Prices, Production, Employment".

"C" equals the net cash position denominated in US dollars (which may be a positive or negative amount) for the Calendar Year for which the calculation is being made, calculated as follows:

Contractor's share of Cost Oil and Profit Oil for that Calendar Year valued in accordance with Article 13 hereof and allocated to the Development Area in question in accordance with the provisions of Annex "D" to this Agreement

(ii) Contractor's share of all credits to the accounts under this Agreement in respect of the Calendar Year calculated and allocated to the Development Area in question in accordance with the provisions of Annex "D" to this Agreement minus.

(iii) Contractor's share of all charges to the accounts under this Agreement in

respect of that Calendar Year, calculated and allocated to the Development Area in question in accordance with the provisions of Annex "D" to this Agreement, except that for this purpose Contractor's share of charges shall not include any amounts in respect of interest on loans obtained for the purpose of carrying out Petroleum Operations.

(c) The *SANCP* on any Development Area for any Calendar Year shall be calculated according to the same formula given under sub-article (b) above except that:

"A" equals the *SANCP* denominated in US dollars at the end of the Calendar Year preceding the Calendar Year for which the calculation is being made,

"B" equals thirty percent (30%) plus the percentage change, for the Calendar Year for which the calculation is being made, in the annual average level the USIGPPI as reported for the first time in the monthly publication "International Financial Statistics" of the IMF in the section "Prices, Production, Employment".

To the amount calculated under (iii) in the definition of "C" in sub-article (b) above shall be added any Additional Profits Tax which would be payable from the Development Area if reference were made hereunder only to the *FANCP*.

(d) If for any Calendar Year the *FANCP* is positive amount, the *FANCP* at the end of that Calendar year shall be deemed to be zero for the purpose of calculating the *FANCP* for the subsequent Calendar Year.

(e) If for any Calendar Year the *SANCP* is a positive amount, the *SANCP* at the end of that Calendar Year shall be deemed to be zero for the purpose of calculating the *SANCP* for the subsequent Calendar Year.

(f) Contractor shall maintain proper records and books of accounts in accordance with the provisions of Annex "D" enabling the calculations described in this Article 16 to be performed. From the Effective Date Contractor shall maintain and submit to the Government annually, or more frequently if so requested, a statement of the *FANCP* and *SANCP*.

(g) The APT due, if any, shall be paid in cash at such time and in such manner as the Commissioner of Income Tax may reasonably require.

Above suggest that the APT is levied on the Oil Company's net cash flow. It is only payable if a negotiated (inflation adjusted) rate of return has been achieved. A second tier of APT ensures that a higher tax rate is applied to cash flow profits in excess of a higher rate of return. The Model PSA gives an indication of the level of returns and tax rates negotiated in earlier PSAs.

## **7.6 Cost Recovery**

There is no ring-fencing of blocks for the purposes of exploration cost recovery in the Contract Area. Petroleum exploration expenses in one Licence Area can be carried over to another Licence within the same Contract Area. Cost recovery is based on cumulative annual production from the Contract Area on a sliding scale and the rate of cost recovery is negotiable.

## **7.7 Local Government Tax**

There is a Local Government Finances 1982 Act in place which makes provision for sources of revenue and the management of funds and resources of Local Government Authorities and for matters connected or incidental to securing the proper collection and sound management of finances in the local government system. Section 6.-(1) outlines many sources of revenues, funds and resources of an urban authority. One of them as indicated under sub-section (u) shall consists of all monies derived from the service levy payable by corporate entities at the rate not exceeding 0.3 percent of the turnover net of the value added tax and the excise duty.

## **7.8 Other Taxation**

In principle, apart from taxes of a minor nature of general applicability, the oil companies are exempted from all other taxes. This includes import and export tax exemption on exploration equipment, materials and goods. In practice, there are, however, options available within the Model PSA and local government systems.

## **7.9 Other Incentives**

Other attractive PSA terms include: no requirement for bank guarantee against Work Program, no restrictions on repatriation of foreign exchange, negotiable training fund, fast track negotiations for concluding PSAs and availability of previous

exploration data on request at no cost.

### **7.10 Production Sharing**

Profit Oil (i.e., production in excess of Cost Oil) is shared between TPDC and the Oil Company in varying proportions determined by incremental production rates. Although the sharing percentages and the associated production bands are negotiable, Tanzania aims to achieve figures close to those set out in the Model PSA (similar arrangements having been obtained in earlier agreements).

### **7.11 Corporate Social Responsibilities**

The Tanzanian taxation system takes into consideration of the importance of petroleum exploration contributions to local communities, social and economic infrastructure; and allows a deduction for such expenditures. Corporate firms are allowed in collaboration with central and local government authorities to participate and contribute to any form of social economic development program, project and activities. There is intense interest by many stakeholders in furthering the concepts of corporate social responsibilities and sustainable development. One way to foster this is to invest in communities nearby oil exploration fields, such that these communities benefit from the on-going activities. Deductions are only allowed if the government approves the expenditure and companies have found it extremely difficult to get such approval from the relevant ministries.

### **7.12 Zanzibar Equation and Shares**

AUPEC (2008) conducted a study with an objective to propose and design a revenue sharing arrangement which will ensure that petroleum exploration and production is carried out smoothly in Mainland Tanzania and Zanzibar. The preliminary drafts were circulated for internal reviews. Most of major findings and recommendations were consistent with the terms of references. However, it is rather a detailed and technical study, demanding an intelligent institutional capacity within government machinery to comprehend and use it for further policy decision making. At the moment, both governments of URT and GOZ have very limited capacity to comprehend data analysis and recommendations. So the risk of misunderstanding and misuse has been high and therefore it has not been accepted by any party. However, this study will focus and make use of some important results and issues given our terms of reference.

AUPEC's (2008) approach to assessing the performance of Production Sharing Contracts and, particularly, the efficacy of the fiscal instruments negotiated between the Government and the oil company, is to first understand the key strategic objectives that most countries have regarding the exploitation of their petroleum resources. For example, most Governments (which in Tanzania will include both the Union Government and the Revolutionary Government of Zanzibar) are likely to have a set of objectives with regard to petroleum taxation, a typical list of which is summarised below (AUPEC, 2008):

- To obtain a "*reasonable*" share of the revenues. More precisely Governments wish to collect an optimal share of the economic rents from oil and gas exploitation.
- To avoid the introduction of disincentives on investors that might discourage them from developing new fields, continuing to explore for oil and gas, or maximising the recovery of oil and gas from the reservoir (i.e. abandoning an oil field prematurely).
- To ensure that the fiscal system does not encourage oil companies to overspend. In some circumstances the tax system may introduce incentives for investors to spend more than is necessary because the resulting tax saved is so great that the investor is better off. This is sometimes referred to as a "gold plating" incentive.
- To receive part of the fiscal take comparatively early in the life of an oil or gas field.
- To establish an "appropriate" degree of project risk-sharing with private investors.
- To integrate the fiscal system levied on petroleum exploitation with the tax system applied across the economy generally.

Fiscal terms need to be attractive to potential contractors when they evaluate the economics of exploring in Tanzania. Our studies suggest that the current attractiveness is largely based on the relatively low risk that applies when a

contractor can relinquish a licence area after acquiring and processing seismic, without being obliged to drill an exploration well. It may be that under current fiscal terms only the most promising structures detected by seismic will be drilled, and improved terms may be required to re-license relinquished areas. Nevertheless, just one significant oil discovery will transform Tanzania's global profile and strengthen its hand in negotiations.

AUPEC (2008) suggested an approach to maximising Government take is therefore to ensure that the fiscal regime is highly progressive, so that Tanzania's share of the economic rent generated by a petroleum development rises significantly when oil or gas prices increase, large reserves are found or development and operating costs are low. The counterpart of this is that marginal (almost sub-economic) developments will be protected by such a fiscal regime from being pushed off the drawing board, and will later reward the nation if, for example, oil prices subsequently rise or new discoveries are made that can be tied into their facilities.

AUPEC (2008) analysis is based on strong assumption on TPDC capacity to participate in Joint Operations under the Model PSA. We all know that TPDC is weak and therefore there is no point to gamble on likely outcomes. The only feasible recommendation has to do with capacity building of TPDC. In order to perform all its roles adequately as an independent corporate national oil company and sustainable over time, including participation in the interest of local content and of raised Government take, TPDC should have a dedicated source of funding, preferably out of petroleum fees (Annual Charges) and other petroleum revenues and possibly also from contributions to the Skills Development Levy in respect of petroleum industry employees. A reformed TPDC will be able solve all sharing revenue arrangements in collaboration with URT and GOZ for purposes of enhancing economic growth and poverty reduction.

## CHAPTER EIGHT: ENVIRONMENT ISSUES

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Chapter Eight assesses the environmental policies; legal, regulatory and institutional issues have been undertaken into consideration by the government and the private companies in exploring petroleum in Tanzania. The exploration, development, and transportation of gas may have serious impacts on fragile mainland ecosystems and wildlife communities. Sizeable oil and gas reserves have led to increased investments and exploration activities in some parts of Tanzania. There is a need for social economic and political pressure to start searching for ways and means to probe ever deeper into sensitive environments. As production and therefore the need for transportation of gas to major cities increases, more accidents are inevitable.

Large quantities of gas are transported through hundreds of miles of pipelines over southern part of Tanzania to Dar es Salaam. In the near future many of these pipelines will be in poor condition and leaks frequently occur. Damage to agriculture soils and vegetation may occur with increasing regularity. Like other ecosystems, Tanzania ecosystems are especially vulnerable to oil pollution as the limited rainfall may not allow for rapid decay of organic pollutants. Hydrocarbons are likely to remain and concentrate in the flat, poorly drained soils and deep depressions of the Tanzania landscape.

Pollution from oil and gas activities can be devastating to the Tanzania marine environment. Oil spills are particularly harmful to marine mammal and bird populations. When the fur of marine mammals becomes oiled, they lose heat and can die of hypothermia. When they try to groom away the oil, they ingest it, and can be poisoned. Birds that have become oil slicked lose water repellency and the ability to fly. Associated threats to the marine environment from oil and gas exploration include noise pollution (as a result of underwater testing detonations), water dispersal in the drilling phase, and the actual drilling process which can release oil and chemicals into the water.

When engaged in exploration, development and production of petroleum resources, companies are encouraged to follow good corporate governance principles such as "good geophysical practice", "good drilling practice", and "good production

practice". This means that operations will be conducted in accordance with regulations, standards, guidelines and the best industry practices. In all cases, companies must have regard for the safety of persons and property, protection of the environment, and conservation.

### **8.1 The National Energy Policy, (2002)**

The National Energy Policy, 2002 covers specific policy issues relevant for environment, health and safety matters. The relationship between man and the environment in which he lives is one of interdependence. Man survives when the wider environment is conducive to his survival. Likewise destructive activities of man destroy the balance in the ecosystem leading to such effects as climatic changes, wind and water-based soil erosion, destruction of arable land, floods, salination of dams, advancement of deserts and others. The fragile nature of the balance in the ecosystem cannot be overemphasized. The interaction between energy and the environment is evident at all the stages of the energy "system", from exploration for energy resources, conversion of energy from one form to another, and finally the usage patterns of energy. Environmental impacts must be considered at each stage in the chain.

Exploration for new energy sources in our case is exploration for oil. The stage at which environmental considerations become paramount is the acquisition of seismic data. This is usually in virgin land, sometimes in game reserves, national parks and in lakes and off-shore. It requires clearance of vegetation for seismic lines over long distances on land. Acquisition of actual data requires the use of explosive materials such as dynamite. In the case of marine seismic data acquisition can lead to destruction of marine environment including marine life.

Exploration for oil and gas can at times lead to blowouts. The resulting fires can lead to loss of life, property and destruction of the environment. Blowouts can also happen in the course of exploitation of oil and gas. A case in point is the disaster of the blowout of Songo Songo well No. 4. In the case of petroleum where a discovery is onshore and far from an export terminal or a refinery, product transportation will invariably be by pipeline, with possibilities of major leaks which could lead to fires and pollution. Where crude oil is imported, leaks of oil from tankers are a real possibility. This could lead to destruction of marine and other life including fish,

plants and birds, as well as pollution of beaches.

In order for the energy sector to contribute to the preservation of the environment the following measures will be taken (i) environmental impact assessment will be undertaken before the exploitation of new energy resources; (ii) oil and gas pipeline regulations will be drafted and will include provisions relating to environmental impacts of oil/gas pipeline transport; (iii) environmental experts will be consulted in oil exploration and production activities; (iv) safety, security fire prevention and fire fighting measures in all the energy sub-sectors will, be reviewed and strengthened. (v) green house gas emissions (carbon dioxide, methane and nitrous oxide) from industry and transport sectors will be monitored. Safety issues are most important consideration in the petroleum industry mainly because of the inflammable nature of petroleum fuels. Safety of petroleum installations must be assured.

## **8.2 National Investment Policy (1997)**

Environment policy issues are also major investment issues. The National Investment Policy of 1997 has specific investment policies relevant for environment. The first and foremost is the need for encouraging investments in the development of all possible sources of energy with emphasis on the utilization of domestic resources with the aim of ensuring security and continuity of supplies, as well as reducing dependence on bio-mass fuels. Secondly, the policy demands for encouraging investments which promote sub-regional and regional cooperation and collaboration in the energy sector. Finally the national investment policy desires the promotion and adoption of systems of production, procurement, transportation, distribution and end-use which are efficient and not detrimental to the environment.

## **8.3 National Environmental Policy, (1997)**

The role of environmental policy lies in providing for the execution of a range of strategic functions, including development of consensual agreement at all levels for the challenge of making trade-offs and the right choices between immediate economic benefits to meet short-term and urgent development needs, and long-term sustainability benefits and the development of a unifying set of principles and objectives for integrated multi-sectoral approaches necessary in addressing the totality of the environment.

Since environmental policy involves many sectors and interest groups, its scope is necessarily broad, and the logistical demand for overseeing its implementation and ensuring coordinated attention to interconnected challenges is complex. The challenge is to ensure that all concerned take priority actions on all the main fronts; and that their actions are mutually supportive, reflecting a mission commonly subscribed to, by all. This means that the environment must be subjected to greater accountability and control, with more effective instruments having clear objectives to be pursued. It means strengthening the functions of government and the corresponding institutions in environmental protection.

We note that the overall objectives of the National Environmental Policy relevant to the petroleum exploration and development include the need [1] to ensure sustainability, security and equitable use of resources for meeting the basic needs of the present and future generations without degrading the environment or risking health or safety; [2] to prevent and control degradation of land, water, vegetation, and air which constitute our life support systems; and [3] to conserve and enhance our natural and man-made heritage, including the biological diversity of the unique ecosystems of in the country.

### **8.3.1 Technology**

Science and Technology have a central role in the exploitation, processing and utilization of natural resources, and in the resulting environmental impacts. The technology used has a bearing in the quality of a product and in the type and amount of the resulting waste and emissions. Environmentally sound technologies in the context of pollution are "process and product technologies" that generate low or no waste, for the prevention of pollution. They also cover "end-of-the-pipe" technologies for treatment of pollution after it has been generated.

The primary policy objective shall be the promotion of the use environmentally sound technologies, that is, technologies that protect the environment are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residue wastes in a more acceptable manner than the technologies for which they are substitutes.

The private sector, particularly within business and industry can play a major role in reducing the stress on resource use and the environment. There is increasing recognition that production, technological and management approaches that use resources inefficiently form residues which are not reused, discharge wastes that have adverse impacts on human health and the environment and manufacture products that when used have further impacts and are difficult to recycle. Improvement of production systems through technologies and processes that utilize resources more efficiently and at the same time generate less waste; that reclaim, recycle and re-use by-products, to a very large extent is within the province of business and industry. By striving for optimal efficiencies at every stage of the product life cycle, good engineering and management practices and know-how; implementing self-regulations; and assuming greater responsibility in ensuring that their activities have minimal impacts on human health and the environment

### **8.3.2 Sectoral Policies**

Environmental impacts of actions in one sector are often felt in other sectors. This is why environmental goals, objectives and actions cannot be understood and framed in isolation from the development and policy sectors in which they emanate. Internalization of environmental considerations in sectoral policies and programmes and their coordination is essential to achieve sustainable development.

Petroleum exploration and development issues are under three sectors. These are energy, mining and industry. The main objective is the sound management of the impacts of energy development and use in order to minimize environmental degradation. The specific policy objectives to be pursued are: [1] promotion of sustainable renewable energy resource [2] assessment and control of development and use of energy; and [3] energy efficiency and conservation.

The specific and relevant policy objective from an environmental perspective for the mining sector is [1] the prevention, reduction, control and elimination of damage, and minimization of the risk thereof from the generation, management, transportation, handling and disposal of hazardous wastes, other wastes and emissions and mining discharges to grounds and water shall be controlled; [2] preventive and clean up measures for accidents shall be formulated and implemented; [3] air pollution from mining areas shall be controlled.

The specific and relevant policy objective with respect to environmental protection for the industry sector is the prevention, reduction, control and limitation of damage, and minimization of the risk from the generation, management, transportation, handling and disposal of hazardous wastes, other wastes and emissions. These specific policy objectives shall be pursued; (i) industries shall be planned in a manner that minimizes adverse effects on the environment at all stages (i.e. location, effluent discharge, waste disposal, use and disposal of products); (ii) industrial emissions shall be controlled; (iii) application of environmental impact assessment (EIA) as an essential element in industrial planning and development for taking account of potentially harmful activities on the environment; (iv) environmental audits/inventory shall be carried out for both new and existing industries for pollution control and waste minimization; (v) installation of resource-saving and waste-recycling facilities, use of clean technology and production of safe and less toxic products shall be promoted and supported; (vi) workers health shall be adequately protected from environmental health hazards; (vii) a review will be made of laws, rules, and regulations governing importation, manufacture, transportation, handling, use, storage and disposal of toxic chemicals, and dangerous products, hazardous wastes and hazardous substances, as appropriate; (viii) permissible noise levels in noise-prone industries and construction sites will be prescribed.

#### **8.4 Petroleum Act 1980**

Environment issues are well articulated under Part X Miscellaneous of the Petroleum Act 1980. Section 58.1 of the Act requires that all private operators in the exploration or development area must be in a proper, safe and workmanlike manner and in accordance with good oilfield practices. Section 58.1.b demands all the petroleum companies to take all reasonable steps necessary to secure the safety, health and welfare of persons engaged in those operations in or about the exploration or development area.

Section 58.2 requires petroleum exploration firms to control the flow and prevent the waste or escape in the exploration or development area of petroleum, gas (not being petroleum), or water and prevent the escape in the exploration or development area of any mixture of water or drilling fluid and petroleum or any other matter and to prevent damage to petroleum bearing strata in an area in respect of which the licence

is not in force. It is required that all petroleum firms to prevent water or any other matter entering any petroleum reservoir through the well in the exploration or development area except when required by, and in accordance with, good oil-field. These firms have to prevent the pollution of any water-well, spring, stream, river, lake, reservoir, estuary harbor or area of sea by escape of petroleum, salt water, drilling fluid, chemical additive, gas (not being petroleum), or any other waste product or effluent;

All petroleum exploration firms have to furnish to the Commissioner prior to the drilling of any well, a detailed report on the technique to be employed, an estimate of the time to be taken, the material to be used and the safety measures to be employed, in the drilling of the well.

The Act requires that a registered holder of a licence to furnish to the Commissioner such notice as is prescribed of his/her intention to abandon any well, and the closure or plugging of any well shall be carried out only with the prior consent in writing of the Commissioner and in the prescribed manner. A person who is the holder of an instrument of consent under section 71 shall carry out all exploration operations in the area in respect of which the instrument of consent is in force in a proper and workmanlike manner and in accordance with good oilfield practices, and shall take all reasonable steps to secure the safety, health and welfare of persons engaged in those operations in or about that area.

The law requires that a registered holder of a licence or a holder of an instrument of consent under section to maintain in good condition and repair all structures, equipment and other property in the area subject to the licence or in respect of which the instrument of consent is in force and used in connection with the operations in which he is engaged. The operating private firm must remove from that area all structures, equipment and other property that are not either used or to be used in connection with the operations in which he/she is engaged.

## **8.5 Environmental Management Act of 2004, Act No 20 of 2004**

The Environmental Management Act of 2004, Act No 20 of 2004 was enacted by Parliament of the United Republic of Tanzania. The Act provides for legal and institutional framework for sustainable management of environment; to outline

principles for management, impact and risk assessments, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement; to provide basis for implementation of international instruments on environment; to provide for implementation of the National Environment Policy; to repeal the National Environment Management Act, 1983 and provide for continued existence of the National Environment Management Council; to provide for establishment of the National Environmental Trust Fund and to provide for other related matters.

#### **8.5.1 Application of the Act**

The application of this act is limited only to Tanzania Mainland and this in accordance with section 2(2) of the Act which provides that, this Act shall apply to mainland Tanzania.

#### **8.5.2 General Principle of the Act**

The Act provides various rights and duties to the people such as right to clean, safe and healthy environment as provided under section 4 (1) and (2), right to bring an action on environment s provided under section five, duty to protect the environment as provided under section 6 of the Act. Apart from right and duties the Act also provides obligation to peoples such as obligation to give effect to environmental principles and this has been evidenced under section 8 of the Environmental Management Act of 2004.

#### **8.5.3 Objectives of the Act**

The objectives of the Environment Managing Act of 2004 include promotion, protection of the environment, waste management, risk assessment and prevention and control of pollution.

#### **8.5.4 Petroleum under Environment Management Act**

Section 105 of the Act provides for strategic environmental assessment for mineral, petroleum, hydroelectric power and major water projects plan. Section 105(1) provides that, where a mineral or petroleum resource is identified and before specific details are planned or a hydro-electric power station is planned or a major water project is planned, the Ministry responsible for mining, energy or water shall carry out a Strategic Environmental Assessment. Thus the Act allow for the

responsible authority to conduct assessment for exploration of petroleum.

The strategic environmental assessment shall assess the area marked for development including the following- (a) baseline environmental conditions and status of natural resources; (b) identification of ecologically sensitive and protected areas; (c) identification and description of communities around the area; (d) existing socio-economic conditions; (e) existing economic activities and infrastructure; (f) proposed developments, including long term scenarios and the cumulative development of a number of different mine or oil and gas site or hydro-electric power stations; (g) infrastructure and resources required to service these development; (h) potential environmental and social impacts of mining or petroleum development or hydro-electric power or any major water projects; and (i) recommendations for land reclamation and limitations on development in different areas. This is evidence under section 105(2) (a) to (i).

The Minister shall direct the Director of Environment to review the strategic environmental assessment statement and prepare a report on adequacy or inadequacy of the statement and areas which need to be improved and make recommendations to the Minister accordingly. This has been provided under section 105(3)

The Director of Environment shall submit a review report to the Minister for approval. On receipt of recommendations, the Minister shall approve the report and make recommendations to the Ministry responsible for mining; energy or water regarding the best way environment can be preserved within the context of the project that is to be undertaken. This is provided under subsection 4 and 5 of the section 105 of the Act. The Ministry responsible for mining, energy or water project shall be required to comply with recommendations made by the Minister.

#### **8.5.5 Contribution Of Environmental Management Act Of 2004**

The Act is of great merit because it allows study of strategic areas to be undertaken this facilitating the process of petroleum exploration by giving out data of a certain strategic area where petroleum is likely to be explored. The Act also provides Recommendations after the assessment of the area to the Ministry responsible for mining; energy or water regarding the best way environment can be preserved

within the context of the project that is to be undertaken

## **8.6 Production Sharing Agreement on Environment**

Article 23 of the PSA covers issues related with health, safety and environment. In furtherance of the Regulations made under the Act or as the Government may otherwise require from time to time, all petroleum exploration firms to take necessary and adequate steps to conduct its operations in a manner that will protect the natural resources, including the living resources of the land, sea and lakes of the United Republic of Tanzania and the environment;

These petroleum exploration firms must employ the best available techniques in accordance with Good Oilfield Practice for the prevention of environmental damage to which its Petroleum Operations might contribute and for the minimization of the effect of such operations on adjoining or neighboring lands, sea and lakes.

These firms must implement their Development Plans regarding the prevention of pollution, the treatment of wastes, the safeguarding of natural resources and the progressive reclamation and rehabilitation of lands disturbed by Petroleum Operations; prevent pollution; and ensure prompt, fair and adequate compensation for injury to persons or damage to property caused by the effects of Petroleum Operations.

The petroleum exploration and development firms have to notify the government and TPDC forthwith in the event of any emergency or accident affecting the environment and shall take such action as may be prudent and necessary in accordance with good international petroleum industry practice in such circumstances. The costs of such actions have to be recoverable costs provided that if such emergencies or accidents are the result of Gross Negligence or Willful Misconduct of firms, the cost of the action shall not be a Recoverable Firm Expense.

If the petroleum exploration and development firm does not act promptly so as to control or clean up any pollution or make good any damage caused, TPDC may, after giving the company reasonable notice in the circumstances, take any actions which are necessary in accordance with good international petroleum industry practice, and the reasonable costs and expenses of such actions shall be borne by the company.

The oil companies must undertake at their expenses (but as a legitimate recoverable cost) one or more comprehensive Environmental Impact Assessment Studies prior to, during and after any major petroleum operations. This requirement is mandatory, and the first study shall be before the start of drilling the first well in the contract Area. However, in areas of particular environmental sensitivity, an Environmental Impact Assessment must also be undertaken prior to seismic acquisition. The companies must prepare an Emergency Response Plans to deal with such emergencies including but not limited to blowouts, fire, storms, oil spills, floods and lightning. The petroleum exploration company must put in place programmes to deal with HIV/AIDS awareness and control, malaria control and epidemic outbreaks.

## **8.7 Marine Environment Issues**

Tanzanian's marine environment is special in many ways - it covers an enormous area. It includes extensive submarine environments including sea grass beds and unique coral reef systems which support an array of marine creatures. The petroleum industry shares the community's concern for the protection of the marine environment. Conserving biological diversity and maintaining ecological processes and systems are among the core objectives of ecologically sustainable development which have been endorsed by the petroleum industry. The responsible development of petroleum resources from offshore areas is consistent with achieving these objectives.

Exploring for oil and gas under the sea bed, and the production activities which follow a successful exploration program, all involve some risks and potential impacts on the marine environment. Clearly identifying these risks and impacts and developing detailed management plans to avoid, prevent or minimize them is a vital and integral part of planning these exploration and production activities.

### **8.7.1 Institutional and Legal Framework**

The governments of URT and GOZ are responsible for managing and regulating most activities, including petroleum exploration and production within limited area of their coasts.

Both governments are responsible for the area from 3 -200 nautical miles off the coast (out to the extent of our Exclusive Economic Zone - defined by the United Nations Convention on the Law of the Sea). However, Tanzania Mainland does not an explicit legislation for offshore activities.

Such laws are aimed at protecting one or more aspects of the marine environment, including cultural and historic values, as well as biodiversity and air and water quality. Controls are placed on all aspects of offshore operations, and licences defining limits are required for various discharges. Strict limits are imposed on discharges to the air and ocean environment.

#### **8.7.2 Marine Protected Areas In Mtwara (Msimbati) And Pemba**

Tanzania has a number of marine protected areas, identified as environmentally significant and is designated by legislation for protection. There are many objectives for which these are established, for example, protection of specific endangered species, breeding grounds for migratory species or for the sustainable use of resources.

The industries have to support the maintenance of these areas. Protected areas must be actively managed to be effective and achieve the objectives for which they were established. A range of activities, such as oil and gas exploration and production, fishing and tourism, may be permitted in some of the protected areas subject to strict conditions that ensure the policy objectives to be achieved. This approach, often called multiple uses, represents an important pathway to ecologically sustainable development. The petroleum industry is well aware of its responsibility to protect and preserve the environment in which it operates, wherever this may be - inside or outside a marine protected area. The industry works closely with environmental agencies to ensure that all interests are accommodated and protected. The offshore continental shelf has the greatest potential for future discoveries of oil and gas. Continuing access to the offshore region for petroleum exploration and production is essential to maintain Tanzanian's energy reserves.

### **8.8 National and International Environment Issues**

Above suggests that Tanzania has well elaborated policy, legal, regulatory and institutional frameworks promoting people environment issues and care in the

petroleum exploration. In addition is known that the United Republic of Tanzania is a signatory of international environment protection frameworks such as the Nairobi Convention, the Convention on Biological Diversity and UN Framework Convention on Climate Change, hydrocarbon extractive works which are integrated and should be carefully monitored by the respective organs of the URT and Zanzibar. In specific, above suggests that the Tanzania legal framework is relatively new, adequate and comprehensive and have all provisions for licences to be required for certain activities and create offences for breaches of the provisions of the Act or of any licence granted under those provisions. The current baseline research noted very few environmental issues and problems due to our limited time and coverage on the matter.

## CHAPTER NINE: OTHER PETROLEUM EXPLORATION AND DEVELOPMENT ISSUES

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Chapter Nine presents other social economic and market issues relevant for the petroleum exploration and development in Tanzania as perceived by various stakeholders.

### 9.1 Pricing and Quantity Determination of Petroleum Products

#### 9.1.1 Petroleum Price Changes

General increases and changing petroleum products prices are always of public concern since they are of particular importance to the operators, government, consumers and the economy of any country. Petroleum products are essential inputs needed in transportation, industries, agriculture, mining and households a necessity for the economy of any country. Moreover, petroleum products have no viable substitute in a foreseeable future. Their demand is inelastic, i.e. change in price does not affect the consumption thereof. The common view that the public hold is that oil companies earn excessive profits by manipulating prices in a market that is controlled by a few operators who can decide on prices and availability of products. Because of this and due to its importance to the economy, some governments are using price control measures to control and closely monitor the prices of these commodities closely.

The rise in petroleum products pump prices that followed the announcement of tax increases as part of June 2007 Budget speech by the Minister for Finance in the Parliament was seen by the public and the Government as collusion and excessive profiteering by Oil Marketing Companies. Oil Market Companies were requested to effect only such increases that were commensurate rate with the increased taxes, but they refused to do so, arguing that the price increase was a result of factors other than tax. This brought about amendments to the Petroleum (Conservation) Act, Cap 393 and the Energy and Water Regulatory Authority (EWURA) Act, Cap 414. These amendments were made principally to enable EWURA to undertake economic regulation of the downstream petroleum (marketing and distribution) sub-sector in addition to the powers it had for technical and safety regulation. The amendments give EWURA powers of intervention to modify, as and when deemed appropriate,

the economic behavior of a licensee. There changes in petroleum prices have important investment decisions for the international large scale petroleum exploration and development firms such as Shell, Statoil and Petrobras. If domestic prices are higher than international prices, these firms may opt to invest in both downstream and upstream petroleum activities. If not, then these firms will focus on activities which optimize long-term shareholders interests.

### **9.1.2 Discovery and Development**

Under Article 8(a) If petroleum product is discovered in the Contract Area, Contractor shall; forthwith notify TPDC of such Discovery; and within thirty (30) days after the date of discovery provide TPDC with all available information regarding the Discovery, including a preliminary classification of the Discovery as Crude Oil or Natural Gas as well as its potential commerciality. Under Article 8(b) If Contractor informs TPDC that, in its opinion, utilizing Good Oilfield Practices, the discovery is of eventual commercial interest and TPDC agrees with such determination, then the Minister shall be advised to agree to allow the Contractor to retain the Discovery Block for the duration of the Exploration License and any renewal thereof, provided that: the determination of eventual and/or potential commerciality shall be based on relevant economic criteria, including but not limited to, *potential petroleum production rates, petroleum prices, development costs, operating costs* as well as any other relevant criteria, as established by the Contractor.

### **9.1.3 Valuation of Crude Oil**

Article 12(a) of the PSA provides that the parties hereby agree that Tanzanian Crude Oil produced and saved from the Contract Area shall be sold or otherwise disposed of at competitive international market prices. Sub (b) of the Article states that the Contractor shall be responsible for establishing the relevant average prices for Crude Oil in accordance with this Article 12, and such prices shall be subject to agreement by TPDC before they shall be accepted as having been finally determined. The Contractor shall provide TPDC with all relevant material in order that it can satisfy itself that the 34 average price determined by the Contractor is fair. If the parties fail to agree on the average price for any Calendar Quarter within thirty (30) days following the end of such Quarter then the calculation of the relevant average price shall be referred to a sole expert appointed pursuant to sub-article (d) of this Article. The sole expert's determination shall be final and binding. Article 12(d) states that in

the event of any difference or dispute between the Contractor and Government or TPDC concerning selection of the major competitive crude oils, or more generally about the manner in which the prices are determined according to the provisions of this Article 12, the matter or matters in issue shall finally be resolved by a sole expert appointed by agreement between the parties or, in the absence of such agreement, by the British Energy Institute (formerly British Institute of Petroleum). The costs of the expert shall be shared equally between the Contractor on the one hand and the Government and TPDC on the other hand.

#### **9.1.4 Lifting, Marketing and Domestic Supply Obligation**

Article 17(d) provides that TPDC shall use its share of production from all Crude Oil/Natural Gas production in the United Republic of Tanzania to meet the requirements of the domestic market of the United Republic of Tanzania. If there is domestic demand in excess of TPDC's total entitlement, then the Contractor may be required to sell Crude Oil/Natural Gas in the United Republic of Tanzania on a pro rata basis with other producers in the United Republic of Tanzania (except TPDC) according to the quantity of Crude Oil/Natural Gas of each producer. TPDC shall give the Contractor at least three (3) months notice in advance of said requirements and the term of the supply will be on an annual basis. The volume of Crude Oil/Natural Gas which TPDC may require Contractor to sell to meet the requirements of the domestic market shall not exceed Contractor's share of Profit Oil /Gas. Crude Oil/Natural Gas sold pursuant to sub-article (d) above shall be paid for in foreign exchange at a price determined in accordance with Article 12 of this Agreement.

#### **9.1.5 Price and Quantity Determination**

From above evidenced provision and explanation from PSA show that there is no interference of the Government in product selling except where agreed in the PSA under exceptional manner as provided under Article 17 of PSA that If there is domestic demand in excess of TPDC's total entitlement, then the Contractor may be required to sell Crude Oil/Natural Gas in the United Republic of Tanzania on a pro rata basis with other producers in the United Republic of Tanzania (except TPDC) according to the quantity of Crude Oil/Natural Gas of each producer. It is EWURA that has been entrusted by law in regulating final petroleum product price in Tanzania. However, neither EWURA nor the government of Tanzania may force or

determine type, amount and quality of petroleum product to be sold in the domestic market. Price and quantity are determined through market system. The notable fact is that there is a body which entrusted in regulating petroleum price in accordance in actual situation of economy and that regulatory body is EWURA

#### **9.1.6 Public and Community Interests**

There has been a general perception that TPDC like any other large scale corporate entities in Tanzania has never take into account interests of the general public. The community and public interests refer to the "common well-being" or "general welfare." The public interest is central to policy debates, politics, democracy and the nature of government itself. While nearly everyone claims that aiding the common well-being or general welfare is positive, there is little, if any, consensus on what exactly constitutes the public interest. Policies and laws of Tanzania do not provide guidance on how public interests are to be handled by TPDC as a public corporate company.

There are different views on how many members of the public must benefit from on-going exploration, and mining activities before they can be declared to be in the public interest: at one extreme, activities have to benefit every single member of society and communities in order to be truly in the public interest; at the other extreme, activities can be in the public interest as long as it benefits some of the population and harms none. The concepts of public include people, natural resources, environment and other common goods. Many companies in the country are aware of their social responsibilities and will not take actions which damage societies, natural resources and environment.



## CHAPTER TEN: THE CONCLUSION

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Chapter Ten is a conclusion consisting of major findings and policy recommendations. The ERSF-NPA (2008/09) background survey aimed at understanding the status of the oil and petroleum exploration and development industry in Tanzania. The objective was to investigate the state of oil and petroleum exploration in Tanzania. In specific study assessed, [1] the oil and petroleum exploration activities in the country, [2] the primary and secondary constraints affecting the performance in oil and petroleum exploration, [3], the policies, legal, regulatory and institutional frameworks affecting the performance of the industry and [4] the environmental impact and measures that have been undertaken by the government and the private companies in exploring petroleum in Tanzania.

### 10.1 Major Findings

#### 10.1.1 Social, Economic and Political Reforms

The study found that, the country has during 1985/6 – 2007/8 taken major reforms in political, social, economic and monetary policies with the view of enabling international private oil companies among others, to invest, explore and develop in the petroleum sector, (Semboja, 2006). Tanzania has excellent opportunities for oil and gas exploration and development in its mostly unexplored but highly potential sedimentary basins. The government has been offering competitive business terms for would-be investors. These include economic, legal and fiscal incentives. The terms are contained in the Model Production Sharing Agreement, (MPSA), of 1995 and the Petroleum (Exploration and Production) Act of 1980. More important is to emphasize that the political, social and security stability in the country has been one of the best investment environment in the Sub –Saharan Africa for increased petroleum exploration and development activities.

#### 10.1.2 Increasing Petroleum Exploration and Development Activities

The study found that the number of operators and licensees have been increasing during the last ten years. Both internationally known and unknown private and public firms are participating. The new international oil public companies include Statoil Hydro of Norway and Petrobras of Brazil. Shell Oil Company is also active old partner since 1952 in Tanzania. There are few new and unknown junior private

and international oil companies. These international oil companies and / or contractors with PSA operate under the command and ownership of TPDC. TDPC is the owner, main partner and active licensee holder on behalf of the government and the people of Tanzania. AUPEC Study (2008) noted that increasing number of firms may indicate that Tanzania is also a frontier hydrocarbon province, particularly in terms of oil and of the deeper shelf and deep sea.

The study found that that there are no local/indigenous private Tanzanian firms involved in the petroleum exploration and development. This is due to the fact that petroleum exploration and development is a complex function of financial capital sizes, levels of economic development, financing framework, technological advancements and other international input and output market systems which are risk and uncertain. However, it is important to note that lack of direct indigenous participation limit their roles, interests and rights over resource use. There will also be minimum direct social economic linkages, impacts and benefits to the people and Tanzanian domestic private sector.

#### **10.1.3 Constraints, Risks and Challenges**

The baseline study found that there are increasing number of complex primary and secondary constraints and risks affecting the performance in oil and petroleum exploration in Tanzania. The petroleum exploration results are sensitive to various risks, the most significant ones being the hydrocarbon price expressed in dollars and the euro-dollar exchange rates. Nevertheless, it should be noted that the operational currency is the dollar as its sales, a major portion of its operational expenses, and a significant portion of its investments are all denominated in that currency. Main risks included social political risks related with behavior of the governments, legal disputes, resource related to the reconstruction of reserves, market competition, industry, health, social and public security related risks.

#### **10.1.4 Policy Framework**

The baseline survey found that neither Tanzania (Mainland) nor Zanzibar has an explicit national petroleum exploration and development policy. The government of URT has a National Energy Policy (1992 and 2003) and other several national development policies facilitating the promotion of the development of the petroleum industry in Tanzania. The government of Zanzibar, (GOZ), does not have an explicit

energy policy. The GOZ is in the process of finalizing its own Zanzibar Energy Policy. The most important and current is the National Energy Policy of 2003 formulated by the Ministry of Water, Energy and Minerals. Other complementary national development policies include National Environment Policy 1997, National Investment Policy 1996 and National Trade Policy, 1998. Both the current URT and proposed GOZ energy policies have the objectives of ensuring availability of reliable and affordable energy supplies and their optimal uses in a rational and sustainable manner in order to support sustainable development goals. These national energy policies, therefore, aim to establish an efficient energy production, procurement, transportation, distribution and end-use systems in an environmentally sound and sustainable manner, (Semboja, 2006). These policies are very clear on matters related with investments, production, private sector participation and development in a liberalized market environment. However, these policy developments do not guarantee the position, interests and rights of indigenous Tanzanians with respect to petroleum resources. It is assumed that the URT and GOZ governments will represent peoples interests when dealing with petroleum exploration and development firms.

#### **10.1.5 Legal and Regulatory Framework**

The baseline survey found that Tanzania has put in place a comprehensive legal and regulatory framework affecting the performance of the petroleum exploration industry. The government of United Republic of Tanzania, has various substantive and subsidiary laws which are affecting performances and activities of petroleum development, starting with the [1] Constitution of the United Republic of Tanzania, [2], the Petroleum Exploration and Production act of 1980; EWURA Act of 2001, [3], the Petroleum (conservation) Act of 1987 which has now been repealed by the Petroleum Act of 2008, [4], Public Corporation Act No.17 of 1969 repealed and replaced by the Public Corporation Act (Cap 257 R.E 2002) of the Laws of Tanzania through GN No 140 of 30<sup>th</sup> May 1969 and [5], other business and cross cutting laws and regulations. Similarly, the government of Zanzibar has a number of substantive and subsidiary laws which may be affecting performances and activities of petroleum development in Unguja and Pemba. These are related with company registration, environment, land, investment and local government authorities. However, there are still controversial legal and regulatory matters. Article 4(3) of the Constitution indicates that matters of natural resources such as oil and gas are under

the management of the United Republic of Tanzania, and there is provision providing that for the purposes of the efficient conduct of public affairs in the United Republic and for the allocation of powers among the organs specified in this Article. Para 15 of the first schedule of the Constitution as referred under Article 4 state that Mineral oil resources, including crude oil and natural gas are Union Matters thus it is very confusing to debate whether petroleum is the matter of Union or not.

There are different legislations establishing regulatory institutions which at times are conflicting. There are also gaps and missing legal and regulatory institutions. For example, the sector does not enjoy TIC /ZIPA facilities.

The study noted that current Act and Product Sharing Agreement are silent on whether the indigenous population or natives have legal right of ownership their land and petroleum resources explored, exploited, and they are also further silent on whether the natives have rights of the sharing revenues derived from the sales of resources after the extraction of those resources. The PSA treats TPDC as the owner of the resources and all PSA contractors enter into the agreement with TPDC in everything such as granting of license and many incidental matters arise when the contract is on going.

#### **10.1.6 Institutional Framework**

The baseline survey found that Tanzania has a functional institutional framework that facilitates, promotes and governs development of petroleum exploration and production activities. Section 4 of the Petroleum Act vests the entire property in and control over oil and gas in any land to the United Republic of Tanzania. Private parties (including foreign parties) can be licensed to conduct exploration or production. Through the Ministry of Energy and Minerals, the Energy department is mandated to administer the petroleum exploration and production in Tanzania.

Tanzania Petroleum Development Corporation (TPDC) was created to oversee, among other things, the exploration operation in the country as a licence holder on behalf of the Government. TPDC is a national oil company and has a monopoly in terms of petroleum exploration and development in Tanzania. By conventional definitions, national oil companies hold the majority of petroleum reserves and produce the majority of the world's supply of crude oil. However, TPDC is facing a

number of institutional problems and challenges. As a corporate entity, TPDC's goal is to explore for and develop oil and gas in Tanzania and thereby contribute to the national income and economic growth of the country. TPDC is a national institution with responsibility of spearheading the development of the petroleum industry in the country with due regard to developing and providing quality products and services with high safety standards to protect people, property and the environment. TPDC is a player and a coach in the petroleum exploration and development.

TPDC is also the major regulator on the petroleum matters but also the laws have empowered EWURA to execute function of TPDC as the regulatory body for petroleum sector. Thus EWURA has acquired the status of regulatory body like TPDC but the only difference is that TPDC is the one recognized in PSA and EWURA is not recognized by the PSA. Thus both have the status of regulatory body in the petroleum sector. This makes TPDC as a very strong and strategic partner in the petroleum exploration and development. However, in practice, there are problems of TPDC assuming different and multiple roles as a player, coach and referee. Its capacity is very limited.

Consultations with people in Zanzibar suggest that TPDC has been neglecting the role and importance of GOZ in participating in determining petroleum activities in Zanzibar. TDPC has ignored the need to establish and operate in Zanzibar

#### **10.1.7 Human Resource Development in Petroleum Exploration**

The baseline survey found that Tanzania has complex policy and legal framework facilitation optimal utilization of domestic human resource in the petroleum exploration industry in Tanzania. The human resource is certainly the most important factor of production because it is capable of transforming all the other factors for the betterment of human life and human welfare. One way of taking care of position, interest and rights of people is through developing and utilizing indigenous human resources. This can in turn effectively increase labour productivity, ownership, income and its capital value.

It is complex because the government has adopted a set of sector specific approaches through PSA that are more in line with the liberalized labour market, socio-economic realities of Tanzania and that of the contemporary world. This requires that citizens

to compete for jobs in employment on the basis of their skills and work experience or their own ingenuity. However, on the other hand it is aware of our human resource constraints, that Tanzanians do not have qualifications, experience and skills to compete in this market. That is, the country has very few trained, skilled, experienced and professional local manpower to support increasing petroleum activities. This implies that rights of Tanzanians to be recruited, engaged and developed are limited.

#### **10.1.8 Taxation and Fiscal Framework**

The baseline survey found that like other resource-based sectors, petroleum is typically subjected to classical and substantial taxation systems in Tanzania. In addition to conventional profits or corporate taxes, petroleum companies are required to pay royalties, revenue taxes, and excess profit taxes and like other economic entities are subjected to a variety of other forms of taxations. Tanzania has many, complex and heavily burdened taxation system. Consultations with private firms suggest that there are negative effects of various revenue-raising taxes, and in particular, the extent to which the imposition of such taxes changes in the off-shore exploration activities.

The current taxation and fiscal incentive systems in Tanzania no doubt are impacting on the investment decisions of private companies in both mainland and off-shore petroleum exploration sectors. Petroleum taxation regime in this sector has been receiving less attention over years, compared with the booming gold mining sector. It is a well-recognized fact that government intervention through macroeconomic and tax policy instruments is essential for optimal exploration of petroleum reserves, maximization of petroleum revenues, maintenance of environmental standards, and for providing incentives for reinvestment of petroleum activities.

Despite these limitations, the government of Tanzania has been giving ad hoc favourable fiscal incentives to the petroleum firms. In principle, apart from taxes of a minor nature of general applicability, the oil companies are exempted from all other taxes. These include import and export tax exemptions on exploration equipment, materials and goods. In practice, there are, options available within the Model PSA and local government systems. Other attractive fiscal incentives are under PSA including no requirement for bank guarantee against Work Program, no restrictions

on repatriation of foreign exchange, negotiable training fund, fast track negotiations for concluding PSAs and availability of previous exploration data on request at no cost.

The revenue interests of people are stipulated under the PSA. The product to be shared in value terms, or Profit Oil (i.e., production in excess of Cost Oil) is shared between TPDC and the Oil Company in varying proportions determined by incremental production rates. The sharing percentages and the associated production bands varying and are negotiable. This can be complex and corruptive. *First*, there is no one in the Tanzania government machinery system is aware, informed and has the capacity to determine the final actual Profit Oil to be shared. *Second*, there is no apriori understanding and agreement between TPDC and URT or and GOZ on how much should be used in TPDC for further investments and capital accumulation and for government consumption. *Third*, the local community and common people in the street are not in these sharing mechanisms. They may or may not be benefiting for exploitation of petroleum products.

#### **10.1.9 Environment Issues**

The baseline survey found that Tanzania has adequate environmental policies; legal, regulatory and institutional systems supporting the government and the private companies in exploring petroleum in Tanzania. The exploration, development, and transportation of gas may have serious impacts on fragile mainland ecosystems and wildlife communities. Sizeable oil and gas reserves have led to increased investments and exploration activities in some parts of Tanzania.

The study noted that the overall objectives of the National Environmental Policy relevant to the petroleum exploration and development included the need [1] to ensure sustainability, security and equitable use of resources for meeting the basic needs of the present and future generations without degrading the environment or risking health or safety; [2] to prevent and control degradation of land, water, vegetation, and air which constitute our life support systems; and [3] to conserve and enhance our natural and man-made heritage, including the biological diversity of the unique ecosystems in the country. Also the Petroleum Act 1980 requires that all private operators in the exploration or development area must be in a proper, safe and workmanlike manner and in accordance with good oilfield practices. The Act

demands all the petroleum companies to take all reasonable steps necessary to secure the safety, health and welfare of persons engaged in those operations in or about the exploration or development area. This suggests that people's interests have been taken care.

## **10.2 General and Specific Policy Recommendations**

### **10.2.1 General Policy Recommendations**

The Government of Tanzania in collaboration with the Government of Zanzibar *has first and foremost* to design, plan, arrange and implement sustainable third generation reforms with the view of enabling both international and national oil companies among others, to invest and explore in the petroleum sector for the benefit of all parties in Tanzania. This involves, among others, continuation and intensification of the first and second generation social, political and economic reforms.

*Secondly*, these generic national policy reforms and objectives should focus on optimal utilization of petroleum resources for sustainable development of Tanzanians. This will involve review of national and sector policies, laws and regulations to ensure that indigenous populations are actively involved and participate in petroleum exploration activities. The positions, interest and rights of indigenous Tanzania, URT and GOZ must be clear by design.

Some of the general national policy recommendations include maximum mobilization and utilization of domestic capacity including cooperation with other neighboring countries such as Kenya and Uganda and the enhancement and harmonization of investment, taxation and fiscal matters between Zanzibar and Tanzania Mainland.

### **10.2.2 Specific Policy Recommendations**

The specific national investment policy recommendation focuses on the promotion of both local and foreign investments include the optimum utilization of the nation's natural human and other resources. In specific, the policy require putting into place incentives to encourage private sector investment in exploration, efficient mining and marketing of the country's mineral resources; including gas and oil reserves,

(URT, 2002). The following are some of specific policy recommendations based on the baseline survey;

***Petroleum exploration and development operations***

- Design policy strategies and lines of activities to enhance political leadership and URT and GOZ government commitments at central and local levels in terms of strategic resource management and development.
- Limit direct political interference and state involvement in the management of day to day operations of TPDC and other similar public corporations
- To support, facilitate and allow allocated gas from inefficient to more efficient thermal power projects for making optimal use of the limited indigenous resources. In addition, there is a need to enhance environmental sound technologies and reduction of low thermal efficiencies
- Design policy strategies and lines of activities aimed at promoting, facilitating and support increasing participation of indigenous public, private sector firms and individual in the petroleum exploration and development businesses.
- Design policy strategies and lines of activities aimed at promoting, facilitating and support increasing participation of indigenous private sector firms and individual in the financial capital and common shares traded on the International Stock Exchange markets
- Design policy strategies and lines of activities aimed at promoting, facilitating and support large scale international petroleum exploration and development firms to increase investments and thereby participate into more integrated gas projects. These efforts will enhance gas to power and fertilizer projects in Tanzania.
- Enhance effective use of combined national, regional and international political, financial and institutional capacities and strength in protecting the Tanzania economy and petroleum exploration from the worst effects of the global recession.

***On long term development policy objectives***

- Design policy strategies and lines of activities aimed at enhancing availability of reliable and affordable energy supplies and their use in a rational and

sustainable manner in order to support national development goals.

- It is high time to think strategically and have a long term energy plans that optimize petroleum resources for our energy and transportation needs.
- Formulate petroleum exploration and development strategy based on national energy policies.
- Design and implement technology-driven international exploration and production strategies combined with new and unique strategic elements where risk analysis and decision models represent important components of a series of investment decisions in the off-shore exploration in Tanzania.
- There is also a need for intensive gas exploration and development of markets and infrastructure for optimal use of the resource. It is essential to formulate a long-term strategy for rational utilisation of natural gas resources, (URT, 2007a and 2007b).

#### *On legal and regulatory framework*

- There is a need to review of relevant legislation contained in the Petroleum (Exploration and Production) Act, 1980, the Petroleum Conservation Act, 1981 and other relevant documents to take into account new developments solve Union versus GOZ issues, other inadequacies, gaps and weaknesses.

#### *On institutional framework*

- There is need for restructuring and reforming TPDC. TPDC should be reconstituted by legislation clearly applying to the whole of the United Republic (perhaps by way of reviewing and amendment to the Petroleum (Exploration and Production) Act, 1980).
- TPDC should be reformed and an independent corporate body whose board adequately reflects the interests of and the level of all stakeholders, private development, market liberalization and efficient petroleum exploration and development activities in both Mainland Tanzania and Tanzania Zanzibar.
- Establish a TPDC office in Zanzibar
- OR: GOZ to establish own independent public corporation responsible for promoting, facilitating and supporting petroleum exploration and development activities in both Unguja and Pemba, Zanzibar Petroleum

Development Corporation, (ZPDC), will represent the interests of GOZ and people of Zanzibar.

- Design policy strategies and lines of activities aimed at building capacities of Tanzania Investment Centre, (TIC) or / and Zanzibar Investment Promotion Authority, (ZIPA) in promoting, facilitating and support investments in the petroleum exploration and development sector. There is a need for TIC/ZIPA to handle all financial, tax, and fiscal incentives for the petroleum exploration and development activities.
- Design policy strategies and lines of activities for TPDC and URT/GOZ to create awareness, sensitization on local government authorities and communities. These have to be well informed, consulted, and involved in matters related with local petroleum exploration and development activities.
- Design policy strategies and lines of activities aimed at building capacities of Tanzania Revenue Authority in terms of awareness of the role, operations, importance, benefits and impact of petroleum exploration and development activities on the long term and sustainable economic development They have to educated on the details of Act 1980, PSA and role of TPDC

#### ***On human resource development***

- The government to continue implementing sector specific HRD approaches as stipulated in national policies, laws and PSA that are more in line with the socio-economic realities of Tanzania and that of the contemporary world. The government realizes the various demands of a market oriented economy put on the nation.
- Design policy strategies and lines of activities to enhance vocational education and technical training at all levels as basic needs of the labour market in terms of the practical application of the knowledge and skills in the petroleum exploration and development sector
- Design policy strategies and lines of activities to carry out an effective training and employment program for potential Tanzanian employees in each phase and level of operations, taking into account the requirements and need to maintain reasonable international standards of efficiency in the conduct of the

Petroleum Operations.

*On taxation and fiscal incentives*

- There is a need to ensure that the Tanzanian taxation system is characterized by the generally acclaimed principles of certainty, fiscal stability, equity and administrative convenience apart from neutrality.
- To design, adopt and use optimal financial and fiscal regime and thus securing an appropriate share in the petroleum rent.
- To ensure that the appropriation of the petroleum royalty and income taxes should be, as far as possible, without disturbing the allocative decisions of economic agents involved, unless there is need for deliberate measures to resolve conflicting interests between the objectives of private agents and social welfare considerations.
- Above suggests that need for the government to have effective, efficient and transparent revenue sharing mechanisms. It is important that revenue sharing systems include the interests of all stakeholders. These include the interests of people, community and ordinary poor people in rural areas where these petroleum projects are situated.

*On environment policy issues*

- There is a need for social economic and political pressure to start searching for ways and means to probe ever deeper into sensitive environments.
- To ensure that companies are encouraged to follow good corporate governance principles such as "good geophysical practice", "good drilling practice", and "good production practice". This means that operations will be conducted in accordance with regulations, standards, guidelines and the best industry practices. In all cases, companies must have regard for the safety of persons and property, protection of the environment, and conservation.
- TPDC, EWURA and NEMC work in collaboration, very effectively, efficiently and transparent to ensure prevention, reduction, control and limitation of damage, and minimization of the risk from the generation, management, transportation, handling and disposal of hazardous wastes, other wastes and

emissions.

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