



Review Article –Energy and Environment

The overview of the legal and institutional framework for oil and natural gas sector in Tanzania—A review

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(Received: 21-12-2017; Accepted 19-01-2018; Published Online 23-01-2018)

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Abstract

One of the essential tools for management of the sectors including the oil and gas sector is the legislative and institutional structure. This paper reviews the overview of the current legal and institutional framework for energy resources development, with weight on oil and gas resources and their critical significance to socio-economic and political development. It affords a comparative account of some new features and on-going trends of the activities conducted by the institutions for sustainable development of the oil and natural gas sector in Tanzania.

Keywords: Institutional structure, legal framework, local community, oil and gas management, Tanzania.

Introduction

The oil and gas sector is one of the fast-growing and foreseeable sectors of the economy to bring about a unique economic revolution in Tanzania if this resource will be extracted and sought out on the interests not only to benefit investors but also the Tanzanian community (Rasmus Hundsbaek Pedersen & Kweka, 2017). The fact of this statement is based on assessments from experts and internationally respected economic institutions that place Tanzania among four countries that will have the largest economy in Africa, similar to the countries of South Africa, Algeria, Nigeria and Egypt.

For the growing oil and natural gas-rich developing nations including Tanzania, the sustainable use of local and national wealth must be put into consideration of the development of local and national oil and gas sector achievements under the application of the relevant legislative and institutional framework. (The Editor, 2014). But all of this will happen if there are more policy, legal and institutional improvements so that each stakeholder is to benefit from this resource as well as other sectors such as mining, fishing, agriculture, tourism, transportation, and trade. That is why this paper has repeatedly referred to key issues of the legal and institutional framework that need to be closely monitored by all Tanzanian citizens, so that resources such as natural gas that has been widely discovered in the area of Songo Songo, near Kilwa in Lindi region (1974) and Mnazi Bay in Mtwara region (1982), benefits the nation instead of turning into a curse that brings poverty or war (Rasmus Hundsbaek Pedersen & Bofin, 2015).

Recently, the discoveries of more natural gas have arisen in those areas and other areas such as Mafia, Mkuranga, Tanga, Kigoma, Selous and elsewhere. It is important to know

how this sector is managed through policies, laws and institutions. This is very important because, although the country's benefit does not satisfy the interests of the country and the expectations of ordinary citizens, even now when gas resources are still being researched and continuously robbed of joint venture agreements (PSAs) between government under the Tanzania Petroleum Development Corporation (TPDC), and foreign investment corporations in this industry (Metacalf, 2014).

The current institutional structure of the oil and natural gas industry is the challenging factor in Tanzania. The TPDC and Energy and Water Regulatory Authority (EWURA) are responsible for contracts arrangement and taxation respectively (Peng & Poudineh, 2017). This brings confusion during the management of the sector. Despite the existence of various policies and legislation related to natural gas, the involvement of local authorities where the natural gas is found still poor. This is reflected in all areas with the gas, where councils and villages executives carry out their obligations through Acts No. 7 and 8 of 1982, which are involved in the role of local and rural governments, do not know the detail of gas and oil exploration in their areas. Due to this concern, this paper is intended to provide the overview on the effectiveness and efficiency of the legal and institutional framework for the natural gas sector which is a fast-growing sector in Tanzania.

The legislative and institutional framework for natural gas sector in Tanzania

There are numerous legal and public institutions that accomplish the various responsibilities to guarantee efficient and effective management of the natural gas sector in Tanzania (Kinyondo & Villanger, 2017; Melyoki, 2017). The legal and institutional framework in oil and gas sector act as the tools for sustainable development of the sector

Table I: Legislative and institutional framework for natural gas sector

| No. | Item | Contribution | References |
|-----|--------------------------------|--|---|
| 1. | Training and employment | The plan for the employment and training must succumb for every request for an exploration or development license The Model Production Sharing Agreement for Petroleum (MPSA) of 2013 requires the Contractor to implement the proposals within 6 months of the development license grant The Contractor must likewise safeguard that the handover of management and operation functions to Tanzanians occur within 5 years of the beginning of commercial operations. | (Reporter, 2017) (Burns & Bonnefoy, 2015) (OpenOil, 2015) |
| 2. | Purchase of goods and services | The Petroleum Act (PA) of 2015 stipulates the preference for local goods and services and for joint venture with local firms when those goods and services are absence The MPSA of 2013 sets out numerous local procurement requirements in association to the tender for or procurement of goods, services and materials. | (URT, 2015b) (Burns & Bonnefoy, 2015) |
| 3. | Technology transfer | Contractors need to certify that their training program result in handover of technology and know-how The PA orders a shared obligation between contractor and government in allowing technology transfer. | (Kasanda & Mallikaaratchi, 2016) (URT, 2015b) |
| 4. | Implementation | According to the PA, the regulatory authority for upstream activities is responsible for endorsing local content and supporting the participation of the local corporations in the sector The Local Content Policy of 2014 also recommends the establishment of a National Local Content Committee to superintend the execution of the local content policy | (Kinyondo & Villanger, 2017) (URT, 2014) |
| 5. | Monitoring and evaluation | The PA and MPSA of 2013 set out convinced annual reportage requirements in association to the Contractor’s accomplishments and their effects on promoting local content. This annual reporting is verified by a third party. | (Kasanda & Mallikaaratchi, 2015; TPDC, 2013) |

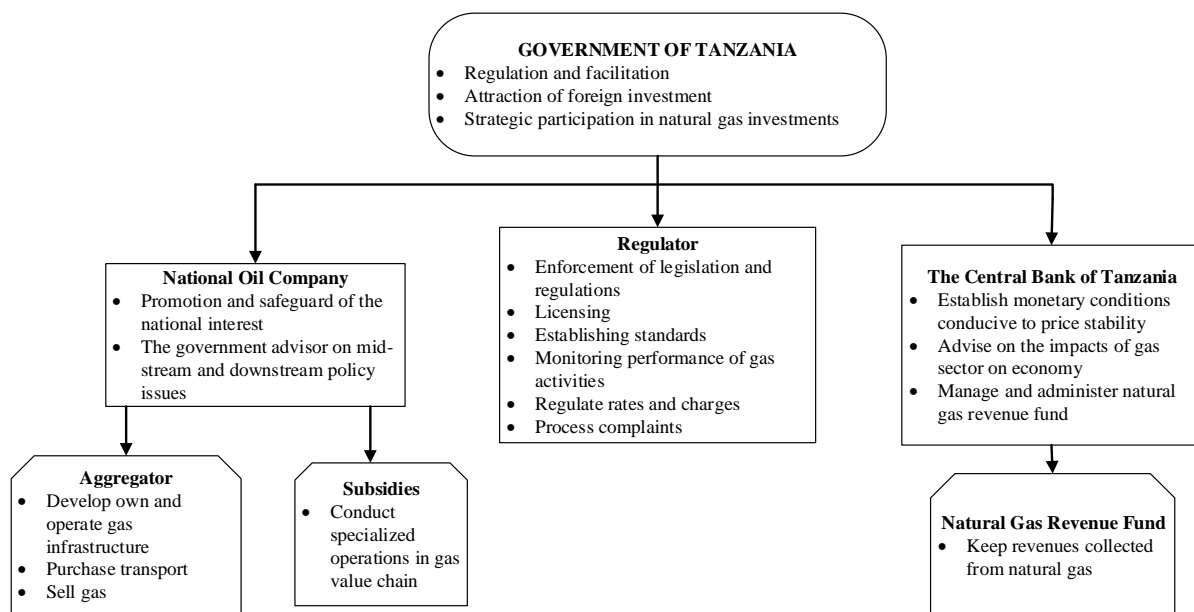


Figure 1: A basic structure of the gas sector governing framework

regarding training and employment, procuring goods and services, technology transfer, implementation, monitoring and enforcement as shown in Table I. There are several policies and laws which govern the natural gas sector in Tanzania as indicated below.

The legal framework in Tanzania

The National Natural Gas Policy (NNGP) of 2013

The NNGP provides the detailed and comprehensive framework for addressing the challenges which face the natural gas sector with top, middle, and down levels focus. It offers procedures for the natural gas sector development to

guarantee optimal welfares to Tanzanians and the national socio-economic and political in the short, medium and long-term basis (URT, 2013). Furthermore, the policy proposes a number of concerns which should be addressed within the legal and regulatory framework. These concerns include security of supply of gas to the domestic market, the establishment of an appropriate regulatory authority for the natural gas industry and development of suitable standards for the natural gas sector based on worldwide satisfactory standards (Ngowi, 2016). From the information provided in the policy, it is possible to map out a basic structure of the gas sector leading framework (Lovett, Mndolwa, Metcalf & Kiwelu, 2014) as shown in Figure 1.

The Local Content Policy of Tanzania for Oil and Gas Industry (LCPTOGI) of 2014

The LCPTOGI defines the local content as the added value brought to the regional and local areas of the country through the undertakings associated with oil and gas industry. It states clearly that delivering local benefits to the local communities where oil and gas firms work is no longer an option (URT, 2014). In the novel competitive scenery of falling supply and rising demand for energy resources, corporations in the oil and gas sector face the increasing forecasts to do more than merely alleviate negative effects, function as sources of tax/royalty income and act as reputable neighbors (Burns & Bonnefoy, 2015). Local content requirements are regarded to be among the most significant tools for extracting additional welfares to local communities from foreign investments in the extractive sectors and have been used in most natural resource-rich countries (Kinyondo & Villanger, 2017; Ovadia, 2016).

The National Investment Policy 1996

The principal objective of the policy extends to ensuring promotion, attraction and facilitation of foreign investments in Tanzania through the Tanzania Investment Centre which was initiated in 1996.

It underlines the following (URT, 1996):-

- Maximum mobilization and use of domestic capacity including collaboration with other developing and industrialized countries.
- Maximum promotion of exports of goods and services to heighten the development of an active and modest export sector.
- The inspiration of influxes of external resources to counterpart national efforts.
- Inspiration and promotion of the adoption of new technologies in undertakings that have a direct bearing on productivity, quality and augmented competitiveness
- Heightening of the transparent legal framework that enables the advancement and guard of all investments.
- Deregulation of the investment consent process.
- Re-defines the protagonist of the private sector and places it into a more fundamental role.
- Generates a balance between administrative controls and market forces as a means of assigning resources.
- Re-emphasize political multiplicity to improve consensus.
- Bestows the nation's adherence to Rule of Law.

The Oil and Gas Revenue Management Act (OGRMA) of 2015

The OGRMA offers the legal framework in relation to the managing the oil and gas revenues derived from exploitation, development, and production of oil and gas accomplishments (URT, 2015a). The Act postulates the "oil and gas revenues" as the royalty in cash payable by a licensed producer or its holdings or a company under:-

- ❖ The share of profit to the government
- ❖ Extra oil and gas entitlements, taxes and profits
- ❖ A Production Sharing Contract

- ❖ The interest of participation of the government
- ❖ Profits on investment income resulting from oil and gas resources fund
- ❖ Taxes paid by the licensed companies
- ❖ Bonuses provided by the National Oil Company for government's impartiality interest
- ❖ Signature bonus, training fees and surface rentals paid by licensed producers
- ❖ Or any other revenue strong-minded by the Minister to establish gas revenue, derivative from operating companies.

Furthermore, The Act creates the Oil and Gas Fund which entail the Revenue Holding Account and the Revenue Saving Account. The Fund's aims are to ensure that (URT, 2015a): -

- Socio-economic and political development is heightened
- Financial and macroeconomic constancy is sustained
- Inter-generational resource is secured
- The funding of oil and gas investment is assured

The fund is expected to get its revenues from profit shares, royalties, revenues accumulated from fund investment, corporate income tax on oil and gas wealth extraction and bonuses obtained from government participation in oil and gas activities. To safeguard appropriate use of the Fund's money, the Act enforces constriction on the use of Fund's revenues, instructing as it ensures that the money deposited in the Fund shall not be used for:-

- As collateral or promises, obligations or other accountabilities of any other entity
- Offering credit the public and private enterprises, government or other business entities
- Renting or compensation for theft or corruption practices

The Petroleum Act (PA) of 2015

The PA and its natural gas pricing regulations of 2016 deliver the legal framework in what way the petroleum and gas should be succeeded for the sustainable development (URT, 2015b). The natural pricing gas regulations rule pricing of the natural gas for the domestic market and cross-border markets (URT, 2016b). The Act does not specifically offer the local content guarantee for natural gas although it outlines petroleum in such a manner that gas is inclusive (Calignano & Vaaland, 2017). This conduct is not sufficient for the development of gas exploration and production. The prominence of having a precise statute dealing with oil and gas is that the specific statute can address the enlarged activities within the oil and natural gas sector in details. Nonetheless, the policy positively ascertains this deficiency within the predominant law hence the stipulation to enact a specific law to deal with the situation (Ngowi, 2016).

In passing new law, there should be such a protection to secure that the people of Tanzania benefit in the oil and gas extraction either by making it obligatory for government to hold shares in any project be it through TPDC or any other entity which may be established, or such other machinery as may be essential to guarantee the participation of Tanzanians in the industry. Compensation is among other parameters which must be considered by the law. With the knowledge

that Tanzania has experienced from the mining sector, it is imperative to evidently provide for responsibility for compensation of those who will be affected directly by activities of exploration, production and distribution of natural gas. The consideration of the compensation will ensure the sustainability of the land to the local community by controlling land conflicts. Land conflicts create instability and hostility among the local community, the government and investors. A new act may arrest the situation beforehand.

The Tanzania Extractive Industries (Transparency and Accountability) Act (TEIA) of 2015

The TEIA asserts the government's effort to warrant that there are transparency and accountability in the extractive industry. Access to information is an ultimate right in activities that may positively benefit or negatively impact individuals, communities and society as a whole. Propagation of information creates the public awareness of the developments in the industry. The Government and stakeholders have significant roles to play in order to realize transparency and accountability to the community as well as eradicating likely rudiments of corruption in the natural gas industry (Breakthrough Attorneys, 2015). Furthermore, the Extractive Industries, Transparency and Accountability Committee is established under the Act with the major duty to guarantee that there are transparency and accountability.

The Petroleum (Local Content) Regulations of 2017

The Petroleum (Local Content) Regulations of 2017 provide the ways of how effectively the government can meet the aim of maximizing the country's benefits from potential and current gas projects (Scurfield, Woodroffe & Olan, 2017). The regulations are aimed to promote the maximization of job creation through the application of the local expertise, goods and services in the oil and gas sector. It is very important to develop the local capacities in the sector through education, skills and technology transfer and expertise development (URT, 2017). They offer the guidelines on how the local community motivation and development should contribute to the oil and gas sector.

Model Production Sharing Agreement for Petroleum (MPSA) of 2008 and 2013

Under a Production Sharing Agreement, a provision is made for the Exploration and Production Company to improve its expenses and then portion the profit from oil and gas income with TPDC, but the MPSA of 2013 pursues to protect better short and long-term fiscal welfares for the state (Burns & Bonnefoy, 2015). The Model PSA of 2013 assets much of the provisions contained in the MPSA of 2008, such as minimum state participation of 25%, the government royalty and additional profits tax (Reuters Staff, 2013). It affords enticements for deepwater exploration while rising revenue from oil and gas activities by compacting the financial footholds existing in the MPSA of 2008. In fact, the MPSA of 2013 reinforces the inspiration of TPDC in oil and gas accomplishments.

The MPSA of 2013 reinforces the compulsions in respect to training and improvement of local staff, including increasing the annual training expenditure necessity from \$150,000 under the MPSA of 2008 to a minimum of \$500,000. The MPSA of 2013 stipulates that the Contractor will be subject to taxes on income in accordance with the law.

The new levy applies to capital gains on a transfer of interest (Kinyondo & Villanger, 2017). The agreement also sets a royalty rate of 12.5% of the total oil or gas production for onshore or shallow operations and a 7.5% royalty rate for offshore production. It is assigned out of production before the solicitation of the production sharing method. The MPSA of 2013 leaves exposed how much oil or gas would be averted to domestic use, and there has been a debate on how much of the nation's hydrocarbon reserves should be used locally and how much can be exported.

Under the MPSA 2013, Contractors are obligated to submit an annual local content strategy, which must be submitted along with the annual working program and budget for petroleum operations and must include (TPDC, 2013):-

- The particulars of the procurement of Tanzanian goods, materials and services.
- A detailed plan and program for recruitment, employment and training of Tanzanian nationals; and
- A strategy for the handover of skills, knowledge, competence and know-how to Tanzanian citizens.

Under the MPSA 2013, the Contractor must also submit an annual report that will be verified by a competent and independent third party and must include details of the Contractor's activities (other than its production sharing and fiscal obligations) and their impact on local content and local value addition in Tanzania.

Health and environment protection related policies and laws

The exploitation, extraction and transportation of oil and gas resources are pertinent to the Environmental Management Act (EMA) 2004, Occupational Health and Safety Act (OHSA) 2003, Insurance Act 2009, and Fire and Rescue Force Act 2007. The EMA contends that an environmental impact assessment must be conducted for all projects concerning oil and gas exploration and development (URT, 1997). The impact assessments are obligatory due to the possible environmental impacts of these activities and to ensure adverse impacts are mitigated by suitable procedures concerning to oil and natural gas extraction, construction of offshore and onshore oil and gas pipelines and separation, processing, handling and storage of oil and gas amenities.

The National Environmental Policy of 1997 is a definite government policy on all environmental issues including anxieties related with energy exercises. The policy emphasizes on guaranteeing comprehensive perform and appropriate management of the environment (TNRF, 2007). It comprises a section that traces on environmental worries in economic activities, which comprise mining and gas/oil exploration, production and the allied operations. The policy necessitates these operations to be conducted in a way that efficiently minimizes threats to the environment. It correspondingly emphasizes proper and nontoxic disposal of dangerous wastes and discharge produced by oil and gas activities.

It outlines the machinery aimed at warranting thorough environmental practices are upheld. These mechanisms include consistent audits and the obligation to commence Environmental Impact Assessment during the planning state of forthcoming project implementation. The policy heartens the application of responses that assist to inspire the exploration of shale oil. It also offers for economic principles that motivate competent environmental

Table II: Legal framework for oil and gas sector in Tanzania

| No. | Law/policy | Explanations |
|-----|--|---|
| 1. | The National Natural Gas Policy of 2013 | Provides the detailed and comprehensive framework for addressing the challenges which face the natural gas sector with mid-and downstream segments focus. |
| 2. | The Local Content Policy of Tanzania for Oil and Gas Industry (LCPTOGI) of 2014 | Defines the local content as the added value brought to the regional and local areas of the country through the activities related to oil and gas sector. It states clearly that delivering local benefits to the local communities where oil and gas firms work is no longer an option. |
| 3. | The National Investment Policy 1996 | Aims to ensure promotion, attraction and facilitation of foreign investments in Tanzania. |
| 4. | The Oil and Gas Revenue Management Act of 2015 | Offers the legal framework in relation to the managing the oil and gas revenues derived from exploitation, development, and production of oil and gas accomplishments. |
| 5. | The Petroleum Act of 2015 | The Act and its natural gas pricing regulations of 2016 deliver the legal framework in what way the petroleum and gas should be succeeded for the sustainable development. The natural pricing gas regulations rule pricing of the natural gas for the domestic market and cross-border markets. |
| 6. | The Tanzania Extractive Industries (Transparency and Accountability) Act of 2015 | Asserts the government's effort to warrant that there are transparency and accountability in the extractive industry. |
| 7. | The Petroleum (Local Content) Regulations 2017 | Provides the ways of how effectively the government can meet the aim of maximizing the country's benefits from potential and current gas projects. |
| 8. | Model Production Sharing Agreement for Petroleum (MPSA) of 2008 and 2013 | Under a Production Sharing Agreement, a provision is made for the Exploration and Production Company to improve its expenses and then portion the profit from oil and gas income with TPDC, but the MPSA of 2013 pursues to protect better short and long-term fiscal welfares for the state. |
| 9. | Health, safety and the environment related policies and laws | The exploitation, extraction and transportation of oil and gas are applicable to the Environmental Management Act (EMA) 2004, Occupational Health and Safety Act (OHSA) 2003, Insurance Act 2009, and Fire and Rescue Force Act 2007. |

management of natural resources, such as adoption of the "polluter pays" principle (URT, 1997).

The summary of the legal framework for oil and gas sector is indicated in Table II.

Institutional framework in Tanzania

There are key regulatory authorities from the top level of research to the low level of use as well as marketing and revenue management as follows:-

The Ministry of Energy

It is the largest supervisor of energy issues and has a great guarantee of defending national resources for the benefit of current and future generations (DODS, 2014). It is headed by a strategy for planning policies, strategies, and law enforcement of energy, facilitating growth and economic development with the statement "an effective institution in contributing to the rapid development of social and economic through sustainable development and use of energy and Tanzania by 2025" (Johnsen, Bess, Ishengoma & Grimsby, 2015).

It has strategic areas namely:

- Upgrading, developing and managing the energy sector to maximize profitability and energy efficiency
- Raising and accelerating access to modern energy in rural areas
- Promotion, development and management of energy sector to promote profits
- Improve revenue collection derived from the energy industries
- Improve human and financial resources management

The Ministry has a great responsibility to coordinate and set appropriate policies, laws, regulations, and management

to ensure sustainable development in the energy sector (Arusha Gem Fair, 2017).

Despite these responsibilities, the ministry is responsible for managing various institutions under its jurisdiction; Energy and Water Utilities Authority (EWURA), Tanzania Electricity Agency (TANESCO), Rural Energy Agency (REA) and Tanzania's Petroleum Development Agency (TPDC). It has five major parts including the components for raw, electrical, new energy and renewable energy, energy development and gas consumption.

The Ministry of Finance

It superintends all revenue collection, expenditure and financing the operating of the Government of the United Republic of Tanzania (URT). It advises the government about various financial issues aimed at promoting economic growth and strengthening the community (The Minister of Finance, 2017). Furthermore, the Ministry is responsible to manage the government repayment on financial markets, to develop policy controls for the financial sector in collaboration with the BoT as well as Tanzania in international financial institutions.

It develops policies which are aimed at promoting national output and coping with the cost of living through the promotion of alternative energy generation through natural gas and providing Value-Added Tax (VAT) and tax exemptions on various devices used to store, export and distribute gas (URT, 2016a).

As the oil and gas sector will be involved in the establishment of a national fund in which Tanzania intends to increase its income for 3 billion US \$ a year due to the discovery of more than 57 trillion cubic feet of the natural gas reserves. The Tanzanian Natural Resources Fund has

been established to ensure that the established law creates the solid institutional beams and relevant fund administration. Hence, the Oil and Gas Revenue Management Act of 2015 has made clear the structure and legal framework that the fund will take, including transparency of the involvement of various institutions such as the BoT, the Ministry of Finance and any financial audit authority in its management (URT, 2015a).

The ministry monitors the budget expenditure for the fiscal year and the use of planned spending is classified by the office of the CAG who prepares a report on the public financial resources expenditure after the end of the financial year. The Ministry of Energy is responsible for monitoring in the oil and gas sector, while the Ministry of Finance is a part of a coordinated system that aims to strengthen transparency and accurate use of revenue derived from this sector.

Central Bank of Tanzania (BoT)

The BoT Administration Framework is headed by the Board of Directors which is a tool that has the highest authority and is responsible for setting the policy direction, budgeting and so on. It is the instrument dedicated to the various key financial management responsibilities in the country, among which are responsible for ensuring the existing of foreign exchange savings with a view to helping strengthen the economy and the savings used during the economic crisis (Bank of Tanzania, 2018). It is also a tool that should stimulate the growth of the financial market in the country, protect and develop well-managed financial institutions, and ensure a stable balance between Tanzania's finances and foreign currency. Currently, the BoT is committed to managing inflation and strengthening prices.

BoT participation in the oil and gas sector has been identified in two policies that are the National Natural Gas Policy of 2013 and the Tanzania Empowerment and Cooperation Policy of 2014 (USAID, 2014). In the natural gas policy, the BoT's responsibility in the oil and gas industry is to prepare financial procedures to prevent inflation that can be caused by natural gas. This policy has identified three roles that the BoT should accomplish which is to ensure that gas transactions do not cause adverse effects on the financial control policy and the broad economy of the country (URT, 2013):-

- To advise the government about the impact of the natural gas sector in the country's economy.
- To manage the Tanzania natural resources fund which has been established by this policy
- Tanzania's Empowerment and Cooperation policy has identified BoT as one of the key institutions in the implementing the policy. According to the policy, BoT has the responsibility of implementing financial management and natural empowerment in the natural gas sector in the country.
- Furthermore, the policy states that BoT will set up a good financial system that will bring lasting stability because the oil and gas sector can stimulate inflation in the country as a good mechanism has not been developed, thus bringing about a significant impact such as 'The Dutch Disease'. The BoT is also responsible for providing for providing and monitoring the applications requested and approving

the use of the national empowerment.

- The Tanzania Development Partners' Union (DPG-Tanzania) recommends that the management of the Natural gas Revenue Fund should be carried out based on transparency and accountability, including how much money will be used to support the population (DPG, 2018). The NRG Institute and the Vale Columbia Center on Sustainable International Investment (VCCI) have recognized in their analysis of such compartments that the arbitrator (in the sense of BoT) must comply with the rules and regulations in the fund management and its assets (Columbia center, 2018; NRG, 2014).
- They advise that the responsibility to manage the fund should be clear by identifying who has the final authority over the management of the fund and its obligations, the responsibility of the fund administrator and the responsibilities of various departments under the fund – in the sense the authority under the BoT. The NRG Institute proposes the limit of the amount of cash that fund administrator can invest in various investments such as construction and design methods. In the investment area, the foreign investments are advised to keep the fund in place for savings, and the profitability of investment will be used (NRGI, 2014).
- In addition, it is suggested that the independent associations including the legislative and the Office of the Controller and Auditor (CAG), be given full authority to manage the fund.
- **Energy and Water Utilities Regulatory Authority (EWURA)**
- EWURA is a self-governing authority reputed in 2006 under the Energy and Water Regulations Act. It controls technological and economic controls in four sections namely natural gas, electric, fuel and water (EWURA, 2017). EWURA is headed by a clear and efficient approach to controlling energy and water services aimed at promoting investment and improving social and economic well-being in the Tanzanian society, with the aim of being an international status regulator in the energy and water service.
- Its main responsibilities include licensing, through product costs, managing performance and quality, security, health and environmental standards. It controls natural resource activities that include processing, shipping, storage, and distribution; and natural gas infrastructures such as gas processing, distribution and distribution pipes (Nyange, 2015).
- In fulfilling its mandate, the authority is striving to ensure that it promotes better competition and economic efficiency; protects consumer interest (consumers); protects the financial interest of effective supplier; guarantees access to services to all users including low-income, rural and non-profit users; protects and stores environment; and promotes awareness and community for all four sections.

EWURA is headed by a four-year strategic plan which includes:-

- Being a source of information and reference to all

stakeholders so that they can understand, and engage in efficient service delivery process.

- Establish an acceptable system of strategic outcomes and objectives.
- Managing the plans and implementation of the activities and services EWURA hopes to provide within the implementation period.
- Ensuring that everything is planned.

EWURA plans to establish standards and symbols of natural gas control. Presently, the Tanzania Standards Agency (TBS) does not have specific natural gas standards, weaknesses that allow companies to use different levels in the country. However, since EWURA participated in the composition of the National Natural Gas Policy in 2013, it would be easier to establish regulatory standards for the industry because is currently being implemented.

Furthermore, the Petroleum Act of 2015 needs EWURA to create a National Petroleum and Gas Information System (NPGIS), most of which shall be accessible for the community. Looking at it frivolously, it seems a positive step for the oil and gas industry but it must be renowned that there are some sections in the Act offering for confidentiality which seems like claw-back clauses for transparency. Therefore this law is most likely prone to cause confusion on transparency issues (Ngowi, 2016).

EWURA faces some challenges as follows:-

- *Legal system:* The oil and gas laws and general guidelines for the sector are still at the level of the ministry.
- *Infrastructure:* Inadequate gas processing, lack of gas supply infrastructure, and significant gas demand requirements for the use of the natural gas. The newly built pipeline constructed from Mnazi Bay to Dar es Salaam is predictable to lessen the impacts of energy consumption.
- *Security:* According to EWURA, there are several security challenges in the sector's control. This includes exploration of areas where passenger gas pipelines and commercial operations along the sidewalks pass through pipelines and so on.

Tanzania's Petroleum Development Agency (TPDC)

TPDC is completely possessed by the government under the Ministry of Energy (TPDC, 2018). Following the discovery of the gas reserves in Songo are in Lindi region, and following AGIP to stop its proceedings, TPDC took over the responsibility to confirm and evaluate the gas area and to be responsible (TPDC, 2017):-

- For participating and engaging in research, development, production, and distribution of fuel and gas and related services
- To create a good business environment
- To protect the national division of raw oil products; and
- At the same time develop quality and security level in protecting people, property and environment

The main objectives of TPDC as set forth in the 1969 implementation plan are:-

- Research and production of crude oil (research, pilot, experimentation, evaluation, extraction, production,

design, storage, transportation)

- Engaging with distribution and storage equipment
- Find the rights of research and production
- Contract, ownership or participation in oil and gas agreements, operating rights and licenses
- Manage all legal units set of the organization
- Establish a solid foundation for operations in oil and gas operations.
- Access agreement and securities in any activity involving research
- Managing exploration and oil and gas trial statistics

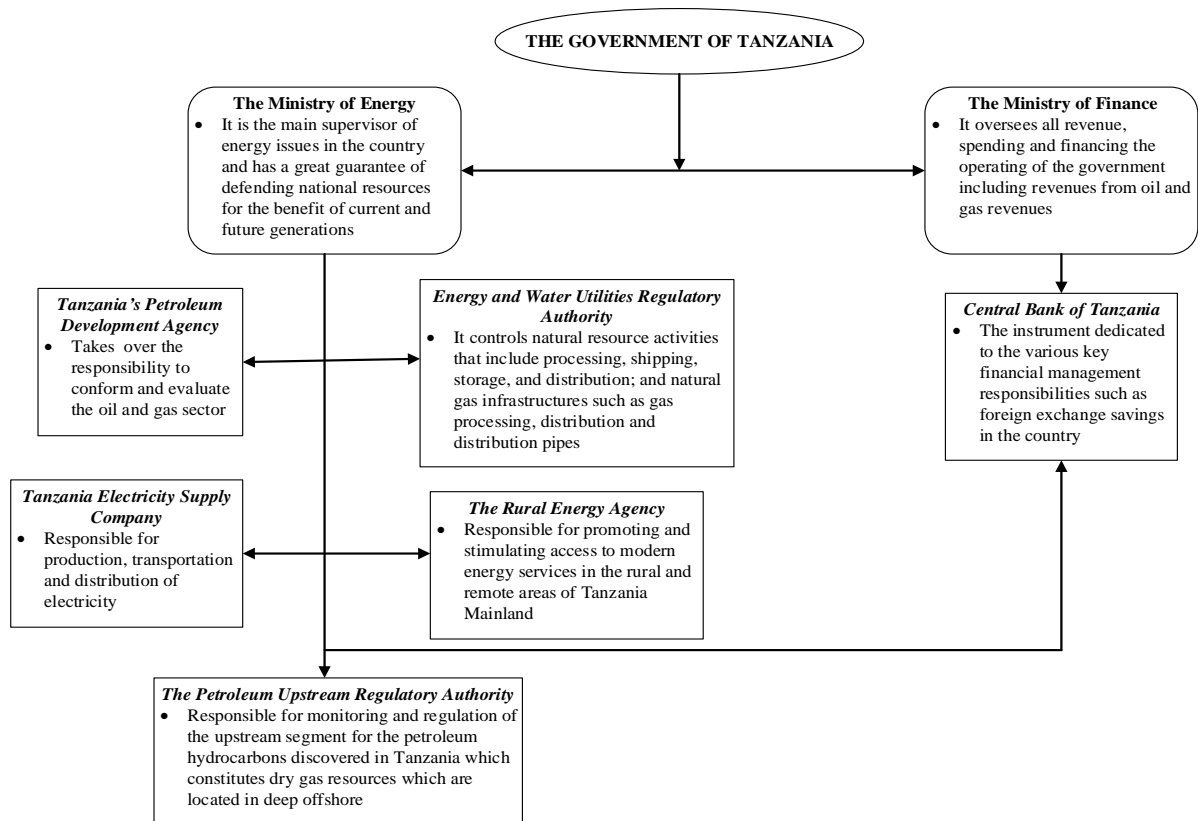
Corporate activities such as research, production, transportation, raw oil production, marketing, and distribution of raw oil products can be made independently or in partnership with a foreign company through the PSAs Contracting Agreement. TPDC shares in oil companies such as BP Tanzania Limited, SEE Pipeline Limited, Fuel House Investment Co. Limited, this is on behalf of the government (Treasury Registry). There are several challenges facing TPDC. Politicians and senior government officials do not understand well the importance of the organization to work as an independent petroleum trade organization. The organization has no legal capacity to establish, store and manage its financial sources. The government is advised to re-evaluate the organization structure by making it an independent to gas and oil sector, without engaging in the business of the other activities. This will ensure the presence of good governance in the relevant sectors by avoiding the collision of the interests.

Tanzania Electricity Supply Company (TANESCO)

TANESCO is the state-owned subsidiary of the Ministry of Energy, which operates three major functions namely production, transportation and distribution of electricity to Tanzania (TANESCO, 2017b). It owns and manages gas production plants in Dar es Salaam: Ubungo I (producing 100MW) (TANESCO, 2017c), Ubungo II (producing 105 MW) (TANESCO, 2017d) and Tegeta (producing 45 MW) along new Kinyerezi gas plant (TANESCO, 2017a); Mtwara and Lindi: Mtwara/Lindi (producing 18MW), and Somanga Fungu (7.5MW) (Ministry of Energy and Minerals, 2013).

TANESCO distributes electricity directly to the consumers. It is estimated that more than 80% of the revenue of the corporation is derived from 1,700 electricity consumers, representing 0.24% of all consumers worldwide. Older customers are the ones who spend over 7,500 kg a month. The electricity supply reaches only a few number of the population. According to figures from the World Bank (2016), only 36% of the population receives access to electricity in the country where rural areas are more vulnerable (Massawe, 2016). However, in 2014, the government announced a change in the energy sector, which, in other words, proposes to disseminate the organization and establish a three-part independent company. TANESCO will remain responsible for the supply of electricity only, with the newly established companies responsible for electricity production and transport. The main aim of these changes is to:-

- Increase competitiveness
- Attract private investors in the energy sector and
- Ensure the presence of reliable energy sources in the country.

Figure 2: The institutional framework for oil and gas sector in Tanzania

The government has planned to spend 1.15 billion US dollar within the next 11 years of the implementation of the energy sector change.

Under that changes, the new electricity generation company will be owned by the government and will be listed on the Dar es Salaam stock market (DSE), while the government has at least 51% of all shares. Other electricity producers will compete directly with direct suppliers of electricity and electricity users. Electricity companies will be owned by the state and will help to supply electricity from manufacturers to distributors who are independent companies. Those companies that will be public or private owned, will sell electricity to consumers in areas that run their operations. Under this plan, electricity production is expected to rise from 1,583 megawatts to 10,000 megawatts in 2025, and electricity connections will increase by at least 50% while electricity supply at different areas will be at least 75% in 2025.

Tanzania becomes the 3rd country in East Africa to break up the electricity organization and create various companies with different roles. In 2009, Kenya made such changes and attracted private investors. These changes resulted in increased electricity supply. In 2015, the government created a task force to track the implementation of the program and to conduct a review of TANESCO's production, transport and distribution, however, very important for the government to pay off TANESCO's debt first to simplify the proposed changes.

The Rural Energy Agency (REA)

REA was established in 2005 as an independent institution under the Ministry of Energy and Minerals (REA, 2017). It is answerable for stimulating and inspiring access

to modern energy services in the rural and remote areas of Tanzania Mainland. The main functions of REA are (Msofe, 2011):-

- Promoting, stimulating, supporting and enhancing access to modern energy for rural production use aimed at stimulating rural development.
- Promoting energy production and consumption and identifying energy projects and rural activities.
- To fund rural energy projects through the Rural Energy Fund
- Preparing and reviewing application procedures, guidelines, selection criteria, terms and conditions of granting
- Building capacity and providing professional support to developers of energy projects and rural communities; and
- Support the preparation of applications for rural electricity projects.

To achieve these functions, it works in partnership with the private sector, non-governmental organizations, social institutions, and government institutions.

The Petroleum Upstream Regulatory Authority (PURA)

It is under the Petroleum Act, 2015 and is responsible for monitoring and regulation of the upstream segment for the petroleum hydrocarbons discovered in Tanzania which constitutes dry gas resources which are located in deep offshore (Ngingite, 2016). It is also responsible to advise the Minister of Energy on negotiations of production sharing agreement and other contacts with oil and gas companies (Kasanda & Mallikaaratchi, 2015). The summary of the institutional framework for oil and gas sector is indicated in Figure 2

Conclusion

Tanzania has a great potential of oil and natural gas energy which promotes the sustainable development of the country. For the country to benefit these resources, better and well organized legal and institutional framework is required. There is the need to harmonize policies, legislation and institutional structure issues in order to ensure the timely implementation of the planned oil and gas projects. Also, there is a need for regular review of the existing policies and laws to ensure the encouragement of the foreign and domestic private investment in the oil and gas industry. Furthermore, the government must adopt and promote renewable energy resources in association with oil and gas resources so as to ensure enough and sustainable energy production and supply in the country.

References

- Arusha Gem Fair. (2017). Ministry of Energy and Minerals. Arusha Gem Fair, <http://www.arushagemshow.com/index.php/en/84-arusha-gem-show/organising-sponsors/93-ministry-of-energy-and-minerals> (accessed 12 December 2017)
- Bank of Tanzania. (2018). Primary Objective and Function of the Bank of Tanzania. Central Bank of Tanzania. <http://www.bot.go.tz/AboutBOT/BOTFunction.asp> (accessed 11 January 2018).
- Breakthrough Attorneys. (2015). Tanzania's new regime on oil and gas laws - Breakthrough. breakthroughattorneys.com/tanzanias-new-regime-oil-gas-laws/ (accessed 04 January 2018).
- Burns, M., & Bonnefoy, N. (2015). New production sharing agreement for Tanzania. <https://www.ashurst.com/en/news-and-insights/legal-updates/new-production-sharing-agreement-for-tanzania/> (accessed 7 February 2018).
- Calignano, G., & Vaaland, T. I. (2017). Local content in Tanzania: Are local suppliers motivated to improve? *The Extractive Industries and Society*, Article in Press, 1–10.
- Columbia center. (2018). Columbia Center on Sustainable Investment. <http://ccsi.columbia.edu/> (accessed 11 February 2018).
- DODS. (2014). Training on natural gas resource. DODS. <http://www.dods-training.com> (accessed 15 July 2017).
- DPG. (2018). Welcome to the Development Partners Group in Tanzania. <http://www.tzdpd.org.tz/dpd-website/dpd-tanzania.html> (07 February 2018).
- EWURA. (2017). Overview of Energy and Water Utilities Regulatory Authority. http://www.ewura.go.tz/?page_id=891 (accessed 18 January 2018).
- Johnsen, F. H., Bess, M., Ishengoma, R. C., & Grimsby, L. K. (2015). Energizing Tanzania: Strategic consideration of possible interventions to support sustainable development and use of bioenergy in Tanzania 2015-2025. *Noragric Report No. 77*. <https://www.nmbu.no/download/file/fid/22207> (accessed 14 September 2017).
- Kasanda, P., & Mallikaaratchi, K. (2015). Tanzania Petroleum Act 2015. An update. https://www.clydeco.com/uploads/Blogs/employment/CC008656_Tanzania_Petroleum_Act_2015_30-10-15_DOC2.pdf (accessed 12 January 2018).
- Kasanda, P., & Mallikaaratchi, K. (2016). Local Content and Domestic Supply Obligations under the Tanzania Petroleum Act 2015. <https://www.clydeco.com/insight/article/local-content-and-domestic-supply-obligations-under-the-tanzania-petroleum-> (accessed 05 January 2018).
- Kinyondo, A., & Villanger, E. (2017). Local content requirements in the petroleum sector in Tanzania: A thorny road from inception to implementation? *The Extractive Industries and Society*, 4, 371–384.
- Lovett, A., Mndolwa, A., Metcalf, R., & Kiwelu, L. (2014). Tanzania natural gas policy. www.nortonrosefulbright.com/knowledge/publications/.../tanzania-natural-gas-policy (accessed 02 February 2018).
- Massawe, O. (2016). Increasing electricity access in Tanzania to reduce poverty. <http://www.worldbank.org/en/results/2016/12/06/increasing-electricity-access-in-tanzania-to-reduce-poverty> (accessed 11 February 2018).
- Melyoki, L. L. (2017). The governance of the petroleum sector in Tanzania: Institutional arrangements and the role of the National Oil Company. *Extractive Industries and Society*, 4(1), 180–190.
- Metcalf, R. (2014). A snapshot of Tanzanian natural gas. <http://www.nortonrosefulbright.com/knowledge/publications/123532/a-snapshot-of-tanzanian-natural-gas> (accessed 08 February 2018).
- Ministry of Energy and Minerals. (2013). Power System Master Plan 2012 Update. TANESCO. <http://goo.gl/hdbL3w> (accessed 05 May 2017).
- Msofe, B. H. (2011) 'The role of the REA/REF in increasing access to modern energy in Rural Tanzania'. siteresources.worldbank.org/EXTAFRREGTOPENERGY/.../Msofe_Bengiel.pdf. (accessed 03 November 2017).
- Ngingite, M. (2016) 'Tanzania: Role of PURA in Petroleum Resource Exploitation', *Tanzania Daily News*, available at: <http://allafrica.com/stories/201604250791.html> (accessed 18 January 2018).
- Ngowi, J. (2016). Developing a legal framework for Tanzania's natural gas sector. <http://tz.ealawchambers.com/site/index.php/2016/08/31/developing-a-legal-framework-for-tanzanias-natural-gas-sector/> (accessed 05 January 2018).
- NRGI. (2014). RWI and VCC Announce April 8th Natural Resource Fund Research Launch Event. Retrieved February 11, 2018, from <http://archive.resourcegovernance.org/news/rwi-and-vcc-announce-april-8th-natural-resource-fund-research-launch-event> (accessed 11 January 2018).
- Nyange, G. H. (2015). Oil and gas regulation in Tanzania: Overview. Thomson Reuters. [https://uk.practicalaw.thomsonreuters.com/4-6198106?transitionType=Default&contextData=\(sc.Default\)&firstPage=true&bhcp=1](https://uk.practicalaw.thomsonreuters.com/4-6198106?transitionType=Default&contextData=(sc.Default)&firstPage=true&bhcp=1) (accessed 18 January 2018).
- OpenOil. (2015). Model Production Sharing Agreement of Tanzania. http://wiki.openoil.net/Model_Production_Sharing_Agreement_of_Tanzania (accessed 13 January 2018).

- Ovadia. (2016). Local content policies and petro-development in Sub-Saharan Africa: A comparative analysis. *Resources Policy*, 49, 20–30.
- Pedersen, R. H., & Bofin, P. (2015). The politics of gas contract negotiations in Tanzania: a review. www.diis.dk (accessed 02 February 2018).
- Pedersen, R. H., & Kweka, O. (2017). The political economy of petroleum investments and land acquisition standards in Africa: The case of Tanzania. *Resources Policy*, 52, 217–225.
- Peng, D., & Poudineh, R. (2017). An appraisal of investment vehicles in the Tanzania's electricity sector. *Utilities Policy*, 48, 51–68.
- REA. (2017). About REA. The Rural Energy Agency. <http://www.rea.go.tz/AboutUs/AboutREA/tabid/144/Default.aspx> (accessed 19 January 2018).
- Reporter. (2017). Tanzania: Incorporation of Oil, Gas in Vocational Training On Cards. <http://allafrica.com/stories/201705170255.html> (accessed 27 December 2017).
- Reuters Staff. (2013). Tanzania outlines new oil and gas production terms. <https://www.reuters.com/article/tanzania-energy/tanzania-outlines-new-oil-and-gas-production-terms-idUSL5N0IP37820131104> (accessed 12 January 2017)
- Scurfield, T., Woodroffe, N., & Olan, S. (2017). Localizing Tanzania's gas sector: Determining optimal policies for an emerging producer. *Natural Resource Government Institute*, August, 1–21.
- TANESCO. (2017a). Kinyerezi Gas Plant. <http://www.tanESCO.co.tz/index.php/kinyerezi-gas-plant> (accessed 18 January 2018).
- TANESCO. (2017b). Historical Background. <http://www.tanESCO.co.tz/index.php/about-us/historical-background> (accessed 18 January 2018).
- TANESCO. (2017c). Ubungo I Gas Plant. <http://www.tanESCO.co.tz/index.php/ubungo-i-gas-plant> (accessed 18 January 2018).
- TANESCO. (2017d). Ubungo II Gas Plant. <http://www.tanESCO.co.tz/index.php/ubungo-ii-gas-plant> (accessed 18 January 2018)
- The Editor. (2014). Oil, natural gas industry: the way forward for Tanzania. www.thecitizen.co.tz/oped/Oil--natural-gas-industry--the-way-forward-.../index.html (accessed 11 October 2017).
- The Minister of Finance. (2017). Roles and values.
- TNRF. (2007). National Environmental Policy 1997. <https://www.tnrf.org/en/node/5243> (accessed 12 January 2018).
- TPDC. (2013). Model production sharing agreement between the government of the United Republic of Tanzania and Tanzania petroleum Development Corporation and ABC LTD for any area. <http://www.eisourcebook.org/> (accessed 23 October 2017).
- TPDC. (2017). Overview of TPDC. <http://www.tpdctz.com/aboutus.php> (accessed 03 January 2018).
- TPDC. (2018). Welcome note of TPDC. <http://tpdc.co.tz/> (accessed 19 January 2018).
- URT. (1996). The National Investment Promotion Policy of 1996. <http://www.tzonline.org/pdf/nationalinvestmentpromotionpolicy.pdf> (accessed 23 July 2017).
- URT. (1997). The National Environmental Policy of 1997. <http://www.tzonline.org/pdf/nationalenvironmentalpolicy.pdf> (accessed 12 November 2017).
- URT. (2013). The United Republic of Tanzania, the National Natural Gas Policy of Tanzania-2013 Dar es Salaam. https://tanzania.go.tz/egov_uploads/.../Natural_Gas_Policy_-_Approved_sw.pdf (accessed 20 December 2017).
- URT. (2014). The local content policy of Tanzania for oil and gas industry of 2014. https://www.agcc.co.uk/uploaded_files/07.05.2014local-content-policy-of-tanzania-for-oil-gas-industry.pdf (accessed 23 December 2017).
- URT. (2015). The Oil and Gas Revenues Management Act, 2015, Pub. L. No. ISSN 0856-0331X, 15. Tanzania. www.teiti.or.tz/?p=787 (accessed 12 November 2017).
- URT. (2015). The Petroleum Act, 2015. parliament.go.tz/polis/uploads/.../acts/1452057729-ActNo-21-2015-Book-21-25.pdf (accessed 15 December 2017).
- URT. (2016a). National Five Year Development Plan 2016/17 - 2020/21. The Ministry of Finance and Planning. http://www.mof.go.tz/mofdocs/msemaji/Five_2016_17_2020_21.pdf (accessed 05 January 2018).
- URT. (2016b). Petroleum (Natural gas pricing) regulations. https://www.agcc.co.uk/uploaded_files/07.05.2014local-content-policy-of-tanzania-for-oil-gas-industry.pdf (accessed 13 January 2018).
- URT. (2017). The Petroleum (Local Content) Regulations, 2017. <http://www.ewura.go.tz/wp-content/uploads/2015/03/GN-Petroleum-Local-Content-Regulations-2017-GN-197.pdf> (accessed 02 January 2018).
- USAID. (2014). Country Development Cooperation Strategy Tanzania's Socio-Economic Transformation toward Middle Income Status by 2025 Advanced. USAID and Tanzania. http://pdf.usaid.gov/pdf_docs/PBAAE273.pdf (accessed 03 July 2017).