EXECUTIVE MBA RESEARCH PROJECT

2011 – 2013

NEEMA LUGANGIRA APSON

“LOCAL SUPPLIER DEVELOPMENT IN THE TANZANIA’S PROPOSED LNG SUPPLY CHAIN”
### TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedication</td>
<td>4</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>5</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>7</td>
</tr>
<tr>
<td><strong>1.0 Introduction</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 Justification of the study</td>
<td>13</td>
</tr>
<tr>
<td>1.2 Background and approach to the study</td>
<td>15</td>
</tr>
<tr>
<td>1.3 The LNG industry</td>
<td>16</td>
</tr>
<tr>
<td>1.4 The Gas industry in Tanzania</td>
<td>22</td>
</tr>
<tr>
<td>1.5 The Expected LNG industry in Tanzania</td>
<td>26</td>
</tr>
<tr>
<td>1.6 The problem statement</td>
<td>27</td>
</tr>
<tr>
<td>1.7 Research questions</td>
<td>29</td>
</tr>
<tr>
<td>1.8 Structure of the report</td>
<td>30</td>
</tr>
<tr>
<td><strong>2.0 Methodology</strong></td>
<td></td>
</tr>
<tr>
<td>2.1 Introduction</td>
<td>31</td>
</tr>
<tr>
<td>2.2 Research methodology</td>
<td>32</td>
</tr>
<tr>
<td>2.3 Literature review key words used in web search</td>
<td>33</td>
</tr>
<tr>
<td>2.4 Interview group and why them</td>
<td>34</td>
</tr>
<tr>
<td>2.5 Scope and limitations of the study</td>
<td>36</td>
</tr>
<tr>
<td><strong>3.0 Literature Review Outcome and Analysis</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Introduction</td>
<td>37</td>
</tr>
<tr>
<td>3.2 Oil and gas industry expectations</td>
<td>40</td>
</tr>
<tr>
<td>3.3 Local supplier capacity</td>
<td>58</td>
</tr>
<tr>
<td>3.4 Government impact on institutional context</td>
<td>63</td>
</tr>
<tr>
<td><strong>4.0 Interviews Outcome and Analysis</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 Introduction</td>
<td>87</td>
</tr>
<tr>
<td>4.2 Oil and gas industry expectations</td>
<td>88</td>
</tr>
<tr>
<td>4.3 Local supplier capacity</td>
<td>92</td>
</tr>
<tr>
<td>4.4 Government impact on institutional context</td>
<td>103</td>
</tr>
<tr>
<td><strong>5.0 Key Findings and Analysis</strong></td>
<td></td>
</tr>
<tr>
<td>5.1 Introduction</td>
<td>108</td>
</tr>
<tr>
<td>5.2 Key findings and analysis – Research Study’s Stakeholders</td>
<td>109</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

## 6.0 Recommendations and Conclusion

6.1 Introduction 119

6.2 Recommendations

6.2.1 Recommendations for the oil and gas industry 120

6.2.2 Recommendations for the local suppliers 124

6.2.3 Recommendations for the Tanzanian government 126

6.2.4 Recommendations to achieving a multiplier effect that will lead to economic growth in Tanzania through local supplier development 131

6.2.5 Proposed Tanzania’s Local Supplier Development Program 132

6.3 Proposed Local Supplier Development Pilot Program’s Cost

6.3.1 Introduction 140

6.3.2 IFC – Local Supplier Development Program Costs 140

6.3.3 Tanzania – Expected Local Supplier Development Pilot Program Costs 142

6.4 Conclusions 143

6.5 Further research 146

References 147

Bibliography 150

## Appendices

Appendix 1 - Interview Guide: Questionnaire Type 155

Appendix 2 - Interview Guide: Multiplier Effect: Questionnaire Type 160

Appendix 3 - Abbreviations and Acronyms 162

Appendix 4 - Figures 163
DEDICATION

This study is dedicated to my kids, Georgia Blessings and Cornel James for their amazing support and recognition over the importance of this research project to their mum. Both Georgia Blessings and Cornel James knew how to lift my spirits up and motivate me anytime they noted that “mummy was exhausted”. There were times when my daughter would offer to help me by staying with me in the home office “just to keep me company”. I am eternally grateful for their incredible support even at their very young ages.
ACKNOWLEDGEMENTS

I would like to thank EIPM, which accepted me in the first place to pursue my specialised MBA. Invaluable thanks go to my supervisor, Prof. Herve Legenvre, MBA Program Director for his encouragement, guidance, advice follow up, thoughtful feedback and for being more critical of my work.

I am also indebted to Neil Hamley for opening the doors for me into getting the opportunity of my MBA Thesis to be supported by Statoil Tanzania and to Steinar Vigdal for ensuring that Statoil Tanzania does indeed support my MBA Project. Special thanks should be extended to my thesis supervisor at Statoil Tanzania, Arne Morken, Procurement Manager for his encouragement, guidance, advice, follow-up, and enriching feedback.

I was very fortunate to have Jillian Lilico, the Managing Director of Demeter Development as my subject expert thesis supervisor, who enriched my understanding of local content and local supplier development. I am grateful for the advice, detailed prompt feedback, guidance and encouragement she provided me with.

I have greatly appreciated the close guidance afforded by those who are Local Content and Supplier/Enterprise Development experts in particular; Willy Olsen, Dr. Michael Warner, Michael Hackenbruch, Per Heum, Dr. Akanimo Odon, Jesse Ovadia, Deirdre White, Brian Imray, Leida Schuman, Titus Fossgard-Moser, Harry Pastuszek, Enzo Troncone, Viecelli Alberto, Cyrille Putz, Simbi Wabote, Peter-Jan Vas AS, Dr. Ana Maria Esteves, Owusu Barnabas, Olesegun Adebayo, Jim Walton, Peter Boon, and other subject experts like Andrew Parker, Knut Henrik Dalland, Olivier Blanchard and Susan Yang.

Further thanks are extended to the Hon. Prof. S. Muhongo, Minister of Ministry of Energy and Minerals; Hon. G. Simbachawene, Deputy Minister of Ministry of Energy and Minerals; Hon. A. Kairuki, Deputy Minister of Ministry of constitutional and Legal Affairs; Hon. Dr. C. Ttizeba, Deputy Minister of Ministry of Transport; Hon. Eng. G. Lwenge; Deputy Minister of Ministry of Works; Hon. G. Teu, Deputy Minister of Ministry of Industries and Trade; Hon. Mahanga, Deputy Minister of Ministry of Education and Vocational Training, Hon. Dr. Nchimbi, Minister of Ministry of Home Affairs; Mr. Yona Killagane, Managing Director of TPDC; Eng. Thobias Rwelamila, Gas Distribution Manager of EWURA and Eng. N. A Kahyoza, Assistant Commissioner for Energy (Natural Gas).
I would like to offer special thanks to all persons interviewed from the public sector, private sectors, development economists, SME development experts, oil and gas companies, global service providers, mining companies, and local suppliers from Eastern Africa, West Africa, South Africa, North Africa, Asia, North America, South America, Canada, Middle East, Europe and Australia.

Space does not allow me to mention all names or institutions of those interviewed. Others not only did they generously offer their time but even made international calls to me for an interview of an hour or more.

Last but not least, I would like extend my deep appreciation to my husband, Jimmy and my dear mum for their moral support.

This report is indeed the result of the cooperation and readiness to share information and experiences.

Finally as the MBA student researcher, I am responsible for any deficiencies in this report.
EXECUTIVE SUMMARY

Tanzania presently has the second largest gas reserves in Eastern Africa, which can be used for the domestic gas market and export gas market. This research study is focused on the export gas market, LNG (liquefied natural gas) with US $ 14 billion predicted investment just for the LNG Plant. When this amount will be combined with a multiplier effect there will be huge amount of money circulating within the Tanzanian economy. While current local content levels are estimated to be between 5-15% and with local content strategy development in its nascent phase within Tanzania, an opportunity exists for creating a local content and supplier development strategy based on notional predicted investment on the various concessions, an understanding of LNG procurement requirements and capabilities required to supply at all levels of the supply chain.

Although, the Tanzania’s Proposed LNG project has many stakeholders, this study has three main stakeholders; the oil and gas industry, the local suppliers and the Tanzanian Government with 3 research questions relating to each stakeholder, which are:

- **Research Question 1**
  - From the demand side, what are the expectations from the oil companies and their global service providers?

- **Research Question 2**
  - From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?

- **Research Question 3**
  - What is the institutional context that the demand and supply side needs to look at?
The purpose of this study is to establish the best way forward in developing Tanzania’s local suppliers leading to their effective and efficient participation within the LNG Supply Chain. In order for Tanzania to build a competitive supply base like Angola, Brazil, Nigeria, Norway, the local supplier need to be strategically developed. This study revealed that it is the local content policy that can pave way for sustainable and tangible local supplier development in Tanzania. Tanzania can adapt from local content best practices. Local content is made up of three elements which are; human capital, supplier development and community investment, making this study directly linked to the local content. Enacting a local content policy that can be sure to achieve this is not a matter to be taken lightly as such a policy is not “one size fits all”, it needs to be tailored as per the Tanzanian context.

This executive summary provides a set of key short term recommendations, key findings, key enablers and key blockers related to the “Local Supplier Development in the Tanzania’s Proposed LNG Supply Chain”.

**The key short term recommendations for each of this study’s stakeholders are:**

- For oil and gas industry
  - Commission a market research analysis to understand local supplier capacity and gap assessment
  - Prepare local supplier development in quick wins
  - Establish a supplier information management system
  - Have an in house local procurement strategy which anticipates the local content requirements across entire LNG supply chain
  - Oil and gas companies to drive down their in house local procurement strategy to their global service providers and make it a contract requirement
- For local suppliers
  - Local suppliers who want to participate in this industry, to take initiative to understand the industry even through internet search
  - Local suppliers should reflect carefully and undertake self-evaluation or diagnosis to assess their individual and collective capacity
  - Local suppliers need to analyze the barriers to entry into serving this industry and brainstorm on solutions and possibility of accessing these solutions; or organize to seek solutions
  - Local suppliers should find or be found by suitable partners in areas they need capacity building through working together on fulfilling a contract
  - Local suppliers can jointly present their training, management and operational needs to the government through the Ministry of Energy and Minerals or national oil company, TPDC
• For the Tanzanian Government
  ➢ First create a clear definition of local and local content, local suppliers, local goods and services definitions. AND assign a small portion of national budget to local supplier development initiatives.
  ➢ To review all the current infrastructure, policies and framework in place and establish what needs to be done for this industry to provide solutions
  ➢ To evaluate the impact and coordinate all the local supplier/SME development programs in Tanzania to avoid repetition and to understand the challenges; align learning from these programs
  ➢ To conduct discussions between the industry and education system & donor agencies to arrive at a plan of aligning to the new industry education requirements, like TVET, further and tertiary education
  ➢ Recognize that current local supplier capacity is weak and should therefore not expect change overnight, this is a long-term transformation.
  ➢ Learn and adapt best practices on local content development and management from other countries and IOCs.
  ➢ Enact a local content policy and set up a separate authority responsible for local content management
  ➢ To establish a local supplier database and information management system
  ➢ To support implementation of industry specific local supplier development programs aiming at building capacity, offering small grants to start-ups and empowering local suppliers for positive change
  ➢ As a logistics solution, plan for a new railway to be constructed between Dar-Es-Salaam and Mtwara, also consider buying strong speed vessels for transporting cargo between Dar-Es-Salaam and Mtwara AND source funding

The key findings from both the literature review and interviews were:
• Local content, local supplier, local goods and services definition was different in almost every country, every company and between people
• Local suppliers are under developed and present a RISK to purchasers
• Local suppliers lack industry linkages
• Public expectations are unrealistic
• Oil companies do not know local companies
• Infrastructure is key to local supplier development
• Capacity building within government to really understand what will take place
• The oil and gas industry and its activities are new to Tanzania and Tanzania is new to the oil companies
The enablers for local content development are:

- Business friendly legislation, regulations and incentives to stimulate gradual growth
- Focus on infrastructure delivery (roads, electricity, regulatory environment, etc.) and other key sectors (education, R&D etc.) through government investment
- Local supplier development programs supporting SMEs and entrepreneurs at large
- Good governance and transparency encouraging and maintaining competitiveness
- Provision for competitive funding for projects and manufacturing
- Collaboration by Government agencies to address inappropriate customary regimes
- Reduction of contracting and pre-contracting life cycle time
- Longer duration of contract to encourage investment

The blockers for local content development are:

- Government involvement in administrative aspects of contracting & procurement
- Lack of funding or badly targeted investment to local suppliers
- Limited access to finance for local suppliers
- Misalignment amongst government agencies
- Misalignment and lack of communication between government & international oil companies (IOCs) implementation strategy & expectation
- Inadequate in-country capacity to deliver government aspiration
- Administration and management of the local content laws
- Lack of industry collaboration
- Lack of procurement strategies that guarantee contracts to support local supplier development investments
- Short term view by industry stakeholders
The set of recommendations is further detailed in the MBA Research Project, which was developed using 6 steps as its methodology. These steps are:

**Step 1 to 3 - Methodology**

- [ ] Step 1: Oil and Gas related courses
- [ ] Step 2: Oil and Gas related internships/training
- [ ] Step 3: Literature Review

**Step 4 to 6 - Methodology**

- [ ] Step 4: Interviews
- [ ] Step 5: Attended the Mozambique Gas Summit - March, 2013
- [ ] Step 6: Attended the Local Content Master Class by Dr. Michael Warner - April, 2013

There is a mis-match between the oil and gas industry’s perception of the Tanzanian local suppliers’ capacity and what is actually the case. There is a great need for a detailed and thorough capability gap assessment to be carried out, including the role of the financial and educational sectors in developing local capabilities. This will make it possible to clearly outline the potential demands for goods and services across the LNG project life cycle and then map it out to the current local capacity. More so, it is crucial to carry out capabilities gap analysis with reference to the amount of support required to make local suppliers internationally competitive. In that case, one can pin-point local suppliers that require minimal support and those that require a medium to longer term capacity building program.

The major challenges experienced by the local suppliers in dealing with the oil and gas industry are; inadequate understanding of the oil and gas industry, difficulty in building strategic and sustainable relationships needed for technical capacity building, barriers to becoming a supplier due to the strict prequalification requirements, lack of knowledge about available opportunities and access to finance. Others include the lack of support policy frameworks from government, the lack of understanding of local content participation models and the lack of internal structures to be able to tender for contracts.
It can’t be stressed enough the importance for Tanzania to have a realistic local content ambition not like Nigeria and Ghana, for example. This ambition should be expanded over time as local capacity is built. Through this approach, Tanzania can be guaranteed of achieving sustainable and tangible local supplier development guaranteeing effective and efficient participation within the LNG Supply Chain. Done properly, this will result in local industrial activity that will benefit Tanzania directly and indirectly through different kinds of spillover. Done badly, however, it will do more harm than good. A few people will benefit, consuming the gas wealth at the expense of the majority (and the society at large).

The findings of this research study reveal crucial significance of planning for and implementing local supplier development prior to the commencement of the Tanzania’s LNG project activities. In order to mitigate these challenges, different local content supplier development initiatives can be deployed and this would include the above addressed key points.

Undertaking this research has been a fantastic experience for me but there is a lot to learn from the stakeholders and I will be dedicated to sharing my findings and perspective with them. It is my hope that this research project will be used as a reference guide to all persons interested in local content and/or the oil and gas industry from both Tanzania and within Eastern Africa countries who are all being considered as frontier markets in the oil and gas industry.
1.0 INTRODUCTION

The purpose of this chapter is to provide the reader with a background to the study and to outline the research aims and objectives. The structure of the study concludes this chapter.

1.1 Justification of the study

The final deliverable of this study is to propose optimal ways in which local supplier can effectively and efficiently participate in the LNG supply chain. This deliverable is very important in ensuring that Tanzania does receive a true added value from the project, which can be in terms of increased capacity and competence of the local suppliers, increased industrial competitiveness and most importantly the achievement of a sustainable and tangible economic growth through multiplier effects resulting from the LNG project investments.

With the Government of Tanzania still working on the formation of the Local Content Policy, this study comes in at the right time, hoping it will be able to contribute to this formation in terms of being a reference tool.

Gas exploration and production and in particular LNG development entails complex operations that call for collaboration with many suppliers. This requires that companies contracting and/or sub-contracting these suppliers need to be carefully selected and monitored to ensure the international oil companies’ goals and objectives are realized and standards complied with. The project at the same time has to meet the company’s profit requirements. The LNG Project in Tanzania will have to compete with other global projects for funding. In addition to this an assessment on technical compliance, matters of integrity, corruption prevention, environmental protection, safety, compliance and governance need to be looked at. On the other hand, a resource rich host country like Tanzania has its own goals and objectives.
In order to be able to develop a local supplier development, it is necessary to plan early the possible participation of local suppliers within the Tanzania’s LNG Supply Chain. The below diagram illustrates the different steps that can be taken:

**Planning local participation early**

**Cannot wait for tenders**

This study therefore will be focusing on the elements within the “define contract strategy element” in the above diagram. It is believed through this, it will be possible to arrive at an optimal local supplier development program that will lead to local suppliers effectively and efficiently participating within the LNG Supply Chain.

---

*Source: Permission to use granted by Mr. Willy Olsen, former advisor to President and CEO of Statoil; Currently senior advisor at INTSOOK*
1.2 Background and approach to the study

The core focus of this study is to recommend supplier development options so that local suppliers can be developed in such a way to be able to meet the needs of the international companies and be competitive, in this case, the oil and gas companies together with their global service providers. The study’s title clearly outlines this very same core focus, “Local Supplier Development in the Tanzania’s Proposed LNG Supply Chain”. This study examines the optimal best practice approaches to supplier development so that, by 2020, Tanzania’s local supplier base can effectively and efficiently supply products and services required to deliver Tanzania’s Proposed LNG plant Tanzania needs to start taking the necessary actions in this preparation and this study is going to provide the how.

Nigeria and Norway were the main countries used as a benchmark across the entire research scope whilst countries like Angola, Brazil, Ghana, Indonesia, Kazakhstan and Trinidad & Tobago were referred to for purposes of understanding the current local content regulations, minimum requirements, compliance measures, strength of local content, targets for local workforce and targets for local goods and services in these countries. Kenya, Mozambique and Uganda were used to analyze the “typology” of their local content initiatives, challenges and opportunities experienced because, like Tanzania they are countries all facing an infant oil and gas industry.

Although the Tanzania’s Proposed LNG Project has many stakeholders, this research study focuses on three main stakeholders; oil companies, local suppliers and Tanzanian government.
The below diagram clearly illustrates the three main stakeholders and their expected results:

**Figure 2: Source: Shell’s Presentation for On Shore Gap Analysis**

As a methodological framework, this study examines the 4 following dimensions:

(a) The needs of the international company (stakeholder 1 – oil companies)
(b) The current supplier capabilities in country of meeting these needs (stakeholder 2 – local suppliers)
(c) The local content policy in the country (stakeholder 3 – Tanzanian Government)
(d) The strategies in place, both of the international company and host country

The needs of the international company can be in the form of products, services and infrastructure. As outlined in the World Bank report “Benchmarking Africa’s Cost and Competitiveness”, a country’s infrastructure includes the cost and competitiveness, banking and financing requirements, electricity, transport, regulatory environment and corruption.\(^2\) The state of the infrastructure in a country is critical to the success of any large project as it can directly hinder the project’s success.

---

1 Shells’ Onshore Gap Analysis – August, 2011. Permission to use the intellectual property granted by Simbi Wabote, Global Local Content Manager. Originally prepared by Willy Olsen

2 Benchmarking Africa’s Cost and Competitiveness, Chapter 1.4 by Giuseppe Iarossi – World Bank Report

Usually, contracts within the LNG Supply Chain are large and complex, which will be difficult for local suppliers to handle. It is therefore important to analyse procurement strategies to understand the ways in which procurement can be designed to make it possible for the local suppliers to handle. Contract unbundling represents one such approach. (Unbundling is only one approach, one can consider set asides for certain contracts, local only – there are pros and cons of each).

To end this section, reference is being made to the following supply chain pyramid related to this research:

![Figure 3: Source: Permission to use granted by Mr. Willy Olsen](image)

© Willy H Olsen
1.3 The LNG Industry

This section attempts to explain to the reader what LNG is and why is it critical in today’s world.

The history of LNG can be traced back to two 17th century physicists, Robert Boyle and Edme Mariotte whose innovative experiments led to the discovering that air is compressible. The first LNG shipment was in 1959, which transported LNG from Lake Charles in Louisana, on the Gulf of Mexico to Canvey Island in the United Kingdom. It should be noted that the first LNG Chain with a Liquefaction Plant was in Arzew, Algeria in 1964 which exported LNG to France and the UK. Subsequently, during the 1960s and 70s, other liquefaction plants were built in Alaska, Libya, Brunei, Abu Dhabi, Indonesia and more in Algeria. In addition to this the Malaysia LNG and Oman LNG were also among the first. Qatar has since become the largest LNG exporter in the world. Nigeria became a major global LNG exporter in the 1990s.

What exactly is LNG? LNG is liquefied natural gas, which is clear, colorless, odorless, non-corrosive and non-toxic. LNG is produced when natural gas is cooled to a minus 262 degrees Fahrenheit through a process known as liquefaction. During this process, the natural gas, which is primarily methane, is cooled below its boiling point, whereby certain concentrations of hydrocarbons, water, carbon dioxide, oxygen and some sulfur compounds are either reduced or removed.³

The LNG supply chain has the following four main elements to it:

---

³ Kiishweko O, Tanzania’s Production of LNG Underway, Daily News Paper, 28/082012

The LNG value chain on the other hand is very similar to the supply chain with a few distinct differences as it can be seen hereunder:

The below table shows the existing African LNG projects (source: www.zawya.com):

<table>
<thead>
<tr>
<th>Country</th>
<th>Project</th>
<th>Start</th>
<th>MPTA</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>Arzew (3 trains)</td>
<td>1964</td>
<td>1.1</td>
<td>Sonatrach</td>
</tr>
<tr>
<td></td>
<td>Skikda (4 trains)</td>
<td>1972</td>
<td>7.6</td>
<td>Sonatrach</td>
</tr>
<tr>
<td></td>
<td>Bethioua (12 trains)</td>
<td>1978</td>
<td>16.5</td>
<td>Sonatrach</td>
</tr>
<tr>
<td>Egypt</td>
<td>Damietta (1 train)</td>
<td>2005</td>
<td>5</td>
<td>ENI</td>
</tr>
<tr>
<td></td>
<td>ELNG (2 trains)</td>
<td>2005</td>
<td>7.2</td>
<td>BG Group</td>
</tr>
<tr>
<td>Libya</td>
<td>Marsa El Brega (2 trains)</td>
<td>1971</td>
<td>3.2</td>
<td>Sirte Oil</td>
</tr>
<tr>
<td>Nigeria</td>
<td>NLNG (6 trains)</td>
<td>1999</td>
<td>22.2</td>
<td>NNPC</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>Punta Eur (1 train)</td>
<td>2007</td>
<td>3.7</td>
<td>Marathon</td>
</tr>
<tr>
<td>Angola</td>
<td>Angola LNG (1 train)</td>
<td>2012</td>
<td>5.2</td>
<td>Chevron</td>
</tr>
</tbody>
</table>

Source: www.total.com
The table above sets a framework of analysis of the above African country’s with LNG plants and compares the corruption perception index (CPI) score (a score of 1 is most corrupt and a score of 100 is almost having zero corruption), the ease of doing business index score (a score of 1 is having the best regulatory environment for business operations whilst a score of 185 is having the worst regulatory environment) and the competitive ranking (1 being most competitive country and 142 being the most uncompetitive country).

For countries that are frontier markets in the oil and gas industry like Ghana, Kenya, Mozambique, Tanzania and Uganda, CPI score improvements, ease of doing business and competitive advantage will also be noted:

<table>
<thead>
<tr>
<th>Year of LNG Start</th>
<th>Country</th>
<th>CPI Score No in 1999</th>
<th>CPI Score No in 2012</th>
<th>Ease of doing business index 2012</th>
<th>Competitive ranking: 2011 – 2012 (Score No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964, 1972 &amp; 1978</td>
<td>Algeria</td>
<td>-</td>
<td>34</td>
<td>152</td>
<td>87</td>
</tr>
<tr>
<td>2005</td>
<td>Egypt</td>
<td>33</td>
<td>32</td>
<td>109</td>
<td>94</td>
</tr>
<tr>
<td>1971</td>
<td>Libya</td>
<td>-</td>
<td>21</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1999</td>
<td>Nigeria</td>
<td>16</td>
<td>27</td>
<td>131</td>
<td>127</td>
</tr>
<tr>
<td>2007</td>
<td>Equatorial Guinea</td>
<td>-</td>
<td>20</td>
<td>162</td>
<td>-</td>
</tr>
<tr>
<td>It was to be 2012 but was 2013</td>
<td>Angola</td>
<td>-</td>
<td>22</td>
<td>172</td>
<td>139</td>
</tr>
<tr>
<td>No plans for LNG</td>
<td>Ghana</td>
<td>33</td>
<td>45</td>
<td>64</td>
<td>114</td>
</tr>
<tr>
<td>No LNG as no major gas finds</td>
<td>Kenya</td>
<td>20</td>
<td>27</td>
<td>121</td>
<td>102</td>
</tr>
<tr>
<td>More likely to be 2020</td>
<td>Mozambique</td>
<td>35</td>
<td>31</td>
<td>146</td>
<td>133</td>
</tr>
<tr>
<td>More likely to be 2022</td>
<td>Tanzania</td>
<td>19</td>
<td>35</td>
<td>134</td>
<td>120</td>
</tr>
<tr>
<td>-</td>
<td>Uganda</td>
<td>22</td>
<td>29</td>
<td>120</td>
<td>121</td>
</tr>
<tr>
<td>Benchmark LNG 2007</td>
<td>Norway</td>
<td>89</td>
<td>85</td>
<td>6</td>
<td>16</td>
</tr>
</tbody>
</table>

The above table shows us that Tanzania needs to make more efforts in its CPI, ease of doing business and competitiveness.

To end this section, it is important to highlight that today natural gas is competing against other fuels in the market, such as oil, coal, nuclear, thermal, hydro, solar power and wind power, etc. This section’s understanding mainly benefited from reading the textbook titled *LNG A NONTECHNICAL GUIDE* by Tusiani, M, D & Shearer G (2007), the LNG Overview by the Channel Logistics LLC in Oman (2005-2009) and the International Gas Union (IGU)’s World LNG Report 2011 (sponsored by Petronas)
1.4 The Gas Industry in Tanzania

In Tanzania, gas exploration activities began in the 1950s. In 1974, a commercial gas reserve was found in Songo Songo Island. It took almost 30 years for this commercial gas reserve to be used. Songo Songo has been commercially producing gas and using it to generate electricity since 2004. With the aid of advanced technology, Tanzania has been able to discover large gas reserves proven to be commercially viable mainly offshore, Mtwara and Lindi Regions. To date, Tanzania is said to have a close to 30tcf in gas reserves.4

The below diagram shows the Block 2 operated by Statoil Tanzania where gas finds have been made5:

Figure 6: Block 2 operated by Statoil

---

4 [www.clubofmoambique.com](http://www.clubofmoambique.com) 14/05/2013
5 Statoil’s LNG Marketing Presentation to TPDC 17/01/2013
The following table gives an initial base line of what is currently happening in Tanzania in terms of the main players in the Tanzania’s Proposed LNG Project:

<table>
<thead>
<tr>
<th>LNG Project Developers – oil companies</th>
<th>Company Specific: Local content plans extracted from website</th>
<th>Tanzania Specific: Local content initiatives</th>
<th>Local content plans for Tanzania</th>
<th>Local supplier development specific – plans</th>
</tr>
</thead>
</table>
| Statoil (in partnership with Exxon Mobil) | Supporting industrial activities, training and skills transfer in Angola as well as many other countries  
Has a central local opportunity centre  
More than 60% of deliveries of Norway’s LNG development has gone to Norwegian companies in Norway | Has 3 CSR focus areas; capacity building (7 hubs), environment and local community | Aiming at a high local content in the Tanzania Gas Project (TGP)  
Statoil is presently working on having a local content document for Tanzania, which will include local content guidelines | Aims to establish a supplier development program |
| BG Group | Has a sustainability strategy (including local content) in Brazil  
Working towards a sustainable future in Queensland; coal seam to be converted to LNG | Skills development program in Mtwara | Aims to have a local content/local procurement strategy | Aims to establish a supplier development program |

**Figure 7: Base line of what is currently happening in Tanzania**
As the oil and gas is a new industry in Tanzania, Tanzania is getting assistance from the World Bank on its industry master plan development. The EU is advising Tanzania on developing a gas policy, which will outline the infrastructure investments, resource revenue management and environmental protection. International development agencies like Norway’s NORAD and the UK’s DFID consult with the Government on matters concerning gas and local content, which is under formulation.

The local content policy is also under formation. The National Gas Company of Trinidad and Tobago Ltd has offered support to Tanzania to help out in its gas industry development. Statoil and BG Group, for example are consulting with the Government on more or less the same matters outlined within this paragraph. It was not possible to establish when these documents will be completed and made available to the public. It is therefore anticipated that this report will act as a reference tool to these efforts and make a positive contribution to Tanzania’s road to new policies being enacted, in particular the local content policy. The current available documents are the Tanzanian Energy Policy (The Petroleum Exploration and Production Act, 1980, Chapter 38 The Petroleum Exploration and Production Transitional Rules 1982 and The Petroleum Act, 2008), Natural Gas Policy 2003 and the Draft Gas Policy.
The slide provides an idea of what sort of the future area requirements. Tanzania’s Proposed LNG will project take up by area the size of the city of Dar-Es-Salaam as illustrated below:

**Figure 8: Possible development scenario. Source: Statoil’s LNG Marketing Presentation to TPDC 17/01/2013**

This chapter ends by stating that the Tanzania’s Proposed LNG Project is expected to cost around US $ 14 billion to build a liquefied natural gas plant in Tanzania. This project will transform Tanzania into being a new energy exporter to Asia’s growing market and other markets. The Tanzanian Government expressed to both Statoil and BG Group of its preferences for the two companies to jointly develop the Tanzanian LNG Project.\(^6\) In March, 2013, Statoil and BG Group reached an agreement on jointly building the LNG terminal, with an investment decision to be taken early 2016.\(^7\) Tanzania has therefore followed the footsteps of its bordering neighbor, Mozambique, whereby the Mozambique LNG Project is being jointly developed by Anadarko and ENI, whilst the offshore field developments are handled by the companies individually. The same is likely to happen in Tanzania.

---

\(^6\) Tanzania to ask BG and Statoil for LNG project development, Bloomberg 18/01/2012

\(^7\) Statoil, BG Plan LNG Plant to Develop Tanzania Natural Gas Finds, Bloomberg, 18/03/2013
1.5 The Expected LNG industry in Tanzania

The LNG industry will bring about huge offshore fields development. Although the LNG Plant will be built jointly by Statoil and BG Group, as already mentioned both will handle the offshore field development in parallel. These two companies are going to enter into contracts with major contractors who will mainly be responsible for the development of the offshore fields and onshore LNG Plant, the pipelines, the loading facilities, the harbor etc.

Statoil, BG Group and others will invest billions of dollars in the offshore project, with floating production vessels, subsea equipment, pipeline offshore, and supply vessels. There will be a huge support needed during operations and on the continuation of the offshore operations through maintenance and modification. It is such support that needs to be mapped out and include planning for the participation of local suppliers.

Below is a table showing some of the major players in the oil and gas industry that are currently in Tanzania or are expected to enter the country to undertake the different development contracts in Tanzania:

<table>
<thead>
<tr>
<th>Upstream companies</th>
<th>Main Contractor</th>
<th>Already/Expected in Tanzania</th>
<th>Already/Expected in Mozambique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schlumberger</td>
<td></td>
<td>Already</td>
<td>Already</td>
</tr>
<tr>
<td>Halliburton</td>
<td></td>
<td>Already</td>
<td>Already</td>
</tr>
<tr>
<td>Weatherford</td>
<td></td>
<td>Already</td>
<td>Already</td>
</tr>
<tr>
<td>Baker Hughes</td>
<td></td>
<td>Currently Entering</td>
<td>Already</td>
</tr>
<tr>
<td>Fluor</td>
<td></td>
<td>Expected</td>
<td>Already</td>
</tr>
<tr>
<td>Fugro</td>
<td></td>
<td>Expected</td>
<td>Already</td>
</tr>
<tr>
<td>Betchel</td>
<td></td>
<td>Expected</td>
<td></td>
</tr>
<tr>
<td>Technip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KBR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linde</td>
<td></td>
<td>This company was used by Statoil at its Snohvit LNG.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 9: Major oil players in Tanzania – current & expected

From the above table, it is clear that many of the same firms doing front-end engineering for Mozambique LNG could be very well present in Tanzania. The supply base in Mtwara, Tanzania will attract investors like in Ghana where the city of Takoradi is seeing a large number of firms setting up facilities. It will have a large impact, the multiplier effect, through expansion of the hotel capacity, restaurants, shops and training facilities. The indirect needs will provide a huge number of jobs.
It is necessary to highlight, for the Snohvit LNG, Statoil based its solution on prefabricating most the LNG plant in Spain and towed it to the location since the local environment had no capacity to build the complex LNG fleet. It could also be expected to happen in Tanzania.

The oil companies in Tanzania will develop economic and environmental impact assessments of the forthcoming projects. That should provide Tanzania with a substantial amount of information which can be used for planning the local content strategy. The below tables gives a country comparison of pre and post-employment in an LNG project:

<table>
<thead>
<tr>
<th>Country</th>
<th>Total employees during construction phase</th>
<th>Past main industry</th>
<th>Total employees during operational phase</th>
<th>Expected LNG life time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>7,000</td>
<td>Fishing</td>
<td>Few hundred</td>
<td>Next 20-30 years</td>
</tr>
<tr>
<td>Norway</td>
<td>3,000</td>
<td>Fishing</td>
<td>300</td>
<td>Next 30 years</td>
</tr>
<tr>
<td>Nigeria</td>
<td></td>
<td>Oil</td>
<td>1,000</td>
<td>Next 20-30 years</td>
</tr>
</tbody>
</table>

**Figure 10: Typical employment illustration development of an LNG project**

Tanzania is most likely going to have only 2 trains, with the construction phase taking about 3-5 years and the operations, over a long period of time, like 20 years+.

In addition to the fact these large gas reserves found in Tanzania will be related to LNG, which is an export industry, there will be an intense debate in the years to come on how much gas should be used in the domestic economy for urea, methanol, power etc.

This section’s overview understanding was mainly as a result of initial discussions with Willy Olsen (Former Advisor to the President and CEO of Statoil and Senior Advisor at INTSOK) in efforts of understanding what can be expected from the LNG industry in Tanzania.
1.6 The Problem Statement

Tanzania has discovered enough gas reserves making the development of an LNG project commercially viable. Tanzania is now faced with a multi-billion dollar investment project, with production start aimed for in 7 or 8 year time that is somewhere in: 2020-2022. The Tanzania’s Proposed LNG Project is already being considered as the key to the long term sustainable economic development of the country with the potential of creating thousands of jobs and hundreds of businesses. However, with the oil and gas industry in Tanzania being at an infant stage, local supplier development initiatives are needed to ensure that local suppliers effectively and efficiently participate within the Tanzania’s Proposed LNG Supply Chain. This research aims to understand to what extent Tanzania is ready to take up this challenge and to make suggestions on how the country should be prepared based on experiences from other selected countries and expert advice from international Local Content and Supplier/Enterprise Development Consultants.

Brian Imray stated that, “The local content attentiveness needs to be continuous and over entire contract life cycles, not only during due diligence at the beginning of a contract. As an oil and gas industry, we can’t scare suppliers into compliance; it needs to be an education evolution and to the benefit of all, but the will is there and the effort required by the IOC’s to build and use the required auditable transparent procurement processes, is offered freely”.\(^8\)

With the above problem statement, the student researcher still recognizes the fact that realistically it will be very difficult to achieve a huge local capacity to contribute to the LNG Project unless unprecedented strategies are in place. Statoil’s LNG project is in the far northern part of Norway, which started with no infrastructure and little local capacity, had about 10% local content in the LNG plant but more in the offshore developments.

---

\(^8\) Interview communication with Brian Imray, May 2013
1.7 The Research Questions

This research study has 3 research questions aiming to lead to local suppliers effectively and efficiently participating in the LNG supply chain, which are:

- **Research Question 1**
  - From the demand side, what are the expectations from the oil companies and their global service providers?

- **Research Question 2**
  - From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?

- **Research Question 3**
  - What is the institutional context that the demand and supply side needs to look at?

*Figure 11: The Research Questions*
1.8 Structure of the Report

Chapter one of the study, provides general introduction, problem statement, research questions and research aims.

Chapter two presents the methodology, which is structured in accordance to the research questions and related research aims. Chapter three covers the literature review on local supplier development relating to the aim of the study. Chapter four presents the interviews. Chapter five provides the findings and analysis of the study by assessing the current understandings of local supplier development in Tanzania in all categories of the Tanzanian Government, the oil and gas industry and local suppliers.

Finally, Chapter six concludes the study with reflections on what the research study achieves and makes further recommendations with respect to the problem statement and research questions.

Reference to the research questions will be made in each chapter, providing a theme throughout the study.
2.0 METHODOLOGY

2.1 Introduction

The purpose of this chapter is to describe and examine the methodology process used to respond to the research questions and also provide a rationale for the methods and methodological approach used to execute this study.

This methodology was guided by the 3 research questions seen below:

<table>
<thead>
<tr>
<th>Research Question 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>• From the demand side, what are the expectations from the oil companies and their global service providers?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research Question 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>• From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research Question 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What is the institutional context that the demand and supply side needs to look at?</td>
</tr>
</tbody>
</table>

**Figure 11: The Research Questions**
2.2 Research Methodology

The following were the steps taken in the research methodology used to gather information:

**Step 1 - Oil and Gas related courses (online)**
- To get understanding of the supply chain management in the oil and gas industry
- Linked to research question 1, 2 & 3

**Step 2 - Oil and Gas related internships/training**
- To get a practical understanding of the supply chain management operations in the oil and gas industry
- Linked to research question 1, 2 & 3

**Step 3 - Literature Review**
- To strengthen the undestanding in the supply chain management operations in the oil and gas industry, local content, local supplier development, global-local supply chain
- To understand what is the literature sayign in relation to the problem statement
- 150 documents & textbooks read - list in Annex 1 but 40-45 documents were referenced
- Linked to research question 1, 2 & 3

**Step 4 - Interviews**
- To benchmark the literature review findings
- To collect additional data
- To get real life experience in the research subject focus
- A total of 144 interviews conducted
- Linked to research question 1, 2 & 3

**Step 5 - Mozambique Gas Summit**
- To get latest developments on local content, local supplier involvement in the Mozambique LNG Project, which is similar situation to Tanzania
- To benchmark against literature review and interviews
- Linked to research question 1, 2 & 3

**Step 6 - The Local Content Master Class**
- Conducted by Dr. Michael Warner, a global leader in the subject area
- To get clarification and gain understanding on the overall subject of local content with focus on local supplier's involvement

**Figure 12: Step 1 to Step 6 of the Research Methodology**
2.3 Literature Review Key Words Used in Web Search

The key words in finding these documents (articles, reports, breaking news) can be found in the below table:

<table>
<thead>
<tr>
<th>× What is LNG</th>
<th>× How can oil and gas companies improve their efficiency in developing countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>× LNG projects</td>
<td>× Local suppliers capacity in oil and gas industry</td>
</tr>
<tr>
<td>× LNG supply chain</td>
<td>× Local suppliers capacity in LNG supply chain</td>
</tr>
<tr>
<td>× LNG value chain</td>
<td>× Local supplier development in oil and gas industry</td>
</tr>
<tr>
<td>× Oil and gas supply chain management challenges</td>
<td>× How do local suppliers get involved in oil and gas projects</td>
</tr>
<tr>
<td>× Global supply chain and local supply chain</td>
<td>× ROI on local supplier development</td>
</tr>
<tr>
<td>× LNG supply chain needs from oil and gas industry</td>
<td></td>
</tr>
<tr>
<td>× Local procurement strategies</td>
<td></td>
</tr>
<tr>
<td>× Local content in oil and gas industry</td>
<td></td>
</tr>
<tr>
<td>× Local content % requirements</td>
<td></td>
</tr>
<tr>
<td>× How can a multiplier effect be measured</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 13: Key words used in web search
2.4 Interview Group and Why them?

The below table shows the number of people interviewed from each category and reasons for choosing the group:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Interviewees</th>
<th>Reason for choosing interviewee group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governments Officials in Tanzania</td>
<td>15</td>
<td>To understand the government’s perspectives on where Tanzania currently is in terms of getting local suppliers involved in the oil and gas industry, in particular the LNG supply chain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To further understand the government’s current initiatives and future plans that can lead to achieving the local suppliers’ participation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To understand where we are at in terms of enacting a local content policy</td>
</tr>
<tr>
<td>Government officials within Eastern Africa</td>
<td>14</td>
<td>To get the same understanding as from the Tanzanian government but further benchmark this against neighbouring Eastern African countries who are also faced with an infant oil and gas industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To find out what could Tanzania learn from the initiatives and future plans of its neighbours.</td>
</tr>
<tr>
<td>Government officials from West Africa</td>
<td>5</td>
<td>To get the same understanding as from the Tanzanian government and other Eastern African countries’ governments but further benchmark this against the West African countries who have an experienced oil and gas industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To find out what could Tanzania learn from the initiatives, experiences, challenges, opportunities and future plans of the chosen Western African nations</td>
</tr>
<tr>
<td>Local suppliers in Tanzania</td>
<td>19</td>
<td>To find out what do they know about the oil and gas industry and its opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To understand how easy/difficult it is to participate in the oil and gas supply chain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To understand the challenges they face in dealing with companies in the oil and gas industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To understand the challenges they get in establishing themselves to enter the oil and gas industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Their views on how can a local supplier development program be successful</td>
</tr>
<tr>
<td>Local suppliers within Eastern Africa</td>
<td>6</td>
<td>To get the same understanding as that from Tanzanian local suppliers but to further benchmark against Eastern African local suppliers with the aim of finding the similarities and differences.</td>
</tr>
<tr>
<td>Related academic institutions in Tanzania</td>
<td>9</td>
<td>To understand the gap in terms of technical skills within local suppliers in areas related to supply chain management and overall business management</td>
</tr>
<tr>
<td>Related academic institutions within Eastern Africa (Mozambique only)</td>
<td>2</td>
<td>To understand the same gap as in Tanzania but to further benchmark and understand the similarities and differences</td>
</tr>
<tr>
<td>Politicians in Tanzania</td>
<td>5 (3 from opposition)</td>
<td>To get a different perspective on the oil and gas industry developed, the proposed LNG project and how best can Tanzania go about ensuring that local</td>
</tr>
<tr>
<td>Party</td>
<td>Number of Interviews</td>
<td>Objectives</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>International oil companies</td>
<td>17 (8 from Tanzania)</td>
<td>To understand their experience in operating in other countries in similar situation as Tanzania</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To understand the best practice approaches to local supply chain alignment, local procurement strategies, local content and local supplier development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To get their opinion on how can they advise Tanzania to approach local content policy leading to local supplier development among other things</td>
</tr>
<tr>
<td>Global service providers</td>
<td>9 (5 from Tanzania)</td>
<td>To get the same understanding as from the international oil companies</td>
</tr>
<tr>
<td>Mining companies</td>
<td>6 (2 from Tanzania)</td>
<td>To get the same understanding as from the international oil companies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To get an understanding of what have been their current efforts towards local supplier development in Tanzania or their respective country of operations</td>
</tr>
<tr>
<td>Development Agencies</td>
<td>2</td>
<td>To get an understanding on how to measure a multiplier effect of a local supplier development/SME development program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To understand how such a multiplier effect can be estimated, monitored and measured for a new local supplier development program</td>
</tr>
<tr>
<td>International Local Content Consultants</td>
<td>18 (1 development economist)</td>
<td>To learn from their experiences in different countries dealing with different governments, development agencies, oil, gas and mining companies in the areas of local content, local supply chain, local procurement, local supplier development; all with the aim of increasing the effective and efficient participation of local suppliers in the extractive industries</td>
</tr>
<tr>
<td>Supply chain management professionals from other industries</td>
<td>17</td>
<td>To benchmark the infrastructure and supply chain management challenges experienced in the extractive industry against those of other industries within the same functions</td>
</tr>
<tr>
<td></td>
<td>144 interviews</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 14: Interviewees list**
2.5 **Scope and Limitations of the Study**

The scope of this study is on using the relevant information on supplier development that has taken place in Nigeria and Norway to gauge what supplier development within the Tanzanian LNG supply chain might look like. It will highlight the different challenges and opportunities that local supplier development provides within a policy driven local content framework. On one hand this study will address the best way forward in achieving local supplier development to ensure that they get an effective and efficient participation within the LNG Supply Chain.

On the other hand, this study is not deeply ingrained in the different local supplier development initiatives that have been deployed in other significant LNG countries such as Australia, Indonesia and Canada etc. However, using Nigeria as a case study in this report is strategic in that it has one of the most diverse and compelling outlook of local supplier development that has been triggered by a long oil and gas history. It also has close relationship with Tanzania in terms of geopolitical, infrastructural and cultural dispositions. The limitation however is that the learning from local supplier development initiatives expected and peculiar to a new oil and gas market like Tanzania will not only be assessed using Nigeria as a representative study location.

The study is a more of a qualitative research than a quantitative one. Therefore there is little emphasis on the successes of local supplier development initiatives that has been deployed in study locations from an empirical or statistical perspective. Furthermore, this study is not addressing the human resource development and national employment aspects of local content. Local Content development is a holistic concept that uses different platforms (employment, contracting, staff retention, training and education, exchanges, financing etc.) to increase the capacity and competitiveness of local suppliers on the back of their natural resource. However, in several cases, these platforms are inter-related and should be considered together which is what a local content strategy aims to design. This study did not consider the inter-relationships of these platforms.

The measurement of local content performance and impact using strategic indices is a difficult one, given the scope of study and so was not taken into consideration in conducting the study. It will be good for future studies to highlight the actual impact of different local supplier development initiatives in LNG supply chains.

Finally, this study has not covered the potential local supplier opportunities that exist within the domestic market, which includes pipeline to inland market; industrial market for intensive energy consumers; gas refinery and local consumption for houses, vehicles, fertilizers etc.
3.0 LITERATURE REVIEW OUTCOME AND ANALYSIS

3.1 Introduction

Among other things, this literature review will answers to the research question thus providing an insight into this research subject area of “local supplier development”.

In this literature review, several definitions on local content, local suppliers and local goods and services were found, these were:

<table>
<thead>
<tr>
<th>Source</th>
<th>Local Content Definition</th>
<th>Local Definition</th>
<th>Supplier Definition</th>
<th>Local goods and services definition</th>
<th>Local Supplier Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFIECA</td>
<td>The added value brought to a host nation (and regional and local areas in that country) through the activities of the oil and gas industry</td>
<td>-</td>
<td>-</td>
<td>Developing supplies and services locally and procuring supplies and services locally</td>
<td></td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>“Local Content and Participation Policy” defines “local” in terms of the level of ownership, control and decision-making in the company; and the use of local financing (preferential access to local finance – not just equal access)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>World Bank</td>
<td>Allows the claiming company to claim percentages of local content based on the percentage of value added created in country and is flexible because it addresses 0-100% ownership in the company</td>
<td>Usually defined according to the share capital &gt;51% held by nationals</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Local Content Policy: Kazakhstan Review</td>
<td>Has to have a certain percentage of Kazakhstan origin</td>
<td>Has to be a resident of Kazakhstan doing business in the country</td>
<td>A certain % of goods and services must be of Kazakhstan origin</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Nigerian Content</td>
<td>The Quantum of composite value added to or created in the Nigerian economy by a systematic development of capacity and capabilities through the deliberate utilization of Nigerian human, material resources and services in the Nigerian oil and gas industry</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>The Timor-Leste Content Policy</td>
<td>Work carried out to stimulate the economy of Timor-Leste by implementing sustainable development projects related to the petroleum sector and preferential purchases of Timorese goods and services</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Local Content Policy Position: CCI Advocacy – February 2011</td>
<td>The total value added to a national economy through localized production of select services and key materials, equipment and goods related to target sectors of the economy (upon which such nation is dependent)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
From the above, there seems to be several definitions for local content, local suppliers and local goods and services, which tend to lead to difficulties in the interpretation of statistics provided by operators like in Kazakhstan.  

Local supplier development is continuing to get more attention from the host countries, oil and gas companies, oilfield service providers, local suppliers and nationals of countries where natural resources are found. Local supplier development is therefore seen as the most beneficial and value creating activity in efforts of handling the supply side.
This chapter seeks to review the more recent research and literature on local supplier development based on selected themes to help achieve the aim of this research, “to find out how local suppliers can be developed to efficiently and effectively participate in the Tanzania’s Proposed LNG Supply Chain”.
3.2 Oil and gas industry expectations

This section will illustrate the needs of the oil and gas industry in the context of the LNG Supply Chain thus answering the research question 1 as seen below highlighted in light blue:

**Figure 15: Research question for oil and gas industry expectations**

IFC (International Finance Corporation), part of the World Bank Group has a tool which helps to identify and prioritize local business opportunities in the following steps:

- **Step 1** – the deliverable of this step will be to provide list of potential goods, potential services, and a sample list of opportunities segmented by stage of operation.
- **Step 2** – the deliverable of this step will be to sort the opportunities according to their risk and difficulty.
- **Step 3** – the deliverable of this step will be to arrive at a prioritized list of goods and services – establishing the quick wins.
- **Step 4** – the deliverable of this step will be to monitor and evaluate the development with the introduction of KPIs.

---

10 IFC – A guide to getting started in local procurement – for companies seeking the benefits of linkages with local SMEs in collaboration with Engineers Against Poverty

The first international conference on social responsibility in mining of 2011 outlined a very interesting framework for local procurement strategies that can be adapted by the oil and gas industry (covering the oil companies and their global service providers) in their efforts of ensuring that the local suppliers do indeed assist them in achieving their strategies as per highlighted under the research question 1, which is linked to this section. This framework is being quoted as follows: “Considering a local procurement during the development of procurement strategies involves (Warner, 2011): 1) understanding the business case and the level of priority the business should give to local procurement when compared to price, time, quality and schedule; 2) identifying the future demand for goods and services, and the capacity of local suppliers to meet these demands (while also considering the demands of other companies competing in the same supplier market); and 3) selecting appropriate procurement strategies, including the packaging of work, selection process, extent of client control and contract terms. These theories are guided by management theories”.

The Australian “Mining, Oil and Gas Good Practice Guide on Procuring from SMEs in Local Communities” seem to be in agreement with the above understanding from both the IFC and Engineers Against Poverty and the first international conference on social responsibility in mining of 2011. This is because this also provides the following key steps in identifying areas of opportunities for the local suppliers which helps to illustrate the expectations of the oil companies and their global service providers:

- Step 1 – develop a local procurement strategy
- Step 2 – build internal capacity to deliver the strategy
- Step 3 – identify opportunities
- Step 4 – establish and manage contracts
- Step 5 – Grow SME local capacity
- Step 6 – monitor and evaluate the strategy

The toolkit developed by Jillian Lilico of Demeter Development for the City of London clearly illustrates how business can support local communities. The toolkit offers some actual templates for which companies can use for their local procurement. Chapter 3.2 Establish and manage contracts sets out procurement-related options which contracting companies can use to reduce barriers to local businesses.

---

11 SR Mining 2011 First International Seminar on Social Responsibility in Mining – Integrating Social and Economic Impact Assessment into Local Procurement by Ana Maria Esteves, Mary-Anne Barclay and David Brereton
The Ten Commandments for building and implementing an effective local content strategy further agrees to the above. These Ten Commandments are:

- Thou shalt create strategies that integrate local content into your core business model.
- Thou shalt not allow your company to operate in silos.
- Thou shalt invest in building internal capacity and designing action plans, procedures and policies.
- Thou shalt not focus community investment entirely on risk mitigation.
- Thou shalt engage with stakeholders and peers to align goals and leverage resources.
- Thou shalt not look at employment opportunities in the project phases in isolation.
- Thou shalt partner with key contractors to share risk.
- Thou shalt not miss opportunities to engage with a broader spectrum of external stakeholders for wider cooperation.
- Thou shalt drive supplier competitiveness through capacity development.
- Thou shalt not accept the status quo when it comes to procurement policies.

The guidance document for the oil and gas industry in local content strategy by IPIECA mentions that there are two key strategies that can achieve local supplier development, which are the modifications of procurement systems from the oil companies and their global service provider’s side and the use of a local supplier development program. It is further stated that, “corporate policy on supplier development can greatly enhance of local procurement initiatives”.

However, in order for this to be achievable the operational staffs need to have a certain level of mandate to carry this forward. A case study reference can be the CAE (Centro de Apoio Empresarial): the industry collaboration in enterprise development in Angola which is a great example of a successful industry wide supplier development initiative. It is also argued that CAE was not so successful since it was not sustained when management was handed over to Sonangol.
This also provides steps in achieving local supplier development similar to all the previously outlined steps through the relation to local procurement strategy, policy, procedures and processes. These steps are:

- Step 1 – modification of the procurement strategy
- Step 2 – specification of needs which can be done via unbundling or reserving certain goods and services for local suppliers
- Step 3 – pre-qualification/accreditations
- Step 4 – tendering
- Step 5 – bid evaluation
- Step 6 – contract
- Step 7 – performance monitoring

The Phase 2 Interim Report on Local SME Participation in the Supply Chain of Australian Mining, Oil and Gas Companies\textsuperscript{14} clearly outlines the following key barriers in ensuring that the expectations of the companies are addressed and preparations are made for those expectations to be realistically met by the local suppliers. These key barriers are not far off the key points already mentioned, which are:

- Most companies seem not to have local business support within their corporate policies.
- Most do not have the understanding of the local market thus making it almost impossible for them to be aware of the local businesses available and their capacity.
- It has been common to find a weak coordination between procurement, the community and the project team.
- The tendering processes of most of the needs of the mining, oil and gas industry is practically inaccessible by the local suppliers with contracts being too large for the local suppliers to stand any chance.
- Usually the local suppliers do not get enough time to prepare for tenders or information about these tenders.
- The KPIs introduced by the mining, oil and gas companies to measure the performance of local suppliers are found to not be well designed potentially leading to a negative socio-economic impact instead of a positive one.

\textsuperscript{14} Local SME Participation in the Supply Chain of Australian Mining, Oil and Gas Companies, Interim Report on Phase 2 – Issues and Emerging Good Practice by Ana Maria Esteves, Mary-Anne Barclay, Daniel Samson and David Brereton
It has been noted that for the extractive industry as a whole, having a strong local supply chain is a high value adding attribute to their operations. The strength of a local supply chain easily contributes to operating cost reduction, the assurance of delivery of goods thus reducing the need of holding high inventory, creates competitive advantage and most importantly ensures the long term sustainability of the project.

The table below illustrates the sector needs of the oil and gas industry to which the local suppliers can supply to in low income countries like Tanzania and the potential impact each sector has on providing employment opportunities:15

<table>
<thead>
<tr>
<th>Sector</th>
<th>Potential Impact on Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Services</td>
<td>Medium</td>
</tr>
<tr>
<td>Construction and Trades</td>
<td>High</td>
</tr>
<tr>
<td>Goods (wholesale, distribution and manufacture)</td>
<td>Low</td>
</tr>
</tbody>
</table>

With the above potential impact on employment, it is clear that some sectors will provide more employment opportunities than others thus varying in the levels of added value. In the event that Tanzania becomes resource strained it would make sense to prioritize the sectors that will have a much higher employment impact over the others. For example, offering security services will be most likely going to provide more employment opportunities than an office equipment or stationary supplier.

The Exxon Mobil Papua New Guinea (PNG LNG) National Content Plan interestingly categorized activities based on their level of complexities as Level I, Level II and Level III respectively.

Exxon Mobil’s Standards of Business Conduct form the framework by which its affiliates such as Esso Highlands operate around the world. The relevant guiding principles and foundation policies in these Standards are the: Environment Policy, labor practices guidance, Health Policy, Statement of Principles on Security and Human Rights, Best Practices in External Affairs and transparency commitments.

15 IPIECA Local Content Strategy – A guidance document for the oil and gas industry social responsibility - 2011
Once this was done, all the various project activities were thereafter classified in these three categories, which meant that:

- Level I – Basic services/labour requirements
- Level II – Intermediate services/construction requirements
- Level III – Highly critical, complex services/construction activities

The below diagram shows the above classification and how local suppliers move up from Level 1 to Level III: above classification can be seen in the below diagram was to have local suppliers move up from Level I then Level II and finally possibly reach at Level III.

![Figure 10 – Classification of activities](image)

**Figure 16:** Source: Page 33, Papua New Guinea LNG – Exxon Mobil National Content Plan
Local suppliers in the Exxon Mobil’s Papua New Guinea LNG Project were evaluated and given ranking on the basis of 1 star 3 stars seen in the below diagram, which was also linked to the Level I to Level III mentioned above.

![Diagram showing star rating system]

**Figure 17: Source: Papua New Guinea LNG – Exxon Mobil National Content Plan**

Exxon Mobil’s local content efforts focused on three areas:

- **Workforce Development** - creating local jobs and training people in technical and professional skills that are needed during the construction phase and for ongoing operations.

- **Supplier Development** - purchasing local goods and services, transferring knowledge and skills and increasing targeted local suppliers’ capability to help them meet global standards and qualify for contracts with PNG LNG and others.

- **Strategic Community Investments** - helping to improve living standards and build community capacity via support for targeted community investments focused on sustainable health, education and agriculture projects.\(^{16}\)

\(^{16}\) [http://www.pnglng.com/media/pdfs/national_content/National%20Content%20Rev%200.pdf](http://www.pnglng.com/media/pdfs/national_content/National%20Content%20Rev%200.pdf)
The ACG, BTC and Shah Deniz/SCP projects are the largest single Foreign Direct Investment (FDI) in Azerbaijan, Georgia and Turkey. The Azerbaijan project was the main source of fabrication to the oil and gas industry in the Soviet Union but very little of the capacity and competence was relevant for the international oil companies entering the country in 1992. Azerbaijan is landlocked with high costs of delivering goods to the country. The most important local content initiative was the establishment of a local Enterprise Centre to assist SMEs.17

The three projects; Azerbaijan, Georgia and Turkey mapped out the opportunities to be given to local suppliers as follows: (www.caspiandevelopmentandexport.com):

![Figure 4.1 Opportunities for local suppliers](image)

**Figure 18: Opportunities for local suppliers**

---

17 Willy Olsen’s experience in the country
The above opportunities are hereunder being compared to whether or not they are currently available to the local suppliers in Tanzania:

<table>
<thead>
<tr>
<th>Opportunities for local suppliers (ACG, BTC and Shah Deniz/SCP projects)</th>
<th>Are local suppliers in Tanzania getting these same opportunities in oil and gas industry?</th>
<th>Example from Statoil Tanzania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabrication</td>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Scaffold</td>
<td>Mostly in housing and basic construction</td>
<td>As there is no LNG plant yet, the only scaffolding done so far is at the Base in Mtwara done by SBS (local supplier)</td>
</tr>
<tr>
<td>Laboratory</td>
<td>Yes, basic</td>
<td>Checking the bedrock samples to see if the ground is suitable for an LNG plant</td>
</tr>
<tr>
<td>Office services</td>
<td>Yes</td>
<td>Drinking water, cleaning, air conditioning services, IT, delivering of flowers and newspapers and recruitment</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Engineering design</td>
<td>Yes but not industry advanced</td>
<td>Most studies are related to CSR, site development</td>
</tr>
<tr>
<td>Waste management</td>
<td>No</td>
<td>Waste handling included in logistics for Mtwara Base</td>
</tr>
<tr>
<td>Painting</td>
<td>Yes, basic</td>
<td>Brochures, T-shirts with logo</td>
</tr>
<tr>
<td>Equipment maintenance</td>
<td>Yes, basic</td>
<td>In Mtwara Base there will some maintenance on some equipment</td>
</tr>
<tr>
<td>Catering</td>
<td>Yes, basic</td>
<td>Lunch at office, food/drink on family day (150 people), meetings and team building events</td>
</tr>
<tr>
<td>Logistics</td>
<td>Yes, most are foreign suppliers-locally registered</td>
<td>Purchased 25 cars, fuel, service, transport between Dar-Es-Salaam and Mtwara (using Tanzanair, emergency transport</td>
</tr>
</tbody>
</table>

**Figure 19: Comparison of opportunities in Figure 18 to Tanzania**
Tanzania needs to communicate the needs of the oil and gas industry to the local suppliers but an element of a local content strategy would be to identify where the responsibility lies for doing this. The following matrix table shows how such a communication was handled in the countries that this study has mainly focused one:

<table>
<thead>
<tr>
<th>Countries</th>
<th>The country’s Government (or the national oil company) takes the driver’s seat to communicating the oil and gas industry needs</th>
<th>The oil and gas industry jointly takes the driver’s seat to communicating their needs to the local suppliers</th>
<th>The oil and gas industry separately communicates their needs to the local suppliers</th>
<th>The country’s Government and the oil and gas industry communicates needs to the local suppliers</th>
<th>Not clear at the moment who is meant to communicates the needs to the local suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>X – Sonangol</td>
<td>X</td>
<td>Sonangol</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Brazil</td>
<td>X – Petrobras</td>
<td>X – part of the bidding for license</td>
<td>X</td>
<td>Petrobras, ANP</td>
<td>X</td>
</tr>
<tr>
<td>Ghana</td>
<td>X – Regulator</td>
<td>X</td>
<td>Ministry, Petroleum Commission</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Indonesia</td>
<td>X – Regulator</td>
<td>X</td>
<td>Oil Companies</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>X – Regulator</td>
<td>X</td>
<td>Industry</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Kenya</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Nigeria</td>
<td>X – Separate organisations</td>
<td>X</td>
<td>Local Content Board</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Norway</td>
<td>X – Statoil</td>
<td>X</td>
<td>Industry</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Mozambique</td>
<td>X minimal</td>
<td>X minimal</td>
<td>X minimal</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tanzania</td>
<td>X minimal</td>
<td>X minimal</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Uganda</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Figure 20:** Who is responsible for communicating the oil and gas industry needs?

In order for the local supplier development program to be successful, there needs to be a communication framework in place communicating these needs to the local suppliers. This will enable the local suppliers to plan on how best they can respond to these needs and most importantly plan on how best they can prepare themselves to these needs especially the future needs.
From figure 20 above, it is clear that first and foremost the government needs to take the driver’s seat to communicating the needs of the oil and gas industry. By doing so, automatically the oil and gas industry will be forced to provide these needs in their current form and projected form because it is the oil and gas industry who knows their needs. Communication of the oil and gas needs therefore requires the collaboration between the government and oil and gas industry. Willy Olsen states that, “The most effective way of communication is one that is initiated by the oil companies followed by the contractors. The national oil company then plays an important role like in Angola, Brazil, Malaysia, Norway, Algeria, Saudi Arabia and Mexico”. Agreeing to this statement, Brian Imray states that, “Any initiative works best if it is Industry lead, global suppliers will react to the customers and the potential of winning work more easily than a government edict. The best way forward is for governments to outline their long term strategies for development, whether infrastructure or localized business and give this to the industry as part of a charter or vision document, like the Bahrain 2030”.
3.2.1 Lessons learnt from other local supplier development programs by international oil and gas companies

Tanzania’s Local Supplier Development Program aims to ensure that local suppliers effectively and efficiently participate with the Tanzania’s Proposed LNG Supply Chain, needs to be planned in such a way that reference is made to the actual LNG Project time line. The LNG Project time line can be found hereunder:  

**Figure 21: Proposed Tanzania’s LNG Project timeline**

The mentioned period of project design (2014 – 2017) is the make or break period as far as local supplier development achievements go. As already mentioned in previous chapters local content needs to be included throughout the project’s life cycle, which will also incorporate the local supplier development initiatives and targets.

---

18 Statoil’s LNG Marketing Presentation to TPDC 17/01/2013

Below is an outline of how local content can be supported through internal and external alignment:

**Figure 22: Source: Courtesy of Michael Hackenbruch, Principal Advisor, Urbanpol**
Below is another diagram outlining how local content can be enhanced through project life-cycle:

Source: Courtesy of Michael Hackenbruch, Principal Advisor, Urbanpol
The following are some examples of local supplier development programs from different projects and companies of which Tanzania can adapt to its own local supplier development as it fits best:

(1) **Azerbaijan Supplier Development:**

![Azerbaijan supplier development](image)

**Figure 23: Azerbaijan supplier development**
Figure 24: Supplier development – international company lead
Figure 25: DAI’s Economic Development Centre

The above shows DAI’s concept of an Economic Development Centre (EDC) in areas where there is a lack of economic capacity or a mismatch between the contracting and employment opportunities provided by a large investor. Judging by the examples from Angola and Ghana in setting up EDCs, it is therefore considered an important element for Tanzania to consider in its local supplier development initiatives.

---

19 Permission to use intellectual property granted by Leida Schuman, Enterprise Development Manager at DAI, South Africa Office
**Business Linkage Program**

**Figure 26: DAI’s business linkage program**

DAI’s above business linkage program can be used to established something similar in Tanzania that will provide a solution to the current struggle being experienced by local suppliers in Tanzania in building relationships with the oil and gas industry and becoming suppliers.
### 3.3 Local supplier capacity

This section will illustrate the local supplier capacity in meeting the needs of the oil and gas industry in the context of the LNG Supply Chain thus answering the research question 2 highlighted in green below:

**Figure 27: Research question for local supplier capacity**

However, as already mentioned in the introduction, the information gathered during the literature review was not detailed enough to draw on a thorough understanding of the dynamics of the local supplier’s capacity, which is why the interviews method was brought on board.

The oil and gas industry is an infant industry in Tanzania as well as the entire Eastern Africa region. This clearly means that the local capacity is also most likely starting at an infancy stage. This however should not imply that there is zero local supplier capacity capable of meeting the needs of the oil and gas industry. The capacity is there but this capacity is hindered by several blockages.

Literature review confirmed that in most countries faced with an infancy industry as it is the case with Tanzania, are found to have the capacity to meet the needs of certain goods and services by the oil and gas industry.
The following table indicates the expected spend level and the compliance standard required that is high in both cases in developing countries\(^2\):

<table>
<thead>
<tr>
<th>High Compliance Required</th>
<th>Low Compliance Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Catering</strong></td>
<td><strong>Sewerage, storm water and drainage</strong></td>
</tr>
<tr>
<td><strong>Logistics and warehousing</strong></td>
<td><strong>Construction supplies and hardware</strong></td>
</tr>
<tr>
<td><strong>Pest control</strong></td>
<td><strong>Fuels, lubes and greases</strong></td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td><strong>PPE</strong></td>
</tr>
<tr>
<td><strong>Transportation services</strong></td>
<td><strong>Uniforms</strong></td>
</tr>
<tr>
<td><strong>Civil work maintenance</strong></td>
<td><strong>Professional services e.g. legal, accounting &amp; HR</strong></td>
</tr>
<tr>
<td><strong>Earth works</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cleaning supplies</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Food supplies</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 28: Oil and gas needs with expected high spend and high compliance standard required**

The following table indicates the expected spend level and the compliance standard required that is low in medium cases:

<table>
<thead>
<tr>
<th>Medium Compliance Required</th>
<th>Low Compliance Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Printing and photography</strong></td>
<td><strong>Appliances and electrical goods</strong></td>
</tr>
<tr>
<td><strong>Translation services</strong></td>
<td><strong>Small motor vehicles</strong></td>
</tr>
<tr>
<td><strong>Carpeting and flooring</strong></td>
<td><strong>Air conditioning maintenance</strong></td>
</tr>
<tr>
<td><strong>Fencing and paving</strong></td>
<td><strong>Roofing and waterproofing</strong></td>
</tr>
<tr>
<td><strong>Low-voltage and electrical maintenance</strong></td>
<td><strong>Simple mechanical maintenance</strong></td>
</tr>
</tbody>
</table>

**Figure 29: Oil and gas needs with expected medium spend and medium compliance standard required**

The following table indicates the expected spend level and the compliance standard required that is low in both cases:

<table>
<thead>
<tr>
<th>Low Compliance Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road marking and signage</strong></td>
</tr>
<tr>
<td><strong>Mailing and courier services</strong></td>
</tr>
<tr>
<td><strong>Furniture and office fittings</strong></td>
</tr>
<tr>
<td><strong>Travel services</strong></td>
</tr>
</tbody>
</table>

**Figure 30: Oil and gas needs with expected low spend and low compliance standard required**

---

\(^2\) Increasing Local Content in the procurement of infrastructure projects in low income countries – Briefing Note by Dr. Jill Wells of Engineers Against Poverty and John Hawkins of ICE, 2008
The above table refers to the goods and services local suppliers tend to have a capacity in Tanzania, although still do require minimal effort to understand the unique elements of the oil and gas industry like HSSE.

The below table shows the goods and services where the expected spend is high and compliance to quality required is high. One column shows local supplier capacity in developing countries like Tanzania, which is found to be very minimal whilst the other column shows there to be zero local supplier capacity:

<table>
<thead>
<tr>
<th>Minimal local supplier capacity</th>
<th>0-15% local supplier capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Forestry and environmental services</td>
<td>• Waste recycling and management</td>
</tr>
<tr>
<td>• Painting and corrosion protection</td>
<td>• Geological investigation</td>
</tr>
<tr>
<td>• Telecommunication and data systems</td>
<td>• Overhead crane fabrication</td>
</tr>
<tr>
<td>• Laundry equipment</td>
<td>• Prefabrication building</td>
</tr>
<tr>
<td>• Machined tools and spare parts</td>
<td>• Fabrication yard</td>
</tr>
<tr>
<td>• Insurance services</td>
<td>• Digital satellite provisions</td>
</tr>
<tr>
<td></td>
<td>• Container modifications</td>
</tr>
<tr>
<td></td>
<td>• Heavy welding line refurbishment</td>
</tr>
<tr>
<td></td>
<td>• Provision of radio frequency</td>
</tr>
</tbody>
</table>

Figure 31: Oil and gas industry needs expected high spend and high compliance standard required on goods and services where local suppliers have minimal or zero capacity

As in Tanzania, the SMEs (Small Medium Enterprises) The Uganda Investment Authority Report on Constraints and Opportunities for SMEs Investment in Uganda’s Oil and Gas Sector (March, 2012) highlights that SMEs in Uganda as being unwilling to invest in order to meet the demands of the oil and gas industry.21 This unwillingness is caused by several barriers like, size, number of years of service, investment capital, tax payment liability, formal registration, access to finance and access to markets, all of which can be grouped as internal constraints. There are also external constraints like inflation, cost of borrowing, tax policies, business registration procedures, presence of enabling infrastructure like electricity, etc.

---

21 Constraints and Opportunities for SMEs, Investing in Uganda’s Oil and Gas Sector by Rebeca Nalumu Wamomo, Prosie Kikabi and Dr. Johnny Mugisha, March, 2012
The report further showed that Governments can play a major role in creating this enabling environment by implementing favourable fiscal regimes. If this is not done, it can therefore hinder the possibilities of local suppliers to try and meet the demands of the oil and gas industry by choosing not to get involved in serving the industry in the first place.

Nigerian local suppliers also experience huge barriers into meeting the needs of the oil and gas industry due to the poor relationship between them as local suppliers and financial institutions. The interest rates in Nigeria are said to be between 23-25% per annum whilst international firms get as little as even 6% international interest rates per annum, creating a great challenge for the local suppliers to be able to fight for the chance of meeting the needs of the oil and gas industry.  

A solution to access to finance for local suppliers that will enable them to enter the oil and gas supply chain is what Brazil has done with the introduction of soft loans for Brazilian suppliers to the oil and gas industry. The loan programs make it easier for small-medium enterprises and micro businesses to gain access to finance through a much lower interest rate. This interest rate ranges from 4.5% to 11.4% depending on the project type. This program is the initiative of BNDES, which is a Brazilian-state owned development bank. Petrobras however, has a major SME program which is probably even more important.

Ghana seems to have followed the footsteps of Brazil with the provision of the US $ 5 million development fund for oil and gas suppliers over the next five years. This fund was a result of the Jubilee Partners (Tullow Oil and its partners) signing a Memorandum of Understanding with the Ministry of Energy and Ministry of Trade and Industries for the development of an Enterprise Development Centre in Takoradi, Ghana. The project aims to achieve local supplier development that will pave way for their participation in Ghana oil and gas value chain.

The Enterprise Development Centre (EDC) in Takoradi, Ghana was officially inaugurated on Thursday 16th May, 2013 by the Hon. Emmanuel Armah-Kofi Buah, Minister of Energy and Petroleum. The enterprise centre aims to boost local content in the oil sector. An estimated US $ 20b is expected to be spent in Ghana within the next 5 years in the upstream petroleum sector activities. This EDC will coordinate all matters between the oil and gas industry and the SMEs.

---

22 Vaaland, I.T, Soneye, S.A and Owusu, A.R; Local content and struggling supplier; A network analysis of Nigeria oil and gas industry – 2012
23 Energy & oil interest publication in Brazil 06/08/2011
24 www.globalnewsreel.com 02/11/2011
25 www.ghanabusinessnews.com
The Enterprise Centre in Angola was initially developed by the major oil companies and Sonangol, which has now been taken over by Sonangol. More than 1,400 Angolan SMEs have been pre-qualified for work in the oil and gas sector as a result.

It is important to understand that oil companies investing in Enterprise Centre expect to deduct the costs against the revenues, indirectly the government is therefore carrying most of the cost due to less tax revenues.

Another solution is that of SAOGA which aims at developing the upstream oil and gas supplier cluster. To achieve this, SAOGA formed a partnership with UNIDO (United Nations Industrial Development Organisation) which since 1981 tested the competitive supplier development program (CSDP) through its Sub-Contractor and Procurement Exchange Programme (SPX). The sole purpose of CSDP is “to encourage large scale buyers to support localization through increasing purchase of locally produced content. In 2011, among participating buyers were Sasol, PetroSA and their OEMs from South Africa.”

Such financing solutions as the ones mentioned above tend to have a positive impact on a country getting the most out of projects like oil and gas related ones through the achievement of local supplier development. A true example of this is the Zimelewe Fund of the Anglo American Zimele company in South Africa which has managed to create 4 funds with an investment of US $ 64 million. The fund provided finance to 737 local suppliers who in return provided employment to 14,684 people whilst creating 973 transactions worth US $ 248 million in collective annual turnover.

From the above, it is clear that for local suppliers to meet the needs of the oil and gas industry, access to finance is one of the major challenges that require attention.

---

26 SAOGA, 2011
27 Angola American Report, 2011
3.4 Government impact on institutional context

This section will illustrate the institutional context that the demand and supply side needs to look at thus providing answers to research question 3 as seen highlighted in beige/orange below:

**Research Question 1**

- From the demand side, what are the expectations from the oil companies and their global service providers?

**Research Question 2**

- From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?

**Research Question 3**

- What is the institutional context that the demand and supply side needs to look at?

*Figure 32: Research question for government impact on institutional context*

In efforts of Governments to design efficient local content policies that will support local supplier development, it is very important to ask the question “how much local content is too much?” The 2011 Global Local Content Summit attempted to provide insight to this very key question. One of the most outstanding in sight was the different viewpoint on what percentage of local content is acceptable in oil and gas projects. The IOCs (International Oil Companies) on one hand voted they wanted only 20-40% of the project to be subject to local content whilst on the other hand NOCs (National Oil Companies) and Government Agencies voted for 60-80% local content in all oil and gas projects, with even 90% getting some votes. Referring to Nigeria’s high local content % aspirations is argued to have failed miserably due to too tight a framework, showing the importance of arriving at a realistic local content target.
Ernest Nwapa, the Executive Secretary of the Nigerian Content Development and Monitoring Board (NCDMB) stated at a conference with 24 bank leaders that, “The multinational service companies were once small. It was the deliberate efforts by the government and the private sector of their country that grew them. We are going to focus on them and work with you to grow the companies”. This shows exactly how the government can impact the institutional context so a country can get the most out of an oil and gas project like the Proposed Tanzanian LNG Project.

The draft report Enhancing Local Content in the Oil and Gas Industry of Uganda highlighted in its recommendations that there was a great need to build both workforce and local supplier capacity through policies that will permit local (indigenous) suppliers, contractors and employees to be given priority in contracts and jobs within the oil and gas industry. The report stated that, “There is a huge potential for industrial capacity building and growth in educating and teaming local labour and firms with internationally leading firms. However, to reap these benefits of local content, it’s crucial for any country to create a political context that is supportive to the task of building industrial capacity”. The final recommendations of this report were expected to be used by ministers in formulating a local content policy for Uganda.

The tables below show a country comparison analysis on the different local content requirements:

Table 1: (Figure 33)

<table>
<thead>
<tr>
<th>Country</th>
<th>LC specific regulation</th>
<th>Minimum LC requirement</th>
<th>LC definition include employment &amp; procurement</th>
<th>Penalties for non-compliance with LC</th>
<th>LC % achieved report must be submitted to Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Yes</td>
<td>Yes different for E&amp;P</td>
<td>Yes</td>
<td>Yes – heavy fines</td>
<td>Yes – including auditing</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Yes</td>
<td>Yes – 35% goods and 50% on services</td>
<td>Yes</td>
<td>Yes – red card, black card and financial penalty</td>
<td>Yes including auditing</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>Yes</td>
<td>The level of product procurement from Kazakhstan suppliers to be 50% by 2012 and 90% for services for 2012</td>
<td>Yes</td>
<td>Yes as contracts are subject to approval</td>
<td>Yes – quarterly</td>
</tr>
<tr>
<td>Angola</td>
<td>Yes</td>
<td>Requirements based on selected regimes</td>
<td>Yes</td>
<td>Yes as contracts are subject to approval</td>
<td>Yes – including auditing</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Yes</td>
<td>75%</td>
<td>Yes</td>
<td>Yes as contracts are subject to approval</td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>Yes</td>
<td>90%</td>
<td>Yes</td>
<td>Yes as contracts are subject to approval</td>
<td></td>
</tr>
</tbody>
</table>

28 Prof. Jackson Mwakali, Per Heum and Ole Frederick Ekern, 2011
In light of the above, it is important to highlight that on one hand in 2012, Kazakhstan has changed their ambition on Kazakh content in services from 82.5% to less than 50% whilst on the other hand, Ghana is yet to have a local content legislation published but will have a 90% target in a limited number of areas not over everything.
In reference to the above, local content is not a “one size fits all” policy, therefore it is important for Tanzania to find its best fit as per its objectives and context, underscoring the need to be clearly identified and mapped out. The Tanzanian Government should also be open minded and ready for the idea of changing the targets set once set to positively impact the local supplier development in the LNG supply chain. This can then be translated into targets for the oil and gas industry to meet.

Hereunder is the summary of the key similarities in their situations and the key differences in the approaches of development between the Norwegian Government and the British Government hence addressing the institutional context:

Norwegian and British Government Key Similarities:

- Both Stavanger and Aberdeen started with similar set of industrial players and level of industry employment
- The overall level of oil and gas production was at the time similar between Stavanger and Aberdeen. At the onset of the North Sea oil era, both countries had virtually no local capability in the oil and gas industry but Norway had huge ship yards that could easily be converted to the oil and gas industry.
- Both countries had to invite foreign companies which were mainly American ones

Norwegian and British Government Key Differences:

- There were key differences in the two country’s macroeconomic circumstances. The British government was facing a crippling balance of payment crisis while Norway had a close to full employment and generally healthy macroeconomic conditions.
- UK was in a hurry and therefore had to use foreign firms while Norway went slower to build local capacity.

---

**Norwegian Government Approach:**

- Norwegians saw the oil as a national asset to be managed carefully
- Domestic capability building was a clear priority from the beginning and the use of Norsk Hydro and developing a privately owned oil company called Saga Petroleum. Three Norwegian oil companies challenged and competed with each other.
- The government made transfer of knowledge part of the bidding requirements for new licenses.
- Establishment of local education and research capabilities were a priority in Stavanger. Norway had a strong R&D capacity at the Technical University in Trondheim.
- In Norway, the oil and gas industry country capital was decided to be in Stavanger
- Stavanger is known for technology driven innovation

**British Government Approach:**

- The British rushed to adopt a fast depletion policy leading to a large number of foreign companies moving in
- Efforts in the UK for domestic capability building started later and did not go far with the British National Oil Corporation (BNOC) being dismantled and foreign-owned companies in the UK were treated as ‘domestic’. The UK established OSO, the Offshore Supply Office, in the late 1970s to ensure that the UK could grow their share of the business.
- There were no efforts in Aberdeen for local education improvements.
- In the UK, OSO and the university of Glasgow and Dundee played a major role in developing people.
- Aberdeen is known for operational innovation

The above comparison between the Norwegian Government and British Government helps to conclude that it is better for a country like Tanzania faced with a new industry and virtually no industry capability to adopt coordination and collaboration in efforts of capacity building which thereafter needs to be powerfully supported by the local and central government. To adopt the market based approach as the UK did in Aberdeen will not lead a country to get the most out of an oil and gas project like the Proposed Tanzania’s LNG Project.
Countries like Tanzania need to study the Stavanger story as it looks in many ways like a best practice textbook case of how to build a local and innovative capability. However, let it not be forgotten that a country like Tanzania is not starting anywhere near the macroeconomic conditions, education level and employment position that Norway started with and for this perhaps a ‘copy and paste’ approach is not possible. Tanzania needs to come with the best local content policy to support local supplier development in the context of Tanzania. It needs to be realistic and applicable to Tanzania. Tanzania can draw on approaches, experiences and lessons from other countries as well as local and external advice for its local content policy.

The Tanzania’s Proposed LNG Project is going to be the largest single project in the history of Tanzania, calling for about US $ 14billion in investment for the LNG plant only. As previously mentioned, this project comes at a time when the country was not prepared for the neither the oil and gas industry nor the LNG project, therefore making it critical to review the current infrastructure of the country and what effect this might have to both the LNG project and the local supplier development initiatives as per the aim of this research study. For purposes of this research, Tanzania’s infrastructure aspects related to the oil and gas industry is being divided into the following sectors, which are:

- Tanzania’s Cost and Competitiveness
- Banking financial requirements
- Electricity
- Transport
- Regulatory environment
- Corruption
- WTO and Local Content

**Tanzania’s Cost and Competitiveness**

*larossi (2008)* stated in his report for the World Bank in 2008 that, “A combination of factors linked to the institutional and physical business environment make Africa one of the most expenses places in the world to produce”. This is no different in Tanzania.

The unreliable infrastructure, corruption, crime, poor regulation among other issues tends to contribute at least 20% in loss of sales from business revenue. Larossi claims that such losses are often higher than the tax paid by African firms.
Tanzanian firms like other African firms are faced with 3 types of costs, which are:

- Direct costs – like capital, labour and electricity.
- Indirect costs – includes all other costs from the broader business environment.
- Invisible costs – like losses caused by poor infrastructure as power interruptions and transport delays.

Like in many other African countries, SMEs in Tanzania are faced with high regulatory costs starting from a high corporate tax of 30%, which is considered to be among the most highly taxed in the world. The customs clearance regulations also cause high costs for SMEs in Tanzania.

Tanzania’s competitive ranking as seen in chapter 1.3 above is at no 120 for the year 2011-2012 with Norway at a very impressive ranking of no 16.

**Banking financial requirements**

Banks in Tanzania tend to demand collateral which is usually higher than the value of the loan. The interest rates can range as high as 130% of the fixed value of the loan. These obstacles make access to finance for local supplier almost impossible.

In efforts to increase access to finance for local suppliers within Tanzania, the following programs have been established:

(i) During the 3rd Presidency of Tanzania, an SME guarantee facility.
(ii) SIDO’s Empowerment Fund.
(iii) Economic Empowerment Fund (popularly known as JK Fund)
(iv) TIC’s Business Linkages Program in partnership with UNCTAD.

It is not clear to what extent potential suppliers benefited from these programs and the effect of benefit. From the literature analysis one of the biggest challenges and barriers facing the local suppliers is lack of access to finance.

**Electricity**

Tanzania is no stranger to having immense power interruptions with 2010 experiencing one of the worst power cuts resulting in; 15 days a month with no power. SMEs ended up closing the business or enduring increased operational costs caused by the use of generators, buying generators, which then led to the price increase of diesel/petrol. The situation eased as the result of Tanzanian government interventions and the Ministry of Energy and Minerals’ specific intervention under the steering of the new Minister.
Tanzania needs to make improvements on its energy policies and mix in order to achieve long term growth which will be sustainable. It is important to invest in new technologies and look at other sources of energy like renewable energy. Tanzania’s development is strongly linked to guaranteed access to electricity, supply of that electricity, transmission of that electricity and usage of that electricity. Further, the LNG project will need reliable energy for both the design and construction phase.

In addition to the LNG, the use of the natural gas for the domestic market will significantly ease the energy poverty that has agonized Tanzania for many years.

**Transport**

The transport inefficiency tends to lead not only local suppliers but even international oil and gas companies to experience subtle cost like holding higher inventories. It is estimated that for local firms in Tanzania a 40% loss of business revenue is experienced as a result of holding higher inventory.

Despite improvements, currently the Dar-Es-Salaam port is still highly congested as it is also used by the 5 landlocked countries around Tanzania, which places a consistent strain on the transportation costs of imports. The increased congestion however has also been contributed by the new oil and gas industry. Initiatives have already started to upgrade the Mtwara port that will reduce pressure on the Dar-Es-Salaam port for purposes of the oil and gas industry. This is similar to the upgrade of the Takoradi Harbour aiming to reduce pressure on Tema Harbour in efforts to prepare the country for the oil and gas industry in Ghana.  

As Iarossi stated, “To address the transport issues in Africa requires action on two fronts: infrastructure and regulations.”

---

31 World Bank Report in 2008 by Iarossi (page 20)
**Regulatory environment**

The regulatory environment in Tanzania seems to be tough to both the local suppliers and the oil and gas companies. For example:

- To start a business in Tanzania there are at least 10 steps to be followed which could take up to 45 days. These procedures contribute to high start-up business costs.
- The cargo clearance process can take up 14 or even 21 days whilst the port only gives 7 days grace period. This 7 days cargo clearance grace period seems to be impossible to meet due to all the regulatory obligations involved. Surprisingly, this is even with around 8-10 procedures to clear customs.

The ease of doing business in Tanzania as per the table in chapter 1.3 above shows that the regulatory environment is still not conducive for business operations hence ranking at number 134 out 142 countries.

**Corruption**

Like in several African countries, corruption remains to be one of the biggest constraints managing a business in Tanzania. The table in chapter 1.3 above shows that Tanzania has continued to improve year after year in terms of improving its corruption perception index (CPI) ranking. In 1999, Tanzania had a CPI score of 19/100 with 1 being the most corrupt. Then by 2012, Tanzania’s CPI score was 35/100 showing an improvement of almost 54%.

These CPI score improvements in Tanzania are as the result of the Government initiatives and taking the driver’s seat in the fight against corruption which started with the formation of an independent body to fight corruption, PCCB. The efforts of both PCCB and the Tanzanian Government must be commended for this achievement.

**WTO and Local Content**

The WTO describes itself as “the only global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world’s trading nations and ratified in their parliaments”\(^3\underline{2}\)

The three main agreements within the WTO are:
- Trade-Related Investment Measures (TRIMs)
- The General Agreement on Trade in Services (GATS)
- The Agreement on Government Procurement (GPA)

---

\(^3\underline{2}\) WTO ‘What is the WTO’ [http://wto.org/english/thewto_e/whatis_e/whatis_e.htm](http://wto.org/english/thewto_e/whatis_e/whatis_e.htm)
Although local content is not permitted under WTO, there are exceptional circumstances when it is permitted. The WTO TRIMS regulations on local content in Egypt inserts 1, 2 and 3 below shows such circumstances.\(^{33}\)

*Insert 1:*

![Figure 36: WTO TRIMS regulations and Local Content in Egypt](image)

33 Courtesy of Michael Hackenbruch, Principal Advisor at Urbanpol
Insert 2:

WTO TRIMS regulations and Local Content

WTO TRIMS regulations & impact on Local Content in Oil & Gas

- According to a March 2000 proposal submitted to WTO Services negotiations:
  - oil and gas services include a wide range of services, such as: drilling services; derrick erection; repair and dismantling services; services necessary for oil or gas extraction such as well casing; cementing, pumping and plugging wells; as well as specialized fire extinguishing services...in addition to services incidental to mining, different related oil and gas services may be included in real estate services, rental/leasing services, technical testing and analysis services, services incidental to energy distribution, related scientific and technical consulting services, and construction and related engineering services...

- Typical obstacles to trade in energy services include:
  - restrictions for the entry and stay of energy services managers, professionals and experts;
  - restrictions for the entry of the equipment and tools needed to provide the service;
  - arbitrary business and licensing requirements; and
  - absence of transparency of regulatory framework.

- It is clear from proposals such as the one above that nearly everything related to oil and gas is on the negotiating table in Geneva. Given that those negotiations however have their own time frame no date or outcome can be predicted.

Figure 37 (a): WTO TRIMS regulations and Local Content in Egypt
Dr. Michael Warner has described protectionism as, “the intended or unintended economic policy of restraining trade between countries through methods such as tariffs (taxes) on imported goods, or restrictive import quotas and regulations designed to discourage imports. The setting of local content targets would fall within the category of restrictive import quotas. Regulations that preference domestic supplier over foreign suppliers (e.g. through domestic-only tender list or price advantages to local suppliers) could be deemed a form of import discouragement”.  

---

34 Do Local Content Regulations Drive National Competitiveness or Create a Pathway to Protectionism by Dr. Michael Warner, March 2011
Out of the 153 WTO members in 2011, 27 were developing oil or gas producers with another three producers classified as the Least Developed Countries. The transitional arrangement under GATT would suggest that Angola, Chad and the Republic of Congo have all acceded prior to 2004. Extensions after the transitional period are possible for consideration.

A WTO member since 1995, Tanzania stands at the bottom group of the least developed countries. With the new oil and gas industry in the country, the best argument for enacting local content policy in Tanzania is that of infant industry. If utilized effectively and efficiently, the 7 years transitional period under the WTO exemption might be enough to at least build the local supplier’s competitiveness in the non-core and semi-core activities. As stated above, there is room for negotiation.

It is very important for the Government of Tanzania to find answers to the below questions when formulating, applying, monitoring and enforcing a policy and regulatory measures to support local procurement:

- Should targets be set for local procurement?
- What is reasonable to require the oil, gas and mining companies to do?
- What does the WTO say about local procurement?
- What incentives should be in place to encourage increased local spend and support for local procurement?
- What incentives should be in place to motivate existing and future local suppliers to commit themselves to participate

As per the best practices, stakeholder consultation, global local content leader consultation and drawing from interview responses, the following needs to be done in Tanzania:

- Tanzania needs to have a policy framework that supports local procurement
- Tanzania needs to have regulations that support local procurement
- Tanzania needs to promote linkages and investment across the entire LNG Supply Chain
- Tanzania needs to take extra efforts and measures to create a supporting environment for local procurement. For example, incentivizing local procurement.

---

35 WTO ‘members and observers’ [http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm)
36 A World Bank Document: Increasing local procurement by the mining industry in West Africa (January 2012), page 66)
It is important for Tanzania to be able to establish its local content policy to drive national competitiveness and aiming to reach international competitiveness and not contribute to protectionism. With protectionism then Tanzania will be breaking the Golden Thread of the WTO which is that contracts are awarded on the basis of international competitiveness on price, quality and delivery.

However, to Tanzania’s defense the argument of infant industry will permit for this protectionism to take place. The infant industry argument is recognized as an important argument in favour of protectionism by DFID.\(^{37}\)

The Financing for Development Initiative of the United Nations has stated that for a limited period, time-bound protectionism of certain industries by countries in the early stages of industrialization, noting that, “however misguided the old model of blanket protection intended to nurture import substitute industries, it would be a mistake to go to the other extreme and deny developing countries the opportunity to actively nurturing the development of an industry sector.”\(^{38}\)

The recent Nigerian Oil & Gas Industry Content Development Act of 2010 is a clear Local Content Act and it is expected that the Nigerian Government will proffer the infant industry or market power argument in their defense if found to be breach of the WTO. Having said the above, Tanzania need not be afraid or bullied into not having a local content policy. Indeed Tanzania has all the grounds to defend why it needs such a policy; infant industry argument. It is however being insisted that this local content policy should be that which will drive national competitiveness and not made hastily.\(^{39}^{40}^{41}\)

To conclude this section, it is a fact that, Tanzania is faced with an infant industry of oil and gas, which then becomes obvious that Tanzania will not have the economies of scale of experienced competitors from other countries. This is where the need for ‘protectionism’ comes in because Tanzania needs to be protected until the nation can attain similar economies of scale. This is commonly referred to as ‘Breathing-space to catch up’).\(^{42}\)

\(^{37}\) DFID 11-718: Protectionism; Trade and Investment Analytical Papers Topic 5 of 18. Department for Business Innovation & Skills
\(^{39}\) WTO – Certain Measures taken by Nigeria in the “Act to provide the development of Nigerian Content in the Nigerian Oil and Gas Industry” of April, 2010
\(^{40}\) Nigeria Local Content Requirements in the Oil and Gas Sector (the Nigerian Content Development Act) TRIMS Committee of 3/10/2011
\(^{41}\) WTO Expected to Rule Against Local Content Requirements by Marc Norman 22/10/2012
\(^{42}\) TOFCO presentation on local content impact, page 33
Reference can be made to Alexander Hamilton, the founder of this infancy industry argument who was also the Founding Father of the United States and Secretary of the Treasury. His argument of the need to support businesses in fledging country that faces strong competition from free trade still continues to date.

Tanzania can adopt something along the local content strategy plan – road map as per the slide shown below for its own local content policy preparation.  

---

**Figure 2:** Example Local Content Strategy and Plan – Roadmap

![Image of Example Local Content Strategy and Plan – Roadmap](image)

**Figure 38:** Example local content strategy and plan – Road map

---

43 Courtesy: Michael Hackebuch
3.4.1 Key limitations and recommendations in implementing a local content policy in Tanzania

In the ‘Local Content Policy in the Petroleum Sector in Tanzania Report’ by Dr. Michael Warner, the following limitations are highlighted: 

- There is no clear definition on local content
- It is not clear how contractor’s expenditure can be aligned with Government policy to build capability in the domestic industrial base to ensure participation in the oil and gas supply chain
- Local content requirements do not cover sub-contractors like the oil field service providers. The new local content policy should aim at filling this gap.
- It is not clear as to how local content might be made accountable and transparent.

There is a levy included in the Production Sharing Agreements (PSAs) to support skills development and a transfer to be paid to TPDC (Article 19c in the model PSA). It is not specified as to how these funds are to be used, what are their targets and what have been their achievements so far? This is where the Ministry of Energy and Minerals could ascertain that the levy be utilized for specific skills development, for strengthening not only TPDC but also the Ministry’s skills, Ministry – supported training, and maybe local supplier development.

It is therefore not clear who will have the responsibility for local content management. It is being suggested that approaches similar to those in Nigeria, setting up a separate authority called Nigerian Content Development and Monitoring Board need to be considered.

---

45 Local Content Policy in the Petroleum Sector in Tanzania: Core Issues, Expenditure Categories and Road Map by Dr. Michael Warner, March, 2012
Tanzania can also consider having a local content vehicle (also known as steering committee whereby adaptation can be from former President Lula of Brazil, which is:

**Prominp – the local content vehicle**

**Former president Lula’s initiative**

- The project was launched in 2003
- Steering committee members
  - Minister of Energy
  - Minister of Industry
  - Petrobras’ CEO and Services Director
  - The oil and gas organization ONIP
  - The president of Brazil’s Development bank, BNDES

![Diagram of the local content vehicle](Image)

© Willy H Olsen

**Figure 39:** Source: Permission to use granted by Mr. Willy Olsen

Article 19 (a) of the PSA agreement states giving “preference to the purchase of Tanzanian goods, services and materials provided such goods and materials are of an acceptable and are available on a timely basis in the quantity required at competitive prices and terms……” As already mentioned, such a clause in fact works negatively towards the local suppliers chances of participating in the oil and gas supply chain. The PSA does not seem to place much emphasis on local supplier opportunities as it does on local employment opportunities.  

---

46 Model Production Sharing Agreement (PSA) between the Government of the United Republic of Tanzania and Tanzania Petroleum Development Corporation and ABC Ltd For Any Area by Dr. Michael Warner, 2012
Although at the same time, it can be argued that such clauses do not have negative impact since local firms usually have an advantage. Under a similar paragraph in the Angolan PSAs, a 10% higher price is seen as acceptable perhaps such an addition can be included in the Tanzanian PSAs. This sort of article is common and used in almost all PSAs in the world.\(^\text{47}\)

It is very important for those involved in formulating the local content regulations for Tanzania to find ways to ensure that expenditure in the oil, gas and mining sectors drive forward the industrialization of Tanzania without trapping the local supplier industry in a cycle of protectionism. The ultimate target for Tanzania should be to the Golden Thread of the WTO which is the award of contracts on an internationally competitive basis in due course. Willy Olsen stated that, “this is 10-15 years down the road at least for Tanzania”. UK, Norway and Malaysia all needed (>15 years in each case) with an average of 2 – 5 years to build institutional capacity and get the buy in from stakeholders. This is why is it critical for Tanzania to start acting now basing actions on strategic value whilst taking a long term view.\(^\text{48}\)

\(^{47}\) Willy Olsen, former advisor to the President and CEO of Statoil and currently senior advisor at INTSOK

\(^{48}\) Interview discussion with Simbi Wabote, Global Local Content Manager, Shell
To conclude this section, reference is being made to a very important illustration clearly showing the challenges in maximizing local content:

**The strategic approach**

**Analyzing gaps, policies and performance**

![Figure 40: Source: Permission to use granted by Mr. Willy Olsen](image)

*Figure 40: Source: Permission to use granted by Mr. Willy Olsen*
3.4.2 Achieving local supplier development through local content policy in Tanzania

First, any local content policy has to set a clear target. It should be clear as to what this local content policy wants to achieve otherwise the oil and gas industry will do as they please as it was the case for so long with the mining sector in Tanzania. With clear local content targets in place, the Government will then drive the oil and gas companies and oilfield service providers to do things in a way to achieve the set local content targets within a certain period or certain phases.

For example, Nigeria had set itself a clear target that by 2007, there should be a 40% local content. Then in 2010 this target was increased to a local content target of 70%.

It is therefore very important for Tanzania to have clear achievable targets to what the country wants to achieve within a certain period. In the absence of this clear target, there will be no sustainable economic growth. The oil and gas industry can drive the funding of local supplier development but the Tanzanian government will need to incentivize the industry through introduction of different frameworks such as tax relief.

Whilst Tanzania needs to use the infant industry argument against the WTO restrictions on enacting a local content policy, it should also set up a local supplier development program that will be able to take full advantage of the 7 year period transition provided by the WTO, to build a competitive local supplier base and ensure that local suppliers are effectively and efficiently participating in the LNG Supply Chain.
3.4.3 Achieving a multiplier effect leading to economic growth in Tanzania from the LNG Project

The economic multiplier can be defined as ‘the multiplicative effect that takes place in an economy following some initial injection (or withdrawal) of economic stimulus. (Available at: http://www.sampsonresearch.com/files/Download/Economic%20Multipliers%20Rules%20of%20Thumb.pdf . Accessed on 20/04/2013) There is a general relationship between the size of firm and the intensity of Type I (direct and indirect) vs. Type II (including induced) multipliers. A large firm will tend to have a proportionately small increase in direct employment, but stimulate a range of indirect and induced employment opportunities (Marfan, Meller (1981) – see IFC doc49), whereas small firms may employ a large number of direct workers but have proportionately less impact through indirect linkages. Based on comparable studies, it is expected that the LNG investment in Tanzania will:

- Have direct employment that will tend to provide higher wages (Asiedu, 2004)
- Cause a proportionately far higher multiplier on employment through indirect and induced effects
- The indirect multiplier will be improved according to the existing human and physical capital in Tanzania, and/or the translation of additional government and individual incomes into education, health and infrastructure.

The degree of reliance on imported capital, imported goods, imported labour, savings, debt cancellation, taxes, inflation, purchase of old stock securities, etc. will significantly affect the multiplier as these are considered to be the leakages of a multiplier effect.50

Various models have been used in Tanzania, most recently the MAC model. The multiplier approach is used for General Budget Support government budgeting. As well as increases in income, the productivity of labour is also noted to change as the increase in wage rate will act as a motivator leading to improved productivity. (Presentation by Dr. Oswald Mashindano, May 2013).

---

49 Assessing Private Sector Contributions to Job Creation and Poverty Reduction, Open Source Study by International Finance Corporation, Preliminary Literature Review

50 In multiplier effect, it is believed that “the greater the marginal propensity to consume, the greater the multiplier effect”. The formula commonly used is:

\[
MPC = \frac{\text{the change in consumption}}{\text{The change in disposable income}}
\]
Currently, public data on LNG investment spends are limited due to confidentiality considerations for companies: this is a key barrier to mapping (and therefore forward planning of impact).

As far as the theoretical approach is concerned, there is inadequate data available for the achieved multiplier effects in developing countries. The main results from the IMF are not encouraging (Presentation by Susan Yang, Senior Economist in Development Macroeconomics at the IMF HQ, May 2013):

- US $ 1 invested in developed countries would result into US $ 1 of capital, making the investment efficiency loss to be close
- In Sub-Saharan countries (Tanzania being one of them), the investment efficiency of each US $ investment tends to be below US $ 0.5 capital.
- In Mexico and Columbia the investment efficiency is even much lower to that of the Sub-Saharan countries, at below $0.35 capital
- It is still very common to find that even this capital is put in projects not chosen properly. For example, building a road leading to nowhere which then doesn’t add value.

Investment efficiency can be paradoxically low: due to insufficient evaluation of each project, duplication, creating an absorptive capacity constraint, relying heavily on imports and inflating local costs.

In Nigeria, Ihua, Ajayi and Eloji note that: ‘More contract awards leads to the creation of more jobs. In the case of Alpha [a Nigerian SME], their staff strength grew from 12 to 44 and Beta witnessed a growth of 15 to 39 employees. Nonetheless, this is still ‘a drop in the ocean’ […] but] the directors opined that if the opportunities in the industry are well harnessed by SMEs, it could help resolve more than half the country’s unemployment problems. Another problem identified is that of ‘staff poaching’ […] after they have spent money training and building the capacity of their employees, they are usually poached by the bigger oil companies; as these individuals move on to seek ‘greener pastures.’

In Chile, Aroca (2001) notes the economic multipliers by sector and concludes that every job created in utilities yields between 4.54 and 6.29 jobs in the wider economy; and in construction, every $1 spent yields $1.65 in wider benefit.

---

52 See IFC table
Asiedu in her paper ‘Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability’ notes that:

“Given the importance of FDI to the region, it is surprising that there is a dearth of research on the factors that affect FDI to Africa. [The available papers] have two limitations. First, none of them include minerals and oil as a determinant of FDI. Second, none of the papers examine the effect of corruption, political risk and investment policies on FDI.”

Other factors may be missing, too: the *demonstration effect* it may have on attracting other large scale investments; learning and specialization; corporation tax revenue; negative impacts or (short run) supply limits. In Mozambique a large mining investment has caused a boom in demand for local accommodation to provide housing, with even the smallest of houses being acquired for inflated sums. *(Presentation by Andrew Parker, Development Economist, Imani Development, May 2013).*

The Nigerian solution, to use Local Content (LC) as a model within the supply chain to maximize the benefits of investments, may be an option for Tanzania, though it is not without its problems. It is an option that is actually work in progress as the Tanzanian Government is in preparation of enacting a Local Content Policy. A more comprehensive list of specific impacts is mapped in other sections of this analysis.

Comparable studies warn of the Dutch disease, when the resource revenue is in foreign currency like US $ and then a country spends it in local currency, for example, Tanzanian Shillings. This leads to the local currency to appreciate and inhibit other exporting industries, and be a “resource curse” through neglecting other options. However it may paradoxically also help them through the ability to buy cheaper imported inputs.

The IMF has shifted its view on Sovereign Wealth Funds (SWF) and developing countries; after promoting, then realizing the complexity of, the Norwegian example, they note that natural resource needs a fiscal framework to control government spending and ensure that the country’s debt is sustainable when investing resource revenue and that it benefits present and future generations and beyond.

One of the main limitations for Tanzania is that it still lacks an efficient instrument to map and implement potential multiplier effects so that benefits are widely distributed and absorbed through the economy.

To conclude this section reference is being made to the below diagram showing the multiplier effect from the oil and gas industry:

Figure 1: Shell Group contribution to national and local economies through employment and procurement of goods and services

**Figure 41: Source:** Fossgard-Moser, T. (2002) Promoting sustainable development through enhancing local employment and supply chain opportunities generated by energy companies: The case of the Shell Group. Greener Management International. Issue 43. 79-92
4.0 INTERVIEWS OUTCOME AND ANALYSIS

4.1 Introduction

The qualitative research method adopted for this study make interviews an important element in benchmarking literature review findings, gaining further understanding in areas that were not fully covered by the literature review and most importantly obtain an insight on the true practicability of local content, local supply chain, local procurement and local supplier development.

A total of 144 expert interviews were conducted representing a variety of different countries and company experience in an effort to understand the dynamics involved in local supplier participation in the mining, oil and gas industry as well as to find out what it would take to achieve local supplier development. Reference is being made to figure 12 in chapter 2 above, which shows the interviewee group and reasons to why each group was chosen as per their areas of expertise.
4.2 Oil and gas industry expectations

This section illustrates the needs of the oil and gas industry in the context of the LNG Supply Chain thus answering research question 1 highlighted in light blue below:

**Research Question 1**
- From the demand side, what are the expectations from the oil companies and their global service providers?

**Research Question 2**
- From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?

**Research Question 3**
- What is the institutional context that the demand and supply side needs to look at?

*Figure 15: Research questions for oil and gas industry expectations*
Based on interview in Tanzania, it was possible to establish the following list of current needs of the oil and gas industry:

**Current needs from the oil and gas industry - results from 15 interviews**

![Bar chart showing current needs from the oil and gas industry in Tanzania](image)

**Figure 42: Current needs from the oil and gas industry in Tanzania**

The above table clearly shows that the current needs by the oil and gas industry fall under the non-core activities. It is through local supplier development that Tanzanian suppliers get access to opportunities with more advanced non-core activities, semi-core activities and eventually core activities such as fabrication yards.

In further interviewing, it was established that out of the above needs most local suppliers in Tanzania are actually being sub-contracted to foreign suppliers registered in Tanzania, which depending on the definition of local that Tanzania will adapt might not truly represent local suppliers.
When logistics, procurement and supply chain supervisors and managers within international oil companies and global service providers in Tanzania where asked if they have a thorough market understanding of the local supplier base in Tanzania in terms of which local suppliers are out there; what goods and services do they provide, and at what capacity, the responses were as follows:

![Oil and gas industry understanding of the Tanzanian local supplier market base - results from 15 interviews](image)

**Figure 43: The Tanzanian local supplier market base**

As found in the literature review, here also it was found that those involved in procurement did not know what sort of suppliers are available, what goods and services they provide and what their capacities are. This often leads to the assumption that there is almost zero capacity in the Tanzanian economy.

During the interviews it was not possible to establish the future needs of the oil and gas industry within Tanzania as it was done in chapter 3.2 above, as part of the literature review.
The main point raised in this section is whether or not the oil and gas industry has a market understanding of the Tanzania local supplier base, something which is currently lacking. It seems that oil companies and global service providers are waiting for local suppliers to approach them in order to find out what their needs are instead of the former communicating their needs to the market.

Local suppliers should be made aware of the opportunities available in the oil and gas companies and be empowered; this empowerment should be included in the local content policy. At the same time, the local suppliers need to also take initiatives to develop themselves.
4.3 Local supplier capacity

This section illustrates the local supplier capacity in meeting the needs of the oil and gas industry in the context of the LNG Supply Chain thus answering research question 2 highlighted in green below:

- **Research Question 1**
  - From the demand side, what are the expectations from the oil companies and their global service providers?

- **Research Question 2**
  - From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?

- **Research Question 3**
  - What is the institutional context that the demand and supply side needs to look at?

**Figure 27: Research question for local supplier capacity**
4.3.1 Current local supplier capacity in the case of Nigeria

Nigeria’s definition of local suppliers is based on ownership of the business, whereby the local partner needs to have 51% shares or more. Nigeria had its first LNG plant built in 1999 but has been an oil exporter for over 50 years. The following tables show the current Nigerian local supplier’s capacity in the different goods and services in comparison to the minimum Nigerian Content targets set by the Nigerian Government.\(^{55}\)

Table 1 – Shell (Figure 44)

<table>
<thead>
<tr>
<th>Description</th>
<th>Minimum NC (%)</th>
<th>Current Compliance Level (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onshore facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shallow water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LNG facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas gathering facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep offshore facilities – Hull &amp; topside modules</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floating concrete structures</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above table shows that as part of FEED & Detailed Engineering, the Nigerian local suppliers’ capacity is still much lower in the deep water offshore facilities and FPSOs/ floating platforms but is at par and even exceeds the Nigerian Content % requirements for onshore facilities, shallow water operations and gas gathering facilities.

\(^{55}\) Table 1 to 6 are from the Nigerian Oil and Gas Gap Analysis. Permission to use intellectual property granted by Olesegun Adebayo, Shell, Nigeria
The above table shows that in Fabrication & Construction, the Nigerian local suppliers’ capacity is at least at 50% across the board, almost matching the Nigerian Content % requirements for terminal/oil movement systems, drilling modules/packages and piles, anchors, buoys, jackets etc.
The above table shows that with Materials and Procurement, Nigerian local suppliers' capacity is still much lower or non-existent for at least 4 sectors with a very low % in valves and cement (hydraulic). However, the Nigerian local suppliers’ capacity is very high for cement (Portland), low voltage cables and is at least 50% or above for drilling mud – barite, bentonite and protective paints.
The above table shows that under the Well and Drilling Services/Petroleum Technology, the Nigerian local suppliers’ capacity is almost at par across the board with only a much a lower capacity under the well completion services.
The above table shows with the Marine, Operations & Logistics Services, the Nigerian local suppliers’ capacity is higher than 50% across the board. Materials, Operations & Logistics Services are areas where the Nigerian local suppliers have a strong capacity.
Table 6 – Shell (Figure 49)

The above table shows with the Installation, Hookup & Commissioning is another area where the Nigerian local suppliers’ capacity is almost at par with the Nigerian Content % requirements.

To conclude this section, the following points are hereby being made:

1. Nigeria has been working in deep waters since 1992 with all major players present; Shell, ExxonMobil, Chevron, ENI, Total. The local content level in the offshore project has grown year after year.
2. Nigeria has been trying to implement a local content policy since 2003 when it realised the real level of local content was some 5-10%.
3. The oil companies operated with up to 70-80% local content; they had signed contracts with Nigerian firms that sourced from abroad.
4.3.2 Current local supplier capacity in the case of Tanzania

It was not possible to conduct a local supplier capacity assessment in Tanzania along all goods and service categories illustrated in chapter 4.3.1 for the case of Nigeria. Even with Tanzania only being at the exploration phase of the LNG supply chain, it should still have been possible to obtain detailed local supplier capacity information for all present activities. The following table shows what is currently being provided by local suppliers:

**Currently provided goods and services by local suppliers in Tanzania - results from 20 interviews**

![Bar chart showing current goods and services provided by local suppliers in Tanzania]

*Figure 50: Currently provided goods and services by local suppliers in Tanzania*

The above shows the information gap in terms of oil and gas buyer awareness of what is available and what is actually available. For example, although office furniture services are being done by the local suppliers, these are all imported office furnitures and not furniture made in Tanzania. Another example, is that also currently the staff recruitment services (HR), logistics requirements, regular chemical supplies and clearing & forwarding services are in actual fact being provided by foreign suppliers registered locally. It is very important for Tanzania to clearly define local supplier, local goods and services so as to avoid such confusion in understanding the local content metrics since local ownership is no guarantee, as it has been experienced in Nigeria.
The below diagram shows that although Shell placed 70% of all contracts with Nigerian owned firms until 2002 – 2003, the value creation in the country was only some 5-15% because local firms either sourced most of their work outside Nigeria or acted as agents for international companies:56

![Diagram showing Shell's contract distribution and value creation]

Much as Tanzania does not have to fall in similar pitfall as experienced by Nigeria during the above mentioned periods, it can nonetheless certainly learn from Nigerian's experience in the last 14 years in building the local supplier's capacity in the LNG Supply Chain, in particular the following whereby Nigerian local suppliers seem to have some capacity in:

- On shore facilities
- Shallow water drilling
- Gas gathering facilities
- Piles, anchors, buoys, jackets etc
- Fabrication
- Cement (portland)
- Low voltage cables
- Drilling mud-barite

---

56 Local Content Development, What will it take? Presentation in Cambodia, 2008 by Willy Olsen, Senior Advisor at INSTOK (Norwegian Oil and Gas Foundation) and Member of the Governing Body at Revenue Watch Institute
- Bentonite
- Protective paints
- Marine, operations & logistics services
- Well and drilling services/petroleum technology
- Installation, hook up & commissioning

Through the interviews, it was possible to establish that the possible main reasons behind contributing to this minimal participation of local suppliers is the fact the local suppliers in Tanzania were found to lack the following key skills:

![Key skills lacked by local suppliers in Tanzania - results from 47 interviews](image)

**Figure 51: Key skills lacked by local suppliers in Tanzania**

Closing this section, it suggested that local supplies in Tanzania need to more be proactive and aggressive in finding out what products and services the oil and gas industry requires; perform thorough self-assessments on their overall operations and management to identify areas that need improvement as per the pre-requirements of the oil and gas industry; be willing and ready to change; show readiness to improve capabilities and be committed to the delivery commitments they make. Most importantly local suppliers need to be focused on specializing in one particular area when providing goods and services instead of trying to cover everything.
In addition, Tanzania needs to avoid the “agent system”, which is used around the world to meet local content requirements. For example, like what the oil companies in Nigeria were doing to meet the 70-80% local content as shown above. The agent system should have demarcations, transfer of knowledge and skill elements and not employed to stifle the local supplier participation or to create monopolies.

The section highlights the need for a detailed analysis of the goods and services across the entire LNG supply chain in terms of the current local supplier capacity in Tanzania. The Nigerian current local supplier capacity information could be used as a baseline to perform a Tanzanian local supplier capacity analysis. This would make it possible to know which areas provide immediate opportunities to the Tanzanian local suppliers. These areas could then be included in the first phase of the local supplier development program, obviously depending on the added value they might bring.
4.4 Government impact on institutional context

This section will illustrate the institutional context that the demand and supply side needs to look at providing answers to research question 3 highlighted in beige/orange below:

**Figure 32: Research question for government impact on institutional context**

Prior to being able to fully understand the institutional context in Tanzania that the demand side and supply side, it is first important to also understand the demand side and the supply side from the interview outcomes.

From the interview, it was estimate that the current local supplier capacity in Tanzania is between 10-15%, with the major gaps being as below (matching findings in both literature and interviews):

<table>
<thead>
<tr>
<th>Gap</th>
<th>Meaning of Gap <em>(source: wikipedia)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Skills</td>
<td>Basic knowledge and ability required to perform a particular task like engineering, accounting</td>
</tr>
<tr>
<td>Capacity</td>
<td>The ability to receive, hold as well as the power to learn and retain knowledge and use it</td>
</tr>
<tr>
<td>Capability</td>
<td>The extent of someone’s ability</td>
</tr>
<tr>
<td>Gap</td>
<td>Meaning of Gap <em>(source: wikipedia)</em></td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>Cost competitive</td>
<td>A price lower than that offered by the competitor or a price made more attractive of added incentives like longer payment terms</td>
</tr>
<tr>
<td>Compliance with company policy/standards</td>
<td>Ensure that business is conducted in a legal and ethical manner</td>
</tr>
<tr>
<td>Anti-bribery and corruption or unethical behavior</td>
<td>Avoid taking action with an intent to give some advantage or receive some advantage inconsistent with official duty and the rights of others</td>
</tr>
</tbody>
</table>

**Figure 52: Gaps**

Bridging these gaps require a comprehensive, constructive and innovative local content policy, respective interventions and support programs. Both the Host Government and the National Oil Company of Tanzania (TPDC) should have a local content policy and the oil and gas industry companies should also have in-house local content policies, local procurement strategies, and local supply chain development. This should include EPCs and international oilfield service providers. Tanzania also needs financial tools and industrial tools like Enterprise Centres.

As already mentioned in chapter 3.4, infrastructure in Tanzania needs to be improved in order to pave the way for local supplier development. The logistics supply chain of Tanzania requires improvement in order to reduce operational costs. Local content policy of Tanzania needs to be enacted in a way that will make space for local supplier development which is the main focus of this report.
In interviews carried out with different groups from different parts of the world it was possible to carry out an individual rating on how the infrastructure key elements affect local suppliers as follows:

**Infrastructure challenges - results from 100% of interviewee group**

![Infrastructure challenges - results from 100% of interviewee group](image)

**Figure 53: Infrastructure challenges**

It is important to highlight that currently out of the Tanzanian interviewees, 35% found electricity to be a challenging infrastructure whilst about 12-24 months ago, it was said to be at 100% challenging about 12-24 months ago.

In addition to the above, there are other important environmental aspects identified through interviews that could possibly have a negative or positive impact on Tanzania’s Proposed LNG Project. Such aspects include:

- Governance, including transparency
- Political stability
- Government policies and strategies in other sectors
- Specific efforts by government to promote quality education in general and concerted efforts to promote mathematics, science, technology and innovation as subjects taught.
- External partners involvement and support to avoid “elite capture”
As it was established in literature review (chapter 3.1 above), interviews too established that there are several definitions to local content, local supplies and local goods and services as quoted from each source in the below table:

<table>
<thead>
<tr>
<th>Source</th>
<th>Local Content Definition</th>
<th>Local Supplier Definition</th>
<th>Local goods and services definition</th>
<th>&quot;Local&quot; Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willy Olsen</td>
<td>Workforce development, supplier development and strategic community investments</td>
<td>Nationally-Owned Supplier – means a company with &gt;50% share capital owned by national citizen</td>
<td>A good or service that, through its manufacturer, assembly or delivery contributes value to the national economy, where this value is above a defined threshold of total cost or price</td>
<td></td>
</tr>
<tr>
<td>Dr. Michael Warner</td>
<td>The participation and development of national capital, labour, technology, goods and services in the planning and executing of oil, gas and mineral exploration, development or production</td>
<td>Nationally-Registered Supplier – means a company, subsidiary or branch incorporated under law eligible to pay corporation tax and/or registered to operate in-country under a renewable license (but &lt;50% owned by national citizens)</td>
<td></td>
<td>Foreign Supplier – means a company not incorporated in-country nor registered operating license includes supplier providing equipment consigned under operator auspices for purposes of import duty relief</td>
</tr>
<tr>
<td></td>
<td>Master Class in Local Content April 2013</td>
<td>Master Class in Local Content, November 2013</td>
<td>Master Class in Local Content Class, November 2013</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In some cases, it equates to a locally owned business with local capital investment, while in others it is any business that maintains a permanent operational presence within a given area</td>
<td>In mining, local tends to refer to the immediate vicinity of an operation. In oil and gas, &quot;local&quot; often refers to the any in-country expenditure. &quot;Local&quot; and &quot;national&quot; content are used interchangeably, especially in regulatory or contractual provisions.</td>
</tr>
<tr>
<td>Michael Hackenbracht</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Titus Fossberg-Moser</td>
<td>The national or in-country value added due to employment, contracting and procurement of people, goods and services, either directly by the project developer or indirectly through major contractors.</td>
<td>Suppliers who meet or exceed the expectations of regional definition of &quot;local&quot; by either government agencies, or incorporation or registration process where they exist. Defined by, but not exclusive, to or inclusive of, ultimate parent company, incorporation, number of local staff in ownership, executive, management and ordinary positions. Further defined by physical location and origin of product and service provision.</td>
<td>The local (or community), or project location specific value added to the employment, contracting and procurement of people, goods and services, either directly by the project developer or indirectly through their main contractors.</td>
<td></td>
</tr>
<tr>
<td>Brian Hulme</td>
<td>The scope of technology, know-how and expertise transferred and transferable and the subsequent development of local companies through these transfers by appropriate contractual agreements between local companies, international and national companies, organisations and institutions. The scheduled training and transfer responsibilities and value of salaries paid to indigenous personnel. The value of taxes and other statutory payments to local, regional and federal budgets of the region and public non-budgetary funds.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jillian Lito</td>
<td></td>
<td>For purposes of supplier development, one should make distribution between supplier of materials (cement, sand, fuel etc.), contractor (doing supply and installation), consultants and site service suppliers. Then apply the definition of local to these suppliers.</td>
<td>In Daimler Development's experience UK local authorities defined &quot;local&quot; according to their voting constituency or to those contributing financially to local procurement projects (again a geographical application of definition)</td>
<td></td>
</tr>
</tbody>
</table>
Jim Walton of Fluor made an interesting statement “Fluor looks at their oil company client and host government to define local content, local supplier, local goods and services definitions for that particular country and the work that is being carried out. This is due to the fact that, the definitions are different in every country” – this is an adaptive approach.

This seems to be a similar approach taken by Fugro Survey BV based on Peter Boom's statement that, “Fugro can't define local content, local suppliers or goods and services without defining the local element first. Fugro operates in 60 countries around the world and “local” has different meanings so they adapt to the local meaning of where their operations are”.

<table>
<thead>
<tr>
<th>Source</th>
<th>Local Content Definition</th>
<th>Local Supplier Definition</th>
<th>Local goods and services definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hashim Balushi</td>
<td>The value retained in country. The value in question here is represented by: Investment in fixed assets in the country, Nationalization of the workforce, National recruitment. Training and Progression, Local sourcing of goods, Local sourcing of subcontracted services. Development of National Suppliers, Development of National Training, Education and R&amp;D Institutions.</td>
<td>A nationally registered firm with local ownership and incorporated in the country delivering in country value to the nation.</td>
<td>Goods and services manufactured/carry out in the country by nationals whether by assembly or fully made in the country. The “Nirvana” will be goods and services manufactured/carry out in the country by nationals fully made in the country. 100% local material, labour, and equipment.</td>
</tr>
<tr>
<td>Harry Pastuszak</td>
<td>A major focus lies in ensuring that all that can be sourced locally, within reason, is indeed sourced locally.</td>
<td>Local companies always mean those that are fully owned and managed by at least nationals in the country in question.</td>
<td>For example, rather than having a local firm selling bricks made in a foreign country, it is better to see an enterprise established to make bricks locally and sell the bricks to the local market.</td>
</tr>
</tbody>
</table>
5.0 KEY FINDINGS & ANALYSIS

5.1 Introduction

This chapter illustrates the key findings and analysis for the three research study’s stakeholders, oil and gas industry, local suppliers and Tanzanian Government. Reference is being made to the research questions below:

- **Research Question 1**
  - From the demand side, what are the expectations from the oil companies and their global service providers?

- **Research Question 2**
  - From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?

- **Research Question 3**
  - What is the institutional context that the demand and supply side needs to look at?

*Figure 15 (ii): Research question for all research study’s key stakeholders*
5.2 Key findings & analysis – Research Study’s Stakeholders

“Funnel” Findings: Figure 54

Key Finding 1: Local suppliers are underdeveloped

The above “funnel” findings show that local suppliers are underdeveloped as the key finding 1. It was established that the oil and gas industry in Tanzania has not taken the initiative to understand the true local supplier capacity, establish where the local suppliers could participate within the LNG supply chain and finally, how best local suppliers can be developed to meet the industry requirements. The oil and gas industry lack market intelligence so assume there is zero local capacity. It is however understandable that the oil companies and contractors will not use local firms unless they can meet the requirements of standards like ISO 9000 or have the financial basis to take the risks. There is need to commission a market research covering the demand and supply side analysis and gap assessment to consultancy firms. This could be funded by oil and gas industry through donor agencies.

This exercise can then lead to the categorization of all goods and services within the LNG supply chain in groups on quick wins (short term), medium term and long term, with the local supplier development program starting with the quick wins.
Preparation for capacity building through local supplier development program needs to start NOW with clear objectives, structure and milestones. Tanzania’s National Content Plan (Local Content Policy) should target sustainable benefits in three areas; workforce development, supplier development and strategic community investments.

The local supplier development program must include training and development initiatives. Although, oil and gas related courses have already started to be established in Tanzania, for example, in 2012, BG Tanzania started a pilot project, working in partnership with VSO and the government body, VETA, to strengthen VETA’s Vocational Education Training Centre in Mtwara, there is still a gap in efforts to educate the local suppliers in related oil and gas courses. Planning for such courses can be possible after market research analysis has been commissioned and completed.

The government needs to promote and encourage private sector training institutions and new small centres specialized to set up training and development courses, e.g. catering for the local suppliers. Although the use of private sector has hereby been suggested, it should only be used when standards can be documented hence why public sector education tends to be more used to develop local competencies. Local suppliers in Tanzania also lack entrepreneurship skills, just in time, operating standards, best procurement practices, general skills level etc. calling for business management courses. Collective participation by oil and gas industry, donor agencies, private sector and Tanzanian Government is needed.

The industry processes are too complicated for most local suppliers and it is important for the companies to see if some of its activities can align the processes to the local supplier capacity of course without totally compromising HSSE standard requirements. These companies will then be responsible for HSSE capacity building to ensure that eventually local suppliers can adhere to these processes.

Although this study is focusing on what can be done for local suppliers to be developed, local suppliers need to do some developing for themselves too first by realizing that this industry is highly demanding and professional; local suppliers need to up their game. Local supplier programs should not include local suppliers who are not willing to change and not taking self-initiatives to do so. There is a need for supplier diversity to create room for inclusiveness and limit monopoly.
The big question in local supplier development program design and execution is who pays for this? Since the oil and gas industry have the experience and it is to their best interest to have a strong local supply chain for long term sustainable operations of their project, this responsibility should be theirs. The Tanzanian Government needs to offer incentives such as regulated tax relief related to the industry to motivate them and ensure success, this way in actual sense it is the government who will then be funding the program. Donor agencies like Norway’s NORAD, UK’s DFID can also play a major role in supporting the government in this initiative.
Key Finding 2: Lack of industry-local supplier linkage

The above “funnel” findings shows that there is a lack of industry-local supplier linkage as the key finding 2. Firstly, local suppliers should be more aggressive identifying industry opportunities. Secondly, a business linkage program is needed, like the Enterprise Development Centre (EDC) in Ghana or CAE in Angola, which is usually the industry’s initiative. Tanzania will need to create an enabling environment for this, for example, through incentives or regulated tax relief. A key responsibility for EDC is to manage communication of opportunities between the industry and local SMEs in Tanzania as Ghana’s EDC has set out to do. Exxon Mobil, a partner in the Tanzanian Proposed LNG Project, established an Enterprise Centre to assess Papua New Guinea when building a huge LNG Plant. The centre helped local firms to build their business skills, and facilitate access to finance. This is intended to increase their competitiveness in bidding for work with the Project and eventually with other PNG developments and lead to stronger, better-run and more sustainable businesses in PNG.

One of the major challenges local suppliers experience as barrier to entry into the oil and gas industry is access to finance. The proposed EDC should have a facility aiming to facilitate access to finance to local SMEs in Tanzania.
As seen in other countries, the EDC is set up by the oil and gas industry where a third party institution such as an NGO or private sector company or consultancy company is involved to develop, operate and manage it, with the government incentivizing the industry.
The above “funnel” findings shows that there is poor public expectation management as the key finding 3. A communication strategy is needed to manage the public expectations which need to be prompt and proactive. In avoidance of confusion, there should be synergy between the communication made by the oil and gas industry and the Tanzanian Government.

This communication deficit was not just found as far as poor public expectation management is concerned but also in view of internal and external stakeholder relationships. There needs to be a clear stakeholder mapping done and each stakeholder group to be communicated with as per the needs making governance and transparency to be key. For example, Ghana initiated a major stakeholder program and established an open dialogue.

Currently the public expectations are unrealistic and joint efforts are needed to turn this perception around. One of the challenges will be to explain the time it takes before Tanzania starts to see the benefits of the LNG Project. There is no quick fix and the public is impatient.
“Funnel” Findings: Figure 57

The above “funnel” findings shows that there are internal inconsistencies in view of local procurement strategies as the key finding 4, revealing the need for strategies to be aligned. For example, local supply chain needs to be integrated into the oil and gas company’s central strategies. The oil companies will use contractors based in Asia, US or Europe for the engineering and planning of the projects. They will have little or no knowledge of the local capacity. Establishment of local procurement offices is necessary. There is a need for these companies to have local procurement strategies if local supplier development is to be achieved and aligned to the entire project life cycle and not just parts of it.

To support local procurement, industry contracts needs to be unbundled so that local supplier can manage better.

For local procurement to be successful, local supply chain strategy needs to be aligned to the corporate level supply chain strategy, which should be the case for all oil and gas companies operating in Tanzania.
The above “funnel” findings shows that there are infrastructure challenges in Tanzania as the key finding 5. From the above, the Tanzanian Government will have to revise all the different policies to aid the infrastructure environment to be transformed into a more conducive business environment. Despite improvements, the business environment in Tanzania is still not local suppliers/SMEs friendly, starting from the new business registration system, the barriers to access to finance, the high loan interest rates, the high rate of taxes; income and import taxes, the long cargo clearance lead time, unreliable electricity access, etc. which supports the literature findings of the low ease of doing business and competitiveness in Tanzania. Production Sharing Agreements (PSAs) often contain rules of no VAT for imported goods and services which makes foreign goods more competitive.
It has already been established that Tanzania can use the infant industry argument to have a local content policy as per the WTO. This local content policy should however have target requirements not too far off the current local supplier level aimed at achieving progress slowly. The local content policy should take into account the local supply capacity and be designed to incorporate short term, medium term and long term interventions. For example, if current local supplier capacity in Tanzania is at 10% then the local content requirements can start at 35% then once it is achieved, move up to 50% then 70% then 90% but to start with a local content requirement of 90% while local supplier capacity is 10% would be a disaster. These local content requirements need to be time bound for all involved. It is very common to note the more targets a country sets, the more risk of corruption it faces. The first challenge is to first define local and accurately measure local supplier capacity. This will allow Tanzania to plan achievable targets.

With Tanzania planning to enact a local content policy, there is a level of uncertainty within the industry with fear of having aggressive local content requirements. This study continues to stress that local content requirements should be SMART requirements that can increase over time and time bound. The Tanzanian Government should compare and contrast the achievements and disasters created by local content requirements in different countries.

The industry related policies and frameworks in Tanzania need to consider the above or be reviewed accordingly and if need be then industry specific ones be enacted. Local suppliers should also be given the opportunity to actively express their point of view. There needs to be a revision on the fiscal regime for local suppliers like the tax rate and issuing of subsidies for local suppliers operating in the oil and gas industry. Import duties are still too high in Tanzania and there needs to be a reduction on import duties especially for local suppliers serving the industry. Donor agencies can play a key advisory here.

The Tanzanian Government needs to set up a logistics hub for the entire industry in Mtwara in efforts to solve the lack of centralized logistics problem. LNG Projects in Norway, Angola and Nigeria show that logistics will be an area for major local content opportunities. With the Tanzanian Government efforts, Mtwara port expansion is under plan and initial progress has already begun. The oil and gas industry can continue to make investment in remote site roads improvement as part of their CSR’s initiatives.

Most of oil and gas cargo is very heavy and of abnormal size making it extremely challenging to use road transportation. A solution to this, Tanzania should construct a new railway between Dar-Es-Salaam and Mtwara. The same can be considered for sea freight transportation between Dar-Es-Salaam and Mtwara.
The construction phase of the Tanzanian LNG project expects 10,000 employees, out of which it is estimated 5,000 will be foreigners. There needs to be training and development in preparing the immigration staff to be able to cope with high volumes of paperwork to come during the project.

As part of the local content strategy, Tanzania will need to set up a bank to regulate interest rates to assist local suppliers to access finance. To sum up all the above key findings, Tanzania’s local content needs a good business environment leading to national wealth as illustrated in the below diagram:

To conclude, many of the challenges addressed from key finding 1 to 5 are as a result of the oil and gas industry and its activities being new to Tanzania and at the same time Tanzania is new to the oil companies. This also gives a challenge for the Tanzanian government making capacity building within government to be crucial. The Tanzanian government needs to really understand what will take place as this in itself may be regarded as a challenge.

---

57 Courtesy of Willy Olsen; originally by Heum et. al, 2003 “Enhancement of local content in the upstream oil and gas industry in Nigeria”, SNF-Report no. 25/2003 (page 55)
6.0 RECOMMENDATIONS & CONCLUSIONS

6.1 Introduction

This chapter presents the key recommendations for the three research study’s stakeholders, oil and gas industry, local suppliers and Tanzanian Government in reference to the key findings revealed in chapter 5. These recommendations are aimed at achieving local supplier development that will ensure local supplier suppliers in Tanzania will effectively and efficiently participate within the Tanzania’s LNG supply chain.
6.2 Recommendations

The below key recommendations are presented in relation to the oil and gas industry (figure 59, 60 and 61); local suppliers (figure 62); and Tanzanian government (figure 63, 64 and 65). For each research stakeholder; oil and gas; local suppliers and Tanzanian government – there are short-term, medium-term and long-term recommendations sequenced to show what should preferably be undertaken first and implemented in accordance to the directions of arrows in the below figures. Implementation dates have only been proposed for the key short-term recommendations. A communication and information strategy is needed to facilitate awareness and implementation of all the key recommendations made.

6.2.1 Key Recommendations for the Oil and Gas Industry:

This section illustrates the key recommendations answering the research question 1 highlighted in light blue below:

Research Question 1

• From the demand side, what are the expectations from the oil companies and their global service providers?

Research Question 2

• From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?

Research Question 3

• What is the institutional context that the demand and supply side needs to look at?

Figure 15: Research question for oil and gas industry expectations
The key short term recommendations (July 2013 to January 2014) for the oil and gas industry are:

Figure 59: Short Term Recommendations

- Commission a market research analysis to understand local supplier capacity
- Prepare local supplier development strategies in quick wins
- Establish a supplier information management system
- Have an in house local procurement strategy which anticipates the local content requirements across entire LNG supply chain
- Oil and gas companies to drive down their in house local procurement strategy to their global service providers and make it a contract requirement and train their procurement staff on delivering this strategy
The key medium term recommendations for the oil and gas industry are:

Figure 60: Medium Term Recommendations

Based on results, advice the government on how best the policies and framework could be

Adhere to local content requirements internally or externally (by government)

Prepare and communicate an in-house local content development plan outlining how the company intends to achieve the requirements

Industry joins force to establish an Enterprise Development Centre with a fund for local suppliers

Establish a local supplier development program and appoint an organisation to manage, monitor, evaluate and report performance
The key long term recommendations for the oil and gas industry are:

**Figure 61: Long Term Recommendations**

- Link local suppliers to international suppliers with the purpose of transfer of skills, knowledge and technology.
- Link public institutions, private institutions and newly established small training centres to foreign institutions to offer specific courses.
- The industry should consider establishing an industry specific university to cater for Eastern Africa region, Statoil could lead this.
- Create trade links with other East African/African countries to export newly developed skills from Tanzania.
- Begin to develop lateral markets for new skills developed in local supply chain, including construction and transportation.
- Look to future legacy of construction projects ie. office buildings which can be redeveloped as hotels.
- Look at long term fiscal initiatives such as expatriate taxation to fund local pension schemes etc.
- Build manufacturing capabilities that will outlast recovery of finite resources ie. heavy plant equipment.
6.2.2 Key Recommendations for Local Suppliers

This illustrates the key recommendations answering research question 2 highlighted in green below:

---

**Research Question 1**

- From the demand side, what are the expectations from the oil companies and their global service providers?

**Research Question 2**

- From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?

**Research Question 3**

- What is the institutional context that the demand and supply side needs to look at?

---

*Figure 27: Research question for local supplier capacity*
The key short term recommendations (July to November, 2013) for the local suppliers are:

**Figure 62: Short Term Recommendations**

- Local suppliers who want to participate in this industry, to take initiative to understand the industry even through internet search.
- Local suppliers should reflect carefully and undertake a self-evaluation or diagnosis to assess their individual and collective capacity.
- Local suppliers need to analyze the barriers to entry into serving this industry and brainstorm on solutions and possibility of accessing these solutions.
- Local suppliers should find suitable partners in areas they need capacity building through working together on fulfilling a contract.
- Local suppliers can jointly present their training, management and operational needs to the government through the Ministry or national oil company, TPDC, IOCs.
6.2.3 Recommendations for the Tanzanian Government

This section illustrates the key recommendations answering research question 3 highlighted in beige/orange below:

- **Research Question 1**
  - From the demand side, what are the expectations from the oil companies and their global service providers?

- **Research Question 2**
  - From the supply side, what is the capacity of the local suppliers to deliver the demand side needs?

- **Research Question 3**
  - What is the institutional context that the demand and supply side needs to look at?

*Figure 32: Research question for government impact on institutional context*
The key short term recommendations (July 2013 to February 2014) for the Tanzanian Government are:

**Figure 63: Short Term Recommendations**

- First decide on local content, local suppliers, local goods and services definitions AND assign a small portion of the national budget to local supplier development initiatives
- To review all the current infrastructure, policies and framework in place and establish what needs to be done for this industry to provide solutions
- To evaluate impact from all the local supplier/SME development programs in Tanzania to avoid repetition and understand the challenges
- To conduct discussions between the industry and education system & donor agencies to arrive at a plan of aligning to the new industry education requirements, like TVET, further and tertiary education
- Enact a local content policy and set up a separate authority responsible for local content management
- As a logistics solution, plan for a new railway to be constructed between Dar-Es-Salaam and Mtwara, also consider buying strong speed vessels for transporting cargo between Dar-Es-Salaam and Mtwara AND source funding
The key medium term recommendations for the Tanzanian government are:

**Figure 64: Medium Term Recommendations**

- Communicate proactively and promptly to the public regarding project developments, industry opportunities and highlight that the LNG project is not yet guaranteed like in Mozambique.
- Discuss progress on the industry's activities between July to December, 2013 and map out a list of goods and services to be locally procured like in Angola.
- The local content policy needs to be enacted and should include different stakeholder opinions including local banks, financial institutions and local suppliers.
- The local content policy needs to be comprehensive, realistic and well informed AND a core strategy of the Tanzanian government and industry as a whole.
- To create a stable, enabling and motivating regulatory environment. For example, through incentivizing the funding of local supplier development program.
- Commence new railway construction and procurement of sea freight cargo vessels.
Figure 64: Medium Term Recommendations (continued)

- Examine the plausibility of having an inter-Ministerial advisory committee to make collective decisions and create synergy as needed in matters that require coordinated efforts, like Mozambique.

- Close monitoring and evaluation on how "local" are the joint ventures being established.

- The local content policy should be enforced to the mining sector, covering the entire extractive industry of Tanzania.

- Local supplier development initiatives should not just benefit companies based in Dar-Es-Salaam or those that have experience in the mining sector but also companies based in Mtwara, Lindi.

- Newly established companies owned and managed by subject professionals should be included in the local supplier development initiatives.
The key long term recommendations for the Tanzanian government are:

**Figure 65: Long Term Recommendations**

- There needs to be an independent government body monitoring and evaluating the Tanzania local content development like the Nigerian Content Development and Monitoring Board.
- There needs to have an independent government body that will regulate activities of the Tanzania’s Proposed Project with clear powers assigned to them.
- Establish access to finance solutions for local suppliers not just through the EDC but also through; offering credit guarantees to banks, offering subsidies, seed money etc.
- Establish a centre to assist local firms to prepare business plans, tender bids, loan applications, business and finance management.
- Establish Tanzania as the Eastern Africa Local Supplier Development Hub.

To conclude this section, it is crucial for the Tanzania’s Proposed LNG Project not to be treated as a stand-alone model but reference needs to be made to the growing trends across the industry sectors. Tanzania should adopt a cross-sector view on this project in efforts to find areas in which local suppliers within the LNG project can diversify into other sectors and vice versa.

Developing local suppliers alone might not be enough to guarantee their effective and efficient participation, if the people who have the responsibility to work with them do not understand the importance of engaging with local suppliers, the buyers, sourcing and procurement staff, supervisors, managers of the purchasing organization of the oil and gas companies. Therefore, the local supplier development program should allocate a budget for training the buyers of the procurement of the procurement departments of companies in the oil and gas industry.
6.2.4 Recommendations to achieving a multiplier effect that will lead to economic growth in Tanzania through local supplier development

The key recommendations are:

- Tanzania needs to adapt a stable fiscal regime
- Tanzania needs to build a fiscal buffer
- Tanzania needs to carefully evaluate the return of each project before starting
- Tanzania should not do things beyond its absorptive capacity. If the absorptive capacity will be found to be low, temporary saving of money can be done and wait till the absorptive capacity has improved and then start investing.

The below diagram shows the economic impact of the oil and gas activities:

**Economic impact of oil and gas activities**

**The direct and indirect value creation**

*Figure 66: Source: Permission to use granted by Mr. Willy Olsen*
6.2.5 Proposed Tanzania’s Local Supplier Development Program

Prior to designing a local supplier development, as already mentioned in the previous chapters, it will first be necessary to perform a detailed and thorough demand side, supply side analysis and a gap assessment, which is hereunder being proposed in three phases (adopted from DAI, www.dai.org):

**Figure 67: Initial 3 phases**

With the above information in place, it will then become possible to design the local supplier development. In this research study, it is being proposed that there needs to be a pilot on the local supplier development program which should focus on one or two commodity products. The pilot therefore could consider products and services that have a low barrier to entry for local supplier as they close to current capacity like; technical skills and based services as well as plant construction and operation goods. This pilot should be typically designed like a business linkage program with capacity building, which contained to specific technical areas.
This research study further proposes the local supplier development program be also split in 3 phases (with phase 1 covering the pilot) focusing on goods and service as per their barrier to entry for local suppliers as shown hereunder:

**Phase 1**
- goods and services with low barrier to entry for local suppliers
- results 0 - 2 years

**Phase 2**
- goods and services with medium barrier to entry for local suppliers
- results 3 - 4 years

**Phase 3**
- goods and services with high barrier to entry for local suppliers
- results 4 years+

*Figure 68: Next 3 phases including pilot*
The following are the key milestones which need to be considered and achieved in the Tanzania’s local supplier development pilot program for the oil and gas industry:

**Figure 69: Key milestones**

- Review existing supplier development programs in Tanzania
- Review infrastructure challenges and related policies
- Business case to be completed
- SMEs recruited
- Supply chain engaged
- Supplier development funding secured
- Online registry for local suppliers & certification
- Supplier development program in place
- Local suppliers promptly linked to EPC contractors
The start-up of any project including the local supplier development program is always the most important. Enough time needs to be taken during the planning stage to avoid the need of going back and forth. It may not be realistic to assume that it will be possible to have the right persons with necessary capacity available in enough time at the start of the project hence the importance of early thorough planning. The below is a proposed local supplier development program plan outlining the key short term recommendations for each stakeholder and the pilot program, which will need to be discussed and agreed upon, as it is the case with any plan. Consultations between stakeholders are recommended to avoid confusion and build consistency.

**Key short term recommendations for the oil and gas industry – time frame**

<table>
<thead>
<tr>
<th>Task</th>
<th>Task Name</th>
<th>Durat</th>
<th>Start</th>
<th>Finish</th>
<th>Predect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>for the oil and gas industry (key short term recommendations)</td>
<td>155 days</td>
<td>Mon 7/1/13</td>
<td>Fri 1/31/14</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>commission a market research analysis to understand local supplier capacity</td>
<td>66 days</td>
<td>Mon 7/1/13</td>
<td>Mon 9/5/13</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Prepare local supplier development strategies in quick</td>
<td>23 days</td>
<td>Tue 10/1/13</td>
<td>Thu 10/31/13</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>establish a supplier information management system</td>
<td>42 days</td>
<td>Fri 11/1/13</td>
<td>Mon 12/30/13</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>have inhouse local procurement strategy</td>
<td>24 days</td>
<td>Tue 12/31/13</td>
<td>Fri 1/31/14</td>
<td>4</td>
</tr>
</tbody>
</table>
Key short term recommendations for the local suppliers – time frame

<table>
<thead>
<tr>
<th>Task</th>
<th>Task Name</th>
<th>Durat</th>
<th>Start</th>
<th>Finish</th>
<th>Predect</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>for the local suppliers (key short term recommendations)</td>
<td>107 days</td>
<td>Mon 7/1/13</td>
<td>Tue 8/15/13</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>take initiative to understand the oil and gas industry</td>
<td>23 days</td>
<td>Mon 7/1/13</td>
<td>Wed 7/15/13</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>undertake self-evaluations to assess their individual and collective capacity</td>
<td>20 days</td>
<td>Thu 8/1/13</td>
<td>Wed 8/28/13</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>analyze the barriers to entry into serving this industry and source solutions</td>
<td>20 days</td>
<td>Thu 6/1/13</td>
<td>Wed 6/28/13</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>seek potential partnerships with international suppliers</td>
<td>44 days</td>
<td>Thu 6/29/13</td>
<td>Tue 10/29/13</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>present their training, management and operational needs to the government</td>
<td>20 days</td>
<td>Wed 10/30/13</td>
<td>Tue 11/26/13</td>
<td></td>
</tr>
</tbody>
</table>
Key short term recommendations for the Tanzanian government – time frame

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start</th>
<th>Finish</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a detailed plan for the Tanzanian government (key short term recommendations)</td>
<td>Mon 7/1/13</td>
<td>Fri 2/28/14</td>
<td>175 days</td>
</tr>
<tr>
<td>Have a clear definition of local content, local supplier, local goods</td>
<td>Mon 7/1/13</td>
<td>Wed 7/31/13</td>
<td>23 days</td>
</tr>
<tr>
<td>Review all current infrastructure, policies and framework in place and establish what needs to be done</td>
<td>Thu 8/1/13</td>
<td>Wed 11/27/13</td>
<td>83 days</td>
</tr>
<tr>
<td>Conduct discussions for aligning to the new industry education requirements</td>
<td>Thu 8/1/13</td>
<td>Wed 11/27/13</td>
<td>85 days</td>
</tr>
<tr>
<td>Enact a local content policy and set up a separate authority responsible for local content management</td>
<td>Thu 11/28/13</td>
<td>Fri 2/28/14</td>
<td>67 days</td>
</tr>
</tbody>
</table>
The Tanzania’s Proposed Local Supplier Development Pilot Program – time frame

Figure 70: Proposed Local supplier development pilot program (2 years) Gantt chart – Quick Wins
To conclude, it is recommended that in order for the local supplier development pilot program to commence and be successful, the key short term recommendations for each of the three research stakeholders need to be have been implemented first. The implementation process is estimated to take about 7 months. The local supplier development pilot program to follow thereafter will take two years. At month 18 of the local supplier development pilot program, strategic and concrete plans for the key medium term and long term recommendations need to take place.
6.3 Proposed Local Supplier Development Pilot Program’s Costs

6.3.1 Introduction

In line with the recommendations, this section provides an overview of the local supplier development program costs as identified.

6.3.2 IFC – Local Supplier Development Program Costs

The IFC developed a local content and supplier development – a conceptual tool kit, whereby the local supplier development is said to have an average cost of US $ 2 million over a three year period, reference can be made to the below diagram.\(^{59}\)

---

\(^{58}\) Local Content and Supplier Development – A Conceptual Toolkit Presentation by IFC, Private Enterprise Partnership for Africa (PEP Africa), Johannesburg, South Africa – Global Local Content Summit for Oil and Gas 2006

\(^{59}\) Courtesy of Michael Hackenbruch

---

The IFC recognizes one of the major challenges of local suppliers is access to finance and the below diagram shows how a supplier finance facility for SME Linkage programs can be established:

Such a facility like the above should be oil and gas industry specific.

---

60 Courtesy of Michael Hackenbruch
6.3.3 Tanzania – Expected Local Supplier Development Pilot Program Costs

Based on literature review and interviews made, local supplier development programs are said to cost between US $ 2 – 3 million for a three year project, with separate cost for setting up an Enterprise Development Centre. For example, Ghana’s recent Enterprise Development Centre was started with US $ 5 million fund. The return on investment is said to be immediate in some sectors while in others being long term. The size of funding for either the local supplier development program or supplier finance facility or enterprise development centre may differ from one country to another.

It is necessary to highlight that another facility that could be considered would be a grant-making facility to offer small grants as seed money to nascent supplier companies especially those by graduates leading to their empowerment.

Among others, one of the most strategic sectors that Tanzania needs to start investing in is the fabrication yard. Building the supplier capacity in fabrication yard is said to take about 5 – 7 years. The amount of investment in local supplier development widely depends on the oil company, host government making it not the same in each country or project. For example, Saipem is investment US $ 300 million in Santos, Brazil and the president of Investe SP, Luciano Almeida stated that, “We are offering free assistance for the companies to enable the investment of US $ 300 million, which will generate approximately 950 direct jobs for the region”. 61

Although, it was not possible to arrive at the expected key short term recommendations’ implementation costs and local supplier development pilot program costs in Tanzania, the above mentioned costs gives an idea of what sort of figures are to be expected.

---

61 http://www.investe.sp.gov.br/noticias/lenoticia.php?id=16524&c=6&lang=3
6.4 Conclusions

From this research any of the three key research stakeholders or anyone who has an interest in the research subject, will find a framework for achieving sustainable and tangible local supplier development in the oil and gas industry, which can also be adopted into the mining sector. Inspiration and motivation gained from international local content consultants was of great added value.

In the current global economic climate, the role of Local Content in stimulating jobs, skilling the workforce, growing supplier competitiveness and protecting or growing a nation’s strategic industries is becoming increasingly apparent. As a result, national governments have developed regulations and policies aimed at increasing and in some cases incentivizing the participation of local suppliers in the supply chain. This is the first and most paramount driver of local content development in oil and gas rich states and Tanzania is not an exception. Therefore, in the last ten years or more, Local Content supplier development has been principally driven by compliance requirements and performance target specifications imposed by governments. Also becoming apparent is that local content is driven by government economic priorities i.e. using the supply chain expenditure to drive the development of strategic sectors of national significance like the development of Brazil and Nigeria’s fabrication and engineering industry.

The overwhelming crisis in unemployment especially in developing countries, are also a major driver of local content development and strategies. Not to mention the poor standard of education, technical competencies and skills in these oil rich developing economies. This is increasing the pressure on oil and gas companies to address these challenges as part of their corporate social responsibilities or as part of their overall long term business strategy. In order for extractive companies to maintain their license to operate, keep healthy and keep working relationships with host governments, build country-needed reputation and profile, achieve a smoother market entry and acquisition profile, attention to local content regulations by way of supplier development initiatives has become crucial.

Local supplier development is a business sustainability offering to the extractive industry with benefit to all stake-holders – government, communities, operators, service providers, non-governmental organizations etc. Therefore smart companies should invest in local supplier development so as to benefit optimally while operating in local content inclined host countries. This is achieved through the development of an overarching local content and supplier development strategy embedded in the oil and gas supply chain. The government of Tanzania therefore has a leading role to provide robust policies to incentivize other stakeholders to commit to local supplier development with a clear business case for such commitments on the long term.
There is no arguing that developing local suppliers within the oil and gas supply chain is fast becoming a global practice but the differences in national premises, regional peculiarities and in several cases company-specific priorities makes this challenging. This is especially so for business conglomerates who operate in diverse locations. It is therefore expedient that ample time and resources are invested in getting the right approaches, models, strategies and initiatives to grow local content in the short, medium and long term. It is hoped that various consultations with regards to supplier development and local content will consider the relevance of the recommendations contained in this report.

It is herein noted that Tanzania has to communicate the magnitude of the domestic gas market’s contribution to Tanzania’s development and economic growth. The potential opportunities for local suppliers need to be known to ensure effective and efficient participation of local suppliers in the domestic gas market projects. The local content policy should also cover major domestic gas market activities leading to knowledge, skills transfer, and other benefits.

This study has elaborated on the crucial challenges, opportunities and strategies for local supplier development in Tanzania LNG Supply chain against the backdrop of learning and experiences from other regions and it is hoped that it becomes a reference material for the key stakeholders in this new and growing industry both in Tanzania and within the Eastern Africa Region.
The mapping and matching local content opportunities diagram below concludes this research study:

**Figure 2: Mapping and matching local content opportunities**

Phase | Activity | Possible Interventions
--- | --- | ---
Feasibility | Define Project Requirements:  
- Direct employment  
- Products & services & Operation  
Map existing local skills and product and service provision capabilities  
Identify potential “local content” areas:  
- Match existing skills and capabilities with project needs  
- Future potential areas if barriers to entry are reduced  
- For both focus on areas with long term potential  | Proactive activities to remove local short term ‘barriers to entry’  
- Workshops to explain project, timing, contractor selection process etc.  
- Skills training  
- HSEQ training  
- Accreditation schemes  
Access to finance  
Support local Business Associations

Construction | Include local content regtns. in bidding process with EPC Contractor  
Remove specific local content areas from EPC contract and manage directly  
Include local content regtnts. (employment and products and services) in EPC Contractor contract.  
Agree with local businesses (e.g. through a negotiated business alliance) areas of mutual interest and benefit.  
Monitor EPC compliance with local content regtnts. and work with EPC contractor where relevant | Proactive activities to remove long term ‘barriers to entry’  
- Education & university scholarships  
- Specific training centres  
- On the job training  
- Facilitate access of SMEs to finance and loans  
- Ongoing training in areas such as HSE, on-line bidding etc.  
- Introducing successful contractors to other companies  
- HIV/AIDS contractor support  
- Influence regulatory framework

Operation | Activities to enhance local supply chain opportunities related to projects ongoing operation (e.g. making certain work-scopes only available to local suppliers).  
Activities to enhance major Contractors use of local contractors, (e.g. requirement that major contractors have local content targets and train local suppliers).  
Long term strategy to reduce dependency of local companies on specific project or activity. |  

**Figure 71: Source:** Fossgard-Moser, T. (2002) Promoting sustainable development through enhancing local employment and supply chain opportunities generated by energy companies: The case of the Shell Group. Greener Management International. Issue 43. 79-92
6.5 Further Research

This study was not able to establish the sustainable and tangible multiplier effect of local supplier development/SMEs development programs that potentially lead to economic growth in a developing country like Tanzania. It was further not possible to even arrive at this multiplier effect based on the investment made through the current exploration activities in Tanzania, making this a potential area for further research.

It was also not possible to estimate costs for the key short term recommendations implementation, local supplier development pilot program costs and establish a true return on investment (ROI) of a local supplier development program for oil, gas and mining sector in a developing country like Tanzania, again calling for further research.

The Tanzania’s domestic gas market was not covered in this study, calling for further research in particular to understand the local supplier opportunities and participation.

Tanzania needs to perform a detailed demand side and supply side analysis and gap assessment for the entire LNG supply chain to clearly map the areas that will provide quick wins. This will be of great help when deciding which goods and services sectors to be included in the first phase and subsequent phases of the local supplier development program. With this a local supplier database should be created.

Working on my MBA Research Project, that took 4 solid months over a period of 8 months, led me to find a niche area of specialization that I have developed a great interest in and enjoy very much, this is local content/local supplier development/global local supply chain/sustainable development etc. Through my intensive practical research, today, I have global leaders in local content as my mentors who will assist my development as a local content expert. I have actually developed into being a Supply Chain/Local Content/Supplier Development Specialist. It is now my aim to first publish several findings from this MBA Project which can be of benefit to the entire industry in different countries, especially Eastern Africa countries.

Further research would be of value including researching the representation of women owned and managed businesses as local suppliers to the extractive industries and how might a local content policy impact this. I would be interested to investigate the possibility of doing a PhD on this matter.

I also look forward to taking part in different research projects covering this area or any related areas like the multiplier effect, ROI and local supplier opportunities within the domestic gas market mentioned above.
REFERENCES

1. Shells’ Onshore Gap Analysis – August, 2011. Permission to use the intellectual property granted by Simbi Wabote, Global Local Content Manager: Originally prepared by Willy Olsen
2. Benchmarking Africa’s Cost and Competitiveness, Chapter 1.4 by Giuseppe Iarossi – World Bank Report
4. www.clubofmozambique.com 14/05/2013
5. Statoil’s LNG Marketing Presentation to TPDC 17/01/2013
6. Tanzania to ask BG and Statoil for LNG project development, Bloomberg 18/01/2012
7. Statoil, BG Plan LNG Plant to Develop Tanzania Natural Gas Finds, Bloomberg, 18/03/2013
8. Interview communication with Brian Imray, May 2013
9. Local Content Policy: Kazakhstan Review by Saule Ospanova
10. IFC – A guide to getting started in local procurement – for companies seeking the benefits of linkages with local SMEs in collaboration with Engineers Against Poverty
11. SR Mining 2011 First International Seminar on Social Responsibility in Mining – Integrating Social and Economic Impact Assessment into Local Procurement by Ana Maria Esteves, Mary-Anne Barclay and David Brereton
12. Michael Hackebruch, 2011 ww.bsr.org
13. IPIECA Local Content Strategy – A guidance document for the oil and gas industry Social Responsibility – 2011
14. Local SME Participation in the Supply Chain of Australian Mining, Oil and Gas Companies, Interim Report on Phase 2 – Issues and Emerging Good Practice by Ana Maria Esteves, Mary-Anne Barclay, Daniel Samson and David Brereton
15. IPIECA Local Content Strategy – A guidance document for the oil and gas industry social responsibility - 2011
17. Willy Olsen’s experience in the country
18. Statoil’s LNG Marketing Presentation to TPDC 17/01/2013
19. Permission to use intellectual property granted by Leida Schuman, Enterprise Development Manager at DAI, South Africa Office
20. Increasing Local Content in the procurement of infrastructure projects in low income countries – Briefing Note by Dr. Jill Wells of Engineers Against Poverty and John Hawkins of ICE, 2008
21. Vaaland, I.T, Soneye, S.A and Owusu, A.R; Local content and struggling supplier; A network analysis of Nigeria oil and gas industry – 2012
22. Energy & oil interest publication in Brazil 06/08/2011
Constraints and Opportunities for SMEs, Investing in Uganda’s Oil and Gas Sector by Rebeca Nalumu Wamomo, Prosie Kikabi and Dr. Johnny Mugisha, March, 2012
www.globalnewsreel.com 02/11/2011

www.ghanabusinessnews.com
SAOGA, 2011

Angola American Report, 2011

Prof. Jackson Mwakali, Per Heum and Ole Frederick Ekern, 2011


World Bank Report in 2008 by Iarossi (page 20)

Do Local Content Regulations Drive National Competitiveness or Create a Pathway to Protectionism by Dr. Michael Warner, March 2011

Courtesy of Michael Hackenbruch, Principal Advisor at Urbanpol


WTO ‘members and observers’
http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm

A World Bank Document: Increasing local procurement by the mining industry in West Africa (January 2012), page 66

DFID 11-718: Protectionism; Trade and Investment Analytical Papers Topic 5 of 18. Department for Business Innovation & Skills


WTO – Certain Measures taken by Nigeria in the “Act to provide the development of Nigerian Content in the Nigerian Oil and Gas Industry” of April, 2010

Nigeria Local Content Requirements in the Oil and Gas Sector (the Nigerian Content Development Act) TRIMS Committee of 3/10/2011

WTO Expected to Rule Against Local Content Requirements by Marc Norman 22/10/2012

TOFCO presentation on local content impact, page 33

Courtesy: Michael Hackebruch


Local Content Policy in the Petroleum Sector in Tanzania: Core Issues, Expenditure Categories and Road Map by Dr. Michael Warner, March, 2012
Model Production Sharing Agreement (PSA) between the Government of the United Republic of Tanzania and Tanzania Petroleum Development Corporation and ABC Ltd For Any Area by Dr. Michael Warner, 2012

Willy Olsen, former advisor to the President and CEO of Statoil

Assessing Private Sector Contributions to Job Creation and Poverty Reduction, Open Source Study by International Finance Corporation, Preliminary Literature Review

In multiplier effect, it is believed that “the greater the marginal propensity to consume, the greater the multiplier effect”. The formula commonly used is:

\[ MPC = \frac{\text{the change in consumption}}{\text{The change in disposable income}} \]


See IFC table

Interview discussion with Simbi Wabote, Global Local Content Manager, Shell

http://www.people.ku.edu/~asiedu/world-economy.pdf


Table 1 to 6 is from the Nigerian Oil and Gas Gap Analysis. Permission to use intellectual property granted by Olesegun Adebayo, Shell, Nigeria

Local Content Development, What will it take? Presentation in Cambodia, 2008 by Willy Olsen, Senior Advisor at INSTOK (Norwegian Oil and Gas Foundation) and Member of the Governing Body at Revenue Watch Institute

Courtesy of Willy Olsen; originally by Heum et. al, 2003 “Enhancement of local content in the upstream oil and gas industry in Nigeria”, SNF-Report no. 25/2003 (page 55)

Local Content and Supplier Development – A Conceptual Toolkit Presentation by IFC, Private Enterprise Partnership for Africa (PEP Africa), Johannesburg, South Africa – Global Local Content Summit for Oil and Gas 2006

Courtesy of Michael Hackenbruch

http://www.investe.sp.gov.br/noticias/lenoticia.php?id=16524&c=6&lang=3
BIBLIOGRAPHY

Literature:

1. Ernst & Young, 2012, Navigating Joint Ventures in the Oil and Gas Industry
5. Oil and Gas, IQPC, 2012, 4 ways in which local content can lead to local contentment
7. Oil and Gas, IQPC, 2012, Just how much local content is too much?
8. Oil and Gas, IQPC, 2011, Local Content Survey Report
9. Oil and Gas, IQPC, 2011 or 2012? Making the benefits of local content universal
10. Oil and Gas, IQPC, 2011 or 2012? Nigeria looks to a local content future
11. Oil and Gas, IQPC, 2012, Progression towards local content in Uganda
13. Warner M., Briefing Note, 8, Incentivizing local economic development in the extractive industries sector through transaction chain analysis with case examples from Timor – Leste
16. Employment, Procurement and the Non-Oil Economy – Azerbajijn
19. Wamomo W.R., Kikabi P., and Mugisha J., 2012, Constraints and Opportunities for SMEs investing in Uganda’s Oil and Gas Sector
22. Local Content Impact in Procurement – Presentation
23. Caldwell B., 2012, Local and Aboriginal Contractor Procurement Initiatives
24. Kaiser Associates, 2003, Fridge Procurement Project Strategic Recommendations
26. Hanlin C., 2011, The drive to increase local content procurement in the mining sector in Africa: Myth or Reality
27. Heum P., 2008, Local content development – experience from the oil and gas activities in Norway. SNF Working Paper No. 02/08
28. Utvikling F. O., 2008, Ghana. SNF Project No 1285 under SNF Working Paper No. 02/08 (same as no 27 above)
30. Yeboah, S, 2012? How content would Ghana’s Local Content Policy be?
34. The new Nigerian Oil and Gas Industry Content Development Act in Brief
35. Nigerian Local Content Policy Presentation
36. Tehrani F., 2006, Norwegian Petroleum “local content” and the relevance to Iran. Presentation at the Global Local Content Summit for Oil and Gas
37. Al Kasim F., The relevance of the Norwegian Model to Developing Countries. NORAD Seminar run by Olje For Utvikling
38. Nore P (Director Oil for Development NORAD)., 2008, Petroleum Management and Industry Policies incl. Local Content and Technology Development
39. Akindelano Legal Practitioners, Review of Nigeria’s Content Legislation
41. The Petrobras Local Content Policy, 2012
42. Developing Local Content Programs. Insight from Accenture for Global Players to Achieve High Performance in today’s competitiveness energy landscape. 2012?
43. Warner. M., 2010, Local Content in Formulation of Invitation to Tender and Tender Evaluation for Major Contracts
44. Government of Western Australia. Department of State Development, Department of Commerce. Local Content Report 2011
45. Africa Investor, 2011, Business/Infrastructure – Local Content
47. Okusami D., 2010, an overview of the Nigerian Local Content Act. A presentation given at the “Africa Energy Week” conference in Cape Town, South Africa
48. Hanna J., Staff Writer (Mining Weekly), 2011, Legislative Environment – Local Content. Significant drive towards increasing Local Content
51. Warner M., 2010, Unpacking Local Content Metrics and Measurement
52. Warner M., 2010, Role of Procurement Strategy in Effective Local Content Management
53. UN, 2002, Economic and Social Commission for Asia and the Pacific. Commercial Development of Regional Ports as Logistics Centre
54. Statoil, 2012, Presentation of Road Upgrade Opportunities for suppliers in Tanzania
55. Instefjord O., 2010, Reflection on Norwegian Experience within the Oil and Gas Sector. Grata law Firm Seminar
61. Mari Sako., 2003, Supplier Development at Honda, Nissan and Toyota; Comparative case studies of organizational capability enhancement
63. The Impact of Supplier Development on Supplier Performance: The Role of Buyer-Supplier Commitment, Thailand. 2012. European Journal of Business and Management. Vol. 4, No 16
64. Crombrugghe D.A., and Coq L.G., 2003, UNIDO Guide to Supplier Development Programs to be implemented by Industrial Sub Contracting and Partnership Exchanges (SPXs)
68. Fluor Local Content and Case Study for MENA Region
69. Australian Pacific LNG Local Content Policy – APLNG Supply Chain
71. BP, 2011, BP Tangguh LNG Verified Site Report
73. Imray B., 2012, Uganda Collaborative Procurement and Local Content Development Workshop
75. UNDP, 2008, Creating Value For all: Strategies for doing business with the poor
78. SASOL, Supplier Management Process Presentation
79. Angola Ministerial Order No 127/03, 2003
82. Nigeria Local Content Amendments Bill, 2013
83. Nigerian Oil and Gas Industry Content Development Bill, 2010 – Explanatory Memorandum
84. OECD Guidelines for Multinational Enterprises, 2008
85. Global Construction 2020. A global forecast for the construction industry over the next decade to 2020
86. Trinidad and Tobago Local Content Policy, 2004 – Local Content & Local Participation Policy and Framework for the Republic of Trinidad & Tobago. Energy Sector Presentation.
88. World Economic Forum, the Global Competitiveness Report 2010 – 2011
89. Warner M., 2012, Local Content Policy in the Petroleum Sector in Tanzania: Core Issues, Expenditure Categories and Road Map
90. Hackenbruch M., 2012, Insight into Local Content in the Mining Industry Presentation at Global Local Content Summit. Urbanpol
91. Ernst & Young, 2012, Turn Risks and Opportunities into Results. Exploring the top 10 risks and opportunities for global organisations. Oil and Gas Sector.
94. World Bank CSD, Measuring Social Value Creation at Saipem’s Karimun Island Fabrication Yard in Indonesia
95. Ernst & Young, 2012? Global LNG – Will new demand and new supply mean new pricing?
98. Tanzania Draft Gas Policy
100. Dr. Michael Warner, 2011, Local Content in Procurement. Creating local jobs and competitive domestic industries in supply chain (textbook)
102. Stern J., (edited by), Natural Gas in Asia. The challenges of growth in China, India, Japan and Korea (textbook)
104. Sidorov, A.N., 1985, Drilling oil and gas wells (English version) – (textbook)
105. Jacobsen R.A, (forward by Knut Henrik Dalland), Snohvit, The history of oil and gas in the Barents Sea (textbook)
APPENDICES

Appendix 1 – Interview Guide: Questionnaire Type

Special Note:

I truly appreciate you taking the time off your demanding schedule to contribute to building my knowledge and understanding on my research focus.

This is a comprehensive set of questions, which I usually provide before an interview and then either we go through the different questions in at least 1-3 interview sessions or I receive typed in answer on them or the mix of the two options.

Although it is my hope that you will answer/we will go through all questions, please kindly feel free to provide answer to the questions you feel you can best answer. For specific LNG questions, if you don’t have experience in this, please share with me your perspective on the specific sector you have experience in like mining sector.

Many thanks.

Local Supplier Development Questions which I seek to get a better understanding of:

1. Do most companies in mining sector have local procurement strategies?

2. Do most companies in the oil and gas sector have local procurement strategies?

3. What is the demand for local procurement? What are opportunities are there?

4. What are the materials and service providing opportunities that can be made available for local suppliers within each supply chain of each main element of the LNG Supply Chain?
   - For example, materials and service providing opportunities within the Exploration Supply Chain?
   - Within the LNG Plant Construction Supply Chain?
   - Within the Production Supply Chain etc.?

5. What are the special requirements for local suppliers to have in order to participate in the extractive industry supply chain?
6. What is the general gap in the local supplier capacity in a country where the oil and gas/mining industry is in its infancy stages like Tanzania?

7. What are the risks associated in dealing with local suppliers?

8. How can the risk of dealing with local suppliers be managed?

9. How can local suppliers’ competitiveness be built?

10. What are the challenges faced by local suppliers? SMEs within the oil and gas/mining industry?

11. What are the capability requirements that local suppliers that need to have in terms of skills & capacity?

12. Should supplier development be done in phases per industry or all at once? Like first catering, then logistics, then ….?

13. On average how long does it take to successfully manage a supplier development project?

14. On average what is the cost of successfully managing supplier development? Is this cost for one supplier or an industry segment like logistics?

15. Who is to invest in local supplier development?

16. How can the Government and the oil and gas companies work together to ensure that local supplier development is achieved and successfully with an positive impact on the nation’s GDP growth?

17. What is the possible ROI (Return on Investment) of a supplier development project? In how many years can this ROI start to be seen?

18. What are the advantages to the international oil and gas/mining companies and their core service providers to have a developed local supply chain?

19. How can local supplier development be measured if it has been achieved?
20. What lessons can be learnt from your experience that could be beneficial to the local supplier development in the Mining/LNG Supply Chain? Do you have any reference on projects done where the ROI has been calculated?

21. What is the best procurement practice any small business should have in order to build a procurement strategy?

22. How can the Tanzania’s National Local Content Policy ensure that local supplier development is achieved?

23. How can Tanzania ensure that the “local” in local content is clearly defined in the local content policy?
24. What are the challenges and limitations that you see in local supplier development in for any LNG project? Or other projects?

25. How can a developing country like Tanzania which is listed amongst the poorest countries in the world enforce a local content policy and ensure that it is not in breach of the WTO agreements on TRIMs (Trade-Related Investment Measures), GATS (the General Agreement on Trade in Services) and GPA (Government Procurement Agreement)?

26. Is there any advice, additional information, past presentations made or documents that you can provide for me?
Local Supplier Development Tools:

It will be highly appreciated to get reference to the best tools that can be used for local supplier development and measurement:

1. Six Sigma usage in local suppliers risk assessment
2. Local supplier evaluation tool
3. Local supplier sourcing tool
4. ROI on Local Supplier Development model
5. Segmentation of local supplier developments:
   - What is the best way to segment local supplier developments?
   - Is it by spend?
   - Is it by the potential they show?
6. In a new country like Tanzania where the oil and gas industry is new, how can one propose setting up a Joint Venture for Supplier Development for oil and gas companies who can share the usage of the same suppliers? Is this practical since they will be competitors, for example Statoil, BG Group and Petrobras join forces to supplier development in Tanzania?
7. What is the best way to measure local supplier development achievement
8. Any other tools
**Current Local Supplier Capacity:**

I am working on developing a comparative table on the current local supplier capacity potentially 9 countries, although depending on the data collected the country number might change. The countries are Angola, Brazil, Ghana, Kazakhstan, Nigeria, Mozambique, Oman, Tanzania and Uganda. However, please feel free to share with me your insight on any of these countries or others that I forgot of. I understand that some mining, oil and gas companies have such data readily available and it is my hope that you might have come across this or something close to this.

1. What are the current local supplier in terms of goods and services provided at full capacity?
2. What are the list of goods and services where the capacity is there but needs improvement to ensure that the local suppliers are able to meet the standards required?
3. What are the list of goods and services where the capacity is non-existing and capacity need to be developed?
Appendix 2 – Interview Guide: Multiplier Effect Questionnaire Type

Questions on Multiplier Effect:

**How can the Tanzania’s Proposed LNG Project create a multiplier effect that will lead to the economic growth of the country, Tanzania?**

1. In your perspective how can you best define a multiplier effect?

2. What are the different methods used to calculate the multiplier effect in developing countries like Tanzania? Can you provide at least an insight from 3 or 4 countries similar to Tanzania? Also, what is the best method of calculating the multiplier effect in such countries?

3. What is the relationship between the country’s GDP and the multiplier effect in the 3 or 4 countries mentioned above?

4. Do you have any examples of projects that led to the creation of sustainable and credible multiplier effect that further created economic growth in the 3 or countries mentioned above? Examples of projects that failed? What were the challenges experienced?

5. What would you consider to be the benefits of a multiplier effect?

6. What would you consider to be the limitations of a multiplier effect? The leakages of a multiplier effect?

7. Tanzania is considering establishing a Sovereign Wealth Fund with the potential LNG exports revenue in mind. What is your opinion of a developing country like Tanzania in establishing such a fund? Do you have any examples of a similar that has done so successfully? Or unsuccessfully? I wish to establish some key lessons learnt, what you happen to know of any?
8. In light of the above and your own personal experience in the different developing countries, what would be your recommendation to the Tanzanian government in their efforts to ensure that the Tanzania’s Proposed LNG Project does create a multiplier effect that will lead to the economic growth of the country?

9. What would the recommendations to the oil and gas industry?

10. What are the key things that need to be in order to pave way for such a project to indeed create such a desired multiplier effect?
Appendix 3 – Abbreviations and Acronyms

BG Group: British IOC
BNOC: British National Oil Corporation
CAE: Centro de Apoio Empresarial
CPI: Corruption Perception Index
CSDP: Competitive Supplier Development Program
DAI: International development consulting firm
DFID: Department for International Development
EDC: Enterprise Development Centre
ENI: Italian IOC
EPC: Engineering, Procurement and Construction
FEED: Front End Engineering Design
FSPO: Floating Production, Storage and Offloading
GATs: The General Agreement and Trade in Services
GATT: General Agreement on Tariff and Trade
GPA: The Agreement on Government Procurement
IGU: International Gas Union
IOC: International Oil Company
IPIECA: International Petroleum Industry Environmental Conservation Association
KPI: Key Performance Indicators
LNG: Liquefied Natural Gas
MBA: Master of Business Administration
NCDMB: Nigerian Content Development and Monitoring Board
NOC: National Oil Company
NORAD: Norwegian Agency for Development Cooperation
OSO: Offshore Supply Office
PCCB: Prevention and Combating of Corruption Bureau
PNG: Papua New Guinea
PSA: Production Sharing Agreement
SAIPEM: Italian EPC Contractor
SIDO: Small Industries Development Organisation
SME: Small and Medium Enterprise
Statoil: Norwegian NOC/IOC
TIC: Tanzania Investment Centre
TPDC: Tanzania Petroleum Development Corporation
TRIMs: Trade-Related Investment Measures
UK: United Kingdom
UNCTAD: United Nations Conference on Trade and Development
US: United States of America
VETA: Vocational Education Training Authority
VSO: Volunteer Service Overseas
WTO: World Trade Organisation
Appendix 4 – Figures

1. Planning local participation early
2. Stakeholders and expected results
3. The supply chain pyramid, highest value created at the top
4. LNG supply chain
5. CPI, ease of doing business and competitive ranking comparison
6. Block 2 operated by Statoil
7. Baseline of what is currently happening in Tanzania
8. Possible development scenario of LNG plant size in Tanzania
9. Major oil players in Tanzania – current and expected
10. Typical employment illustration development of an LNG project
11. Research questions
12. Step 1 to Step 6 of the research methodology
13. Key words used in web search
14. Interviewee List
15. Research questions for oil and gas industry expectations
16. Level I to Level III of supplier development – Exxon Mobil
17. Start I to Star III of supplier development – Exxon Mobil
18. Opportunities for local suppliers
19. Comparison of opportunities in figure 18 and in Tanzania
20. Who is responsible for communicating the oil and gas industry needs
21. Tanzania LNG Project timeline
22. Supporting internal and external alignment of local content
23. Azerbaijan supplier development
24. Supplier development – international company lead
25. DAI’s Economic Development Centre
26. DAI’s Business Linkage Program
27. Research questions for local supplier capacity
28. Oil and gas industry needs with expected high spend and high compliance standard required
29. Oil and gas industry needs with expected medium spend and medium compliance standard required
30. Oil and gas industry needs with expected low spend and low compliance standard required
31. Oil and gas industry needs where local suppliers have minimal or zero capacity
32. Research questions for government impact on institutional context
33. Country comparison on analysis on the different local content requirements
34. Country comparison on analysis on the different local content requirements – table 2
35. Country comparison on analysis on the different local content requirements – table 3
36. WTO TRIMS regulations and local content in Egypt – Insert 1
37. (a) WTO TRIMS regulations and local content in Egypt – Insert 2
    (b) WTO TRIMS regulations and local content in Egypt – Insert 3
38. Examples of local content strategy and plan – road map
39. Prominp – the local content vehicle
40. Challenges in maximizing local content
41. Multiplier effect in oil and gas industry
42. Current needs from oil and gas industry in Tanzania
43. The Tanzanian local supplier market base
44. Feed & Detailed Engineering – Table 1
45. Fabrication and Construction – Table 2
46. Materials & Procurement – Table 3
47. Well and Drilling Services/Petroleum Technology – Table 4
48. Marine, Operations and Logistics Services – Table 5
49. Installation, hook up and commissioning - Table 6
50. Currently provided goods and services by local suppliers in Tanzania
51. Key skills lacked by local suppliers in Tanzania
52. Gaps
53. Infrastructure challenges
54. Key findings 1
55. Key findings 2
56. Key findings 3
57. Key findings 4
58. Key findings 5
59. Key short term recommendations for oil and gas industry
60. Key medium term recommendations for oil and gas industry
61. Key long term recommendations for oil and gas industry
62. Key short term recommendations for local suppliers
63. Key short term recommendations for the Tanzanian government
64. Key medium term recommendations for the Tanzanian government
65. Key long term recommendations for the Tanzanian government
66. Economic impact of oil and gas activities – the direct and indirect value creation
67. Initial 3 phases
68. Next 3 phases including pilot
69. Key milestones
70. Proposed local supplier development pilot program (2 years) Gantt chart – Quick Wins
71. Mapping and matching local content opportunities