



# **Sustainability Management Framework**

**Linkages between long-term visions, legislation  
and Guidelines for Sustainable Development  
of Liquid Biofuels and Co-generation in Tanzania**

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## Preface

This master thesis is a result of a contract employment at the Swedish Energy Agency during the autumn 2007 (070820 – 080120). It has been accomplished within the master degree programme; Sustainable Enterprise, at the Center for Transdisciplinary Sustainability Research at Stockholm University. The primary objective though, is to present this material in a way that allows it to contribute to the actual development process in Tanzania.

The Swedish Energy Agency and the Swedish International Development Cooperation Agency (Sida) has made an agreement to cooperate in matters relating to their respective jurisdictions i.e. promotion of sustainable technology for use of renewable energy sources, and development cooperation intended to contribute to improved living conditions for poor people. One task is to support the Tanzanian Government in their intention to create an efficient and effective regulatory framework for the growing sector of production of liquid biofuels and electricity. This is one among other strategies in Tanzania to achieve the overall mission of poverty erasure. The assignment of the contract was to participate in the process during the first phase of this process.

During the autumn; *Policy, Legal and Regulatory Environmental Scan for Biofuels in Tanzania* has been prepared, to serve as an input to the *Project Document (PD)* for second phase. In the PD there is also included material showing the results of the *LFA-workshop (Logical Framework Analysis)*. The present report may be read as corresponding to these documents.

## Acknowledgements

There are a number of persons that have contributed to this study. Björn Hassler at Södertörn University College read, gave comments, read again, supported and gave answers on all my questions, always with a minimum of delay. Christopher Waldén at the Swedish Energy Agency, STEM, opened doors, gave support and shared all kind of material and knowledge. Also Lisa Lundmark, Josephine Bahr Ljungdell, Åke Axenbom, Kristina Holmgren and Annika Jonsson at STEM have contributed from their different perspectives. Mattias Nordström and Anders Arvidsson from ECON have been essential for the mix of stimulating discussions, Safari lagers, skilfulness, post-it notes and new experiences during the time in Tanzania and in the past - keep your hands on your luggage. I would also like to thank all my fellow students, especially Robert Larsson for both inspiring comments and practical help. Also the course administration at Stockholm Resilience Center, Stockholm University have to be thanked, especially Jim Nilsson and Lisa Deutsch – sorry for those grey hairs, as well as my examiner Francis X Johnson at the Stockholm Environment Institute SEI. There are also some persons from my earlier years of studying that should be remembered. Eva Thorin and Erik Dahlquist at the School of Sustainable Development of Society and Technology, Mälardalens University brought knowledge on sustainable energy systems and techniques. And if it had not been for Vesa-Matti Loiske and Liselotte Hallman at the Institution for life sciences at Södertörn University College I had not been able to go to Tanzania in the first place, in 2003.

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## Abstract

One of the most crucial tasks for the Government of Tanzania is to reduce poverty. In the same time, a growing international demand in liquid biofuels has arisen as one possibly positive input to the task of the Government. This raises two crucial issues. First, regulations must be updated in order to create an adequate framework for management. This has to be done in a manner that highlights approaches of poverty reduction and sustainability, thus securing avoidance of negative effects. Secondly, although the biofuels industry in Tanzania is in its formative stages, there is already a rapid development taking place, including different stakeholders. Therefore the necessity to “fast track the process” has also been highlighted. As one central component of these approaches, the *Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania* is to be formulated. Consequently, this document has to reflect long-term visions of poverty reduction and development, as it serves as a functional instrument within the process. The *Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania* (BG) is here evaluated with respect to relevant legislation. The intention is to assess the extent to which the BG express the overall visions i.e. long-term improved conditions for human welfare, through improved economical environment, and with regard to conserved or improved ecological conditions. In this context this is defined as an approach towards sustainable development. Through a legislative framework scan focusing on *Rural Energy Act 2005*, *Tanzania Land Act 1999*, *Tanzania Village Land Act 1999*, *Tanzania Environment Management Act 2004*, *Energy and Water Utilities Regulatory Authority Act 2001* and *the Tanzania Investment Act 1997*, inconsistencies within the regulatory framework is identified. Another threat is the functional correlation between the social context on one hand, and the regulative framework on the other hand. This has to be taken into deep consideration during the process of formulating the forthcoming Guidelines on Biofuels and Co-generation.



Keywords: Social capital, Biofuels Guidelines, Poverty reduction, Tanzania Biofuels Taskforce

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## Acronyms

<b>BG</b>	— Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania
<b>EMS</b>	— Environmental Management System
<b>EWURA</b>	— Energy and Water Utilities Regulatory Authority
<b>GBC</b>	— The forthcoming Guidelines for Biofuels and Co-generation
<b>LFA</b>	— Logical Framework Approach
<b>MEM</b>	— Ministry of Energy and Minerals
<b>NBTF</b>	— National Biofuels Task Force
<b>NEMC</b>	— National Environmental Management Council
<b>STEM</b>	— Swedish Energy Agency
<b>REA</b>	— Rural Energy Agency
<b>REB</b>	— Rural Energy Board
<b>TIC</b>	— Tanzania Investment Center
<b>WCED</b>	— World Commission on Environment and Development

## Executive summary

One of the most crucial tasks for the Government of Tanzania is to reduce poverty. In the same time, a growing international demand in liquid biofuels has arisen as one possible and positive input to the task of the Government. Domestic production of liquid biofuels could generate income to the country, reduce dependency on imported fuels and contribute to rural development. A strategy for a new industrial sector needs to be developed. The mission for the coming years will include regulatory framework assessments, organizational improvement, capacity building and development and rising of awareness on all levels.

But, in order to manage the opportunity, there are some major challenges that have to be taken into great consideration, the issues of sustainability and public participation. Future negative effects must not be created. And as the strategy includes capacity development it is dependent on public support. The institutional reform work must correlate with the social context. It has to be done with respect to existing formal and informal structures.

Even though the biofuels industry in Tanzania is in its formative stages, there is already a rapid development taking place, including all different stakeholders. The necessity to “fast-track” the process has been highlighted. In the Memorandum of Understanding (MoU) between the Ministry of Energy and Minerals and the Swedish Energy Agency one part of the “fast-tracking” is specified as “*Review the existing policies and legislation/.../Identify gaps inhibiting biofuels development/.../Propose whether particular/.../arrangements have to be amended or/and new for biofuels developed /.../used as an input to the biofuels guidelines, (MoU appendix 2; ToR- Consultancy Services)*”.

The *Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania* is one specific steering instrument in the process. Consequently, this document has to reflect long-term visions of poverty reduction and improved conditions for human welfare, as it serves as a functional instrument within the process. Sustainable development shall be achieved through improved economical environment and with regard to conserved or improved ecological conditions.

In this report the *Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania* is evaluated as part of the regulatory framework, here altogether defined as *the formal documentation*. The objective is to assess whether it is possible to “fast-track” the process, and to identify critical aspects that need to be considered. That includes both consistency within the regulatory framework and concerns relative to the social context.

## Conclusions

It is possible to “fast-track” the process of reforming the institutional regulatory framework, on three specific prerequisites:

- The document has to be given an interim status of jurisdictional power with regard to those specific issues that are stated in the document. This is because of two reasons. The legislation that needs to support the document needs to be revised, and a Biofuels Policy needs to be developed from scratch.

- As a consequence of the preceding statement, the first version of the document, needs to be further developed in an adaptive process and should therefore be a living document.
- Correlation between the reformed institutions and the social context need to be secured. Therefore the regulatory institutions need a communicating function. During the interim period the forthcoming Guidelines on Biofuels and Co-generation can fill that purpose.

Those aspects that need to be assessed within existing legislation include both structural issues and detailed regulations.

The sub-sector of co-generation has not been identified to be satisfactory covered. In evaluated legislation this is identified to be a missing perspective, which is reflected in the draft BG. This has to be taken into account in the requirements in the registration process, in requirements according to production process and with regard to distribution. Being an added production path this has the characteristics of a new area for regulation. Energy and Water Utilities Regulatory Authority is identified to have a specific role in this part of the process.

Some inconsistencies have been identified within evaluated legislation. Rural Energy Act and Energy and Water Utilities Regulatory Authority Act need to be revised. Regarding the over all vision there might be an inconsistent consequence in the registration process, which could be unfavourable for small-scale project developers.

Inconsistencies are also identified between Tanzania Investment Act and the Industrial Research and Development Organization Act, regarding duties to participate and contribute to research.

On issues of land use and property rights, the land laws; Land Act and Village Land Act need to be streamlined. Doing that, consequences related to customary law need to be taken into account.

The theoretically identified criteria for sustainable management have been recognized in the long-term visions. In the evaluated legislation these have been estimated to be fairly reflected. That is with some crucial exceptions that can not be neglected. The most critical aspects to further consider are the aspects of **Property rights**, **Food Supply**<sup>1</sup> and **Discrimination**. In a strategy including large-scale developments with elements of foreign actors, these aspects must be regarded as being most crucial. It has to be emphasised; the forthcoming Guidelines for Biofuels and Co-generation must pay attention to show consideration on existing socio-economic structures, and how to integrate these in the planned strategy.

The underlying purpose of the GBC is to promote investments, thus enhancing the economy and the structures of the economy, and in the long run – long-term visions of improved welfare. From that perspective it should be a duty of all project developers to address issues of livelihoods and provisions in the project area. That means that they need to demonstrate knowledge in formal and informal social structures. This prerequisite has not been identified in draft BG or evaluated legislation.

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<sup>1</sup> Although "food supply" is the term used in Tanzanian legislation, the more relevant concept is probably "food security", i.e. insuring that vulnerable persons have access to the food supply.



# 1 Introduction

**Tanzania is standing on a threshold of development that contains both opportunities and risks. Domestic production of liquid biofuels creates a challenge that includes new actors who have to cooperate with existing social systems, as well as new industrial processes that have to cope with natural given preconditions. Consequently, regulations have to be developed to adequately meet the development process. The process is already taking place. In the same time sustainability aspects has to be brought into the process. Therefore the need to “fast-track” the regulatory framework assessment and the whole process has been highlighted.**

The growing international demand for liquid biofuels has arisen as one possible and positive input to the task of the Government of Tanzania. It is a driving force that could have a significant advantage for the Tanzanian economy in terms of increased energy security, rural development, reduced dependency for imported petroleum products, employment creation and environmental protection. The driving force in the process is represented by the potential in land. Previously unexploited supply areas have been identified, allowing new actors to participate on the world market. Calculations of world’s potential supply in productive land areas in 2050 have shown that South-America and Africa represent the largest unused potentials, see appendix 1 (Smeets 2004). In South- America a considerable amount of this potential is already utilized. That is not the subject in Africa. Africa does not only represent a large unused potential, but also the largest potential compared to other parts of the world. For Tanzania with a total land area of 88, 4 million ha, 44 % is forest area, 54% is agricultural areas, out of which 5, 8% is cultivated. This makes an unused potential of arable land of 48%, or 42 million ha (Johnson 2007). It is worth notice that the 54% of agricultural land includes pastures, temporary as well as permanent ones.

One of the most crucial tasks for the Government of Tanzania is to reduce poverty (the Tanzania Vision of 2025). A strategy to reduce a complex dilemma such as poverty has to include wide spectra of approaches and procedures (Törnqvist 1996). An input of foreign investments could very well serve as an opportunity, if the financial system is designed to spread the monetary resources within the socio-economic structure. The complementary precondition is therefore how the strategy approaches issues of capacity development, as well as social and environmental risk assessments. In order to make the strategy contributively for the main objective, public participation is one crucial issue, as *“employment is the singularly most important, yet often neglected, link between economic development and a reduction in income poverty”* (Osmani 2005 p.5).

Although the biofuels industry in Tanzania is in its formative stages, there is already a rapid development taking place, including all different stakeholders. In order to manage the opportunity, the National Biofuels Task Force (NBTF) has been established by the Government of Tanzania. The strategy has to be advantageous to foreign investments, and export, in the same time as it has to enhance the mechanisms of the domestic market. This includes the production sector as well as end-users, with the purpose of promoting the welfare within the country. As the strategy will most likely include large scale estates it will also include large scale investments, and investors will calculate on long-term perspectives. Resulting from scale and time perspective the Government has stressed the necessity to make sure that all actions, schemes and development plans is made in a sustainable manner.

Proper regulations have to be developed, and the need to “fast-track” this process has been highlighted. In the Memorandum of Understanding (MoU) between the Ministry of Energy and Minerals and the Swedish Energy Agency one part of the “fast tracking” is specified as “*Review the existing policies and legislation/.../Identify gaps inhibiting biofuels development/.../Propose whether particular/.../arrangements have to be amended or/and new for biofuels developed /.../used as an input to the biofuels guidelines, (MoU appendix 2; ToR-Consultancy Services)*”.

Besides these regulatory framework assessments, other measures also have to be taken for the coming years, including; organizational improvement, capacity building and development and rising of awareness on all levels. This has to be done with respect to the context and thus existing formal and informal structures.

## **1.1 The challenge**

The currently growing international demand for liquid biofuels is a truly powerful driving force, attached with both opportunities for welfare, and risks. Export of liquid biofuel could have advantages for the country in terms of investments, employment creation and increased tax base, thus strengthened national economy. But, these improvements in itself would not maximize the opportunities and could also increase the risks. Incitements to build a national strategy of that range have to focus on increased welfare within the country. It has to contribute to domestic development goals, other than increased foreign investments.

Large-scale investments, by definition, will result in large-scale projects, which will affect the social conditions, the environment and thus the human’s dependency on the environment. As biofuels essentially is a matter of farming, the strategy must also include conditions for the rural population. Locals have to be able to participate in the progress, as small-scale investors and out growers as well as consumers with increased benefits. Since women play a central role in the farming sector, such a program also includes matters of gender perspectives.

It is necessarily to create sufficient regulations – and doing that in time. Overexploitation of nature resources has been proved to happen faster than regulatory authorities have time to take action, and sometimes faster than the negative effects are identified at all (Berkes et al 2006). As one central component of the approaches of the Government of Tanzania, the *Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania* (BG) is to be formulated. Although BG has to provide a guiding principle for investors, this does not necessarily mean the same as increased welfare within the country. Large-scale investors do not automatically by nature have these interests. In that perspective BG may just function as a set of regulations that has to be taken into account, among other regulations. Therefore it is significant to also focus on to what extent social matters are articulated, since this is what the overall visions aim for. These socio-economic long-term perspectives put the subordinate clause *Sustainable Development* in centre of attention. Consequently, this document has to reflect long-term visions of poverty reduction and welfare development, as it serves as a functional instrument within the process. In the same time the formulation of the BG has to be done with regard to the organisational structure and social context it is supposed to serve. As an objective formulated by the National Biofuels Task Force, the Biofuels Guidelines has to be designed, consistent to existing legislation. The process as a whole has to be “fast-tracked”, and in the same time secure a sustainable development.

## 1.2 Objective of the report

The intention of this thesis is to evaluate the *Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania* (Draft Biofuels Guidelines) from a perspective of sustainability. This is done with regard to relevant legislation and long-term visions, to assess the extent to which the direction given by the BG will promote sustainable development i.e. long-term improved conditions for human welfare, through improved economical environment, and with regard to conserved or improved ecological conditions. In order to assess the possibility to “fast-track” the process, it is necessary to break out two principal viewpoints. First, the focal point is the consistency of Draft Biofuels Guidelines in relation to legislation. Secondly, assuming that the Biofuels Guidelines is expected to promote the major long-term objectives, the functional applicability of Biofuels Guidelines also has to be taken in consideration.

### Questions to be answered

Based upon the two principal viewpoints two main problems are developed. The focal point is the Biofuels Guidelines in relation to existing legislation. This will be an assessment of the formal documentation based upon the assumption that the guidelines has to be supported by legislation and in the same time express the overall visions, the problem is formulated as:

1. Is the formal documentation consistent?

The following sub-question is:

- 1.2 When appropriate, if the statements in the forthcoming guidelines can be further developed on basis of existing legislation.

In order to answer this, linkages between legislation also has to be considered:

- 1.3 Is evaluated legislation, as identified to be relevant for the design of the forthcoming guidelines, consistent?

The second main problem is related to the social context. Here the assumption is that the guidelines are supposed to have a communication function, as an instrument in the organizational structure. In this assumption, the organizational structure includes the society in whole, with focus on the local levels. Although this will in a way be beyond the focal point, it is critical to consider, as the purpose of the formal documentation is to communicate a strategy. Even if the Guidelines do communicate the message it is nothing worth if it does not consider the addressee. The second main question is then;

2. Can the forthcoming guidelines be designed to communicate the strategy to all potential stakeholders?

The sub-question is:

- 2.2 Are the general public prepared to consider the strategy as it may be expected to be expressed in the guidelines?

Given the results of these questions, the study evaluate the overall question whether it is possible to “fast-track” the process, and if a proper design of the Guidelines can contribute to this objective – to “fast-track” the process.

### **1.3 Delimitations and clarifications**

The meaning of sustainability and sustainable development is a matter of wide debate, of interpretations, application as well as purpose and goal. One essential part of the ongoing debate is the relationship between economic growth and sustainability. It is not the intention of this report to contribute to this debate. Instead the definition is adopted from the long-term visions for Tanzania, where improvement within the economic system is one fundamental component, just as sustainability (National Strategy for Growth and Reduction of Poverty 2005/06 – 2009/10). This is in direct analogy with *Our Common Future*, where economic growth is stated to be a prerequisite to sustainable development (WCED1987). Consequently, the WCED-statement is here taken as an element of the definition. Sustainable development is thus defined from an anthropocentric perspective, as improved conditions for human welfare, through conserved or improved ecological conditions.

The evaluation will focus on how given criteria are considered in defined legislative framework, and to what extent it may be expressed in Draft Biofuels Guidelines. There will not be a specific evaluation of possible negative impacts resulting from activities in refinement or farming sectors. Instead possible impacts will be analysed in relation to what is expressed in the overall visions.

Notes referring to legislation and Draft Biofuels Guidelines are rendered as precise as possible. The wordings are only changed in order to make the text readable. It is an intention that these referring notes should be able to be taken as quotations with minimized distortion, although quotation marks are left out. These are omitted in order to not disturb the readability and references show the correct article in referred legislation.

Besides the evaluated legislation some additional legislation has been scanned briefly. The evaluated legislation is selected out of what is directly mentioned or indirectly implied in Draft Biofuels Guidelines. The briefly scanned but unevaluated acts are:

The Written Laws (Miscellaneous Amendments) Act 2005

Forest Act 2002

The Atomic Energy (Protection from Ionizing Radiation) Regulation 2004

The Atomic Energy Act 2002, The Petroleum (Conservation) Act 1981

The Seeds Act 2003, Business Activities Registration Act 2005

Water Laws (Miscellaneous Amendments) Act 1997

The Tanzania Industrial Research and Development Organisation Act 1979

The Water Act 1974

The latter is thus estimated not appropriate for up to day issues, such as sustainability. The law focuses on limitations due to lack of rainfall or draughts.

Other legislation has been identified to have less relevance for the objective of the thesis. The Seeds Act 2003 and The Tanzania Industrial Research and Development Organisation Act 1979, have not been evaluated in detail, but referred to in some specifically relevant matters.

### **1.4 Study framing**

In chapter 2 a theoretical framework is presented, in order to evaluate the two perspectives of the study.

First, experiences and previous research related to development, when new systems and institutions are implemented in existing social structures. Theories of social capital and norms provide a framework to understand how formal documentations can be expected to function in the social context.

Secondly; relevant criteria for sustainable development are identified. These will be the foundation of the evaluation of how aspects of sustainability can be expected to be brought into the process.

Chapter 3 describes the methodology and work procedure. The study is primarily a literature study of identified legislation.

Chapter 4 describes the overall visions, and barriers that have been formulated in the Project Document. The chapter are summarised with an analysis of how these link to theoretically identified criteria on social capital and norms.

Chapter 5 presents the evaluated guidelines and legislation. In conclusion these are compared in order to identify linkages and gaps. Here also criteria for sustainability are analysed.

In chapter 6 the two sub-analysis are discussed. A structured summary of identified linkages and gaps are also given.

Conclusions are presented in chapter 7. In chapter 8 recommendations are given, together with suggestions for further research.

## **1.5 Previous knowledge**

As a background for deeper understanding of the social and structural environment in Tanzania, findings from a study that was undertaken in 2003 will also contribute. Objective of that study were sustainable energy, sources and technology, as driver for rural development. The assumption for that study was that many of these techniques are often appropriate for small-scale devices. Compared to large estates these could therefore easier be integrated to existing structures, social, ecological as well as infrastructure. During that study several interviews were made, including meetings with the executive officer of TANESCO in Babati district, representatives from the sector of trade and industry, such as sugar producers in Kiro Valley, other farmers and carpenters in Babati Town, different representatives from the organizations of the political opposition, Village Councils in Babati district, and the Regional Commissioner of Manyara Region.

Outputs relevant for this study were that the general awareness of new alternatives was low, not to mention the opportunities these could provide. Also, the impression was that it was the authorities that were responsible to take such measures for development, even though the trust in the system could sometimes be low. Village Council offices could be very poorly equipped, although the officers expressed dignity and a great sense of responsibility for their duties (Lindström 2003). These findings will contribute to analysis performed in the study presented here.

## 2 Theoretical framework

**The need to “fast-track” the process includes regulatory framework assessment. In fact the whole society will be affected. Existing institutions has to be reformed and new have to be developed. It is important that new institutions are accepted and supported by existing social structures. As these are built up around social capital, such as norms and values, these are components that have to be considered. Aspects of sustainability and social responsibility have to be brought into the policy work.**

### 2.1 Experiences from institutional reform work

What is to be created in Tanzania is a strategy that is intended to reform the country in several ways. The strategy intends to contribute to job creation, rural development, improvement of health conditions and in the long run, improvement of urban services. In order to manage this, institutions have to be reformed, and to some extent new institutions have to be created.

Robert D. Putnam has during a research project of some two decades studied how institutions develop and adapt to the social context. He found that the critical factor is not only how the new institutions are articulated, how they are communicated or how the formal regulations presented. Instead it is the social capital that is decisive for the success of implementation.

Social capital is here defined as components in the organisation of society, such as trust, norms and network, which can improve the effectiveness of society by facilitating coordinated actions. According to Putnam it is the engagement in social activities that builds up the social capital. Trust are created and strengthened in relations, as people are engaged in voluntary organisations, such as choirs or sports clubs. Voluntarily cooperation is “easier in a society that has inherited a deep social capital of norms for mutuality and networks of civic commitment (Putnam p.201 author’s translation)”. The foundation of this development of trust is commonality (reciprocity), which, simply spoken, is cooperation today on basis of expectation of cooperation in the future. In a society with powerful social capital norms are built up around reciprocity. The binding precondition is a social system of obligations, which can not be broken without loss of reputation. Polanyi has described how a working team, a *dobkwe* in Benin, can be an institution of essential meaning (Söderberg 2007). All citizens in a village had to belong to a *dobkwe*, which made sure that the land of the elders or unable were cultivated. It also had the responsibility to bury the dead.

No man should, without reasonable reasons, refuse to stand by when *dobkwe* were calling. If he would do so without permission he would be branded by the other villagers, his wives would leave him, and his family would be poor as a punishment to his crime. Nor he or his relatives would be buried (Ibid 2007, in original the quotation is from Polanyi cited by Söderberg, p. 18)

This is not only specific for African cultures but also a well described phenomenon. People often tend to create structures to solve practical dilemmas around common resources (Ostrom 1990). Putnam explains that “in a small limited society were everybody are living close to each others, as for example a village in the Ibo people’s part of Nigeria, the threat for being shut out from the socio-economic system is a powerful and trustworthy sanction (2003 p. 203)”. Actually, this alternative system of organizing transactions, trade, and sharing and management of resources exists all over the world, in different shapes. In ancient times it may have been the only system, but today it still exists, in parallel with the system we usually think of for these matters – the market (Söderberg 2007). In Japan *ko* is one institution of such

mutual commitment, as arisan at Java is a similar institution, that strengthens the social capital (Putnam 2003). What is connective between these institutions is the commonality.

### **2.1.1 Vertical v.s. horizontal structure**

These structures of mutual cooperation are essentially horizontal, which Putnam has identified to be one critical aspect. In societies with strong social capital the network between people are in general horizontal. On the contrary, societies where the networks are vertical are those with weak social capital. The latter have been identified to be the ones with low capacity to adopt new inputs, as the former are better predisposed to handle changes. This is because even how dense the vertical network is and no matter how important it is for the ones included “it can not maintain social trust and cooperation (Putnam 2003 p. 210)”. In the vertical network the roles of participants are the ones of patron and client, characterized by dependence and not reciprocity<sup>2</sup>. It is more likely that both the patron and the client act opportunistic, the patron by exploiting and the client by evading. The vertical bonds within the client system undermine the horizontal organization as well as the solidarity between patrons and clients, and especially between the clients. The clients under the same protector “will not have the opportunity to develop norms for general reciprocity and no history of mutual cooperation to build on (Putnam 2003 p. 210)”. These institutional patterns in societies are self reinforcing, also when they are socially ineffective (Putnam 2003, North 1990). This is explained by the fact that it is almost always easier for a single actor to adapt to existing rules than to try to change them. In a wider perspective, the process reinforces as people learn about the structure of the organization and develop cultural habits and societal patterns. As informal norms evolve during long time frames they will affect the outcomes of the formal rules. The same set of rules, or opportunities, introduced to two different social structures, will give different results. It is the foundation of the social structure, the social capital, which will direct the outcome.

### **2.1.2 Socio-economic development are resulting from social capital**

Putnam’s study also gave results related to the relationship between social capital and socio-economic development. Usually we regard “the state” or “the market” as alternative mechanisms to solve social problems. By central steering of market mechanisms social conditions are expected to be enhanced. But it has been shown that, on the contrary, the effectiveness of both the state and the market are dependent on mechanisms within the society (Putnam 2003).

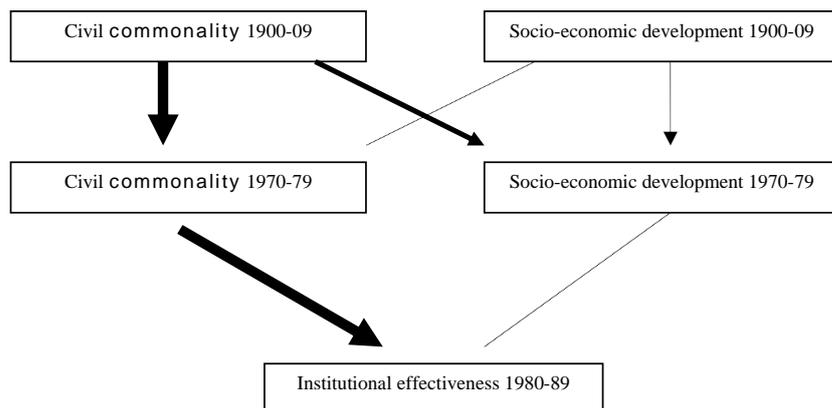
Socio-economic progress is not necessarily triggered or caused by the civil traditions. Instead it is most often dependent on external factors as changes in the national, international and technological environment. But the divergence within civil traditions may be an explanation to why the same opportunities give different results in different social contexts. In those industrial districts where the progress were most positive, important factors for success are the existence of norms for mutual support and networks for civil commitment. The core to a productive economic structure can be found in a series of institutional mechanisms, which admit competition to co-exist with cooperation, in order to prevent opportunism. These networks facilitate the flow of information of technical news and improvements, as well as reliability, and they are characterised by adaptability.

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<sup>2</sup> For further reading, see for example J. Pitt-Rivers *The People of Sierra*, and S.N. Eisenstadt & L. Roniger *Patrons, Clients, and Friends; Interpersonal Relations and the Structure of Trust in the Society*.

Social structures contain conservatory elements. Therefore knowledge development, in itself a path dependent process, can benefit from being disconnected from a social context. Rosenberg has scrutinized how technical knowledge in one social context is taken up in another (1994). The process can thus go from imitation, to improvements and further on to new innovations. Still, the adaptability of the second social context is decisive.

The surprising outcome of Putnam’s research demonstrates that the essential factor is the power of *social capital*. Figure1 shows how it is the social capital (civil commonality) that affects both the socio-economic development and the institutional effectiveness. It could not be identified that socio-economic development affects neither the social capital nor the institutional effectiveness. In fact, the socio-economic development during 1979 – 79 was more dependent on the civil commonality 1900 – 09 than the socio-economic development during the same time.



**Figure 1. The relationship between civil commonality, socio-economic development and institutional effectiveness as identified by Putnam. This result is based on research in Italy (Source; Putnam 2003 p. 189)**

The results from Putnam’s study show that the social capital is the decisive factor for the scope of success when implementing new institutions. In those regions where the implementation gave the best results the social capital was identified to be strong. Putnam argues that it is the social capital that has a key function causing the positive outcome. The regions with identified weak social capital showed weaker results.

But anyway, both the regions with weak and strong social capital made a progress, compared to the time before the institutional reform work. One reasonable interpretation is that the answer can be found in the formulation of the new formal institutions. It was thus well designed for the purpose to create change by strengthening existing adoptability. Thereby it is a rational interpretation is that the success, also in the regions with weak social capital, was caused by the social capital that yet exists. One conclusion is then that the success also depends on the correlation between the existing social capital and the new institutions.

## 2.2 Norms are built up from both external and individual factors

As discussed above, norms are of essential importance for the strength of social capital. Just like Putnam, Hydén argues that studying norms can help us understand why certain patterns

of actions arise and others do not. Based on the assumption that a norm can be an explanatory factor for the understanding of human actions Hydén has developed a model (Dolva 2007). This norm model is useful in order to illustrate how norms are evolving as a result of both individual and external processes.

*Cognition* is those functions of our intellect by which information and knowledge are handled. Among the cognitive functions there are apperception, memory, conceptualization, rationality, problem solving and attention. This can here be considered as the processes between the social context and the individuals. *Systemic conditions* are more related to external factors, inputs such as improvements in technology or other changes in the surrounding world. These can create opportunities. *Value* is more of an individual perspective, even if it of course is influenced by both cognition and systemic conditions.

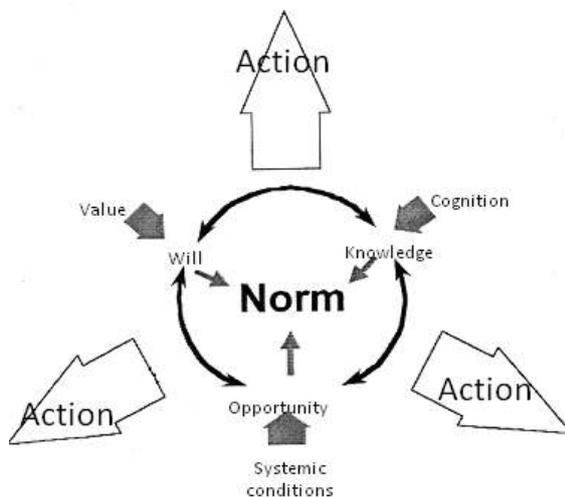


Figure 2. Hydén's norm model (Source; Hydén 2002, Dolva 2007)

### 2.3 Integrating aspects of sustainability in the policy work

In the coming process new institutions has to be developed and they have to be built on existing structures. Policies have to be realigned and the policy work has to include new aspects. The need to integrate aspects of sustainability in policy work was stressed already in *Our Common Future* (1987). In Sweden the principle of Environmental Policy Integration, EPI has been established under the term "sector responsibility" (Nilsson & Owens 2007). Policy integration has been proven hard to bring about in practise. It is a puzzle of complexities lacking of systematic studies. In an attempt to break through this barrier Nilsson and Owens has identified four elements needed to integrate aspects of sustainability in policy work. These relates to value, cognition, systemic conditions, and adaptability (Nilsson & Owens 2007).

**Trust;** different stakeholders within and outside government must engage in some kind of learning process, in order to make learning to occur. This includes taking a risk; accepting that your argument might not be valid and possibly having to change your mind. For stakeholders to take this risk they need to have full trust in the process and in the process leadership. This

correlates directly with the discussion about reciprocity. It also makes an essential prerequisite for our will to take action in any direction, as values are deeply influenced by trust.

Putnam argues that trust is a resource that does not decrease but increase when used. It will only be emptied when not used. James S. Coleman develops this statement saying;

Deeply mistrust is very difficult to eradicate by help from experience, because either it block people from engaging in right sort of social experiment or it will lead to behaviours that will reinforce the mistrust/.../As soon as mistrust has taken root it will soon be impossible to know if it ever was motivated, as it has the ability to be self reinforcing (Putnam 2003 p. 204, quoting Coleman, translation by author).

Nilsson and Owens make clear thus that how to create this trust then becomes one of the key challenges for EPI.

**Ownership;** Environmental Policy Integration implies that sectoral actors need to be the owners of the issue, both in terms of being able to address it and in terms of being accountable for delivering **results**. In vertical structures this is a fundamental aspect. The examples of reciprocate (mutual) cooperation, such as ko in Japan, arisan in java or the dobkwe in Benin, show the importance of ownership and being accountable. This is thus the core of those norms that builds strong social capital.

**Capacity;** to engage in learning requires the capacity to engage in knowledge assimilation, interpretation, strategic thinking and interactions with different stakeholders. *Capacity* is thus not only linked to the definition of cognition, it is also the primary input to strengthen trust and the sense of ownership.

**Knowledge;** integrating sustainability issues depends on how well we understand the aspects of our activities. Nilsson and Owens argue further that anything resembling a 'complete' understanding will surely remain an illusion. Still there is a need for more integrative analytical tools to provide knowledge, but also for stronger formal procedures for policy analysis, both before decisions and when evaluating their results. Hydén show how knowledge is developed by cognition. Following Putnam knowledge is the feature that creates capacity, and strengthens both trust and the sense of ownership in an interacting process. In a vertical structure, characterised by trust and ownership, people tend to share information and thereby develop the foundation of shared knowledge.

Although these elements are declared to be necessary from an environmental perspective, they are in fact relating to sustainable development in general. Nilsson & Owens states that EPI should be considered "to be a conceptual policy-learning process in which sectoral policymakers come to see environmental sustainability issues as integral components of their sectors' problems, objectives and strategies (2007)". An Environmental Management System (EMS) is an example of a method that can be useful in order to integrate sustainability measures in the daily work. This will be briefly described in chapter 3, as a background perspective for the methodology of this study.

## 2.4 Criteria of sustainability

**The planned strategy includes large-scale projects in biofuel production. This study intends to assess the extent to which sustainability is expressed in the Biofuels Guidelines and legislation. Therefore criteria used to assess impacts and sustainability in relation to production of bio-ethanol in Brazil has been identified to be useful.**

The sampling frame of criteria for sustainability used in this study is based on four studies related to sustainable biomass utilisation (Smeets et al 2004, Lewandowski et al 2004, Smeets et al 2005, and Smeets et al 2006). Evaluating added costs as a consequence of sustainable measures, Smeets presents a selection of criteria with relevance for sustainable biomass trade (2005). On two critical aspects, food supply and deforestation, Smeets refer to a specific methodology.

The referred methodology is worked out to estimate theoretical potential to generate surplus agricultural land to 2050 (Smeets et al 2004). In the report, the attempt is to present a bottom-up analysis, based on the “best available knowledge of the different factors that determine the bioenergy production potential (Smeets et al 2004)”. Included variables are population growth, per capita food consumption and composition, land use patterns, crop yields (Food crops and bioenergy crops), feed inputs and efficiency of the animal production system, wood consumption and production (fuel wood and industrial round wood) and natural forest growth, see appendix 2. “By using the best available data from various studies and statistics, we aim for: a better understanding of the impact of different factors that determine the bioenergy potential /.../ (Smeets et al. 2004 p. 7)”. On the background of these approaches the methodology is worked out depending on the assumption that if one or both of the following criteria is not met, then the production of bioenergy from specialised bioenergy crops must be regarded as unsustainable;

The production of bioenergy is only allowed on *abandoned or surplus agricultural land* (bioenergy production is not allowed to compete with agricultural land for use for food production). Surplus agricultural land includes both areas degraded land no longer suitable for commercial crop production and areas that are taken out of production due to a surplus of productive area

Deforestation due to the demand for suitable cropland for bioenergy production is not allowed (Smeets et al. 2004 p. 8).

In this research Smeets is focusing on bioenergy production potential. Also the following research [Smeets et al 2005], focusing on costs and potentials as consequence of sustainable criteria, is based on the same framework. The criteria used in both these studies are selected from an extensive register defining 127 aspects of sustainability related to biofuels production (Lewandowski et al 2004). Out of the 127 identified sustainability aspects, some 50 are included in the study. They are aggregated into 12 criteria, due to overlap in scope. The 12 criteria are translated into measures used for estimation of impact on the land ability, yield of crop management system and subsequently a cost-supply curve of biomass production. The selection of the 12 criteria can also be seen in a perspective of multiple interactions in a complex system, as illustrated in appendix 2.

Another study, also related to the same theoretical framework, focuses on how Brazilian bio-ethanol accomplishes to meet Dutch legislation on sustainability (Smeets et al 2006). Out of

the 127 aspects of sustainability, 16 key areas of concern are distinguished. These reports have a correspondence in the approach to study complex system with multiple interactions. It is done with the consideration of specified criteria of sustainability. In this study the attempt is not to analyse neither outcome nor complexity in multiple interacting systems, but to use identified criteria for sustainability for evaluating the regulative framework related to biofuels production in Tanzania. These criteria, defined Lewandowski and Smeets can be applicable for that purpose.

**Table 1. Identified criteria for evaluating sustainability within the regulative framework related to biofuels production in Tanzania. Source: adapted from Smeets, 2006**

**Elements of sustainability and social responsibility to be concerned**

<b>1. Green House Gas balance</b>	Used technology and planning for processes must strive for best possible balance of energy input – output, and with regard to reduction in well-to-wheel CO <sub>2</sub> -equivalent/km, compared to gasoline. GHG-balance in Brazil for average case is 8.3. Reduction of CO <sub>2</sub> for Brazilian ethanol from sugar cane is in the range of 85 – 90% (low – high), (interpretation made from data in Smeets 2006 p. 52 – 53).
<b>2. Airborne emissions on local level</b>	Airborne emissions and particles must be minimized. Health effects of indoor air pollutions as result of burning of wood for cooking and heating kills more women and children than tuberculosis and malaria (Johnson 200701)
<b>3. Biodiversity</b>	Biodiversity must be protected (UNDP, 2004 World Energy Assessment)
<b>4. Soil erosion</b>	Soil erosion rates are not allowed to increase compared to conventional agricultural land use. Soil erosion rates are compared based on crop/vegetation specific management factors and if required additional soil erosion prevention measures (no tillage, ridge ploughing ) are implemented
<b>5. Depletion of fresh water resources</b>	Depletion of fresh water resources is not allowed. The risk of groundwater depletion is estimated by means of a water balance, in which the evapotranspiration is compared with the (effective) rainfall. Irrigation is not allowed, for ecological and economical reasons: yields are based on rain-feed production.
<b>6. Soil nutrient losses and depletion</b>	Soil nutrient depletion must be prevented by means of sufficient application of fertilizers.
<b>7. Deforestation</b>	The production of bioenergy is not allowed to result in deforestation. The theoretical potential to generate surplus agricultural land can be estimated, following the methodology of Smeets (2004a)
<b>8. Pollution of chemicals</b>	Pollution from agricultural chemicals must be avoided by means of good management as far as reasonable.
<b>9. Use of GMO:s</b>	Precautionary principle. The potential impact of GMO is subject of debate, characterized of a lack of consensus. Potential strategies include long term monitoring, increase in R&D and optimal use of existing technologies, to prevent the need for GMO technologies (Smeets 2006 p. 47 – 48).
<b>10. Waste treatment</b>	A minor requisite is that all plants have a Farm Waste Management Plan to prevent the contamination of the air, soil and/or water with harmful pollutants ( <a href="http://www.globalgap.org">www.globalgap.org</a> referred to by Smeets et al 2006)
<b>11. Food supply</b>	The production is not allowed to endanger food supply. The theoretical potential to generate surplus agricultural land can be estimated, following the methodology of Smeets (2004a)
<b>12. Property and use rights</b>	Markets access to small farmers and producers must be guaranteed. Tenure and use rights shall be clearly defined, documented and legally established (Lewandowski 2004, Smeets 2005)
<b>13. welfare, and Social conditions of local population, and capacity building</b>	The production and trade of bioenergy must contribute to preserve or increased social conditions of local population, including involvement of communities into management planning, monitoring and implementation. A comprehensive development and research programme for new technologies and production processes is in place (Lewandowski 2004, Smeets 2005).
<b>14. Employment, wages and remuneration</b>	The production and trade of bioenergy must contribute to employment. Wages must be based on at least the minimum wages and must be above the international poverty line. Prohibition of discrimination and equal pay for equal work. All supply chain partners are able to cover costs and receive fair remuneration through prizes reflecting the true value of the product (Lewandowski 2004, Smeets 2005).
<b>15 Discrimination; women, children, indigenous people etc.</b>	Women shall not be discriminated and their rights have to be respected, including the rights of pregnant women and breastfeeding mothers. Indigenous people's and tribe's rights have to be respected, by recognizing and strengthen the role of their communities. (Lewandowski 2004, Smeets 2005)
<b>16. Education</b>	Children have access to schools, work does not jeopardize schooling. Promoting of education, public awareness and training (Lewandowski 2004, Smeets 2005).
<b>17. Health care</b>	A safe and healthy work environment, with aspects such as machinery and body protection, sufficient lighting, adequate indoor temperature etc. Avoidance of agricultural chemicals as far as reasonably is achievable. Training of all co-workers is performed and documented, according to requirements formulated on health protection (Lewandowski 2004, Smeets 2005)
<b>18. Strength and diversification of local economy</b>	The activity should contribute to strengthening and diversifying the local economy (Lewandowski 2004, Smeets 2005)

## 2.5 Summary of the theoretical framework

In this context; *sustainable development* supported by the promotion of a new industrial sector, there is a wide spectra of components to consider. First this theoretical framework identifies relevant aspects to consider in evaluating the formal documentation as communicative instrument in the organizational process/social context. Secondly appropriate criteria for sustainability is identified on basis on previous research work on sustainability in the context of production of liquid biofuels.

In the context of institutional development in Tanzania the social capital seem to be of critical importance. Social capital is built up by trust, in mutual cooperation. Of significant meaning for trust, and thus reciprocity and social capital, is the sense of ownership. In a society characterised by a strong social capital knowledge is shared in an informative environment. The capacity to participate in the society and the will to support the whole structure is thus strengthened by trust, ownership and knowledge. All these four components have to, to some extent, be part of values, cognition and systematic conditions. Related to values trust and ownership is easily motivated. But following the discussion both knowledge and capacity can reinforce values. Cognition is obviously linked to knowledge, in the same time as trust will affect our ability to assimilate what we observe. Without a sense of ownership there is a risk that we will never turn information to consciousness, there will be a lack of capacity. Regarding the systematic conditions, there is of critical importance to reinforce trust. Ownership has to be highlighted, capacity has to be built up and knowledge has to be communicated – and formal organization has to be built upon informal structures (Nilsson & Owens 2007, North 1990, Putnam 2003)..

Following the results of Putnam the institutional reform work has to link to existing social structures. The most critical resource is the existing social capital; either it can be assessed to be strong or weak. Social capital is built up by the norm system. It can be based upon trust and a fellow feeling. An awareness of ownership creates responsibility and faith. Horizontally organized social structures are built up by these functions of trust and ownership, which is reflected in the whole system. This is the glue that is missing in vertically organized social structures. However, this is partly a matter of scale. Even vertically organized societies consist of horizontal associations. These are the ones that can build the foundation of strengthened social capital.

## 3 Methodology

**This study is mainly a desk study of regulatory framework related to the new planned industrial sector. However experiences on site create an important input for the understanding of the context. Following the focal point, the visions and the Project Document set the criteria to evaluate linkages and gaps in the formal documentation itself, and how criteria of sustainability are taken into account. This is based on the assumption that long-term visions are superior, which are described more in detail in legislation, while the guidelines are supposed to support the long-term visions with legislation.**

In this study, an Environmental Management System (EMS) creates the background perspective of the methodology. In an EMS the methodology, and also the following audit is based upon some specific elements, here defined as (Almgren & Brorson, 2003);

- A formulated **vision, or environmental management policy** shall express how considered targets of sustainability, together with other aspects of economic character are expected to contribute to a sustainable development within the organization.
- The **aspects of possible impact** are supposed to be dealt with in a procedure of continuous improvement:
  - Identified aspects of possible impacts build the framework for what has to be considered during the following process, formulated as targets.
  - The targets are not necessarily expected to be completed immediately. Instead they are supposed to be dealt with, during the process, in a practice that strives after continuous improvement.
- The procedure is dependent on the **communication** within the organization:
- The communication and work of improvement shall be directed, supported and monitored by formal **documentation**.
  - Targets and actions have to be formulated as some kind of guidelines, in order not to lose the overall visions.
  - Resulting from the function of continuous improvement, the guidelines have to be formulated as a living document, thus promoting an adaptive procedure.
  - The communication shall be both-way, and thus transparent
- Regarding the organizational structure at least two dimensions are of specific importance:
  - In order to reach the targets and follow up the activities the **commitment of the executive body in charge** are of essential importance.
  - **Dedicated associates on all levels** must be well informed and supportive.

From this structure, one or more elements are revised. For instance, the formal documentation may be measured against the visions and identified aspects of possible impact. The intention is then to follow up and estimate whether the formal documentation actually does direct the work in the direction expressed by the vision. Another perspective may be to assess if the procedure expressed in the formal documentation are adequate for the organization, and the expected procedure for communication. Another relevant criterion of revision might be to estimate if the vision consider and express commitment related to the identified aspects of possible impact.

EMS is a useful instrument to improve the work of integrating sustainability into the daily work of organizations. In this context, sustainable development of a new industrial sector in Tanzania, EMS can not be adopted straight forward as an adequate method, because of differences in complexity. However, some approaches can be adopted, therefore;

- the formal documentation i.e. the guidelines and legislation, is evaluated to estimate whether it direct the strategy in the direction expressed by the vision
- the formal documentation, including the Project Document<sup>3</sup> and visions, are assessed in relation to identified aspects of possible impact i.e. the sustainability criteria
- an assessment is done on whether the formal documentation are adequate for the organizational process

The examination is done mainly as a desk study. Legislation, Guidelines, policy documents and visions are studied, to search for linkages and gaps. Besides this there is also an

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<sup>3</sup> The Project Document, which has been formulated during the autumn 2007, describes the forthcoming work during 2008 – 09. This work includes institutional framework assessment, capacity building, strengthening of public awareness, participation and support etc

evaluation of contextual barriers that can be interpreted by the overall visions in correlation to the Project Document, describing the first steps of the implementation of the strategy. This leads to assessments of linkages between the formal documentation and the social context it intends to communicate to. The evaluated documents are thus analyzed considering two perspectives; correlation with the social context and consistency. The assessments are also based upon experiences on site, in Tanzania.

These experiences include visits in Tanzania as part of a contract employment at the Swedish Energy Agency (STEM). During the autumn 2007 (phase one of the implementation process), STEM was supporting the Tanzanian Government in the definition of the forthcoming project for phase two during 2008 – 2009. The work resulted in a Project Document, defining obstacles, objectives, expected outputs, stakeholders and target groups, etc. As a background for deeper understanding of the social and structural environment in Tanzania, experiences from 2003 will also contribute. This includes meetings with officials, civil servants, representatives from the sector of trade and industry and politicians.

In chapter 4 the long-term visions and the recently formulated Project Document are described. Also earlier experiences from Tanzania are considered. This is summarized in a short analysis and thus related to the theory of social capital. Hydén's norm model is used as an analytical tool when evaluating how trust, ownership, capacity and knowledge is described in the visions and Project Document.

In chapter 5 the Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania (Draft Biofuels Guidelines) and identified legislation are described. The chapter ends up with a summarizing analysis, searching to answer three questions:

1. Are the Draft Biofuels Guidelines supported by legislation?
2. Are the evaluated legislation consistent?
3. Are aspects of sustainability expressed in Draft Biofuels Guidelines and identified legislation?

The evaluation of consistency between legislation and guidelines is done from two angles. First the draft Biofuels Guidelines is in focus assuming that given requirements have to be met by legislation. Secondly the acts are also evaluated compared to each other, to assess whether they are in line. Sustainability aspects is analyzed using the criteria identified from research work by Lewandowski, Smeets and Faaji. Each act is analyzed with regard to the given criteria.

The focal point of this study is to evaluate consistency of the formal documentation. This is done in chapter 5. But in order to evaluate how this might work in the social context, this has to be discussed in relation to the results of chapter 4, which is done in chapter 6.

The background framework given by the methodology of EMS provides a perspective where relevant actors are linked to targets, regulated by formal documentations.

## 4 Goals, visions and the social context

During the autumn 2007 the Swedish Energy Agency was supporting the Tanzanian Government in the definition of the forthcoming project for phase two during 2008 – 2009. The work resulted in a Project Document, that defines obstacles, objectives, expected outputs, stakeholders and target groups, etc. The project is the first steps to implement a strategy for domestic production of liquid biofuels, and thus handling barriers. Initially this section gives a brief description of the project, as it is defined during the project planning week, and described in the Project Document. Secondly in this section, the Vision 2025 and the Tanzania Energy Policy 2003 are explained, in order to present the formal over all frameworks. Finally this chapter ends up with a summarising analysis, related to theoretically identified experiences of social capital and norms.



LFA-workshop; Tanzania National Biofuels Task Force, the Swedish Energy Agency and ECON at Giraffe Ocean View Hotel, 071114 – 071116<sup>4</sup>.

### 4.1 Earlier experiences

During an earlier research visit to Tanzania some actors related to the energy sector were interviewed. That included meetings with the executive officer of TANESCO in Babati district, representatives from the sector of trade and industry, such as sugar producers in Kiro Valley, different representatives from the organizations of the political opposition, the Village Council in Riroda Village, and the Regional Commissioner of Manyara Region. Findings from that study that is relevant for this context can briefly be summarized as:

- Awareness of opportunities connected to renewable energy sources and techniques as such is in general low among the public. Knowledge on, and trust in smaller stand-alone systems are also low. The focus is on large infrastructure systems, such as the electric grid, no matter the source.
- The high demand is thus well expressed, but puts all responsibilities on the government.
- Still, among public servants at local level, the knowledge, awareness and trust in new techniques are higher. But the resources at the local offices are not enough.

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<sup>4</sup> Logical Framework Analysis is a method of goal-seeking identification of barriers and definition of strategies and activities to overcome the barriers and reach a specified target (Örtengren 2003).

## 4.2 The Project Document

The Project Document will be a guiding document during the coming two years 2008 – 2009. It defines how barriers will be managed and what actions and resources that are needed to reach the identified objectives. Here this is presented in brief outline.

### 4.2.1 Development objective

The project objectives are intended to contribute to the realization of overall long-term development goals. Regarding this specific subject of a biofuels industry, the intention is that this industry is expected:

To contribute to a well regulated sustainable biofuels industry contributing to important development objectives of Tanzania such as energy security and reduced dependency on oil imports, food security, environmental protection, human health, macroeconomic growth and an expanded tax base (Project Document p.9).

Issues related to the long-term development goals that will be influenced by the strategy of a new biofuels energy industrial sector are defined as (Project Document 2007):

**Energy sector diversification:** aiming to reduce dependency on foreign energy sources and to increase the supply of energy services.

**Access to modern energy:** including; clean cooking fuels reducing air pollution both in urban areas and from indoor use, electricity resulting from co-generation as part of the production scheme within biofuels refinement plant, increased access to mechanical power in rural communities through the use of small- or large-scale produced biofuels oils.

**Policy, legislation and regulation:** is required in order to reduce negative effects on both private investments and communities in need of economic development and investments. Lack of adequate regulation may lead to a risk for buyout of smallholders at lower than market land price.

**Cross-sector coordination:** coordination of public-private investments is needed not to slow private investments or create a situation where investments are channelled only to certain areas, neglecting others. Scarce public investment in infrastructure is seen as a major market barrier. Changes in land use needs to be incorporated into local and central government planning procedures.

**Awareness and education:** investments will have to be made in energy and agricultural technology development and education, and enhanced international cooperation on skills and technology transfer. Awareness of opportunities among small farmers needs to increase, as broad skills development shall result in an inclusive industry with opportunities for all.

**Natural resources management:** A wide range of natural resource issues will have to be managed. A properly regulated biofuels industry should contribute positively to issues as water and soil protection, reduced deforestation through fuel substitution. There is a need to ensure that Tanzania is an active contributor influencing international standards for biofuels production and utilisation.

**Economic issues:** the right incentives to meet domestic energy service demands need to be developed to ensure that most or all products will not be exported. It is necessary to meet the expectations of employment and growth generation, reduced expenditure on oil imports and expansion of agricultural services and markets

**Social issues:** investments are expected to result in rural development, including expanded social services, access to energy services and reduction of respiratory diseases. Therefore historic experiences have to be concerned, to ensure that small farmers do not become dependant on external actors or commodity markets, and that resettlement are managed properly, not resulting in marginalisation of rural people.

**Cross cutting issues;** Due to the large plantations involved, including large number of people involved in the production, the risks of water borne diseases and sexually transmitted diseases like HIV/AIDS, need to be carefully managed and mitigated through awareness creation and enforcement of corporate HIV/AIDS action plans.

#### 4.2.2 Project objective

During the project formulating week two major obstacles were defined. The first relates to the objective of this thesis work. Existing institutional and policy framework to handle the sustainable development and growth of a modern biofuels industry sector is weak. The institutional framework is defined to be consisting of policies, laws, regulations and societal values; and of the organisations that define, implement and enforce this legal framework. The second major obstacle relates to the capacity of the physical infrastructure, and is not included in the objective of the project. Therefore, the immediate objective of the project is defined as;

The policy, legal, regulatory and institutional framework is in place to support and regulate the development of a sustainable biofuels industry of Tanzania (Project Document p. 10).

Problems relating to the institutional framework include:

1. **Organisational capacity;** which is found to be insufficient in order to develop, coordinate and enforce legal instruments and policies addressing the biofuels industry sector. This is due to inadequate experience and knowledge among civil servants, from the level of the central government to the level of the local government authorities. Additionally there is an obstacle related to resources, including the number of the staff, within the government administration. This causes an insufficient capacity to generate, manage and disseminate relevant information.
2. The existing **legal instruments** are not adapted to regulating this new industrial sector. This includes licensing and registration procedures for biofuels, directing standards aiming to avoid **negative** impacts and to capture opportunities for addressing development priorities, laws regulating liquid biofuels and co-generation in order promote increased energy supply within Tanzania. There is also stated that the land administration system is not adapted to large scale biofuels production and how this links with other important societal objectives such as food security.
3. The **financial sector** in Tanzania –both public and private - is not sufficiently developed to support the new biofuels industry. There is in general a lack of relevant experience, and the existing capital markets do not have adequate information to support the process.

This relates both to financial incentives as well as opportunities for financial partnerships. At the core of both these problems is that there is uncertainty amongst both private and public financial institutions as well as within the government and private investors as to the viability and impacts of supporting the industry with tax incentives, subsidised interest rates or investments in partnerships with local actors (Project Document p. 6) .

4. **Public awareness, support and participation** regarding biofuels are limited within the country. Farmers are not aware of opportunities. Among authorities and politicians there is a lack of knowledge about biofuels industry development and its possible implications.
5. **Human resource capacity** in Tanzania is inadequate in order to support the growth of a **biofuels** industry. This includes the availability of skilled workforce and also the issue of local research on all relevant issues related to a sustainable biofuels industry in Tanzania, which could contribute to the development of knowledge in Tanzania.

This last dilemma is defined to be an issue partly beyond the projects´ range;

While this issue of human resource capacity is of critical importance this is not something that can be resolved through a single project but rather will be the result of a long term, broad process including both government and non-government organisations (Project Document p.7).”

#### **4.2.3 Expected outputs**

At the end of the time of the project, 2008 - 2009 it is unlikely that new legislation needed in a longer time perspective will be in place. However, the expected outputs of the project, including sufficient interim guidelines and policy development, are urgently needed. This will provide sufficient interim guidance to actors within the sector and to safeguard against possible negative social, environmental and economic impacts of an expanding biofuels sector. It is also expected that the regulation of actors involved in the sector will face a smoother and transparent administration and that a higher level coordination regarding the interface between the biofuels industry and other sectors will be in place. The project is expected to produce four overriding outputs.

1. The organisational capacity of the government to coordinate, regulate and support the development of plans and legal instruments relevant to the biofuels industry is strengthened, for example through the appointment of a designated project coordinator with resources to develop capacity in relevant institutions (Project Document p.11).

The project will establish a dedicated permanent project coordinator (PC) with a staff of three full-time positions and administrative support. In addition, various experts in project management, communications, biofuels, etc from Tanzania, will be needed. The PC shall have the necessary organisational capacity to handle policy, coordination and development of strategies related to a biofuels industry. Expected deliverables include the project management and coordination capacity, with the objective to support all relevant stakeholders in the process of developing the institutional and regulatory framework.

2. Adequate capacity of the government and other financial actors to assess the biofuels industry from a fiscal and financial perspective is in place. This capacity is critical for the Ministry of Finance as it considers financial policy instruments but is also important for the Bank of Tanzania, Tanzania Investment Bank and the Tanzania Investment Centre as well as for other financial institutions (Project Document p.13).

The project shall develop and disseminate relevant information for policy decisions regarding specific tax incentives for biofuels industry. This objective is specially targeting the Ministry of Finance in Tanzania. A framework has to be developed to provide a basis for decisions whether or not tax instruments or subsidies are appropriate and what strategies and implications of such are likely to be.

It is also intended that the project will produce relevant information and guidelines assessing credit risk for investments in the biofuels industry. Thereby providing instruments for financial institutions, such as the Tanzania Investment Bank, and investors, to make informed assessments of business plans relating to these investments

3. Policy and legal instruments to support the development of a biofuels industry contributing to sustainable and prioritised development objectives of Tanzania are developed, including permits and licences procedures and input to the legislative process (Project Document p.14).

During the project it is expected that the Biofuels Guidelines are finalised, adopted and made operational to support the regulation of the industry. National Biofuels Policy will be developed to support these guidelines, together with an established process for implementing the policy. A thorough review of the current legislation is conducted from the perspective of how a biofuels industry may contribute to long-term sustainable development goals. Finally, an information database on sustainable biofuels production practices and investment activities will be created, together with a process for maintaining and updating this database.

4. There is public support, participation and awareness regarding the biofuels industry in Tanzania, encouraging two-way communication and knowledge dissemination in society at large and with Tanzanian stakeholders directly involved in the biofuels industry in particular (Project Document p.16).

During the project it is expected that Local Government Authorities (LGA), national bodies such as Parliament, Cabinet and Councils, farmers, CBOs/NGOs and the general public is made aware of and consulted on the development in the biofuels industry. All the activities are expected to be based on consultations, and encourage two-way communication. This includes a broader information programme to inform people and organisations not directly involved about the objectives and progress of the project.

Small- as well as large-scale farmers should have access to information on both the basics of biofuels as well as current and planned development in the industry. This information material shall be disseminated through existing channels, such as agricultural extension officers, LGA facilities and relevant CBO: s/NGO: s.

As the actions resulting from the strategy will be taking place within the jurisdiction of Local Government Authorities, these shall be provided with information material of relevance for LGA planning and coordination. This will include practical guidance on land and water rights issues as well as regulatory and permitting issues.

Civil servants and politicians shall perform study tours to ensure that the policy process is based in state of the art knowledge.

#### 4.2.4 Stakeholder and target groups

The majority of activities related to a biofuels industry sector are expected to take place in the rural communities and this is where the **primary target groups** for this project first and foremost can be found. Although these groups may not be directly involved in the project to a significant degree, it is important to keep their interests in mind as the project is implemented. The primary target group includes:

- The rural communities will be directly and indirectly affected by a growing biofuels industry and are thus a primary target group for the project.
- Farmers including large scale commercial, semi-commercial and small scale farmers finding a market and a livelihood from growing biofuels for sale are part of the primary target group. Especially women who provide the main input to farming activities in Tanzania are a primary target group.
- Energy end-users who benefit from access to clean modern fuels for cooking, transportation and powering of equipment for productive uses.
- Semi-skilled workers and seasonal workers based in rural areas as these are those who employed in the biofuels industry.
- National Biofuel industry business actors, who are directly involved in the farming, processing and distribution of biofuels and by-products, including small-scale farmers, medium sized biofuels processing businesses and large scale industries

The **secondary target groups** that are to be directly involved or whose support will be sought in implementing the project may be divided into two groups:

- Central government authorities and civil servants working in these organisations, such as central government agencies, departments and ministries.
- Local government authorities and the civil servants working in these organisations.

In addition to the primary and secondary target groups there is a group of actors whose cooperation or engagement can facilitate and support the development of a biofuels industry. Such allies are for example CBO: s/NGO: s, financiers and investors (national and international), media and academia.

#### 4.3 Vision of 2025

The Tanzania Vision 2025 states that the country by 2025 shall have developed to a middle income country, with a high level of human development. A transition from a low productive agriculture economy to a semi-industrialized is stated to being the main engine to the process. Modernized and highly productive agricultural activities, effectively integrated and supported by industrial and service activities, shall create a solid foundation for a competitive economy. It is also settled that the vision will be realized only when implementation “entails equal opportunities for participation of all the people and the same opportunities extended to all people for the enjoyment of the fruits of its achievements (Tanzania Vision of 2025; [www.tanzania.go.tz/vision.htm](http://www.tanzania.go.tz/vision.htm), 080213)”.

In former visions for the development of the country some crucial impediments have been identified, such as a donor dependency syndrome and a dependent and defeatist developmental mindset, a weak and low capacity for economic management, failures in good governance and in the organization of production and ineffective implementation syndrome. It is stated that;

Tanzanians have developed a propensity to prepare and pronounce plans and programmes, and ambitions which are not accompanied by effective implementation, monitoring and evaluation mechanisms. As a result, implementation has been weak. This situation has given rise to the erosion of trust and confidence among the people on their leaders. It is evident that the people are now less enthusiastic about participating in national endeavours. Apathy has set in (The Tanzania Vision of 2025, 2.2.4).

In order to create a break from the past and deploy more appropriate driving forces to assure socio-economic progress for the future, the strategy for a high quality livelihood for all Tanzanians is now expected to be attained through the realization of some specified objectives. Out of these at least five are specifically linked to the over all objectives of the strategy in question:

- Absence of abject poverty
- An active and competitive player in the regional and world markets, with the capacity to articulate and promote national interests and to adjust quickly to regional and global market shifts.
- Macroeconomic stability manifested by a low inflation economy and basic macroeconomic balances.
- A diversified and semi-industrialized economy with a substantial industrial sector comparable to typical middle-income countries.
- An active and competitive player in the regional and world markets, with the capacity to articulate and promote national interests and to adjust quickly to regional and global market shifts.

One objective, the issue of physical infrastructure, is specifically identified to be related to the obstacle that has been highlighted during the Project planning week, but considered as being beyond the scope of the project. Another eight targets can be estimated to relate specifically to the defined criteria of sustainability:

- Food self-sufficiency and food security.
- Universal primary education, the eradication of illiteracy and the attainment of a level of tertiary education and training that is commensurate with a critical mass of high quality human resources required to effectively respond and master the development challenges at all levels.
- Gender equality and the empowerment of women in all socio-economic and political relations and cultures.
- Access to quality primary health care for all.
- Access to quality reproductive health services for all individuals of appropriate ages.
- Universal access to safe water.

- A learning society which is confident, learns from its own development experience and that of others and owns and determines its own development agenda.
- A diversified and semi-industrialized economy with a substantial industrial sector comparable to typical middle-income countries.

It is also envisaged that fast growth will be pursued while effectively reversing current adverse trends in the loss and degradation of environmental resources [such as forests, fisheries, fresh water, climate, soils, biodiversity] and in the accumulation of hazardous substances (Tanzania Vision of 2025).

#### **4.4 Tanzania Energy Policy 2003**

The vision of the Energy Policy is that the energy sector shall contribute to social economic development, and in the long-term perspective, poverty eradication. Thus, the objective for the development of the energy sector is expected to be fulfilled by “*establishing an efficient energy production, procurement, transportation, distribution, and end-user systems in an environmentally sound manner and with due regard to gender issues* (Tanzania Energy Policy p.5)”. Since the first National Energy Policy of 1992 was formulated, the overall economy has gone through structural changes, resulting in change in the role of the Government. The revised Energy Policy has, therefore, focussed on the market mechanisms and means to reach the objective, and achieve an efficient energy sector with a balance between national and commercial interests.

The energy sector is by nature complex. Therefore it is believed that the process has to be marked by interactivity between the Government, and other stakeholders. By this approach, views of market actors and energy consumers are expected to be taken into the process. Specifically, the revised energy policy takes into consideration the need to (Tanzania Energy Policy):

- have affordable and reliable energy supplies in the whole country;
- reform the market for energy services and establish an adequate institutional framework, which facilitates investment, expansion of services, efficient pricing mechanisms and other financial incentives;
- enhance the development and utilisation of indigenous and renewable energy sources and technologies;
- adequately take into account environmental considerations for all energy activities;
- increase energy efficiency and conservation in all sectors; and
- increase energy education and build gender-balanced capacity in energy planning, implementation and a good monitoring system.

A national program for liquid biofuels and co-generation will affect and integrate with the whole society. In the Energy Policy, eighty statements are listed, of which at least half of them are directly related to the strategy in question. When looking at the sub-headlines, at least one third of them addresses issues of specific sustainability concerns, see appendix 10.

## 4.5 Summary

In the Project Document it is stated that the objective of the project relates to societal values in the organizational framework that are involved in the process (see p.18).

The adaptive strength in the social context has in the theory been described as the scope of social capital. As the social capital is dependent on the norms, and the success of the strategy is dependent on the social capital, then the strategy must be having regard to existing norms. This leads to an overriding assumption stating that;

The key to a successful implementation of the actual strategy is dependent on how it correlates and interacts with existing norms.

As stated, the formal documentation creates the institutional regulatory framework and has to be in line. In this chapter the visions and the Project Document are analyzed in order to identify what purpose the Biofuels Guidelines has to fill in the coming process. In the actual context the overriding assumption is developed and divided in three assumptions related to the correlation between the strategy and the social context. Both this sub-analysis and also the whole summarizing analysis are based upon these assumptions.

The long-term goals have to be highlighted in all parts of the formal documentation

The implementation strategy has to involve existing social structures.

The Biofuels Guidelines has a central function in the process. This includes communication of directives to project developers and to link these directives to the social context. Therefore it also has to be designed in order to have a communicative function in the organizational procedure.

With these assumptions in mind, and recalling the importance of the social capital, Hydén's norm model is used as an analytical tool. As summarized in the theoretical framework, this model is linked to the components of trust, capacity, knowledge and ownership. The extent to how these are expressed at the input side affects the norms and thus the possible expected output. For instance, the perception of ownership is communicated as values and cognition, and will affect the will to participate and support.

In the Project Document barriers relating to the institutional framework are described as insufficient **organizational capacity**, due to inadequate experience and knowledge among civil servants, from the level of the central government to the level of the local government authorities. This includes knowledge about possible implications of a biofuels industry and does therefore link to lack of local research. Thereby this also link to the overall **human resource capacity** which is identified to be inadequate, also because of unskilled workforce. This do to some extent confirm the findings from Lindström (2003). Following Hydén this will create a weakness in the social capital on this organizational scale, due to weak systemic conditions.

Considering **public awareness, support and participation**, it is stated to be limited within the country, and farmers are not aware of opportunities. This affects the norms and thus the social capital as both lack of knowledge and weak systemic conditions, limiting the opportunities in general. It is stated that the issue of human resource capacity is partly beyond the project's range;

While this issue of human resource capacity is of critical importance this is not something that can be resolved through a single project but rather will be the result of a long term, broad process including both government and non-government organisations (Project Document p.7)."

This can not be argued, especially regarding necessary efforts and resources. But considering this, and **public awareness, support and participation**, it has to be emphasized - according to Putnam this is where the project has its Achilles' heel.

The PC shall have the necessary organizational capacity, being guided by the objective to support all relevant stakeholders, and all activities are expected to encourage two-way communication. Following the findings of the theoretically identified prerequisites these efforts have to correlate with the social context. In plain text, it has to consider the perspective of the addressee. For instance, when it is said that "information material shall be disseminated through existing channels, such as agricultural extension officers [and] LGA facilities/..." these officer's working conditions has to be guiding the process. Otherwise the perception of weak ownership will affect the norms on LGA-level, also decreasing the trust in the procedure. Relating to this there is a practical challenge that TIC is sited in Dar es Salaam, as actions resulting from the strategy will be taking place within the jurisdiction of Local Government Authorities.

Considering the fourth objective; the identified **primary target groups** relates directly to the issue of **public support, participation and awareness**. It is emphasized that these may not be directly involved in the project to a significant degree, and therefore it is important to keep their interests in mind as the project is implemented. By this it is said that the public will not have sufficient influence on the formulation of the strategy. If that will be the case, it is a weakness in the systemic conditions. It might cause mistrust and a weak public ownership, which will be strengthened by already existing lack of knowledge and capacity on this level. The statement of The Tanzania Development Vision of 2025 has to be recalled, that previous implementation strategies "has given rise to the erosion of trust and confidence among the people on their leaders. It is evident that the people are now less enthusiastic about participating in national endeavors (see p. 22 above)".

Based on this empirical material nothing can really be said about the social capital in general in Tanzania. What can be said thus is that the norms are not yet ready for an institutional reform work like the planned. Systematic conditions are identified to be inadequate. There is lack of structures to express the opportunities, or knowledge to be aware of them. Values indicate that there is a risk for unsupportive approaches among parts of the public. It is thus not only an issue of developing knowledge and capacity, but also to increase the perception of ownership and thus trust in the process and the process leadership. This must be part of the major objective of the forthcoming Guidelines on Biofuels and Co-generation.

## **5 Working steering documentation – legislation and guidelines**

On basis of *Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania* (BG) adequate legislation has been identified. The respectively legislation is compared to BG in order to identify linkages, and also to spot approaches of sustainable development. Matrixes with evaluated legislation are included in appendixes, this section presents the results.

### **5.1 Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania**

These guidelines are intended to give guidance to project developers, both small- and large-scale. It shall thereby express the intentions of the strategy, including major long-term objectives and sustainability. As functional instrument it shall give directions on specified requirements, authorities in charge and relevant regulations. In this report *Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania* (BG) is realigned. This is done in an attempt to put the ingoing elements (headings) in a sequential structure. A matrix, including all relevant facts, is used in the evaluation and comparison with legislation, see appendixes. The realigned version is structured as following:

#### **1 Application and registration procedures**

- 1.1 Registration
  - 1.1.1 Taxation
  - 1.1.2 Incentives
- 1.2 Terms of Permits
  - 1.2.1 Permits and fees
  - 1.2.2 Land Acquisition;
    - 1.2.2.1 Derivative rights
    - 1.2.2.2. Conveyance
    - 1.2.2.3 Resettlement Plan, RP
    - 1.2.2.4 RP shall include
    - 1.2.2.5 Socio-economic survey
  - 1.2.3 Community engagement
    - 1.2.3.1 Public participation
    - 1.2.3.2 Mainstream HIV/AIDS and Gender in projects
  - 1.2.4 Environmental Impact Assessment, Health Impact Assessment
- 1.3 Monitoring, follow-up and soft long-term responsibilities
  - 1.3.1. Biofuels waste management
  - 1.3.2 Breach of procedures and other offences, Dispute Settlement
  - 1.3.3 Change in land use
  - 1.3.4 Research and development

#### **2 Production process**

- 2.1 Processing of biofuels
- 2.2 Blending
- 2.3 Quality of biofuels
- 2.4 Contract farming
- 2.5 Seeds management

#### **3 Distributions**

- 3.1 Infrastructure development
- 3.2 Storage and handling of biofuels
- 3.3 Transport and distribution

Each element is structured in order to define, or to not define, four components; accountable stakeholder, executive body in charge, legislation and requirement. This is done to find linkages to relevant legislation. In most of the cases, requirements are defined. It can thus be used to compare with legislation, in the search for linkages. Accountable stakeholder is by nature most often the investor/ developer. However, in some cases it is found to be the Government or delegated authorities. In Draft BG the following can not be defined:

**Table 2. Identified elements of; responsible stakeholder, executive body in charge, regulation and requirement. The identified or unidentified elements refer to headings in within draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania.**

<b>Component</b>	<b>Not defined in element:</b>
<b>responsible stakeholder</b>	Quality of biofuels
<b>Regulatory authority</b>	Taxation, Permits and fees, Mainstream HIV/AIDS and Gender, Change in land use, Research and development, Blending, Quality of biofuels, Contract farming, Storage and handling of biofuels, Transport and distribution
<b>Regulation</b>	Taxation, Permits and fees, Land acquisition – Derivative rights and Conveyance, Resettlement Plan, Socio-economic survey, Public participation, Mainstream HIV/AIDS and Gender, Change in land use, Research and development, Processing of biofuels, Blending, Quality of biofuels, Contract farming, Storage and handling of biofuels, Transport and distribution
<b>Undertaking</b>	Incentives, Quality of biofuels

## 5.2 Legislative framework scan

First the respective legislation is described in broad outline. Linkage with Biofuels Guidelines is then expressed. References to draft BG is linked to both the draft version and the realigned version, i.e. in (BG 1.1: (1a – f)) the first reference - 1.1 - refer to the realigned version of this report and the reference in brackets (1a – f) refer to the original draft BG. Secondly follows an evaluation of how aspects of sustainability are taken into account in the legislation respectively. The effectiveness of how the legislation in question is considering the aspects is assessed and given an indicative mark, where 1 imply that the aspect is mentioned in very broad outline, 2 imply that the aspect is referred to in specific, but not regulated in detail, and 3 means that the aspect is well considered and regulated. These are further discussed in chapter five. The matrixes are arranged in columns, see appendixes.

### 5.2.1 Rural Energy Act 2005

In this act there are description of regulative procedures associated to; establishment of the Rural Energy Board (REB), establishment of the Rural Energy Agency (REA) and establishment of the Rural Energy Fund (REF). The objective of the REB is to promote rural socio-economic development by facilitating extended access to modern energy services for the productive economic uses, health and education, clean water, civil security and domestic applications. The REB shall be the governing body for the REA, and shall consist of representatives from relevant Ministries, private sector, Tanzanian Bankers' Association, civic society, development partners and consumers. Objective of the REA is to implement the REB's Strategies and decisions and thus act as the executive body and Secretariat to REB. REF is the funding mechanism to subsidize the capital costs of projects that are developed by private and public entities, co-operatives and local community organizations.

## Linkages to Draft BG

Draft BG refer to the Rural Energy Fund, and states that biofuels projects are potential candidates for the purpose of the fund [Part V p.11]. This is confirmed in Rural Energy Act that the responsibilities of the REB shall be “to subsidize the capital cost of projects that are developed by private and public entities, co-operatives, and local community organisations (Article 16- 16- (1a, c, 2, 3), 17, 18- (1, 2a –c)).”

The required information included in a grant contract (Article 16- (a – i), 17) has similarities to the information required for registration in general (BG 1.1: (1a – f)). It is the purpose of the two procedures that makes a crucial difference. The first is a request for a Grant Contract, while the latter is the requirements to anyone that intends to start an activity in the sector. For further information on the details, see enclosures. Defined aspects of sustainability

Aspects of **sustainability in general** are identified. Aspects of promotion of social welfare, health and education, clean water and civil security are mentioned in general terms (Article 4- (a - b), 6- (1)). The effectiveness of the declaration is estimated to 1.

The aspect of **depletion of fresh water resources** is mentioned in very broad outline (Article 6- (1)). Estimated effectiveness is 1.

The aspect of **welfare, social conditions of local population, and capacity building** is found to be referred to in specific, but not regulated. Responsibilities are described as well as way of management, but the details are not identified (Article 6- (2a – c), 15- (b), 16- (4a – h), 22- (2d)). Estimated effectiveness is 2.

The aspect of **health care** is mentioned in very broad outline (Article 6- (1)). Estimated effectiveness is 1.

### 5.2.2 Land Act 1999

The objective of Land Act is to promote the fundamental principles of National Land Policy. It is declared that all land in Tanzania is public and vested in the President, as trustee on behalf of all the citizens in Tanzania (Article 1-(1a) p.36, (11)). The President may, through the Minister, give directives to the Commissioner of Lands (Part IV; 3). The Minister shall be responsible for policy formulation and for ensuring the execution by officials in the ministry (part IV. Article 8). The Minister shall also establish Land Allocation Committees, at appropriate levels of the Government, to advise the Commissioner on the exercise of his power to determinate applications for rights and property (Article 12-(1)). The Commissioner, who shall be appointed by the President, shall be the principal administrative and professional and adviser to the Government on all matters connected with the administration of lands (Article 9- (1), 10- (1)). Local government authorities shall not make an offer or grant any right of occupation to any organization (Article 14-(1)). In such cases, local government authorities, acting through a duly constituted committee or appointed officers make representations to the Commissioner, and the Commissioner shall have regard to that representation (Article 14-(3)). The role of District Councils and Village Councils are of advising character. Applications for a granted right of occupancy, received by the local government authority, shall be forwarded to the Commissioner. It may include comments and recommendations. The commissioner shall ensure that all local government authorities and associations of local authorities are consulted and kept informed about the administration of land under the Land Act and all other laws (Article 14- (6)). Within this administrative

framework, Land Act regulates all issues of rights of occupancy, such as; covenants, leases, mortgages, easements, transfers, assignments, transactions, remedies, and also dispute settlements and powers of courts.

It shall be the duty of all courts in interpreting and applying the Land act and all other laws relating to land in Tanzania to use their best endeavours to create a common law of Tanzania applicable in equal measure to all land and to this end the courts shall apply a purposive interpretation to this act and shall at all times be guided by the Fundamental Principles of Land Policy (Article 180- (3)).

### **Linkages to Draft BG**

Draft BG states that the applicant has to apply for land ownership from TIC. Among other documents accompanied to the application a feasibility study must be included (BG 1.2.2; (4e)). As part of the feasibility study, a summarized version of the Resettlement Plan must be included (BG 1.2.2.3; (6.2)). The preparation of the Resettlement Plan should involve a socio-economic survey of all Project-Affected-Persons (BG 1.2.2.4; (6.6a)). This is analogous with the Land Act (Article 59- (2) p.191).

Detailed regulations related to Resettlement Plan (RP) (BG (6. 1, 2, 4,6a – d)) correspond to the scheme of regularisation, for which the Commissioner is responsible (Article 60- (2, 1a, c – h)).

In determining whether to grant an approval for a disposition, the Commissioner shall have regard to displaced persons (Article 41-(2e)). The procedure is also described as a responsibility to the investor, to carry out a socio-economic survey, thus identify and categorize Project Affected Persons (BG 1.2.2.5 (6.8a – f)).

Matters of compensation to communities and households requiring assistance with relocation and restoration (BG (6.5) p.15), are also regulated within the Land Act (Article 34- (3)).

The land will be granted to the investor/developer on condition that the land is used for the applied purpose [BG 1.3.3; (5)]. This has to be approved by the Commissioner (Article 35-(5a – b)).

Draft BG states that the Tanzania Investment Center shall ensure that majority ownership of land is by locals (BG 1.2.2.1; (4.4)). Land Act is not really analogous on this point, as it refer to the Tanzania Investment Act;

“for avoidance of doubt, a non-citizen shall not be allocated or granted land unless it is for investment purposes under the Tanzania Investment Act, 1997. Land to for investment purposes under subsection (1) of this section, shall be identified, gazetted and allocated to the Tanzania Investment Centre which shall create derivative rights to investors. For the purposes of this Act, any body corporate of whose majority shareholders or owners are non-citizens shall be deemed to be non citizen or foreign company (Article 20- (1,2,4))”.

Disputes shall be referred to the Courts of law of United Republic of Tanzania (BG 1.3.2 (19)). The courts vested with exclusive jurisdiction are; the Court of Appeal, the Land Division of the High Court established in accordance with law for time being in force for establishing courts divisions, The District Land and Housing Tribunal, Ward Tribunals and Village Land Council (Article 167- (1a – e)).

## **Defined aspects of sustainability**

Aspects of **sustainability in general** are identified. The fundamental principles of National Land Policy mention aspects of social sustainability in very broad outline (Article 1- (1e, g)). Ecological sustainability is mentioned in the definition of hazardous land (Article 7-(1a - f)). Estimated effectiveness is 1.

Aspects of **property and use rights** are identified (Article 1- (1i, k -l), 51-(1e: ii), 89- (1c), 123- (1e)). Estimated effectiveness is 2.

Aspect of **welfare, social conditions of local population, and capacity building** are identified as the President's duties so as to advance the economic and social welfare of the citizens (Article 1- (2)). Estimated effectiveness is 1.

These aspects are all weakly linked to BG (BG 1.2.2.3: (6.5)).

### **5.2.3 Tanzania Village Land Act 1999**

Village Land Act is the application of the Fundamental Principles of the National Land Policy (FPNLP) that focuses on the establishment of an independent, expeditious and just system for adjudication of land issues. Land disputes shall thereby be heard and determined without undue delay (Article 3- (1a, 1n)). It also has the object to encourage dissemination of information about land administration and Land Law through programs of public and adult education, using all forms of media (Article 3- (1o)). It is stated that the President is minded to transfer any area of village land to general or reserved land for public interest, and that public interest shall include investments, of national interests (Article 4- (1,2)). He may by then direct to the Minister to proceed in accordance with the provisions of Article 4. As the objective of VLA is issues related to the governance on local level, the main actors in preparations of decisions are the Commissioner and the Village Council (Article 4- (5)). In issues of land transfer, less than 250 ha, the Village Council is responsible for the preparation for the proposal. It shall be submitted, with recommendations, to the Village Assembly. According to Local Government Act 1982 section 103- (3), the Village Assembly shall with respect to the given recommendations (also from District Council when relevant) decide on approval or disapproval of the proposed transfer (Article 4- (6a)). For proposals of areas greater than 250 ha, the Minister is responsible. The Minister shall consider the given recommendations made by the Village Assembly through the Village Council, the District Council and their representations (Article 4- (6b)). No village transfer land shall be transferred until type, amount, method, timing of the payment of compensation has been agreed upon between the Village Council and the Commissioner. In cases when the Minister is responsible, the Commissioner and the President shall also be included in the agreement (Article 4- (8a)).

### **Linkages to Draft BG**

In matters of land acquisition Draft BG refer to both Village Land Act 1999 and Land Act 1999 (BG 1.2.2 :( 4.3)). The jurisdiction of the Village Council, on issues of customary right of occupancy as well as compensation, etc, are described (Article 18- (1a – i)).

As Draft BG states that an investor shall provide employment to the community and thus give priority to marginalized groups (BG (10.2a)), Village Land Act is more general in described outcomes, but still very clear on the intention related to discrimination. Consequently, the

right of every woman to acquire, hold, use and deal with land shall to the same extent and subject to the same restriction be treated as the right of any man, is declared to be law. Also the rights of small-holders pastoralists are also included in the fundamental principles of National Land Policy which are the objectives of the Land Act 1999 (Article 3- (11, 2), 30- (4a – b)).

Relating to improvement of social conditions Draft BG declare that these should be re-established or improved as a principal objective of a Resettlement Plan (BG 1.2.2.3: (6.2 - 3)). At what time where an application (- for customary right of occupancy) is from a non-village organisation, the Village Council shall seek guidance from the Commissioner who shall have regard to the contribution to the national economy and well-being that the development for which the right of occupancy is being applied for is likely to make (Article 23- (2d)). This requirement is further described in relation to matters of agriculture and the construction of some industrial building (Article 30- (2a –b, e – f)).

Matters of compensation are described briefly in Draft BG (BG 1.2.2.3: (6.5)), and more in detail in Village Land Act ((FPNLP) Article 3- (1h), 4- (8a (i), 11)).

It has not been identified whether the Village Land Act does verify the statement in Draft BG, of majority of ownership by locals (BG 1.2.2.1: (4.4)). But, Village Land Act do give a definition of non-village actors (Article 17- (1a – c, 5 )). Moreover, it is declared that a person who is not a citizen shall not be entitled to be nominated as a member of the village land Council or continue as a member of a traditional village land council (Article 60- (5g)).

### **Defined aspects of sustainability**

Aspects of **sustainability in general** are identified, however mentioned in very broad outline. They are related to management of village land and must be considered related to ecological sustainability, as a prerequisite for social activities (Article 6- (1,2,3f – g), 8- (3a), 29- (2a)). Estimated effectiveness is 1.

Aspects of **property and use rights** are the main subject of the Village Land Act ((FPNLP) Article 3- (1c)). Therefore the effectiveness has to be considered to be 3, even if matters related to biofuel production or co-generation is not specified.

Aspects of **welfare, social conditions of local population, and capacity building** are related to the aspects of improvement of social conditions. Required considerations from responsible bodies are referred to in specific, but not regulated in details related to matters related to biofuel production or co-generation (Article 23- (2d), 30- (2a –b, e – f)). Estimated effectiveness is 2.

Aspects of **Employment, wages and remuneration** can be found to been taken into consideration, from the same articles referred to above (Article 23- (2d), 30- (2a –b, e – f)). Specifically article 30 states that the applicant has to sign a deposition that he or they will commence activities which is likely to provide benefit of villagers or the village. Estimated effectiveness is 2

Aspects of **inequity; women, children, indigenous people etc.** has to be considered strongly adopted, since the right of every woman is declared to be law, and the rights of small-holders pastoralists are included in the fundamental principles of National Land Policy (Article 3- (11, 2), 30- (4a – b)). Estimated effectiveness is 3.

Aspects of **education** is a secondary purpose of the Village Land Act, stating that programmes of public and adult education, using all forms of media is part of The fundamental principles of National Land Policy (Article 3- (1o). Estimated effectiveness is 1. Aspects of **Strength and diversification of local economy** may be considered as taken into account in the aspects of sustainability in general, see above

#### **5.2.4 Tanzania Environment Management Act 2004**

The general principle of the Environmental Management Act (EMA) is that every person living in Tanzania shall have a right to clean, safe and healthy environment, including access to the environment for recreational, educational, health, spiritual, cultural and economic purposes (Article 4- (1, 2)) Any person exercising jurisdiction under EMA shall be guided by principles of sustainable development, such as: the precautionary principle, the polluter pays principle, the principle of eco-system integrity, the principle of public participation in the development policies, plans and processes for the management of the environment, the principle of access to justice, the principle of inter-generational equity and intra-generational equity, the principle of international co-operation in management of environmental resources shared by two or more states and the principle of common but differentiated responsibilities (Article 5- (3a - h)). Land users shall be responsible for the protection, improvement and nourishment of the land, and for using it in an environmentally sustainable manner. The Management and utilisation of land shall be in accordance with the prevailing land laws provided that where there is any conflict on environmental aspect of land management, the provisions of EMA shall prevail (Article 51, 72, 73- (2)).

The Minister shall be overall responsible for articulation of policy guidelines necessary for a sustainable management of environment in Tanzania (Article 13.-(1)). Implementation of the National Environmental Policy, as well as advises to the Government on legislative matters and also coordination of all activities related to environmental management aspects is the responsibilities of the Director of Environment (Articles 14, 15). Executive authority is The National Environment Management Council (NEMC), through the Director-General who will be the chief executive officer (Article 21.-(3)). The Council shall be managed by a Board of Directors, which shall consist of; the Chairman who shall be appointed by the President, the Director of Environment and seven members, appointed by the Minister at least two of whom being women (Article 19- (2a – c)). The Director-General, appointed by the President, is responsible to the Board for the management and administration of the affairs of NEMC (Article 21.-(1, 2, 3, 5)). NEMC shall do all such acts as may appear to it to be requisite, advantageous or convenient, in association with any other person or body of persons (Article 18.-(1)). In its corporate name, NEMC will be capable of suing and being sued (Article 16.-(2b)).

The National Environmental Trust Fund is established with the objectives; to facilitate research intended to further the requirement of environmental management; to foster capacity building; to confer environmental awards; to issue environmental publications; to provide scholarships; to promote and assist, through grants, community based environmental management programmes; and to pay for the costs of the meetings of the National Environmental Advisory Committee and of the Board of Trustees. The Board of Trustees may, on recommendation of the National Environmental Advisory Committee, determine that certain donations of the Trust Fund be applied specifically for prizes and awards for exemplary services to the environment and to be applied by the recipient exclusively to the management of the environment (Articles 213- (1, 3, ), 214- (1a – g, 2)).

## Linkages to Draft BG

In matters of application Draft BG declare that a socio-economic survey shall consider the resource base of the affected population (BG 1.2.2.5: (6.8b)). EMA states that The Minister shall recommend to the licensing authority that the project should not be licensed or, where the licence has been issued, be cancelled if: the project or undertaking is likely to cause significant adverse impact or irreversible impact on the society (Article 93- (a – b, d)). Further, as Draft BG mention re-established or improved social and economic productivity (BG 1.2.2.3: (6, 3 – 4)), EMA states that NEMC has the authority to pay visits of inspection, at the proponent's cost, during the EIA-process. It shall be conducted before approval and include aspects of the balance between short and long term socio-economic benefits of the project (Article 88- (1, 2a – e)).

During the feasibility study the investor shall be required to consult and involve the public. Consultation shall include the local communities and local, District and Regional authorities (BG 1.2.3.1: (10.1)). NEMC and other relevant authorities shall establish mechanisms to collect and respond to public comments, concerns and questions related to the environment (Article 178- (2)). NEMC is also responsible for enhancement of environmental education and public awareness (Article 18- (1g – h)). As a link between local levels and NEMC a Regional Environment Management Expert shall be charged with the responsibility of advising the local authorities (Article 35-1, 2)). Also design of environmental policies, strategies, plans and programmes and participation in the preparation of laws and regulations relating to the environment is part of the public's right to participate in decisions (Article 17- (1)).

More specific public participation is pointed out, as NEMC is empowered to adopt guidelines on public participation, especially those likely to be affected and solicit comments by any appropriate means, of the people who will be affected (Article 89- (1a – c)).

In case of any disputes (BG 1.3.2: (19)) each Environmental Management Committee shall have powers to require any person to provide information or explanation., and also to initiate proceedings of civil or criminal nature against any person, company, agency, department or institution that fails or refuses to comply with any directive issued by any of such Committees (Article 41- (b – f)).

Draft BG declares the importance of investor's support to research activities (BG 1.3.4: (20)). In EMA this is stated to be the responsibility of NEMC, to either alone or in association with others carry out these issues (Article 18- (1e – g)).

In Draft BG Environmental Impact Assessment is declared to be carried out, by the investor "*prior to the beginning of the project as per EIA regulations*", and being submitted to the Biofuels one stop center. A Health Impact Assessment may be required after commencement of the project implementation (BG 1.2.4: (11)). The EIA regulations state that an EIA shall be undertaken prior to the commencement or financing of a project. Further, NEMC may, at any time after the issuance of an EIA Certificate, require the holder to conduct a fresh EIA study and submit an Environmental Impact Statement within a prescribed time. The costs of executing an EIA shall be carried by the investor (Article 81- (1, 2, 3, 4), 83- (3), 97- (a – b)).

In case of any change in use of land, the investor must apply for re-grant, which is not automatic (BG 1.3.3: (5)). NEMC may, require the holder of an EIA certificate to conduct a

fresh EIA study, if there is substantial change, or modification, in the manner in which the project is being operated (Article 97- (a)).

In order to describe the production of the planned activity, the investor is required to submit; detailed process flow sheet and process lay out of the anticipated plant, detailed equipment specifications and drawings for all equipment in the plant, operation manuals of major equipment in the plant, a list of all chemicals that will be used; and where appropriated a material safety data sheet for each chemical, together with other technical information relevant to the proposed plant (BG 2.1: (12.1a - c)). This kind of requirement shall be prescribed by the Minister on safety for human and other living being, to avoid causing environmental degradation (Article 110- (4)).

Relating to matters of distribution the investor shall make sure that containers are reusable, and that there is a mechanism in place for collection of used containers including obsolete ones for possible re-cycling or disposal (BG 3.2 (13c, g)). This is a matter for the local government authorities to prescribe, to ensure that industries within their geographical areas of jurisdiction provide adequate space and facilities for management of all solid waste (Article 116- (1)).

### **Defined aspects of sustainability**

In the description of the objectives of EMA, important principles of both social and ecological aspects, i.e. **sustainability in general** are referred to in specific, but not regulated in detail (Article 7- (1 – 4)). More specifically described and thus well regulated are the descriptions about “*Protection order*” (Article 195 – 197). Together these articles imply that chances are good that general aspects of sustainability may be well regulated. Effectiveness is thus estimated to 3.

Aspect of **Green house gases** balance is identified. The Minister and relevant sector Ministries are responsible to address matters of climate change by any institution, firm, sector or individuals and also project national positions at global level in the context of the United Nations Framework Convention on Climate Change, and its related Protocols (Article 75- (d – e)). The issue is referred to in specific, but not regulated in detail, effectiveness is thus estimated to 2.

The aspect of **Biodiversity** is identified and found specifically described and rather well regulated. Biodiversity is described from both bio-system and genetic level. The Minister and relevant sector Ministries are responsible, for regulations prescribing; adaptation and integration of strategies, plan and programmes, identification, monitoring, maintenance and organization (Article 66- (1, 2, 3a – g)). Effectiveness is thus estimated to 3.

The aspect of **depletion of fresh water resources** is found to be specifically described and rather well regulated. NEMC and local government authorities are identified to executive and shall issue guidelines and prescribe measures for the protection of riverbanks, rivers, lakes or lakeshores and shorelines. Without permit issued by the Minister it shall be a felony to deposit a substance in open water or subsoil water, as well as to direct or block any water flow or drain rivers and lakes. For applications for water use, under Tanzania Water Act 1974, a statement on the likely impact on the environment shall be submitted, together with an obligation to return used and not polluted water to the body of water from which it was taken (Article 55- (1, 2d – f), 60- (1, 2a – c)). Effectiveness is thus estimated to 3.

Regarding **deforestation**, modern techniques for use of renewable sources of shall be promoted, through research and incentives. The Minister shall, in consultation with Minister responsible for forestry or/and energy, promoting policies and measures for the conservation of non-renewable sources of energy, as well as taking measures to encourage the planting of trees and woodlots (Article 64- (a – c)). Effectiveness is estimated to 2.

About the aspect of **pollution of chemicals** it is stated that industry shall be involved, particularly with reference to sharing the costs for disposal and taking responsibility of disposal of persistent organic pollutants. It shall be an offence for any person to pollute. The Ministry, NEMC and local authorities shall promote appropriate pesticide and chemicals practices, thus seek to ensure that the prescribed best practicable option is adopted (Article 77- (4, 5f – g, q), 106- (1, 2, 3)). Effectiveness is estimated to 2.

Considering the aspect of **Genetically modified organisms**; it is found to be mentioned in very broad outline. Effectiveness is estimated to 1. It is stated that any person that use, develop or handle GMO: s shall ensure that the activity do not harm the socio-ecological society (Article 69- (1, 2)). Effectiveness is estimated to 1.

**Waste treatment** is regulated through a duty of submission of information, and therefore estimated to be not really regulated in detail. Any person who operates an irrigation project scheme or an industrial production plant shall furnish information to NEMC, or any designated person, due to prescriptions by the Ministry. Any failure to this prescription is an offence (Article 112- (1a, 3)). Effectiveness is estimated to 1.

The issue of **food supply** is identified to be mentioned in very broad outline. EMA says that Among other institutions, the Tanzania Food Drugs and Cosmetics Authority, shall keep the Council (NEMC) updated on matters relating to their respective functions which have or may have great impact on the environment (Article 170- (1c)). Effectiveness is estimated to 1.

**Property and use rights**; is a fundamental part of the general objectives of EMA. The aspect is referred to in broad outline and thus not regulated in detail (Article 7- (3e – g, I – k, 4)). Depending on the use of the “protection order”, the issue of property and use rights may be seen as regulated more in detail (Article 195 – 197). In case when the Minister is about to declare land to be an Environmental protected Area, the interests of the local communities in or around the area shall be regarded (Article 47- (1, 3a, 4)). Estimated effectiveness is yet 1, see below; welfare etc.

Strengthening of **Welfare and social conditions of local population, and capacity building** is one of the main objectives of EMA. NEMC is established for the purpose of facilitate public participation in environmental decision making (Article 17- (1)). Thus the public shall participate in the design of environmental policies, strategies, plans and programmes (Article 178- (2)). A Regional Environment Management Expert, appointed by the Minister shall be charged with the responsibility of advising the local authorities on matters relating to the implementation and enforcement of EMA (Article 35-1, 2)). Estimated effectiveness is 3. Aspects of **education** is within the framework of EMA related to education relating to environmental protection matters, as for example; the responsibilities of NEMC (Article 18), environmental sections within Ministries (Article 31), and authorities managing national protected areas (Article 49). The aspect is found to be referred to in specific, but not regulated in detail, neither is it related to levels of education in general. Therefore estimated effectiveness is 1.

Aspects of **health care** refer to general rights to environment for health purposes (Article 4-(1, 2)), which is further specified as consequences of, for example, use of GMO: s (Article 69) chemicals (Article 78) and waste treatment (Article 118). The aspect is found to be referred to in specific, but not regulated in detail, and thus effectiveness is estimated to 2.

### **5.2.5 Energy and Water Utilities Regulatory Authority Act, 2001**

Energy and Water Utilities Regulatory Authority Act describes the responsibilities and duties of the Energy and Water Utilities Regulatory Authority, (EWURA). EWURA shall strive to enhance the welfare of Tanzania society by; promoting effective competition and economic efficiency; protecting the interests of consumers; protecting the financial viability of efficient suppliers; promoting the availability of regulated services to all consumers including low income, rural and disadvantaged consumers; enhancing public knowledge, awareness and understanding of the regulated sectors including:

- i) the rights and obligations of consumers and regulated suppliers;
- ii) the ways in which complaints and disputes may be initiated and resolved;

EWURA shall in serving its duties taking into account the need to protect and preserve the environment (Article 6). The functions of EWURA shall be, subject to sector legislation;

- i) to issue, renew and cancel licences;
- ii) to establish standards for goods and services;
- iii) to establish standards for the terms and conditions of supply of goods and services;
- iv) to regulate rates and charges;
- v) to make rules;

And to monitor the performance of the regulated sectors in relation to

- i) levels of investment;
- ii) availability, quantity and standard of services;
- iii) the cost of services;
- iv) the efficiency of production and distribution of services; and
- v) other matters relevant to the Authority;

And also; facilitate the resolution of complaints and disputes; disseminate information; consult with other regulatory authorities; perform such other functions as are conferred to administer this Act. In the performance of its functions, EWURA shall not award or cancel a major or exclusive licence having a term of five or more years without Prior consultation with the Minister and the relevant sector Minister (Article 7- (1a – i, 3)).

EWURA shall be governed by a Board of Directors consisting of a Chairman, appointed by the President, and five non-executives, appointed by the Minister after consultation with the relevant sector Ministers. The President acting in accordance with the advice of the Sector Minister, and the Minister, may remove a member from office at any time if: the member is declared bankrupt; or convicted of a criminal offence; or if the President decides that the member should be removed because at a conflict of interest (Article 8- (1, 2a – c)). In case of appointments of members of the Board, there shall be established a Nomination Committee composed of the Permanent Secretary, who shall be the Chairman, and two persons representing the private sector. One of the two shall be nominated from a legally recognised

body representative of private sector interests, and the other person shall be nominated by the EWURA Consumer Consultative Council (the Council) (Article 9- (1, 2)).

The Council shall consist of six to ten members, appointed by the Minister. Being representatives of private sector interests, the Council shall be ruled by knowledge and understanding of the interests of consumers and that of the regulated services, including the interest of; low income, rural and disadvantaged persons; industrial and business users; government and community organisation. The Council shall provide views and information to and consulting with the Authority, Minister and sector Ministers, and also consult with industry, government and other consumer groups on matters of interests to consumers of regulated goods and services (Article 30- (1, 2, 4a – c), 31- (1a, d)).

### **Linkages to Draft BG**

Regarding **Equal terms in market participation** Draft BG declare that Out growers through their established associations will enter into contract agreement(s) with investor/developer(s) to ensure fair prize for energy crops/biofuel products (BG 2.4 :( 8)). EWURA is responsible for carrying out regular reviews of rates and charges, taking into account: the costs of making, producing and supplying the goods or services; return on assets, benchmarks for prices, costs and return on assets in comparable industries; factors specified in the relevant sector legislation; consumer and investor interest, etc (Article 17- (1, 2a – i)).

The issue of **Fair competition** is one of the implicit - but still main - objects of the BG is to be part of the regulatory framework, aiming to build the foundation of fair and equal production [author's understanding]. EWURA is the authority which shall see to this matter, considering:

- a) whether the conditions for effective competition exist in the market;
- b) whether any exercise by EWURA is likely to cause any lessening of competition or additional costs in the market and is likely to be detrimental to the public;
- c) whether any such detriments to the public are likely to outweigh any benefits to the public resulting from the exercise of the powers.

EWURA shall deal with all competition issues/.../making appropriate recommendations to the Tanzania Bureau of Standards, the Commission or any other relevant authority in relation to:

- a) any contravention of the Fair Competition Act, 1994, the Tanzania Bureau of Standards Act, 1975 or any other written law;
- b) actual or potential competition in any market for regulated services; and
- c) any detriments likely to result to the members of the public  
(Article 20- (1a – c, 2a – c)).

### **Defined aspects of sustainability**

**Aspects of sustainability in general** are mentioned in very broad outline, as the Act says that “EWURA shall strive to enhance the welfare of Tanzania society by taking into account the need to protect and preserve the environment (Article 6- (f)). Estimated effectiveness is 1.

In this specific legislation, **Social sustainability** is secondary outputs, resulting from the main objective to ensure fair market conditions. By this, included aspects are: *Food supply, Property and use rights, Welfare, and social conditions of local population, and capacity building, Employment wages and remuneration, Inequity; women, children, indigenous people etc, Education* as well as *Waste treatment*.

All of these aspects are mentioned in very broad outline (Article 6, 7). *Welfare, and social conditions of local population, and capacity building* is also considered in Article 31- (1a – e). Although it is a sought output to encourage aspects such as these, the specific aspects must here be regarded as referred to, but not regulated in detail. Estimated effectiveness is 2.

**Strength and diversification of local economy** is the main objective of this Act. In the whole, the legislation is considered to be describing this aspect specifically and thus it regarded well regulated. Estimated effectiveness is 3.

### 5.2.6 Tanzania Investment Act 1997

Tanzania Investment Centre/.../shall be a one-stop centre for investors [and] shall be the primary agency of Government to co-ordinate, encourage, promote and facilitate investment in Tanzania and to advise the Government on investment policy and related matters. For this purpose TIC shall:

- initiate and support measures that will enhance the investment climate/,,,/for both local and foreign investors;
- collect, collate, analyse and disseminate information about investment opportunities and sources of investment capital, and advise investors upon request on the availability, choice or suitability of partners in joint-venture projects.

In consultation with Government institutions and agencies TIC shall identify/,,,/and further provide, develop, construct, alter, adapt, maintain and administer investment sites, estates or land together with associated facilities of those sites, estates, land and subject to relevant law, the creation and management of export processing zones/.../for the purposes of investors and investments in general. For the purposes of making TIC an effective one stop Centre, all Government departments, Government agencies and other public authorities shall co-operate fully with TIC/.../ (which) shall liaise in writing with the relevant authorities to secure the necessary licences and approvals as required by the investor.

TIC shall thereby assist all investors including those who are not bound by the provisions of TIA, to obtain all necessary permits, licences approvals consents, authorizations, registrations and other matters required by law for a person to set up and operate an investment; and to enable certificates issued by TIC to have full effect. TIC shall also:

- provide and disseminate up-to-date information on benefits or incentives available to investors;
- carry out and support local investment promotion activities which are necessary to encourage and facilitate increased local investments, including entrepreneurial development programmes (Article 2.5, 4, 5, 6, 15, 16)

All applications for certificates of incentives and protection under this Act shall be made to TIC (which) shall, issue certificates in accordance with the provisions of this section.

Where an application is for new investment, it shall contain:

- the name and address for the proposed business enterprise, its legal form, its bankers,
- the name and address of each director or partner and the name, address, nationality and shareholding, of each share holder;
- the qualifications, experience and other relevant particulars of the project management;
- the nature of the proposed business activity and the proposed location where that activity is to be carried on;

- the proposed capital structure or the amount of investment and the projected growth over the next five years;
- how the investment will be financed;
- evidence of sufficient capital available for investment;
- an undertaking that the project shall be implemented as indicated in the projections of the project.

A certificate of incentives shall not be transferred, or assigned or amended without the approval of the Centre (Article 17- (1, 2a – g, 7)). Investments, wholly owned privately, are welcome whether domestic or foreign in origin. Joint Ventures between local and foreign investors (public and private) are also encouraged. The Government will, in particular, encourage joint venture undertakings between the following groups

- Foreign investors and local co-operative organisations.
- Foreign investors and local private investors.
- Domestic private investors and/or co-operative organisations.

TIA shall apply to any business enterprise that meets the following businesses specification:

- if wholly owned by a foreign investor or if a joint venture, the minimum investment capital is not less than Tanzanian shillings equivalent of US dollars three hundred thousand (US\$ 300,000); or
- if locally owned, the minimum investment capital is not less than Tanzania shillings equivalent of US dollars one hundred thousand (US\$100,000) (Article 2- (2a – b)).

As land is owned by the Government it can be leased on short, medium and long term basis. In some respects, land under lease may be subleased (Indian Ocean Rim Network) Where an investor is granted a Certificate of Approval by TIC, the Minister responsible for land shall grant him such terms and conditions as may be prescribed a lease of appropriate land for a term suited to the requirement of his enterprise (Article 26- (1)). Village land is available for commercial activities only; for the village itself, for joint ventures with the Village Government or the village's Co-operative Society. Likewise, village land may be sub-leased by the village for small or medium scale, private or public, economic activities (iornet). Notwithstanding the provisions of subsection (1), prior to the expiry of a lease granted pursuant to subsection (1) of this section the investor may apply for an extension of his lease and the Minister responsible for lands may grant an extension for such period as he deems fit, provided that no such extension shall exceed a period of ninety nine years (Article 26- (2)).

#### LICENCES REQUIRED BY A BUSINESS ENTERPRISE (Indian Ocean Rim Network)

- Registration Certificate of Approval
- Industrial Licence for investments in medium or large scale production plants. National Industries (Licensing and Registration) Act, 1967 it shall be determined by the Minister responsible for industry. Will be received automatically to holders of the TIC Certificate of Approval.
- A Certificate of Registration is required for small-scale industries.
- In the case when the investment is intended for manufacturing industry or factory the investor should apply to the Registrar of Industries.

- Certificate of Registration is required from the Factories Inspectorate of the Ministry of Labour, for investors intending to occupy a factory or using premises as a factory, in accordance with the Factories Ordinance, Cap. 297. Plans for the factory must be submitted with the application.
- Approval of the Municipal Council's Land Department is needed in case of plans for new buildings in urban areas.
- Grant of a Certificate Title should be applied for to the Land Registry, Ministry of Lands, Housing and Urban Development, by investors who have been allocated land for an investment project. Site allocation must be applied for, in the case when investors require land for an investment project, according to the Land Registration Ordinance, Cap. 334. Depending on the location of the land, the authority for application will be Ministry of Lands, Housing and Urban Development, Regional Land Officers, District Land Officers or village committees. In the case when the requested land is available for allocation, the application will be considered by the Land Allocation Committee in the regions – unless the land in question is Government land, for which the request has to be considered by the Ministry of Lands and Urban Development.
- An annual Business License is required for any person carrying on a business in Tanzania (including a manufacturing business), according to Business Licensing Act, 1972. The licensing authority may be any public authority appointed by the Minister of Finance. For retail businesses the authority is the local Council. For non-retail businesses the Regional Trade Officers of the Ministry of Industries and Trade are accountable.
- Tax Clearance Certificate issued by the Income Tax Department must be submitted to the application.

### **5.3 Summary – linkages between guidelines and legislation**

In the previous chapter goals related to the project is presented, as they are expressed in the long-term development goals and the Project Document. The latter includes the defined overall goals, the project objectives, expected outputs and stakeholders, in the project for the following two years. This chapter presents the working steering part of the formal documentation, the legislation and the guidelines.

First the realigned structure of the Guidelines is described, together with the identified elements of responsible stakeholder, executive body in charge, regulation and requirement. As requirements were identified, in most cases, these are used to identify linkages to legislation. This is done in very brief outline, and the full version can be found as a matrix in appendixes. Secondly the evaluated legislation is described, which are *Rural Energy Act 2005*, *Land Act 1999*, *Tanzania Village Land Act 1999*, *Tanzania Environment Management Act 2004*, *Energy and Water Utilities Regulatory Authority Act 2001*, and *Tanzania Investment Act 1997*. The selection is based on draft BG, and what has been presumed to be relevant during the reading process. Identified parts of legislation is linked to the relevant part of biofuels guidelines, presented in the realigned version.

Inconsistencies have been identified, both between Draft Biofuels Guidelines and legislation, and within legislation.

## Registration

The inception procedures of registration are briefly described and regulated. Identified weaknesses are the lack of specified certificates, legislation and authorities related specifically to a growing sector of biofuels, not least co-generation.

Tanzania Investment Center (TIC) is the over all responsible authority. TIC is established with the purpose of being a one-stop-center. It shall serve as the primary agency of the Government, and shall for this purpose consult with both the Government and other agencies. Of certain relevance for issues related to the biofuel sector the National Environment Management Council (NEMC) has to be consulted already at this stage, due to the regulations of Environmental Impact Assessment, see below – Terms of Permits. Energy and Water Utilities Regulatory Authority is another body in charge that has to consult on these matters, thus promoting and ensuring streamlined standards relating to goods and services, supply, and rates and charges. In *Permits and fees* it is declared some permits that has to be “required from relevant sector Ministries or institutions”; a) Production of biofuels, b) Specified biofuels crops in a specified location, c) Import and export of seeds, d) Co-generation, e) Power plant installation, f) Processing of Liquid biofuels, g) Plant installation, h) Local marketing and distribution, and i) Export. (BG 1.2: (2 p. 12)). Some of the stated permits have been identified with regard to legislation and responsible authority. But, in some cases, such as for instance *Local marketing and distribution* these are not specific considering biofuel production or co-generation. Other required permits that have not been identified at all are all related to the new sector. Besides what is said about requirements in draft BG (1.1 (1)) some certificates and licenses have been more specifically identified in the evaluated literature, in some cases together with responsible authority:

- **Registration Certificate of Approval**
- **Industrial Licence;** Minister responsible for industry (automatically to holders of the TIC Certificate of Approval), National Industries (Licensing and Registration) Act, 1967
- **Certificate of Registration;** the Registrar of Industries.
- **Certificate of Registration;** Factories Inspectorate of the Ministry of Labour, Factories Ordinance, Cap. 297.
- **Approval of the Municipal Council's Land Department** case of plans for new buildings in urban areas.
- **Grant of a Certificate Title;** the Land Registry, Ministry of Lands, Housing and Urban Development. **Site allocation** must be applied for at Ministry of Lands, Housing and Urban Development, Regional Land Officers, District Land Officers or village committees. The application will be considered by the Land Allocation Committee in the regions – unless the land in question is Government land, for which the request has to be considered by the Ministry of Lands and Urban Development; according to the Land Registration Ordinance, Cap. 334.
- **Business License;** for retail businesses the authority is the local Council, for non-retail businesses the authority is the Regional Trade Officers of the Ministry of Industries and Trade, according to Business. Licensing Act, 1972.
- **Tax Clearance Certificate**

When the project are dependent on grant payment according to the responsibilities of the Rural energy Board, the information submitted to the application shall follow directions of the Grant Contract, according to Rural Energy Act (Article 16- (a – i), 17)

## Land Acquisition

Derivative rights and conveyance and the like are in general the issues of Land Act 1999 and Village Land Act 1999. The specified terms of permits (BG 1.2.2.1: (4.1), 1.2.2.2: (4.2)) are covered within the responsibilities of TIC and the Tanzania Investment Act 1997 – except for the request for *Proven track records in biofuels* (BG 1.2.2.1b: (4.1)). The missing standards to assess this request are one specific gap that has been identified. Village land in general is not available for commercial activities, except by the village itself, or for joint ventures with the Village Government or the village's Co-operative Society. Similarly, village land may be sub-leased by the village for small or medium scale, private or public, economic activities (iornet). Draft BG declares that TIC shall ensure that majority ownership of land is by locals (BG (4)). It shall be noticed that this is not the same as majority of ownership in enterprises. Actually Investment Act states that TIC shall “initiate and support measures that will enhance the investment climate in the country for both local and foreign investors” (Article 6). Foreign investors are defined as a “person who is not a citizen of Tanzania, and in the case of a company, a company incorporated under the laws of any country other than Tanzania in which more than fifty percent of the shares are held by a person who is not it citizen of Tanzania (Article 3)”.

As part of the feasibility study, a Resettlement Plan (RP) has to be conducted, including a socio-economic survey. Even if the project does not have to result in relocations a RP has to be done, to be summarized in the feasibility study.

If the project will result in **relocations** the Commissioner of Lands is the body in charge (Land Act, Article 56 – 60). The Village Councils are in charge of village land, and shall deal with any issues relating to this jurisdiction (Village Land Act Article 18). In the case when relocations or other losses are unavoidable the **affected persons** shall have “prompt payment of full compensation for loss of any interests in land and any losses that are incurred due to any move or any other interference with their occupation or use of land (Land Act Article 34)”, which is analogous with Village land Act that stresses “full and fair compensation to acquisition” (Article 18). In fact “no Village transfer land shall be transferred until the type, amount, method and timing of the payment of compensation has been agreed upon between the village council and the Commissioner” (Article 4). Assessments on social and economic impacts on approved projects are also part of the responsibilities regulated within Rural Energy Act (Article 16). NEMC shall adopt guidelines on public participation, especially those likely to be affected by a project (Environmental Management Act, Article 89).

The principal objective of a RP should be to re-establish or improve the social and economic productivity (BG 1.2.2.3: (6.2 – 3)). This is regulated within the Village Land Act, specifically if an application of a right of occupancy is from a non-villager. Then the project must be proved to likely “provide benefits of villager or the village” (Article 23, 30). As part of the monitoring responsibilities of NEMC in the beginning of the process, **socio-economic benefits** of the project are one criterion that has to be considered (Environmental Management Act, Article 88).

The socio-economic survey should be conducted early in the project (BG 1.2.2.5: (6.8)). In determining whether to grant an approval for a disposition, the Commissioner shall have regard to where the disposition affect the interests of risk groups such as **displaced persons**, children and any low income persons (Land Act, Article 41).

BG declares that TIC shall ensure that **majority of ownership** of land is by locals (BG 4.4), which is analogous with Land Act (Article 20). In case of breach against this the Commissioner shall serve a notice of revocation on the occupier (Article 47, 48). The definition of a non-village organisation as not consisting of a majority of members of the similarly subsidiary village underline the responsibilities of TIC (Village Land Act, Article 17).

## Community engagement

It has not been defined how the two items of “how project(s) may contribute in improving social services at the project area” or investors obligation to “Ensure locals’ share holding in the business (in cash and land-assets) where appropriate, including out growers” shall be secured (BG 1.2.3.1: (10.1)). The closest legal support for those statements is identified within Village Land Act. It states the requirement to investors to “make and sign a deposition that he or they will within six months of the making of that deposition commence the construction of some industrial, commercial or other building, or agricultural, tourist or other development which is likely to provide benefit of villagers or the village (Article 30). Special regulations related to HIV and AIDS has not been recognized either.

Relating to **public participation** the Village Land Act has the object to encourage dissemination of information about land administration and land law through programs of public and adult education (Article 3). NEMC is responsible to establish mechanisms to collect and respond to public comments, in order to enhance the public’s rights to participate in decisions relating to environmental policies, plans and programmes (Environmental Management Act, Article 17, 18, 178). In order to advise the local authorities Regional Environmental Management Experts shall be appointed by the minister responsible for regional administration (Environmental Management Act, Article 35). The Environmental Management Act is guided by, among other, the principle of public participation in development plans, etc (Article 5).

In matters of rights to acquire, hold, use and deal with land, **Discrimination** of women is prohibited by law (Village Land Act, Article 3). This is part of the fundamental principles of National Land Policy, which also states that market in land shall be made in such manner that do not disadvantage small-holder pastoralists.

### 5.3.1.1 Environmental Impact Assessment, Health Impact Assessment

Regulations considering **EIA** are identified, as one major concern within Environmental Management Act (Article 31, 77, 81, 97, 100). It is also related to other responsibilities of NEMC, as for instance public participation (Article 17, 89, 178), and duties to local authorities (Article 35). Type of project which require EIA

1. General:
  - a) any activity out of character with its surrounding
  - b) any structure of a scale not in keeping with its surrounding
  - c) major changes in land use
2. Urban development, 3. Transportation, 4 Dams, rivers and water use, 5. Aerial spraying, 8. Agriculture (including animal production), 9. Processing and manufacturing industries, 10. Electrical infrastructure, 11. Management of hydrocarbons including the storage of natural gas and combustive or explosive fuels, 12. Waste disposal and, 16. Any other activity as may be prescribed in the regulations (Environmental Management Act, Third schedule).

## **Monitoring, follow-up and soft long-term responsibilities**

### **Biofuels waste treatment**

Draft BG identifies *Tanzanian waste water policy* and *Tanzanian air emissions quality policy* as being relevant standards (BG 1.3.1: (17)). These issues are also regulated within Environmental Management Act (Article 112). There and in the Water Laws (Miscellaneous Amendments) Act 1997, these matters are also regulated more in detail. Every water right granted for industrial purposes or for the generation of power shall be returned, not polluted, to the stream or body of water from which it was taken or to such other stream or body of water as may be authorized by the Water Officer (Water laws 1997, Article 17) and (Environmental Management Act, Article 60).

Issues of solid waste treatment, such as recycling, re-use, are regulated in Environmental Management Act (Article 114 – 119). Pollution control shall follow the principle of best practice (Environmental Management Act; Article 106), and the industry shall in particular be involved with the reference to sharing the costs for disposal and taking responsibility of disposal of persistent organic pollutants (Environmental Management Act, Article 77).

### **Breach of procedures and other offences and Dispute settlement**

In disputes concerning land the Court of Appeal, the land division of the High Court, the District land and Housing Tribunal, Ward Tribunals and Village Land Council (Land Act, Article 167). For purpose of facilitating pollution prevention and control measures it is an offence to contravene the requirement to furnish information to NEMC (Environmental Management Act, Article 112). Among other duties the Environmental Committees shall resolve conflicts between persons, companies, agencies, non governmental organisations, Governments departments or institutions about their respective functions, duties, mandates, obligations or activities (Environmental Management Act, Article 89). The establishment of Energy and Water Utilities Regulatory Authority is by definition for the purpose of control whether the conditions for effective competition exist in the market.

### **Change in land use**

The land will be granted for a project on condition that the investor must use the land for the applied purpose. In case of any change of use, the investor must apply for re-grant, which is not automatic (BG 1.3.3; (5)). This has to be endorsed on the certificate of occupancy, signed by the Commissioner (Land Act, Article 35). In such case NEMC may require the holder of an EIA Certificate to conduct a fresh EIA study, at his own cost, and submit an Environmental Impact Statement (Environmental Management Act, Article 97).

### **Research and Development**

It is declared that investors should support research activities for their respective crops. Research findings should thereafter be taken back to the biofuel industry through extension services (BG 1.3.4: (20)). Education and capacity building in general are major subjects of the Rural Energy Act (Article 6, 15, 16, 18). This is also expressed briefly as a major subject of the fundamental principles of National Land Policy (Village Land Act 3).

The objectives of the Trust Fund, under the Environmental Management Act, shall be; to facilitate research intended to further the requirement of environmental management; to foster capacity building; to confer environmental awards; to issue environmental publications; to provide scholarships; to promote and assist, through grants, community based environmental

management programmes (Article 213, 214). Specifically, this is the task of NEMC (Article 18).

In opposite of the required research support, Investment Act declare this as an option of the investor ; “A person who has established an enterprise may enter into such technology transfer agreement as he considers appropriate for his enterprise (Investment Act, Article 26). The Tanzania Industrial Research and Development Organization Act, states that the Organization may require in writing any firm or organization engaged in industrial production or in technological research within Tanzania to furnish to it such information relating to industrial production or technological research as the Organization may specify. Every firm or organization which is required to furnish which refuses or fails to comply with that requirement shall be guilty of an offence (Article 9).

## **Production process**

### **Processing of biofuels**

These issues are in draft BG declared to be a responsibility to the project developer to submit information related to the processes planned plant, or land management project. The Biofuels one stop center shall “(a) commission an independent technical body to review, scrutinize and recommend appropriately to the biofuel one stop center on the suitability of the proposed biofuel production plant in Tanzania”. Further, the Biofuels one stop center shall “(b) Formulate terms of reference for the commissioned body which will include, amongst others the issues of occupation health and safety of the plant, financial and fiscal implications, environmental pollution (air, water, and land) etc”, and thereafter (c) inform the applicant on the outcome, and afterwards also (d) follow up the process (BG 2.1 (12.1 – 2)). Actually, this section gives a vague impression. The duties of the Biofuels one stop center are in fact a mix of the duties of TIC and NEMC. The first item (a) is part of the jurisdiction of TIC, while the second (b) are included in the duties of NEMC. Item c and d are the duties of both authorities (Tanzania Investment Act, Environmental Management Act). Part VI of the Environmental Management Act defines the requirements and the process on these matters (Article 81 – 103).

### **Blending**

This relates to ratios of blending between biofuels and fossil fuels. In draft BG this is declared to be the responsibility of Ministry of Energy and Petroleum (BG 2.2: (16)).

### **Quality of biofuels**

Tanzania Bureau of Standards is a member of the International Organization of Standardization (ISO). Therefore the immediate biofuels standards in Tanzania could be based on those developed by ISO (BG 2.3: (15)).

### **Contract farming**

Out growers shall through their established associations enter into contract agreements with project developers to ensure fair price for energy crops and biofuel products (BG 2.4: (8)). This should be included in the duties of Rural Energy Board, pay attention on these matters (Rural Energy Act). But primarily this is included in the purposes of the Energy and Water Utilities Regulatory Authority (Article 7). Possibly there could be a discrepancy with regard to the over all goals. Rural Energy Act states; “Where the developer is required to obtain a licence or authorisation from EWURA, the grant contract shall have the award of such a licence or authorisation as a condition precedent; and the Board shall be absolved from

making any grant payments should the developer's licence be withdrawn or suspended (Article 17). The Sugar Board shall promote the development of small-holder sugar cane growers (The Sugar Industry Act, Article 4).'

### Seeds management

Draft BG declares that "biofuel seeds are to be produced according to the regulations governing seed production in Tanzania. Biofuel seeds shall not be imported or exported without permits from the Ministry responsible for biofuel crops (BG 2.5: (9))". It has not been identified any such Ministry responsible for biofuel crops in specific. However it may not be necessary. These matters are identified to be regulated within The Seeds Act 2003.

Executive body is the National Seeds Committee, a Stakeholders' Forum responsible for advising the Government, composed of the Permanent Secretary to the Ministry of Agriculture, the officer responsible for co-ordination and supervision of the seeds industry in the Ministry, the head of the division in the Ministry for the time being responsible for crop research, the Chief Seed Quality Controller; and the Registrar of Plant Varieties (Article 3, 4, 5). The National Seeds Committee shall with regard to the Seeds Act 2003 and the Plant Protection Act ensure that the required standards and conditions for importation, production, processing, distribution sale or advertisement for sale of seeds have been complied with (Article 13).

### Distribution

#### Infrastructure development

Draft BG declares that infrastructure inside the projected area is the responsibility of the project developer, while infrastructure to provide access to other parts of the country is the responsibility of the Government, in accordance with national Plans (BG 3.1: (7)). Legislation to support these issues has not been identified. It is worth noting that all issues relating to infrastructure has been defined during the LFA-workshop, to be a general problem.

#### Storage and handling of biofuels

The project developer should ensure that containers are reusable as many times as possible, and should devise a mechanism for collection of used containers including obsolete ones for possible re-cycling or disposal (BG 3.2 (13)). The local government authorities shall ensure that industries located within their geographical respective areas of jurisdiction have appropriate containers and enhance separation of waste at source, and provide adequate space and facilities for managing all solid waste generated from such industries before they are collected for disposal at designated places (Article 114, 116).

#### Transport and distribution

In the subdivision of *Transport and distribution* Draft BG requires the project developer to

- a) Have arrangement of appropriate containers, pipelines, vehicles, or wagons for haulage and transport of large volumes of biofuels
- b) Distribution centres (outlet centres) with appropriate safety measures
- c) Apply for construction of biofuel piping system from one point to another
- d) Apply for construction of biofuel stations at various points
- e) Ensure that safety and country's policy procedures on construction of the above infrastructures are adhered to;
- f) Show an indicator to have potential costumers, and

- g) Establish mechanism of selling liquid biofuel or co-generation products (BG 3.3: (14)).

Actually, this subdivision is attached to several different areas, related to different legislation. Some of items can not be evaluated strictly in correlation to legislation, for instance item (d). That item in itself is an example of one potential project, which will have to follow all those regulations that have been described above. Item (b) is indistinct, as a project developer might be interested in setting up a distribution center. The conditions such as safety are related to requirements. (f) is part of the required information that are to be included to an application for registration with TIC, while (a and g) is more or less in the projector's interests to start the business, even though the intention has to follow different regulations. The items are thus an example of at least two dimensions of the objectives of the whole strategy.

## Co-generation

This is the part of draft BG that has not been specifically worked out and elaborated. Naturally, this is close linked to the refinement of biofuels, and will follow the same regulations in many aspects. For instance, projects that will include, or be specialized on, co-generation will follow the above described requirements on **permits and registration** in the beginning of the process. Thus TIC, NEMC and EWURA will be the executive authorities, following their respectively regulations

The need for **Land Acquisition** is not specifically different in relation to the primary production; instead this aspect might be simpler, as co-generation is following on the refinement process. The crucial aspect of land use is for farming, secondly comes the need for land for production plants. But the added need for land because of co-generation will most likely be small relative to the sector as a whole. No specific regulations would be needed because of this sub-sector.

**Community engagement**; both from a perspective of awareness in general and from a perspective of end users, is of specific relevance. This point of view is of great importance regarding the over all visions. Therefore this has to be reflected by the over all regulations of the sector as a whole.

Regulations on **Environmental Impact Assessment-Health Impact Assessment** will most likely be the same as for any other development projects, under the Environmental Management Act, Third schedule, and Part VI, Article 81 – 103.

**Biofuels waste treatment, Processing of biofuels, Blending, and Quality of biofuels** are examples of the focus that draft BG put on the sub-sector of primary production i.e. refinement of biofuels. But, in the regulation and description of **Processing of biofuels**, the sub-sector of co-generation should be well explained.

**Dispute settlement** should not be different from a perspective of co-generation, others than that the legislation has to be adopted for arrangements of cooperation, between Government actors and actors in the production and trade sector. That will include both large- and small-scale producing actors.

**Contract farming** is an example of matters that has to be considered for the sector as a whole. The aspect is more linked to the primary production.

**Seeds management** is an aspect that is of no specific interest for the sub-sector. Issues of **distribution** are one specific area where the legislation has to be looked over.

## 5.4 Sustainability aspects in evaluated legislation

In chapter two aspects of sustainability is expressed. These are theoretically identified as being relevant for the production of liquid biofuels in Brazil. Table 3 show the extent to how these aspects have been identified in evaluated legislation in this study. Some aspects have not been covered by the selection of legislation. This is assumed to be explained by the constricted selection of legislation. However it is clear that Environmental Management Act handle 14 of 19 aspects, including aspects of societal nature. Aspects that are well covered from this selection are; *Aspects of sustainability in general, Welfare, and Social conditions of local population, and capacity building, and Strength and diversification of local economy.* This is discussed further in chapter six.

**Table 3. Evaluated legislation, considering the defined aspects of sustainability. 1 imply that the aspect is mentioned in very broad outline, 2 imply that the aspect is referred to in specific, but not regulated in detail, and 3 means that the aspect is well considered and regulated.**

### Identified elements of sustainability, and evaluated effectiveness

Aspects of sustainability in general		evaluated effectiveness
<b>Identified in legislation:</b>	Rural energy act (Article 4, 6)	1
	Land Act (Article 1, 7)	1
	Village Land Act (Article 6, 8, 29)	3
	Environmental Management Act (Article 7) (The legislation as a whole is from an environmental perspective defined to be well regulatory)	
	Energy and Water Utilities Regulatory Authority Act (Article 6)	1
	The Tanzania Industrial Research and Development Organization Act (Article 9)	3
	The Seeds Act 2003 (Article 13)	1
<b>1. GHG balance</b>		
<b>Identified in legislation:</b>	Environmental Management Act (Article 75)	2
<b>2. Airborne emissions on local level</b>		
<b>Identified in legislation:</b>		
<b>3. Biodiversity</b>		
<b>Identified in legislation:</b>	Environmental Management Act (Article 66)	3
	The Seeds Act 2003	1
<b>4. Soil erosion</b>		
<b>Identified in legislation:</b>		
<b>5. Depletion of fresh water resources</b>		
<b>Identified in legislation:</b>	Rural energy act (Article 6)	1
	Environmental Management Act (Article 55, 60)	3
	Water Laws (Miscellaneous Amendments) Act 1997 (Article 17)	2
<b>6. Soil nutrient losses and depletion</b>		
<b>Identified in legislation:</b>		
<b>7. Deforestation</b>		
<b>Identified in legislation:</b>	Environmental Management Act (Article 64)	2

<b>8. Pollution of chemicals</b>		
<b>Identified in legislation:</b>	Environmental Management Act (Article 78)	
<b>9. Use of GMO:s</b>		
<b>Identified in legislation:</b>	Environmental Management Act (Article 69)	
<b>10. Waste treatment</b>		
<b>Identified in legislation:</b>	Environmental Management Act Article 112, 118)	3
	Water Laws (Miscellaneous Amendments) Act 1997 (Article 17)	2
	Energy and Water Utilities Regulatory Authority Act (Article 6, 7)	1
<b>11. Food supply</b>		
<b>Identified in legislation:</b>	Environmental Management Act (Article 170)	1
	Energy and Water Utilities Regulatory Authority Act (Article 6, 7)	1
<b>12. Property and use rights</b>		
<b>Identified in legislation:</b>	Land Act (Article 1, 51, 89, 123)	2
	Village Land Act (Article 3) (main concern of the legislation)	3
	Environmental Management Act (Article 7, 197) (environmental perspective)	3
	Energy and Water Utilities Regulatory Authority Act (Article 6, 7)	
	The Sugar Industry Act (Article 4)	1
		1
<b>13. Welfare, and Social conditions of local population, and capacity building</b>		
<b>Identified in legislation:</b>	Rural Energy Act (Article 6, 15, 16, 22)	2
	Land Act (Article 1)	1
	Village Land Act (Article 23, 30)	1
	Environmental Management Act (Article 17, 35, 47, 178) (purpose of NEMC and Regional Environmental Management expert)	3
	Energy and Water Utilities Regulatory Authority Act (Article 6, 31)	3
	The Tanzania Industrial Research and Development Organization Act (Article 9)	3
	The Sugar Industry Act (Article 4)	2
	The Seeds Act 2003 (Article 13)	1
<b>14. Employment, wages and remuneration</b>		
<b>Identified in legislation:</b>	Village Land Act (Article 23, 30)	1
	Energy and Water Utilities Regulatory Authority Act (Article 6, 7)	1
	The Sugar Industry Act (Article 4)	1
<b>15 Discrimination; women, children, indigenous people etc.</b>		
<b>Identified in legislation:</b>	Village Land Act [Article 23]	3
<b>16. Education</b>		
<b>Identified in legislation:</b>	Village Land Act (Article 3)	1
	Environmental Management Act (Article 18, 31, 49) (on environmental matters)	3
	Energy and Water Utilities Regulatory Authority Act (Article 6)	1
<b>17. Health care</b>		
<b>Identified in legislation:</b>	Rural Energy Act (Article 6)	1
	Environmental Management Act (Article 4, 69, 78, 118)	3
<b>18. Strength and diversification of local economy</b>		
<b>Identified in legislation:</b>	Village Land Act (Article 6, 8, 29) (preservation perspective)	1
	Environmental Management Act (Article 7) (purpose for environmental management)	1
	Tanzania Investment Act (Article 6)	2
	Energy and Water Utilities Regulatory Authority Act (Article 6, 7) (purpose of EWURA)	3
	The Tanzania Industrial Research and Development Organization Act (Article 9)]	3
	The Sugar Industry Act (Article 4)	3
	The Seeds Act 2003	1

Draft Biofuels Guidelines has been identified to be not satisfyingly consistent with legislation, which will be discussed in next chapter. However, at this stage this was expected. What is considerable though is that inconsistencies on matters related to this strategy have been identified within the legislation. Actually this could be part of an explanation to why Draft Biofuels Guidelines has weaknesses with regard to consistency with legislation.

Executive bodies in charge are governmental authorities on central and local level. Authorities of certain relevance for this process are Tanzania Investment Center, Rural Energy Agency, National Environment Management Council, and Energy and Water Utilities Regulatory Authority.

In draft Biofuels Guidelines issues of sustainable development are not brought up specifically, only mentioned indirectly. A strictly social perspective can be interpreted from the requirements related to resettlements. Ecological matters are covered within the Environmental Management Act, which is indirectly referred to in the requirements of Environmental Impact Assessment. From a perspective where the strategy is to promote ".../Sustainable Development of Liquid Biofuels/..." this must be considered as a weakness.

The picture that is drawn up from the **evaluated legislation** is that this framework in general supports the long-term vision, from their respective perspective. The over all intention of evaluated legislation is to enhance social welfare development, in a sustainable manner. It is thus described in general in Rural Energy Act 2005 (Article 4, 6), Land Act 1999; fundamental Principles of National Land Policy and definitions of regulations of hazardous land (Article 1, 7), Village Land Act 1999; considerations of Village Councils (Article 8), land use (Article 29), definitions of regulations of hazardous land (Article 6), Energy and Water Utilities Regulatory Authority Act 2001; (Article 6).

Of specific relevance for matters of registration are: Rural Energy Act 2005; grants and project planning (Article 15, 16, 20). Specific regulations relating to affected persons are described in Land Act 1999 and Village Land Act 1999. Tanzania Environment Management Act 2004 is, naturally, focusing on ecological sustainability. But this is done with great emphasis on social issues. Of specific relevance in this section are the regulations on Environmental Impact Assessments (Article 31, 77, 81, 83, 97, 100).

## 6 Discussion

**Subject of the research is legislation related to adoption of a program for production of liquid biofuels and co-generation within Tanzania. The formal guiding principle in this process is the *Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania (Draft Biofuels Guidelines)*, at least for the second phase of the process (2008 - 2009). Hence, relevant legislation is identified out of what is given in draft Biofuels Guidelines. All together, this is defined to be the formal documentation that is supposed to build up, support and will contribute to further develop the process. The focal point of this study is to look for “linkages and gaps” in the regulatory framework, here defined as the formal documentation.**

During the project planning week relevant stakeholders were invited to consult and give inputs to the process. Thereafter the rest of the ingoing elements of the Project Document were identified. The project objective was divided into four clusters, representing different aspects within the framework of the project, highlighting; 1) the organisational capacity of the government, 2) financial instruments, 3) policy and legal instruments, and 4) public support, participation and awareness. The scope of this thesis work is thus specifically related to the third objective, stating that it is expected that the Biofuels Guidelines are finalised, adopted and made operational to support the regulation of the industry, during the time of the project.

A secondary focal point occurs as a result of the discussion in chapter four. The Biofuels Guidelines is intended to function as a working instrument. Therefore this document and the whole formal documentation has to be considered in relation to the organizational process and the social context. In this context the formal documentation is defined in a hierarchical structure.

The visions declare long-term goals. A strategy for development of a new industrial sector must be in line with these goals. Actually such strategy should be contributory to these goals. The measures, reforms and activities should be drawn up so as to contribute to the development goals.

The legislation regulates the conditions for how actions and reforms shall be performed. Naturally it has to be in line with the long-term goals.

The Project Document formulates the activities and measures that are needed for the coming two years, 2008 – 2009. It describes the first steps of implementing the new strategy and those reforms that will contribute to the fulfillment of an adequate institutional framework for the new industrial sector. As part of one objective the development of the forthcoming Biofuels Guidelines is identified.

The Biofuels Guidelines shall be the functional part of the formal documentation. It shall give directions to project developers, both large- and small scale actors. Consequently it must be designed to communicate with all potential stakeholders within the country, and be designed in order to cope with, and strengthen the organizational process.

All ingoing elements of the formal documentation create the institutional regulatory framework and have to be in line. The visions and the Project Document draw up the long-term development goals. Consequently, both legislation and guidelines have to communicate how to achieve these overall targets. Therefore it also has to be designed in order to function in the social context.

The theoretical framework is used to illustrate what conditions the functional instruments need to meet. Putnam has showed that the social capital are decisive for how new institutions will be implemented; the higher correlation between the new institutions and the social context, the better the results. This gives at least two possible alternative approaches.

1. Formulate the strategy so as to be in line with those parts of the social context that can be expected to already have an interest in the process. These will be a fairly homogenous group, within the whole context. This creates a risk that those that can not see, or agree on, the benefits the strategy might generate, will be excluded. Such lack of participation in the inception phase might be an aggravation in the implementing process. Possible negative effects include segregation, opposing actors, mistrust etc. Also, there is a risk that the strategy will be regarded as a centrally directed top-down project. According to Putnam, and from a perspective that includes the whole social context, this illustrates the circumstances that will lead to weak results. From the perspective of those that can benefit from the strategy the results might be strong.
2. The second alternative approach of implementation is to formulate the strategy so as to be in line with the whole social context. This will result in a more difficult implementation process, due to complexity. Also it will need more regulations, considering differentiated interests. The strength of the strategy will then be dependent on the scope of interests it includes.

Following Putnam, the first alternative implementation strategy will have prerequisites to result in a positive process of development, for those that are in focus of the strategy. Being a homogenous group with functioning structures for information and transactions they correlates with the regions that Putnam has identified to have gained from the institutional reform work. In that studied case the goal was to strengthen the regions governing function in a process of decentralization. In this case thus, the goal is to develop the whole country. In Tanzania Vision of 2025, the agriculture sector is stated to being the main engine in the process to accomplish poverty extinction. Modernized and highly productive agricultural activities, effectively integrated and supported by industrial and service activities, shall create a solid foundation for a competitive economy. It is also settled that the vision will be realized only when implementation “entails equal opportunities for participation of all the people and the same opportunities extended to all people for the enjoyment of the fruits of its achievements (Tanzania Development Vision 2025, 6.0)”. Therefore the implementation strategy has to be based upon the second approach.

But also the first approach has to be included in the strategy. The Energy Policy highlights the importance of the agricultural sector, both from a supply and from a demand perspective. There is a need to create a commercial environment and encourage entrepreneurs to develop and distribute energy products and technologies in order to improve efficiency in agricultural production and add value to agricultural products. Among other, biomass, need to be developed and commercialized, and methods and approaches on how to maximize these and other alternative sources need to be developed (Energy Policy 3.1.5 Agriculture Sector). This is an essential part of the vision and mission of the Energy Policy, and the energy sector will in a sustainable manner thereby contribute to social economic development, and in the long-term perspective, poverty eradication.

### 6.1.1 Identified elements related to the background methodology

The methodology following from an Environmental Management System is based upon some specific elements. Regarding the context of this research these have been identified as:

The overall **visions** are the strategically visions on long-term development, Tanzania Development Vision 2025, National Strategy for Growth and Reduction of Poverty, and the Energy Policy.

Identified **aspects of possible impacts** are the theoretically identified aspects of criteria that have to be considered, during the forthcoming process.

The function of **continuous improvement** has been identified to have great relevance in the context. Regulations have to be in place immediately in the same time as legislation has to be reviewed. Depending on the design, the forthcoming Guidelines for Biofuels and Co-generation can efficiently contribute to this function.

Whether the **communication** is both-way has not been identified. Although it is beyond the focal point it is still of great importance for the implementation of the strategy. It has been emphasised in the Project Document and the theoretical framework.

The fundamental formal framework for **documentations** has been defined as the Visions and the legislation, which shall be expressed by the guidelines. Other documentation also has to contribute to the process, resulting in the need of an adaptive function within the formal documentations. That is for instance; results from domestic research, experiences from initial projects, and response from project developers on all levels, local authorities, end-users, affected persons etc.

The **commitment of the executive body in charge** has been identified. As an expression of the seriousness with which the Government looks upon the whole context, the National Biofuels Task Force has been established. And the need for adequate regulations has been seriously emphasized.

**Dedicated associates on all levels** have not been identified. On the contrary, the sparse representations of local authorities, small-holders associations and possibly affected persons during the consultations preceding the LFA-workshop could indicate a low engagement from these groups. This fact was also brought up during the LFA-workshop as a lack of awareness. But, in the worst case it could also be an expression of an unsupportive and even obstructive attitude.

The methodology has been found to have relevance for an assessment of this context. In the forthcoming process primarily one element is relevant in order to strengthen the procedures, the function of continuous improvement in an adaptive living document. Depending on the design of the organisation supporting this function, the procedure might possibly contribute to enhanced both-way communication and thus strengthened public support.

### 6.1.2 Aspects of sustainability identified within evaluated legislation

The selection of evaluated legislation is to limit in order to give a true picture of the extent to which aspects of sustainability is concerned within the legislation. In chapter 5 aspects of sustainability in relevant legislation are summarized, see p 48. The numbers given in column three indicate the extent to which the specific aspect is treated within the legislation. Anyhow, some indications can be identified. Aspects of **Sustainability in general, Property and use rights, Welfare & social conditions of local population & capacity building and Strength and diversification of local economy** are rather well considered, which is in line with the over all visions.

Other aspects that have been identified in more than one act are; **Biodiversity, Depletion of fresh water resources, Waste treatment, Food supply, Employment, wages & remuneration, Education and Health care.** This could also be assumed being a reflection of the long-term goals.

One crucial aspect; **Food supply** is only identified in two acts. That is not in line with the declared visions, and is most likely depending on the limited selection.

Some of the aspects that have only been identified once are assumed to be caused by a rational reason, as they are linked to the jurisdiction of one specific act, such as for instance the Environmental Management Act. This is with exception for the aspect **Discrimination; women, children, indigenous people etc**, which is also identified only once. In issues including large-scale developments with elements of foreign actors, aspects of **Food supply** and **Discrimination** must be regarded as being most crucial aspects.

**Aspects of sustainability in general** are identified in all evaluated legislation, even if it may be mentioned in very broad outline. In two of the identified acts the aspect is more specifically described; Environmental Management Act and the Tanzania Industrial Research and Development Organization Act. Although the Environmental Management Act covers environmental aspects of sustainability social aspects are also considered, thus reflecting the over all vision. Natural resources shall be protected and managed in order to serve the society. The impression is, by the way, that the Environmental Management Act is fairly updated, in comparison with for instance the land laws.

The aspect **Property and use rights**; is also identified to be described in several of the evaluated acts. But the two acts that are most essential on these matters; the Land Act and Village Land Act are not consistent. This has to be considered in the process of designing the forthcoming Guidelines for Biofuels and Co-generation.

The aspect of **Strength and diversification of local economy** is also identified to be well established. However, it has to be emphasized; the forthcoming Guidelines for Biofuels and Co-generation must pay attention to show consideration on existing socio-economic structures, and how to integrate these in the planned strategy. Environmental Management Act declares clearly how people are supposed to have influence in processes such as devilmint of biofuels facilities. This needs to be brought in the guidelines and give clear guidance to investors and authorities. Following the results of Putnam it is of critical importance that the institutional reform work has regard to the social capital in established social structures.

### **6.1.3 Consistency within regulatory framework**

It is clear that Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania is intended to reflect legislation. Unfortunately it is also clear that the expression given by Draft Biofuels Guidelines reflects the inconsistencies within legislation. The interpretation is not that the forthcoming Guidelines for Biofuels and Co-generation should include all detailed directives, given by legislation. Instead it should highlight relevant standards supporting the long-term development goals. For instance these standards should reflect aspects of sustainability such as those identified within this framework. However, to some extent the draft BG are in accordance with the evaluated legislation. Therefore it is also possible to, to some extent, expand the forthcoming Guidelines for Biofuels and Co-generation on basis on existing legislation. But, some legislation has to be revised and there are areas that have to be subject for new legislation, see below.

The sub-sector of co-generation has not been identified to be satisfactory covered. In evaluated legislation this is identified to be a missing perspective, which is reflected in the draft BG. Co-generation has to be taken into account in the requirements in the registration process, in requirements according to production process and with regard to distribution. Being an added link in the production chain this has the characteristics of a new area for regulation. Co-generation is a sector that complicates the picture of roles and interests. Regulatory authorities become stakeholders with specific interest, and project developer's interest as actors on the market becomes mixed with their possibilities to contribute directly to the national economy. EWURA is identified to have a specific role in this part of the process. The results of Berkes (2006) are essential on these matters, the importance of being one step ahead and having adequate regulations. There could be a challenge expressed as the balance between the precautionary principle and in the same time promoting needed energy services. This link of the production chain is of great importance from a perspective of increased electricity supply, and thus improved conditions of energy services. When developing the forthcoming Guidelines on Liquid Biofuels and Co-generation this sub-sector has to be brought into the documents.

Co-generation is thus one aspect that links to the over all visions. But there are other discrepancies as well, for instance between the Rural Energy Act and the Energy and Water Utilisation Regulatory Authority Act. Every project developer intending to start an activity needs to obtain a license from EWURA. But, in that case the Rural Energy Board (REB) may be absolved from making any grant payments or the developer's license may be withdrawn. Assuming the project developer to be dependent on grant payments from REB this would create a Catch 22. By definition those project developers in need of support from REB will be small-holders, and small-scale developers.

### **6.1.4 Correlation between the regulatory framework and the social context**

Previous experiences, theoretically described, have shown how a successful implementation is dependent on the correlation between the strategy for institutional reform work and the social context. It is also identified that in this context, improved welfare by introduction of a new industrial sector, the Biofuels Guidelines needs to have both a directing and communicative function. It has to express how long-term goals shall be achieved by the strategy in question. However, from that perspective; *Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania (draft BG)* does not reflect the intention of the over all vision.

In draft BG these aspects are mentioned. But the linkages have to be clarified in a way that can not be misunderstood. This has to be highlighted already in the introduction. Secondly, the Draft BG does not highlight the perspective of public participation. The theoretical framework shows that the will to participate is dependent on the norm system. The strategy must include functions that strengthen both trust and the perception of ownership. Nilsson & Owens (2007) states the necessity to “have full trust in the process and in the process leadership”. As this is a matter of communication this has to be considered already in the formulation of the guidelines. The identified primary target groups relates directly to the issue of public participation, the fourth objective within the Project Document. It is emphasized that these may not be directly involved in the project to a significant degree, and therefore it is important to keep their interests in mind as the project is implemented. By this it is said that the public will not have sufficient influence on the formulation of the strategy. This is not in line with the Environmental Management Act, stating that the public shall be consulted on plans, programmes and schemes that affect their environment. The forthcoming Guidelines for Biofuels and Co-generation (GBC) can fill a purpose on this matter, thus promoting communicative functions.

The need to develop public participation is identified to be an issue. In the results from the LFA-workshop it is stated as one specific expected output that “there is public, support, participation, and awareness regarding the biofuels industry in Tanzania”. That is based on the assumption that “the general public has an interest to learn more about biofuels”. During the consultations preceding the workshop all kind of stakeholders were invited. But the representations of local interest on district or village level were weak. If that reflects a lack of interest on these matters that is a weakness. This has to be deeply considered during the first steps of next phase (2008 – 2009). Following the findings of Lindström (2003) the implementation instruments has to be designed in order to strengthen the local capacity. The formulation of the forthcoming Guidelines could contribute to increasing both capacity, as well as public interest and sense of ownership. And if the formal documentation, especially the guidelines, is developed in an adaptive process it could be a way to strengthen the trust in the process.

The duties and functions of Tanzania Investment Center (TIC), Energy and Water Utilities Regulatory Authority (EWURA) and Rural Energy Agency (REA) in all have to be well described, and taken into the GBC. Also it must be considered how services from these authorities shall be available all over the country. For instance; in the procedure, project developers are intended to have guidance from TIC. After what had been identified, TIC is an authority represented at one office, sited in Dar es Salaam. It has not been identified how small-scale rural actors shall attain to requested information. The point is; if there is not a natural interest on this level in the same time as the authority that shall promote new investments are located only in Dar es Salaam, then small-scale actors will hardly be part of the process. Capacity and knowledge cannot reach the rural areas where it is needed. There is a risk that the strategy could be taken as a centrally decided top-down driven project. The experiences from vertical vs. horizontal structure expressed by North (1990) and Putnam (1996) show the weaknesses in such approaches. A top-down vertical communication will hardly be contributive to the implementation. It is not only a matter of development of capacity and knowledge, also the awareness of ownership and trust must be developed.

The discussion above also has to be regarded in relation to the required licenses. TIC need to be represented on regional level, in order to give sufficient support to rural people in these matters.

In the Project Document it is stated that legal instruments are not adapted to regulating this new industrial sector. The land administration system is mentioned not to being adapted to large scale biofuels production. It is of great importance that the legislation on land is distinct. It is stated that the President has the over all authority to decide on matters of ownership and use rights. In the same time, there is two or three legislation on land, depending on definition; the Land Act, the Village Land Act and Customary Law, where the latter could be defined as being part of the Land Act. Customary Law is based upon old traditional laws, and says that anyone that has been using a specified area of land for cultivation should be deemed to have the rights to that land. This legislation could be contradictive to Land Act and Village Land Act. In a potential conflict between the interpretation of Customary Law and Village Land Act, the President may – in theory – have the authority to declare that Customary Law are not valid for the specific matter. In practice, this would mean that one land user trust in one law, while another, for instance a project developer trust in the other law. If the project developers' activities are not accomplishable with the previous land use there could be incitements for conflicts, where both actors believe they have their rights supported by law. Also, it is stated that land that has not been used for two years is to be regarded as abandoned. This lead to the need to define the meaning of “use”, whether it includes both farming and cattle rising. It is important as cattle rising pastoralists by nature do not treat the land they use. There are potential conflicts between farmers and pastoralists that could be passed on to conflicts between project developers and other land users.

The underlying purpose of the GBC is to promote investments, thus enhancing the economy and the structures of the economy, and in the long run – long-term visions of improved welfare. From that perspective it should be a duty of all project developers to **prove their knowledge in formal and informal structures** of livelihood and provisions in the area neighboring the site of the project. A thorough Social Impact Assessment should be required. This has not been identified in draft BG or evaluated legislation.

## 7 Conclusions

The study aims to answer five questions, in order to evaluate the possibility to “fast-track” the process of creating a sufficient regulatory institutional framework. Three relates to the consistency within regulatory framework, while two are relating to the social context;

1. Is the formal documentation consistent?
- 1.2 When appropriate, if the statements in the forthcoming guidelines can be further developed on basis of existing legislation.
- 1.3 Is evaluated legislation, as identified to be relevant for the design of the forthcoming guidelines, consistent?
  
2. Can the forthcoming guidelines be designed to communicate the strategy to all potential stakeholders?
- 2.2 Are the general public prepared to consider the strategy as it may be expected to be expressed in the guidelines?

It is possible to “fast-track” the process of creating a sufficient regulatory institutional framework. This is because it is possible to “fast-track” the process of formulating the forthcoming Guidelines on Biofuels and Co-generation, given two specific prerequisites:

- The document has to be given an interim status of jurisdictional power with regard to those specific issues that are stated in the document. This is because of two reasons. The legislation that needs to support the document needs to be revised, and a Biofuels Policy needs to be developed from scratch.
- As a consequence of the preceding statement; the first version of the document, needs to be further developed in an adaptive process and should therefore be a living document. Normally this means that it shall be formally subject to review at certain time periods - and such review should be specified in the legislation.
- Correlation between the reformed institutions and the social context need to be secured. Therefore the regulatory institutions need a communicating function. During the interim period the forthcoming Guidelines on Biofuels and Co-generation can fill that purpose.

The focal point of the study is to identify linkages and gaps within legislation. It is clear that Draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania is intended to reflect legislation. Unfortunately it is also clear that the expression given by Draft Biofuels Guidelines reflects the inconsistencies within legislation. Also the secondary focus – formal documentation’s estimated correlation with the social context – has been found having to be further considered.

- The ability of formal documentation to promote Long-term major objectives is identified to be weak. This is because of inconsistencies within legislation and the fact that relevant standards for sustainable management has not been brought into, and highlighted as crucial components of the Biofuels Guidelines.
- The sub-sector of co-generation has not been identified to be satisfactory covered. In evaluated legislation this is identified to be a missing perspective, which is reflected in the draft BG. Co-generation has to be taken into account in the requirements in the registration process, in requirements according to production process and with regard to distribution. Being an added production path this has the characteristics of a new area for regulation. EWURA is identified to have a specific role in of this part of the process in regulating different interacting interests and duties.
- The primary production, of crops for biofuels, is estimated to be covered within existing legislation. Also the secondary production, of liquid biofuels, is covered within existing legislation, regarding registration and permits. What are missing are standards for regulation of volumes, safety measures, working conditions, etc in the actual process. Also for the sector of distribution there is identified to be a lack of standards. Regulations on export are identified, but these have not been evaluated from a perspective of liquid biofuels. Standards for blending could easily be adopted from ISO, represented by Tanzania Bureau of Standards, as declared in draft BG.
- Persons affected by the strategy are considered in draft BG. But this has to be further assessed, resulting from inconsistencies in evaluated legislation. In this process, negative experiences relating to land use and possible inconsistent interpretations of land laws must be taken into account.
- It has not been identified how the project developers obligation to “ensure locals’ share holding in the business (in cash and land-assets) where appropriate, including out growers” shall be secured.

- There is an inconsistency between the Investment Act and the Tanzania Industrial Research and Development Organization Act. The Investment Act declares that research support is an option of the project developer. Tanzania Industrial Research and Development Organization Act states that it is an offence not to furnish such information on industrial production or technological research as the Organization request.
- There need to be made a clearance on the responsibilities and duties regarding issues of infrastructure development.
- Rural Energy Act and Energy and Water Utilities Regulatory Authority Act need to be streamlined. Regarding the over all vision there might be an inconsistent consequence in the registration process, which could be unfavourable for small-scale project developers.
- On issues of land use and property rights, the land laws; Land Act and Village Land Act need to be streamlined. Doing that, consequences related to customary law need to be taken into account. This is of critical importance with regard to public support, social capital and path dependency. As Putnam (1996) has demonstrated, successes in implementing strategically schemes are dependent on traditional informal structures. The first step to avoid negative effects is to have regards to those regulating structures that have public support.
- The theoretically identified criteria for sustainable management have been recognized in the long-term visions. In the evaluated legislation these have been estimated to be fairly reflected. That is with some crucial exceptions that can not be neglected. The most critical aspects to further consider are the aspects of **Property rights, Food Supply and Discrimination**. In a strategy including large-scale developments with elements of foreign actors, these aspects must be regarded as being most crucial. It has to be emphasized; the forthcoming Guidelines for Biofuels and Co-generation must pay attention to show consideration on existing socio-economic structures, and how to integrate the planned strategy.
- Considering the fourth objective; public support, participation and awareness, the practice and procedure following from the design of Biofuels Guidelines is of critical importance. The identified primary target groups relates directly to the issue of public participation. It is emphasized that these may not be directly involved in the project to a significant degree, and therefore it is important to keep their interests in mind as the project is implemented. By this it is said that there might be a risk that the public will not have sufficient influence on the formulation of the strategy. This is not in line with legislation, especially the Environmental Management Act. From a perspective of lacking public support, it may be valuable to keep in mind the statement made in Vision of 2025, 2.2.4, see p.22, as well as the previous findings of Lindström.
- The forthcoming process exemplifies the relevance of an adaptive process and a living document. Desired Guidelines for Biofuels and Co-generation (GBC) can be developed in a “fast-tracking” process, based on existing legislation – provided that the process is guided by “continuous improvement”.

## 8 Recommendations and further research

In order to manage that weakness of inconsistent legislation, the GBC can be designed and have function as an interim regulation. The process should be guided by principles of sustainable development: *The precautionary principle, The principle of public participation in the development policies, plans and processes for the management of the environment, The principle of access to justice, The principle of inter-generational equity and intra-generational equity, and The principle of common but differentiated responsibilities* (Environmental management Act 2004, Article 5). In time when the interpretations on legislation has reached consensus, the GBC may strictly have the function as a directive.

The process of drawing up a Biofuels Policy needs to be given high priority. It has to include not only production of biofuels crops and refinement of products, but also the sub-sector of co-generation. Also it should be take stand, and communicate how both large- and small-scale activities contribute to the long-term development goals. This message, that the strategy of a new industrial sector is intended to contribute to long-term development goals has then to be clear in all communicating material. Besides the forthcoming Guidelines for Biofuels and Co-generation documents that includes all kinds of information material.

- There need to be developed adequate regulation standards and conditions for permits for production of biofuels, co-generation and processing of liquid biofuels. On matters related to biofuels, this may be rather fast developed, as the processes are quite similar to other production all ready taking place. Relevant legislation for the needed framework is Factories Ordinance, Sugar Industry Act 2001, Tanzania Investment Act etc. Co-generation on the other hand is more difficult to set relevant terms for permits, as it is a new sub-sector and production system. EWURA has a definite role to play on this part.
- Regarding the required information submitted to the application for land, TIC shall consider “proven track records in biofuels”. That means that TIC need to create competence and thus to be provided with adequate material of references.
- The meaning of the sentence “TIC shall ensure that majority ownership is by locals” has to be assessed. This is not necessarily the resulting interpretation of the Investment Act.
- There need to be made a clearance on the responsibilities and duties regarding issues of infrastructure development. Legislation regulating these matters has not been identified.
- Standards for distribution are mentioned in draft BG. These need to be identified in legislation, or formulated. Depending on the authority of the forthcoming GBC, this could be regulated through the GBC, at least during the interim period of preparation. That would give the legislation on distribution better settings to be adequate formulated.
- Legislation on land has to be made distinct. The Land Act and the Village Land Act need to be streamlined. During that procedure, consequences coming from the actual interpretations of Customary Law need to be considered.

- BG has to be distinct designed. This is necessary from at least two perspectives; it has to more adequately reflect the overall visions, and it is intended to be a working instrument in a communication process. The arrangements of topics have to be clear on how different perspectives of the overall vision shall be highlighted. And the respective headings and their following statements and requirements should be evident in what topic it intends to treat, see for example the subdivision of *Transport and distribution* (BG 3.3: (14)).
- Draft BG declares that project developers shall show “how project(s) may contribute in improving social services at the projected area” and shall “ensure locals’ share holding/...” The first statement has been identified as partially regulated within Village Land Act, while the second has not been identified. This seems to be an issue that needs to be further evaluated.

As knowledge and competence on district and village level related to these issues is identified to be imperfect some strengths have been identified. This is based upon the assumption that GBC is intended to function as both a central steering document, and an instrument to support the organizational structure. Distributing GBC to the local Councils would not only be a way to spread information. It would also contribute to fasten the process of development of an adequate regulation – in a bottom-up process. In line with the Environment Management Act, doubts and concerns could be brought into and be dealt with within the living document. This would be a way to build trust, share knowledge, extend capacity and strengthen the sense of ownership. It may contribute to increase a positive awareness and may also contribute to a smoother process of implementation of the strategy.

## 8.1 Suggestion for further research

Robert Putnam ends his book *Making democracy work* (1996) saying that it is not easy to develop social capital, but that it is the key to making democracy work. Also he has found that it is not economic growth that strengthens and builds up social capital but the opposite. Processes of democracy, as well as the economical environment, benefited from other social activities. The more people that are involved, and the more committed they are in activities in associations, choirs, bird-watching clubs, sports clubs and so on, the better the social system works. Informal structures, not necessarily reflected by the formal structures in politics – or economics, built up and made the foundation of the reform work. To travesty Putnam, one could say that it is not easy to develop social capital, but that it is the key to success in institutional reform work.

Assuming that institutional reform work has similarities with industrial development in the sense of trust in another part, a sense of ownership in the process and capacity to handle your own role in the process, then the social capital is decisive for the development of the socio-economical environment that comes with a new industrial sector. Following Putnam, the existing social capital in Tanzania is of crucial importance for the possibility to integrate the planned strategy in the development process. Also, which is more important, it is decisive for the possibilities to create benefits within Tanzania. Consequently the social capital within the country needs to be investigated. It is clear that the international demand for liquid biofuels has created a window of opportunity for East Africa, as well as an opportunity to study institutional development in general.

Structures of social activities have to be identified, including those that at a first glance might seem old-fashioned. That includes existing systems and rules of barter, how responsibilities, duties and rights create bonds between village members, i.e. the foundations of existing trust and sense of ownership. Knowledge about differences and similarities between social structures in different regions, as well as that about different groups of people, can contribute to a deeper understanding of how to create a positive development. For example, differences in entrepreneurial capacity need to be scrutinized as well as the strength in community organizations in rural areas. An understanding of established knowledge and structures of farming need to be brought in to the new system, as this includes both day labour and gender issues. Traditional informal restrictions and distribution of revenues need to be highlighted, as these will affect the development of new regulations.

This research would benefit from an interdisciplinary approach, including different social sciences. Studying these aspects, from that approach, includes an ambition to keep an open mind. A favourable development process must not necessarily follow the same path as that in the Western world.

Doing this as the progress takes place could both generate valuable knowledge on conditions of development in general, in the same time as the findings can be brought into –and strengthen the process as it continue

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## Appendixes

### Appendix 1. Calculations of world potential land surplus in 2050 for different levels of change in agricultural management

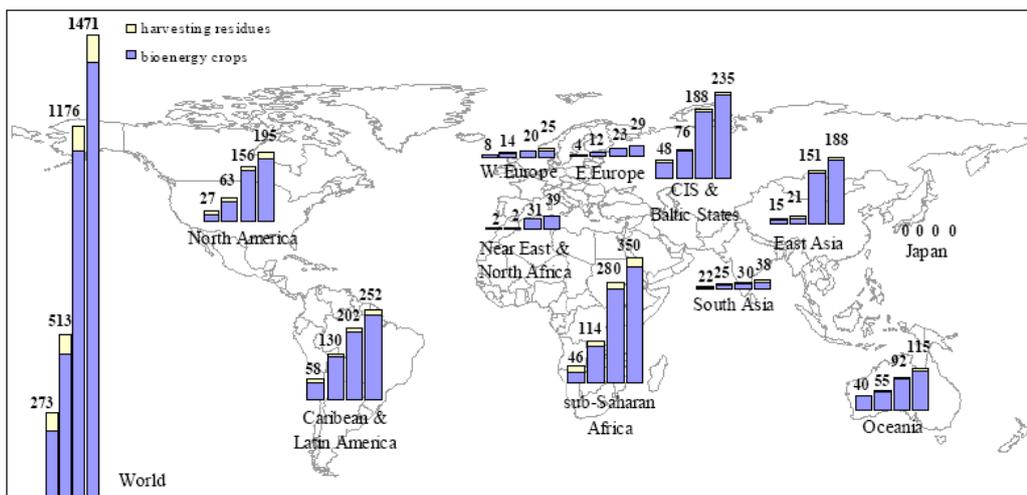


Figure 3. Total bioenergy production potential in 2050, no deforestation, based on surplus agricultural land (EJy-1). Left bar is scenario 1, right bar is scenario 4. (Source; Smeets, Faaij 2004)

Scenarios 1 – 3 have are all based on four assumptions (Smeets et al 2004):

1. a medium population growth (5.9 billion people in 1998 to 8.8 billion of a total population in 2050)
2. a medium increase in per capita food consumption (global average 1998; 2,8 Mcap cap<sup>-1</sup> day<sup>-1</sup>, 2050 3,2 Mcap cap<sup>-1</sup> day<sup>-1</sup>)
3. a high plantation establishment scenario (123 million ha globally in 1998, 284 million ha in 2050)
4. a high level of technology for the production of bioenergy crops

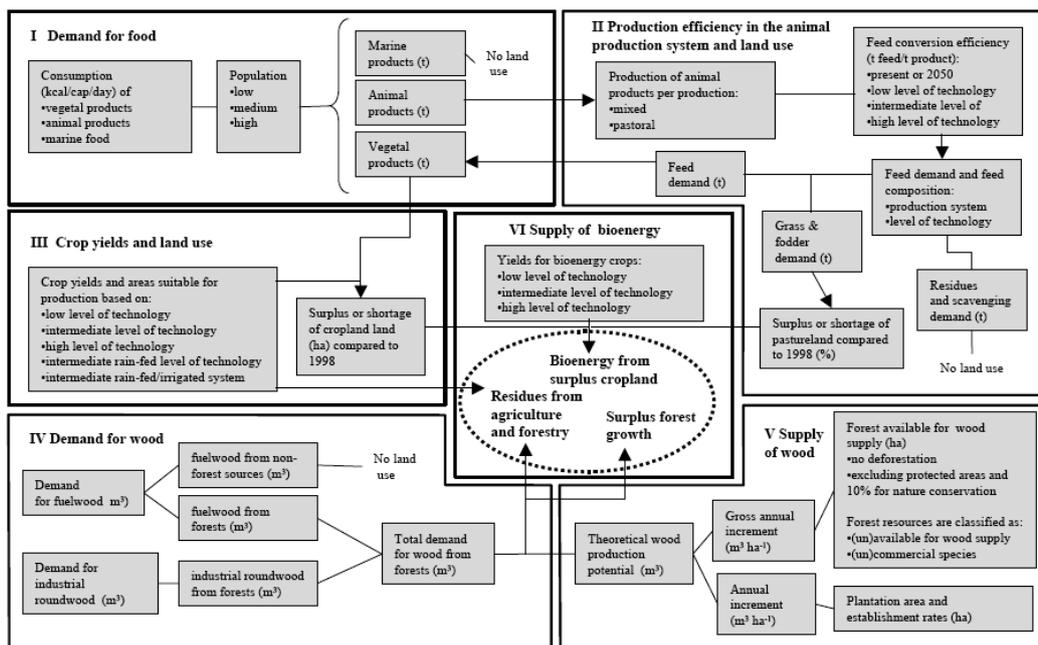
Scenario 3 is the scenario that is most depending on the assumption that yields will increase above existing level of technology as a result of research and development efforts.

Scenario 4 is based on the assumption that yields are 25% higher compared to scenario 3 as a result of technological improvements that are not further specified.

Table 5. Criteria for the four scenarios (Source; Smeets, Faaij 2004)

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Feed conversion efficiency	high	high	high	high
Animal production system used (pastoral, mixed, landless)	mixed	mixed	landless	landless
Level of technology for crop production	very high	very high	very high	super high
Water supply for agriculture (rain-fed = r.f., irrigated = irri)	r.f.	r.f./irri.	r.f./irri.	r.f./irri.

## Appendix 2. Illustration of complexity in relation key elements of the bioenergy potential from specialized energy crops



Figur 2 Figure X. Overview of the key elements of the bioenergy potential from specialized energy crops. This figure illustrates the complexity that has to be considered. Relevant criteria for sustainable management have to cover this complexity (Smeets et al.

## Appendix 3. The draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania – realigned version

Below is the matrixes used for evaluation. For the realigned version of the draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania the reference in brackets refer to the original draft version. The referred legislation is first evaluated in comparison with draft Guidelines for Sustainable Development of Liquid Biofuels and Co-generation in Tanzania. Secondly it is evaluated in relation to given aspects of sustainability.

### 1.1 Registration [BG 1]

<b>Accountable stakeholder</b>	Investors
<b>Regulatory authority</b>	Tanzania Investment Center, TIC
<b>Regulated through</b>	Possibly TIC Guidelines
<b>Requirement</b>	<ul style="list-style-type: none"> <li>a) Name of Investor/developer</li> <li>b) Company or association registration certificate/certificate of incorporation in Tanzania</li> <li>c) Commitment to be registered as a Tax payer</li> <li>d) Brief descriptions of the type of biofuels intended for investment (production capacity and bankable feasibility study)</li> <li>e) Brief description of land requirement (area and location)</li> <li>f) Financial status: at least two years consecutive years' audited accounts and brief description of how funds shall be committed to the intended investment</li> <li>g) Experience and competence on liquid biofuels</li> </ul>

#### 1.1.1 Taxation [BG 3]

<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	Tanzania Revenue Authority
<b>Regulated through</b>	<b><u>Not defined</u></b>
<b>Requirement</b>	<b><u>Not defined</u></b>

#### 1.1.2 Incentives [BG 3]

<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	Tanzania Investment Center
<b>Regulated through</b>	TIC guidelines
<b>Requirement</b>	<b><u>Not defined</u></b>

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## 1.2 Permits

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### 1.2.1 Permits and fees [BG 2]

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<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	<u>Not defined</u>
<b>Regulated through</b>	<u>Not defined</u>
<b>Requirement</b>	The following permits may be required from relevant sector ministries/institution(s): a) Production of biofuels b) Specified biofuels crops in a specified location c) Import and export of seeds d) Co-generation e) Power plant installation f) Processing of Liquid biofuels g) Plant installation h) Local marketing and distribution i) Export

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### 1.2.2 Land Acquisition [BG 4]

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Acquisition by small out growers will be provided under Village Land Act 1999 and/or Land Act 1999 [BG 4.3]

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#### 1.2.2.1 Derivative rights [BG 4.1]

Long term derivative rights and leases range between 5 – 98 years.

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<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	Tanzania Investment Center TIC [BG 4.4]
<b>Regulated through</b>	<u>Not defined</u>
<b>Requirement</b>	a) Certificate of incorporation of the company b) Proven track record in biofuels c) Project implementation scheme d) Document showing the purpose of acquiring land and the type of biofuel crop e) Feasibility study

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#### 1.2.2.2. Conveyance [BG 4.2]

<b>Accountable stakeholder</b>	Investor
<b>1 Regulatory authority</b>	Tanzania Investment Center, TIC [BG 4.2a]
<b>Regulated through</b>	<u>Not defined</u>
<b>Requirement</b>	a) Certificate of incorporation of the company b) Proven track record in biofuels
<b>2 Regulatory authority</b>	Commissioner for Lands [BG 4.2b]
<b>Regulated through</b>	<u>Not defined</u>
<b>Requirement</b>	a) Application for approval of disposition b) Derivative right c) Annual return d) Land rent receipt e) Memorandum of Article of Association f) Transfer deed or gift deed g) Certificate of incorporation h) Valuation report i) Sales agreement

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**1.2.2.3 Resettlement Plan, RP [BG 6.1-6]**

<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	Tanzania Investment Center, TIC – since it is part of the feasibility study
<b>Regulated through</b>	<b><u>Not defined</u></b>
<b>Requirement</b>	<ol style="list-style-type: none"><li>1. Involuntary resettlement should be minimized and where displacement is unavoidable, a RP should be implemented as a development program</li><li>2. The RP should be prepared as a separate document and should be summarized in the feasibility study report</li><li>3. The principal objective of a RP should be to re-establish (or even improve) the social and economic productivity of the displaced community. It is therefore essential to approach all aspects of resettlement in a systematic manner, from project preparation to the re-establishment of the community life at the new location</li><li>4. People who are being resettled should be directly involved in the planning, implantation, monitoring and evaluation of the resettlement plan</li><li>5. Communities and households requiring assistance with relocation and restoration of livelihood must be fully consulted and compensated for losses according to the Tanzanian legislation</li></ol>

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**1.2.2.4 RP shall include [BG 6.6]**

- a) Identifying and describing all Project Affected Persons (PAP: s) and the assets that they will lose (i.e. conducting a **socio-economic survey** of the PAP: s)
- b) Determine entitlements and eligibility for compensation and resettlement assistance, according to Tanzanian prevailing land and property laws
- c) Selecting the resettlement site and completing the physical planning and the technical and feasibility studies of the resettlement packages
- d) Preparing a timetable and a budget
- e) Developing the infrastructure at the receiving site
- f) Arranging the actual relocation of the PAP: s
- g) Organizing the social and economic support services

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**1.2.2.5 Socio-economic survey [BG 6.8]****summerad, analyserad och systematiskt presenterat**

“.../should be conducted early in the product cycle to avoid an influx of new people.”

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<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	Tanzania Investment Center, TIC – since it is part of the Resettlement Plan, which shall be included in the feasibility study
<b>Regulated through</b>	<b><u>Not defined</u></b>
<b>Requirement</b>	<ol style="list-style-type: none"><li>a) Identify and categorize the displaced persons</li><li>b) Collect information on the resource base and productivity of the affected population, including incomes from on- and off-farm activities</li><li>c) Asses the total amount of land and other assets to be lost</li><li>d) Determine the amount of loss in terms of common property, public infrastructure and social services</li><li>e) Identify formal and informal institutions (e.g. NGO: s and CBO: s) that ca assist with designing implementing the resettlement program</li><li>f) Outline the perceptions and attitudes of attitudes of PAP: s towards various resettlement options</li></ol>

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### 1.2.3 Community engagement [BG 10]

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#### 1.2.3.1 Public participation [BG 10.1]

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<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	Tanzania Investment Center, TIC – since it is part of the feasibility study Local communities Local, district and regional authorities
<b>Regulated through</b>	<b><u>Not defined</u></b>
<b>Requirement</b>	Investor shall: a) Be required to consult and involve the public during the feasibility study or project planning phase. Consultation shall include: i) The local communities ii) The local authorities iii) District authorities iv) Regional authorities b) Be required to provide a brief description on how local community will fully participate in project(s) c) Show how project(s) may contribute in improving social services at the project area d) Ensure locals' share holding in the business (in cash and land-assets) where appropriate, including out growers

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#### 1.2.3.2 Mainstream HIV/AIDS and Gender in projects [BG 10.2]

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<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	<b><u>Not defined</u></b>
<b>Regulated through</b>	<b><u>Not defined</u></b>
<b>Requirement</b>	a) The investors/developers should provide employment to the community and should give priority to the marginalized groups b) Bearing in mind the high population involved in the production line in biofuels, there are possibilities of spreading of HIV/AIDS. Therefore the investor /developer(s) MUST incorporate HIV/AIDS control measures in biofuel programme(s)

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### 1.2.4 Environmental Impact Assessment, Health Impact Assessment [BG 11]

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<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	Biofuels one stop center (- TIC ?)
<b>Regulated through</b>	EIA regulations (- Environ protection Act?)
<b>Requirement</b>	Investor: a) Shall carry out EIA prior to the beginning of the project as per EIA regulations b) Shall be require to submit EIA statement to the biofuels one stop center c) May be required to carry out HAIR after commencement of the project implementation

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## 1.3 Monitoring, follow-up and soft long-term responsibilities

### 1.3.1. Biofuels waste management [BG 17]

<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	The biofuels center
<b>Regulated through</b>	Tanzanian waste water policy (TWWP) Tanzanian air emissions quality policy (TAEQP)
<b>Requirement</b>	<ul style="list-style-type: none"> <li>a) All liquid effluents from the plant are treated to meet needs (ref. TWWP) before disposing them to water bodies</li> <li>b) A mechanism in place for recycling products that do not meet the set quality standards</li> <li>c) All solid waste generated in the plant is used either for co-generation or processed to useful by products such as fertilizers or animal feed</li> <li>d) All air emissions from the plant are sufficiently scrubbed and treated to remove poisonous pollutants to meet air quality emission standards (ref. TAEQP) before discharging them to the atmosphere</li> <li>e) Within two years of operation the plant the investor/developer in collaboration with the biofuel center conduct a thorough Environmental Impact Assessment. And this should be a regular exercise as the plant operates</li> </ul>

### 1.3.2 Breach of procedures and other offences [BG 18], Dispute settlement [BG 19]

In case of any dispute, not settled amicably, the matter shall be referred to the Courts of law of United Republic of Tanzania	
<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	Courts of law of United Republic of Tanzania
<b>Regulated through</b>	Will be dealt with in accordance to respective legislation [BG18]
<b>Requirement</b>	

### 1.3.3 Change in land use [BG 5]

<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	<b><u>Not defined</u></b>
<b>Regulated through</b>	<b><u>Not defined</u></b>
<b>Requirement</b>	The land will be granted to the investor/developer on condition that he/she must use the land for the applied purpose. As far as biofuels are concerned, the investor/developer shall use the land for specified energy crop (s) and not otherwise. In case of any change of use, the investor/developer must apply for re-grant, which is not automatic.

### 1.3.4 Research and development [BG 20]

<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	<b><u>Not defined</u></b>
<b>Regulated through</b>	<b><u>Not defined</u></b>
<b>Requirement</b>	It is/.../important for the investors/developers to support research activities for their respective crops. Research findings should be taken back to the biofuel industry through extension services.

## 2 Production process

### 2.1 Processing of biofuels [BG 12]

“Since there are many options for production of biofuel and co-generation, and some of them are well established technologies and others are currently emerging as a result of research and development in the field, then appropriate control of inception of these technologies as well safeguarding the environment is vital, in these regard the:/... “

<b>Accountable stakeholder</b>	Investor [BG 12.1] .../required to submit the following information to the biofuels one stop center:
<b>Regulated through</b>	<u>Not defined</u>
<b>Requirement</b>	<ul style="list-style-type: none"> <li>a) Detailed process flow sheet and process lay out of the anticipated plant</li> <li>b) Detailed equipment specifications and drawings for all equipment in the plant</li> <li>c) Operation manuals of major equipment in the plant</li> <li>d) A list of all chemicals that will be used; and where appropriated (in case of less known chemicals) a material safety data sheet for each chemical has to be provided</li> <li>e) Any other technical information relevant to the proposed plant</li> </ul>
<b>Regulatory authority</b>	Biofuels one stop center [BG 12.2]
<b>Regulated through</b>	<u>Not defined</u>
<b>Requirement</b>	<ul style="list-style-type: none"> <li>a) Commission an independent technical body to review, scrutinize and recommend appropriately to the biofuel one stop center on the suitability of the proposed biofuel production plant in Tanzania</li> <li>b) Formulate terms of reference for the commissioned body which will include, amongst others the issues of occupation health and safety of the plant, financial and fiscal implications, environmental pollution (air, water, and land) etc.</li> <li>c) Inform the applicant/investor/developer on the outcome of application. If amendments are needed, then the applicant will do the needful and resubmit, and</li> <li>d) Make sure that the technical body involved in evaluation of this process plant should be involved during various stages of construction and commissioning of the plant</li> </ul>

### 2.2 Blending [BG 16]

Blending ratios would be stipulated in the blending permit issued by responsible Ministry

<b>Accountable stakeholder</b>	Investor Ministry responsible for Energy and Petroleum affairs
<b>Regulatory authority</b>	Ministry responsible for Energy and Petroleum affairs
<b>Regulated through</b>	<u>Not defined</u>
<b>Requirement</b>	<u>Not specified</u>

### 2.3 Quality of biofuels [BG 15]

As of to-date, Tanzania has no standards on liquid biofuels; however plans are under way to develop them. Quality standards and process for manufacturing biofuels are well established elsewhere. For safe and satisfactory engine performance, biofuel standards are based on physical and chemical properties. Since Tanzania Bureau of Standards is a member of ISO, the immediate biofuels standards in Tanzania could be base on those developed by ISO

<b>Accountable stakeholder</b>	Investor Government
<b>Regulatory authority</b>	Tanzania Bureau of Standards
<b>Regulated through</b>	<u>Not defined</u>
<b>Requirement</b>	<u>Not specified</u>

### 2.4 Contract farming [BG 8]

<b>Accountable stakeholder</b>	Investor Relevant associations
<b>Regulatory authority</b>	Relevant associations - <u>Not defined</u>
<b>Regulated through</b>	<u>Not defined</u>
<b>Requirement</b>	Out growers through their established associations will enter into contract agreement(s) with investor/developer(s) to ensure fair prize for energy crops/biofuel products

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## 2.5 Seeds management [BG 9]

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<b>Accountable stakeholder</b>	Investor Government
<b>Regulatory authority</b>	Ministry responsible for biofuel crops - <b><u>Not defined</u></b>
<b>Regulated through</b>	Regulations governing seed production in Tanzania - <b><u>Not defined</u></b>
<b>Requirement</b>	Biofuel seed shall not be imported or extracted without permit

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## 3 Distribution

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### 3.1 Infrastructure development [BG 7]

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<b>Accountable stakeholder</b>	Investor
<b>Requirement</b>	Appropriate infrastructure inside the area to be developed will be the responsibility of the investor/developers. This will include access roads, electric transmission and distribution lines, pipelines, etc.
<b>Regulatory authority</b>	Government
<b>Requirement</b>	Infrastructure to provide access to other parts of the country including high power transmission to national grid, railways, district and regional roads and bridges, as well as national pipelines will be the responsibility of the Government.
<b>Regulated through</b>	National plans

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### 3.2 Storage and handling of biofuels [BG 13]

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<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	<b><u>Not defined</u></b>
<b>Regulated through</b>	<b><u>Not defined</u></b>
<b>Requirement</b>	<ol style="list-style-type: none"><li>There should be an own legal storage facility (depot) or hospitality arrangement from any other biofuel/oil marketing companies</li><li>The product is thrown at the plant and elsewhere in appropriated containers that prohibits its deterioration</li><li>The containers are clearly marked and made particularly for biofuels in accordance with internationally agreed standards</li><li>The containers are reusable as many times as possible</li><li>The containers have safety and user friendly features for storing and handling biofuels, especially at household level</li><li>The containers are of various size capacities to cater for various storage and handling applications</li><li>The containers are of adequate strength for transportation and carriage</li><li>The producer devises a mechanism for collection of used containers including obsolete ones for possible re-cycling or disposal</li></ol>

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### 3.3 Transport and distribution [BG 14]

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<b>Accountable stakeholder</b>	Investor
<b>Regulatory authority</b>	<b><u>Not defined</u></b>
<b>Regulated through</b>	<b><u>Not defined</u></b>
<b>Requirement</b>	<ol style="list-style-type: none"><li>Arrangement of appropriate containers, pipelines, vehicles, or wagons for haulage and transport of large volumes of biofuels</li><li>Distribution centres (outlet centres) with appropriate safety measures</li><li>Apply for construction of biofuel piping system from one point to another</li><li>Apply for construction of biofuel stations at various points</li><li>Ensure that safety and country's policy procedures on construction of the above infrastructures are adhered to;</li><li>Show an indicator to have potential costumers, and</li><li>Establish mechanism of selling liquid biofuel or co-generation products</li></ol>

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## 4 Co-generation

### 4.1 Licenses

Accountable stakeholder Investor

Requirement

Regulatory authority The Energy and Water Utilities Regulatory Authority

Requirement

Regulated through

### 4.2 Rates and Charges

Accountable stakeholder Investor

Regulatory authority The Energy and Water Utilities Regulatory Authority

Regulated through Not defined

Requirement

### 4.3 Competition

Accountable stakeholder

Regulatory authority

Regulated through

Requirement

## Appendix 4. Rural Energy Act evaluated against Draft Biofuels Guidelines and criteria of sustainability

### Rural Energy Act

In this act there are description of regulative procedures associated to; establishment of the Rural Energy Board (REB), establishment of the Rural Energy Agency (REA) and establishment of the Rural Energy Fund (REF). The objective of the REB is to promote rural socio-economic development by facilitate extended access to modern energy services for the productive economic uses, health and education, clean water, civil security and domestic applications. The REB shall be the governing body for the REA, and shall consist of representatives from relevant Ministries, private sector, Tanzanian Bankers' Association, civic society, development partners and consumers. Objective of the REA is to implement the REB's Strategies and decisions and thus act as the executive body and Secretariat to REB. REF is the funding mechanism to subsidize the capital costs of projects that are developed by private and public entities, co-operatives and local community organizations.

### General correspondence according to Biofuels Guidelines

#### Facilitation of rural energy service

##### Biofuels Guidelines

".../Rural Energy Fund (REF) is being established to provide capital subsidy to eligible rural energy projects. Biofuels projects are potential candidates for the REF"

##### Rural Energy Act

The Agency shall:

act as the executive body/.../and Secretariat to the Board/.../and ensure the implementation of its (the Board) decisions and directives;

prepare and submit for Board's approval the application procedures, guidelines, selection criteria, standards and terms and conditions for grants.

.../ select projects for evaluation, and shall contract suitably qualified persons to evaluate the social and economic impacts of these projects.

.../ recommend to the Board projects for approval.

There shall be established/.../the Rural Energy Fund/.../by which the Board shall fulfil its mandate to provide grants to subsidize the capital cost of projects that are developed by private and public entities, co-operatives,

and local community organisations. The Fund shall provide resources for:  
 (a) grants towards the capital costs of projects implemented by private and public entities, co-operatives, and local community organisations;  
 (b) the provision of technical assistance, training and other forms of capacity building to qualified developers by qualified experts related to the planning and preparation of a project prior to an application for a grant; and  
 (c) the provision of financial assistance [Article 16- 16- (1a, c, 2, 3), 17, 18- (1, 2a –c)].

## Application and registration

### Biofuels Guidelines

Investors/developers applying for registration shall submit:

- Name of the investor/developer
- Company or association registration certificate/certificate of incorporation in Tanzania
- Commitment to be registered as a Tax payer
- Brief descriptions of the type of biofuels intended for investment (production capacity and bankable feasibility study)
- Brief description of land requirement (area and location)
- Financial status: at least two years consecutive years' audited accounts and brief description of how funds shall be committed to the intended investment
- Experience and competence on liquid biofuels [BG 1.1: (1a – f)]

### Rural Energy Act

#### *The Grant Contract*

The information to be included in a grant contract shall include but not be limited to –

- a description of the project;
- the place of execution of the project;
- a report on the financial status of the developer;
- anticipated financing arrangements for the project including the developer's own equity contribution and sources and conditions of loan finance;
- the disbursement schedule for grant payments set against project development milestones
- mechanisms for project supervision and control, including regular reporting requirements during the implementation of the investment programme;
- specification of any guarantees as required by the Board;
- a mechanism and process to transfer the grant contract to another entity where the ownership of the project is transferred to another entity during the period in which the grant contract is valid;
- description of consequences and procedures in case of non-fulfilment of the investment programme.

Where the developer is required to obtain a licence or authorisation from EWURA, the grant contract shall have the award of such a licence or authorisation as a condition precedent; and the Board shall be absolved from making any grant payments should the developer's licence be withdrawn or suspended [FIRST SCHEDULE Guidelines for management of the fund, Article 16- (a – i), 17]

## Aspects of sustainability regulated within Rural Energy Act

	Observed + / -	Relevance	Congruence with B.G.	effectiveness
Considering aspects of sustainability in general	+	Ecological sustainability matters, of certain relevance for capacity building and thus social sustainability	Yes	1
	<p>The principles of Rural Energy Development shall be as follows that</p> <ul style="list-style-type: none"> <li>• modern energy supply to rural areas promotes growth in economic production and productivity as well as social welfare;</li> <li>• sustainable development shall be achieved when modern energy services in rural areas are promoted, facilitated and supported through private and community initiative and involvement [Article 4- (a - b)]</li> </ul> <p>There is hereby established a Board to be known as the Rural Energy Board whose objective shall be to promote rural socioeconomic development by facilitating extended access to modern energy services for the productive economic uses, health and education, clean water, civil security and domestic applications [Article 6- (1)].</p>			
1. GHG balance	-			

<b>2. Airborne emissions on local level</b>	-			
<b>3. Biodiversity</b>	-			
<b>4. Soil erosion</b>	-			
<b>5. Depletion of fresh water resources</b>	+	Social sustainability	yes	1
	Se above: Article 6- (1)].			
<b>6. Nutrient losses and soil nutrient depletion</b>	-			
<b>7. Deforestation</b>	-			
<b>8. Pollution of chemicals</b>	-			
<b>9. Use of GMO:s</b>	-			
<b>10. Waste treatment</b>	-			
<b>11. Food supply</b>	-			
<b>12. Property and use rights</b>	-			
<b>13. welfare, and social conditions of local population, and capacity building</b>	+		yes	2
	<p>The objective of the Agency shall be to facilitate provision of technical assistance, research and development, training and other forms of capacity building to qualified developers by suitably qualified experts related to the planning and preparation of a project prior to an application for a grant [Article 15- (b), 16 (4a -h)]</p> <p>The Board shall strive to achieve the objective stipulated in subsection (1) above by:-</p> <ul style="list-style-type: none"> <li>• supporting the provision of modern energy services through projects that are developed by private, public entities, co-operatives and local community organisations;</li> <li>• facilitating the provision of technical assistance to qualified developers that contributes to the provision of modern energy services in rural areas</li> <li>• allocating grants in an efficient and competitive manner, to subsidize the capital costs of projects, taking into consideration a project's social and economic benefits, regional equity in the allocation of funding resources, and the project's sustainability [Article 6- (2a – c)]</li> </ul> <p>Grants made by the Fund to qualified developers may be used to co-finance investments in innovative pilot and demonstration projects and applications for renewable energy when development partners make special purpose funds available for that purpose [Article 22- (2d)]</p>			
<b>14. Employment wages and remuneration</b>	-			
<b>15. Inequity; women, children, indigenous people etc.</b>	-			
<b>16. Education</b>	-			
<b>17. Health care</b>	+		yes	1
	See above:[Article 6- (1)]			
<b>18. Strength and diversification of local economy</b>	+			

## Appendix 5. Land Act 1999 evaluated against Draft Biofuels Guidelines and criteria of sustainability

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### Land Act

The objective of Land Act is to promote the fundamental principles of National Land Policy. It is declared that all land in Tanzania is public and vested in the President, as trustee on behalf of all the citizens in Tanzania [1-(1a) p.36, (1) p.40]. The President may, through the Minister, give directives to the Commissioner of Lands [Part IV p. 57; 3 p. 60]. The Minister shall be responsible for policy formulation and for ensuring the execution by officials in the ministry [part IV. Article 8 p.57]. The Minister shall also establish Land Allocation Committees, at appropriate levels of the Government, to advise the Commissioner on the exercise of his power to determinate applications for rights and property [Article 12-(1) p. 64]. The Commissioner, who shall be appointed by the President, shall be the principal administrative and professional and adviser to the Government on all matters connected with the administration of lands [Article 9- (1), 10- (1) p.59]. Local government authorities shall not make an offer or grant any right of occupation to any organization [Article 14-(1) p.66]. In such cases, local government authorities, acting through a duly constituted committee or appointed officers make representations to the Commissioner, and the Commissioner shall have regard to that representation [Article 14-(3) p. 67]. The role of District Councils and Village Councils are of advising character. Applications for a granted right of occupancy, received by the local government authority, shall be forwarded to the Commissioner. It may include comments and recommendations. The commissioner shall ensure that all local government authorities and associations of local authorities are consulted and kept informed about the administration of land under the Land Act and all other laws [Article 14- (6) p. 68]. Within this administrative framework, Land Act regulates all issues of rights of occupancy, such as; covenants, leases, mortgages, easements, transfers, assignments, transactions, remedies, and also dispute settlements and powers of courts.

On and after the commencement of the Land Act, it shall be the duty of all courts in interpreting and applying the Land act and all other laws relating to land in Tanzania to use their best endeavours to create a common law of Tanzania applicable in equal measure to all land and to this end the courts shall apply a purposive interpretation to this act and shall at all times be guided by the Fundamental Principles of Land Policy/.. [Article 180- (3) p. 509]

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### General correspondence according to Biofuels Guidelines

#### Relocation

##### Biofuels Guidelines

The applicant has to apply for land ownership from TIC. Among other documents accompanied to the application a feasibility study must be included [BG 1.2.2; (4e)]. As part of the feasibility study, a summarized version of the Resettlement Plan must be included [BG 1.2.2.3; (6.2)]. The preparation of the Resettlement Plan should involve a socio-economic survey of all Project-Affected-Persons [BG 1.2.2.4; (6.6a)].

**Resettlement Plan**, in broad-spectrum [BG 6. 1 - 6], Specifically; Determining entitlements and eligibility for **compensation and resettlement assistance**, according to Tanzanian prevailing land and property laws [BG (6.6.b) p. 15].

- 1) Involuntary resettlement should be minimized and where displacement is unavoidable, a resettlement plan (PR) should be implemented as a development program
- (2) the RP should be prepared as a separate document and should be summarized in the feasibility study report<sup>5</sup>
- (4) People who are being resettled should be directly involved in the planning, implementation, monitoring and evaluation of the resettlement plan
- (6) The preparation of the RP should involve the following steps:
  - a) identifying and describing all Project Affected Persons (PAP: s) and the assets that they will lose (i.e. conducting a socio-economic survey of the PAP: s
  - b) se above
  - c) selecting the resettlement site and completing the physical planning and the technical and economic feasibility studies of the resettlement packages
  - d) preparing a timetable and a budget [BG (6. 1,2,4,6a – d) p. 13]

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#### Land Act

Where a draft scheme will or is likely to involve the movement or relocation of people from their

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<sup>5</sup> Feasibility study report is a responsibility of the applicant (investor), as part of the application to TIC. Hence, the PR may also be in the response of the applicant/investor, even though the Commissioner is responsible for the implementation of the scheme

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homes or places of work, or the acquisition of land in the area or the redistribution of land, or the readjustment of boundaries and areas of plots of land, the Commissioner shall serve a notice on every person occupying land affected or likely to be affected by any parts of that draft scheme and shall not reach any final conclusions on the draft scheme to which this subsection refers until all persons on whom a notice has been served who so desire it have had an opportunity of being heard on these proposals in the draft scheme [Article 59- (2) p.191].

The Commissioner shall be responsible for the implementation of a scheme of regularisation but he may, and if so directed by the Minister shall delegate the whole or any part of the implementation of that scheme to the implementation of that scheme to the urban authority where the regulation area is situate. A scheme of regularisation may contain all or any of the following matters, that is to say-

- a) arrangements for the survey, adjudication and recordation of the interests in land claimed by those persons occupying land in the regularisation area, which arrangements shall be based, as far as is practicable, on the provisions of sections 48 to 58 of the Village Land Act, 1999 relating to adjudication of interests in land-
  - c) arrangements, within the framework of the rights in land provided for under paragraphs (a) and (b) for the better planning and layout of the land, including the pooling, sharing and redistribution of rights in land
  - d) arrangements for the involvement of the local authorities having jurisdiction in the regularisation area in the implementation of the scheme arrangements
  - e) for the involvement of the people whose land is the subject of the scheme of regularisation in the implementation of the scheme;
  - f) arrangement for the assessment and payment of any compensation that may be payable in connection with the implementation of the scheme;
  - g) a budget for the scheme;
  - h) any other matter which may be prescribed
- [Article 60- (2, 1a, c – h) p.194]

Nothing in this section shall be taken to dispense with the requirement to obtain permission to develop land under the Town and Country Planning Ordinance, and any other laws relating to the erection of buildings on land [§41-(6) p. 138].

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## Identification of displaced persons

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### Biofuels Guidelines

The **socio-economic survey** of all PAP: s should be conducted early in the project cycle to avoid an influx of new people, the survey should: Identify and categorize the **displaced persons** (e.g. families with land titles, families without land titles, squatters, landless workers, indigenous people and other types of people [BG 1.2.2.5 (6.8a – f)]

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### Land Act

In determining whether to grant an approval for a disposition, the Commissioner shall, taking into account the presumption set out in subsection (1, granting of approval for a disposition), have regard to;

- e) where the disposition consists the interests of risk groups such as **displaced persons**, children and any low income persons [Article 41-(2e) p. 135].

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## Compensation

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### Biofuels Guidelines

Communities and households requiring assistance with relocation and restoration of livelihood must be fully **consulted and compensated** for losses according to the Tanzanian legislation [BG (6.5) p.15].

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### Land Act

Where a right of occupancy includes land which is occupied by persons under customary law, it shall be a condition of that right of occupancy that those customary rights shall be recognized and those persons so occupying the land shall be moved or relocated only:

- a) so far as is necessary to enable the purpose for which the right of occupancy was granted to be carried out, and
- b) in accordance with due process and principles of fair administration, being given –
  - (iv) Prompt payment of full **compensation for loss of any interests in land** and any losses that are incurred due to any move or any other interference with their occupation or use of land [Article 34- (3) p. 112]

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## Change of use

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**Biofuels Guidelines**

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The land will be granted to the investor/developer on condition that he/she must use the land for the applied purpose. As far as biofuels are concerned, the investor/developer shall use the land for specified energy crop (s) and not otherwise. In case of any change of use, the investor/developer must apply for re-grant, which is not automatic [BG 1.3.3; (5)].

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**Land Act**

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**Change of use**

No approved change of use shall take effect and no action may be taken by an occupier in pursuance of a proposed or approved change of use until:

- a) that change of use is endorsed on the certificate of occupancy
- b) the certificate is signed by the Commissioner with his official seal and by the occupier [Article 35-(5a – b) p.116]

Upon any breach arising from any condition subject to which any right of occupancy has been granted, the right of occupancy shall become liable to be revoked by the president [Article 45- (1) p.145]

Notwithstanding the provision a of subsection (2) above, the President may revoke a right of occupancy if in his opinion is in the public interest to do so [Article 45- (3) p.147]

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**Majority of ownership**

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**Biofuels Guidelines**

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TIC shall ensure that **majority ownership** of land is by locals [BG 4.4]

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**Land Act**

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For avoidance of doubt, a non-citizen shall not be allocated or granted land unless it is for investment purposes under the Tanzania Investment Act, 1997

Land to for investment purposes under subsection (1) of this section, shall be identified, gazetted and allocated to the Tanzania Investment Centre which shall create derivative rights to investors. For the purposes of this Act, any body corporate of whose majority shareholders or owners are non-citizens [Article 20- (1,2,4)]

Where the Commissioner is satisfied that

- a) a notice served under section 47 has not been complied with- or
- b) the breach of condition is so serious and of far-reaching consequences that-
- c) there has been an attempted disposition of a right of occupancy to a non-citizen contrary to this Act and any other law governing the disposition of a right of occupancy to a non-citizen;

(i) he shall-

serve a notice of revocation in the prescribe form on the occupier [Article 48- (1a – c, i) ]

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## Disputes

### Biofuels Guidelines

In case of any dispute, not settled amicably, the matter shall be referred to the Courts of law of United Republic of Tanzania (URT) [BG 1.3.2 (19)]

### Land Act

The following courts are hereby vested with exclusive jurisdiction, subject to the provisions of this Part, to hear and determine all manner of disputes, actions and proceedings concerning land, that is to say-

- a) the Court of Appeal;
- b) the Land Division of the High Court established in accordance with law for time being in force for establishing courts divisions;
- c) The District Land and Housing Tribunal
- d) Ward Tribunals
- e) Village Land Council [Article 167- (1a – e) p. 467]

## Aspects of sustainability regulated within Land Act

	Observed + / -	Relevance	Congruence with B.G.	Effectiveness
Considering aspects of sustainability in general	+	Social and ecological sustainability	BG 1.2.2.3: (6.5)	1
	The fundamental principles of National Land Policy which is the objective of this Act to promote and to which all persons exercising powers under, applying or interpreting this Act are to have regard to , are to ensure that land is used productively and that any such use complies with the principles of sustainable development, and to pay full, fair and prompt compensation to any person whose right of occupancy or recognised long-standing occupation or customary use of land is revoked or otherwise interfered with to their detriment by the State under this Act or is acquired under the Land Acquisition Act [Article 1- (1e, g) p. 37]			
	Declaration of hazardous land: .../hazardous land is land the development of which is likely to pose a danger or to lead to the degradation of or environmental destruction/.../includes but is not limited to-			
	<ul style="list-style-type: none"><li>• mangrove swamps and coral reefs;</li><li>• wetlands and offshore islands;</li><li>• land designated or used for the dumping of hazardous waste;</li><li>• land within sixty metres of a river bank, shoreline of an inland lake, beach or coast;</li><li>• land on slopes with a gradient exceeding any angle which the Minister shall, after taking account of proper scientific advice, specify;</li><li>• land specified by the appropriate authority as land which should not be developed on account of its fragile nature or of its environmental significance.</li></ul> [Article 7.-(1a - f) p.52]			
1. GHG balance	-			
2. Airborne emissions on local level	-			
3. Biodiversity	-			
4. Soil erosion	-			
5. Depletion of fresh water resources	-			
6. Nutrient losses and soil nutrient depletion	-			
7. Deforestation	-			
8. Pollution of chemicals	-			

<b>9. Use of GMO:s</b>	-			
<b>10. Waste treatment</b>	-			
<b>11. Food supply</b>	-			
<b>12. Property and use rights</b>	+	Social and ecological sustainability	BG1.2.2.3 : (6.5)	2
	<ul style="list-style-type: none"> <li>• to enable all citizens to participate in decision making on matters connected with their occupation or use of land</li> <li>• regulate the operation of a market and urban small-holders and pastoralists are not disadvantaged;</li> <li>• to set out rules of land law accessibly and in a manner which can be readily understood.../ [Article 1- (1i,k -l)]</li> </ul> <p>There shall be implied in every lease, other than a short term lease covenants/.../to use any land in a sustainable manner/... /unless the purpose for which the land has been leased cannot be carried out without so doing, not to cut down, injure or destroy any living tree on the land [Article 89- (1c) p. 244]</p> <p>.../in the case of mortgage of land used for agricultural purposes, to use , the land in a sustainable manner [Article 123- (1e) p. 318]</p> <p>Land held for a right of occupancy shall be taken to have been abandoned where rights of one or more of the following factors are present: by reason of the neglect of the land the land is: suffering serious environmental damage [Article 51-(1e:ii)]</p>			
<b>13. welfare, and social conditions of local population, and capacity building</b>	+	Social sustainability	BG1.2.2.3: (6.3 – 4, 6)	1
	The President and every person to whom the President may delegate any of his functions under this Act, and any person exercising powers under this Act, shall at all times exercise those functions powers and discharge duties so as to advance the economic and social welfare of the citizens [Article 1- (2) p.41].			
<b>14. Employment wages and remuneration</b>	-			
<b>15. Inequity; women, children, indigenous people etc.</b>	-			
<b>16. Education</b>	-			
<b>17. Health care</b>	-			
<b>18. Strength and diversification of local economy</b>	-			

## Appendix 6. Village Land Act Rural Energy Act evaluated against Draft Biofuels Guidelines and criteria of sustainability

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### Village Land Act

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Village Land Act is the application of the Fundamental Principles of the National Land Policy (FPNLP) that focuses on the establishment of an independent, expeditious and just system for adjudication of land issues. Land disputes shall thereby be heard and determined without undue delay [Article 3- (1a, 1n) p. 22]. It also has the object to encourage dissemination of information about land administration and Land Law through programs of public and adult education, using all forms of media [Article 3- (1o) p. 26]. It is stated that the President is minded to transfer any area of village land to general or reserved land for public interest, and that public interest shall include investments, of national interests [Article 4- (1,2) p.26]. He may by then direct to the Minister to proceed in accordance with the provisions of Article 4. As the objective of VLA are issues related to the governance on local level, the main actors in preparations of decisions are the Commissioner and the Village Council [Article 4- (5) p. 28]. In issues of land transfer, less than 250 ha, the Village Council is responsible for the preparation for the proposal. It shall be submitted, with recommendations, to the Village Assembly. According to Local Government Act 1982 section 103- (3), the Village Assembly shall with respect to the given recommendations (also from District Council when relevant) decide on approval or disapproval of the proposed transfer [Article 4- (6a) p. 29]. For proposals of areas greater than 250 ha, the Minister is responsible. The Minister shall consider the given recommendations made by the Village Assembly through the Village Council, the District Council and their representations [Article 4- (6b) p. 29]. No village transfer land shall be transferred until type, amount, method, timing of the payment of compensation has been agreed upon between the Village Council and the Commissioner. In cases when the Minister is responsible, the Commissioner and the President shall also be included in the agreement [Article 4- (8a) p. 30].

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### General correspondence according to Biofuels Guidelines

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#### Land acquisition

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##### Biofuels Guidelines

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Acquisition by small out growers will be provided under Village Land Act 1999 and/or Land Act 1999 [BG 1.2.2:(4.3)]

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##### Village Land Act

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A customary right of occupancy is in every respect of equal status and effect to a granted right of occupancy and shall, subject to the provision of this Act, be

- a) capable of being allocated by a village council to a citizen, a family of citizens a group of two or more citizens whether associated together under any law or not a partnership or a corporate body the majority of whose members or shareholders are citizens;
- b) in village land or reserved land;
- c) capable of being of indefinite duration;
- d) governed by customary law in respect of any dealings, between persons residing in or occupying and using land-
  - i) within the village having jurisdiction over that land; or
  - ii) where the customary right of occupancy has been granted in land other than village Land, contiguous to or surrounding the Land which has been granted for a customary right of occupancy;
- e) .../ village council having jurisdiction over that land shall determine;
- f) May be granted subject to a premium and an annual rent/...
- g) capable of being assigned to a citizen or a group of citizens, having a residence or place of business in the village where the land is situate, or a body corporate the majority of whose shareholders or members are citizens having a place of business in that village;
- h) inheritable and transmissible by will.
- i) .../ full and fair compensation to acquisition/... [Article 18- (1a – i) p 90]

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#### Discrimination

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##### Biofuels Guidelines

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Mainstream HIV/AIDS and Gender in projects:  
The investors/developers should provide employment to the community and should **give priority to marginalized groups**;.../ [BG (10.2a) p.17]

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##### Village Land Act

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The village council shall disallow an assignment which:  
a) would result in the assignee occupying an amount of land in excess of the

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- prescribed maximum for that village;
- b) would operate or would be likely to operate to defeat **the right of any woman** to occupy land under a customary, right of occupancy, a derivative right or as a successor in title to the assignor [Article 30- (4a – b) p 141]

The fundamental principles of National Land Policy which are the objectives of the Land Act 1999 to which persons exercising powers under applying or interpreting this Act are to have regard to are:

- l) regulate the operation of a market in Land so as to ensure that rural and urban **small-holders pastoralists** are disadvantaged, are not [Article 3- (1) p 25]

**The right of every woman** to acquire, hold, use and deal with land shall to the same extent and subject to the same restriction **be treated as the right of any man, is hereby declared to be law** [Article 3- (2) p. 26]

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## Improvement of social conditions

### Biofuels Guidelines

An application [for Land acquisition] has to be accompanied with the following documents;

- a) Certificate of incorporation of the company
- b) Proven track records in biofuels
- c) Project implementation scheme
- d) Document showing the purpose of acquiring land type and type of biofuel crop
- e) **Feasibility study** [BG (4.1a - e) p. 13]

**Feasibility study report should be including a summary of the Resettlement Plan, and;**

**The principal objective of a RP should be to re-establish (or even improve) the social and economic productivity** in the displaced community. It is therefore essential to approach all aspects of resettlement in a systematic manner, from project preparation to the re-establishment of the community life in the new location [BG 1.2.2.3: (6.2 - 3)]

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### Village Land Act

where the application [- for customary right of occupancy] is from a non-village organisation, the Village Council shall seek guidance from the Commissioner who shall have regard to-

- ii) any advice/.../ given/.../ by the district council or/.../ the urban authority having jurisdiction in the area.../
- iii) the contribution that the non-village organisation has made or has undertaken to make to the community and public facilities of the village
- iv) the contribution to the national economy and well-being that the development for which the right of occupancy is being applied for is likely to make**
- v) whether the amount of land in respect/.../ is located in such an area that it will or is likely to impede the present and future occupation and use of village land by persons ordinarily resident in the village
- vi) any other matters which may be prescribed [Article 23- (2d) p.108]

An assignment of a customary right of occupancy may be made to a person or group of persons not ordinarily resident in a village if and only if

- a) the village council approves of the assignment
- b) there is an agreement prior to the assignment;
- e) that person or that group of persons make and sign a deposition that he or they will within six months of the making of that deposition commence the construction of some industrial, commercial or other building which is likely to Provide benefit of villagers or the village**
- f) that person or that group of persons make and sign a deposition that he or they intend within six months of the making of that deposition to **commence some agricultural, mining, tourist or other development which is likely to provide benefit to villagers or the village.**

[Article 30- (2a –b, e – f) p. 137]

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## Compensation

### Biofuels Guidelines

Communities and households requiring assistance with relocation and restoration of livelihood must be fully **consulted and compensated** for losses according to the Tanzanian legislation [BG 1.2.2.3: (6.5 )].

### Village Land Act

to pay **full, fair and prompt compensation** to any person whose right of occupancy or recognized long-standing occupation or customary use of land is revoked or otherwise interfered with to their detriment by the State under this Act or is acquired under the Land Acquisition Act, 1967 [(FPNLP) Article 3- (1h) p. 24].

No Village transfer land shall be transferred until the **type, amount, method and timing of the payment of compensation** has been agreed upon between the village council and the Commissioner.../ [Article 4- (8a(i)) p. 30]

**The President may direct that any compensation** payable under this section shall be paid by the person to whom or an organization to which the village transfer land which has been transferred to general land is granted by a right of occupancy [Article 4- (11) p.33]

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## Majority of ownership

### Biofuels Guidelines

TIC shall ensure that **majority of ownership** of land is by locals [BG 1.2.2.1: (4.4)]

### Village Land Act

No person shall be eligible to be nominated as a member of the village land Council or continue as a member of a traditional village land council if he is: (g) a person who is not a citizen [Article 60- (5g) p.269]

A non-village organisation to which this part applies non-village is (c) a corporate or other body, a majority of whose members or shareholders are citizens registered or licensed to operate under any law for the time being in force in Tanzania applicable to that corporate or other body which does not consist of a **majority of the members** of the similarly subsidiary village; or any composed of that efficient manner/... [Article 17- (1 c) p.86]

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## Of relevance for the matter, stressed in Village Land Act but not described in Biofuels Guidelines

.../to ensure that existing rights in and recognized long standing occupation or use of Land are clarified and secured by the law [(FPNLP) Article 3- (1c) p. 24].

Definition of non-village:

A non-village organisation to which this part applies non-village is

- (a) a government department or any office or part of it;
  - (b) a public corporation or other Parastatal body or any office, part, division or its subsidiary body;
  - (c) a corporate or other body, a majority of whose members or shareholders are citizens registered or licensed to operate under any law for the time being in force in Tanzania applicable to that corporate or other body which does not consist of a majority of the members of the similarly subsidiary village; or any composed of that efficient manner/...
  - (5) On and after the coming into operation of this Act, a non-village organisation which wishes to obtain a portion of village land for the better carrying on of -its operations may apply to the village council for that land, and the village council shall recommend to the Commissioner for the grant or refusal of such grant. [Article 17- (1a – c, 5 (!)) p.86]
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## Aspects of sustainability regulated within Village Land Act

	Observed + / -	Relevance	Congruence with B.G.	Effectiveness
Considering aspects of sustainability in general	+	Ecological sustainability		1
		<p>In the management of village land, a village council shall have regard to the <b>principle of sustainable development in the management of village land and the relationship between land use, other natural resources</b> and the environment in and contiguous to the village and village land [Article 8- (3a) p. 53]</p> <p>.../ keep and <b>maintain the land in good state</b>; and in the case of land to be used for farming, farm the land in accordance with <b>the practice of good husbandry</b> customarily used in the area [Article 29- (2a)]</p> <p>The Minister may declare any area of a village land to be <b>hazard land</b>/.../ Notwithstanding the provisions of subsection (1), any local authority having jurisdiction in any village may advise the Minister/.../ For purposes of this Section, hazard land is land the development of which is likely to pose a danger to life or to lead to the degradation of or <b>environmental destruction</b> on that or contiguous land and includes/...:</p> <p>(f) land specified by the appropriate authority as land which should not be developed on account of its <b>fragile nature</b>;</p> <p>(g) land specified by the appropriate authority as being land which should not be developed on account of its <b>environmental significance</b> [Article 6- (1, 2,3f – g)].</p>		
1. GHG balance	-			
2. Airborne emissions on local level	-			
3. Biodiversity	-			
4. Soil erosion	-			
5. Depletion of fresh water resources	-			
6. Nutrient losses and soil nutrient depletion	-			
7. Deforestation	-			
8. Pollution of chemicals	-			
9. Use of GMO:s	-			
10. Waste treatment	-			
11. Food supply	-			
12. Property and use rights	+			3
		Existing rights in and recognized long standing occupation or use of Land are clarified and secured by the law [(FPNLP) Article 3- (1c)].		
13. welfare, and social conditions of local population, and capacity building	+			1
		See above: [Article 23- (2d) p.108] and [Article 30- (2a –b, e – f) p. 137]		
14. Employment wages and remuneration	+			1
		See above:		

	[Article 23- (2d) p.108] and [Article 30- (2a –b, e – f) p. 137]	
<b>15. Inequity; women, children, indigenous people etc.</b>	+	3
	In determining whether to grant a customary right of occupancy, the village council shall/.../have special regard in respect of the equality of all persons, such as (i) treat an application from a woman, or a group of women no less favourably than an equivalent application from a man, a group of men or a mixed group of men and women; and (ii) adopt or apply no adverse discriminatory practices or attitudes towards any woman who has applied for a customary right of occupancy [Article 23- (2c) p. 105]	
<b>16. Education</b>	+	1
	The fundamental principles of National Land Policy which are the objectives of the Land Act, 1999 to which persons exercising powers under, applying or interpreting this Act are to have regard to are: to encourage the dissemination of information about land administration and Land Law as provided for by this Act through programmes of public and adult education, using all forms of media [Article 3- (1o)]	
<b>17. Health care</b>	-	
<b>18. Strength and diversification of local economy</b>	-	
	See above; aspects of sustainability in general	

## Appendix 7. Tanzania Environmental Management Act 2004 evaluated against Draft Biofuels Guidelines and criteria of sustainability

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### Environmental Management Act

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The general principle of the Environmental Management Act (EMA) is that every person living in Tanzania shall have a right to clean, safe and healthy environment. This includes the right of access by any citizen to the various public elements or segments of the environment for recreational, educational, health, spiritual, cultural and economic purposes [Article 4- (1, 2)]. The Tribunal, court and any person exercising jurisdiction under EMA shall be guided by principles of environment and sustainable development, such as: the precautionary principle, the polluter pays principle, the principle of eco-system integrity, the principle of public participation in the development policies, plans and processes for the management of the environment, the principle of access to justice, the principle of inter-generational equity and intra-generational equity, the principle of international co-operation in management of environmental resources shared by two or more states and the principle of common but differentiated responsibilities [Article 5- (3a - h)]. Land users and occupiers shall be responsible for the protection, improvement and nourishment of the land and for using it in an environmentally sustainable manner as may be prescribed by the Minister. Where any matter concerning management of the environment undertaken according to any written law is in conflict with this Act, this Act shall prevail [Article 72, 73- (2)].

The Minister shall be overall responsible for articulation of policy guidelines necessary for the promotion, protection and sustainable management of environment in Tanzania [Article 13.-(1)]. Implementation of the National Environmental Policy, as well as advises to the Government on legislative matters and also coordination of all activities related to environmental management aspects is the responsibilities of the Director of Environment [Articles 14, 15]. Executive authority is The National Environment Management Council (NEMC), through the Director-General who will be the chief executive officer [Article 21.-(3)]. The Council shall be managed by a Board of Directors, which shall consist of: the Chairman who shall be appointed by the President, the Director of Environment and seven members, appointed by the Minister at least two of whom being women [Article 19- (2a – c)]. The Director-General, appointed by the President, is responsible to the Board for the day to day management and proper administration of the affairs of NEMC [Article 21.-(1, 2, 3, 5)]. NEMC shall do all such acts as may appear to it to be requisite, advantageous or convenient, in association with any other person or body of persons [Article 18.-(1)]. In its corporate name, the Council will be capable of suing and being sued [Article 16.-(2b)].

There is established a Fund to be known as the National Environmental Trust Fund/.../There may be charged on and paid out of the Fund all such sums of money as may be expended for management of environment and administrative functions of the Fund. The objectives of the Trust Fund shall be; to facilitate research intended to further the requirement of environmental management; to foster capacity building; to confer environmental awards; to issue environmental publications; to provide scholarships; to promote and assist, through grants, community based environmental management programmes; and to pay for the costs of the meetings of the National Environmental Advisory Committee and of the Board of Trustees. The Board of Trustees may, on recommendation of the National Environmental Advisory Committee, determine that certain donations of the Trust Fund be applied specifically for prizes and awards for exemplary services to the environment and to be applied by the recipient exclusively to the management of the environment [Articles 213- (1, 3), 214- (1a – g, 2)].

The Management and utilisation of land shall be in accordance with the prevailing land laws provided that where there is any conflict on environmental aspect of land management, the provisions of this Act shall prevail. [Article 51]

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### General correspondence according to Biofuels Guidelines

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#### Application and registration

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#### Biofuels Guidelines

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Application and registration for investments in liquid biofuels and co-generation shall include brief descriptions of the type of biofuels intended for investment (production capacity and bankable feasibility study), and brief description of land requirement (area and location) [BG 1.1: (1d – e)]

Collect information on the **resource base** and productivity of the affected population, including incomes from on- and off-farm activities [BG 1.2.2.5: (6.8b)]

Investor shall show how project(s) may contribute in **improving social services** at the project area Ensure locals´ share holding in the business (in cash and land-assets) where appropriate, including out growers [BG 1.2.3.1: (10.1)]

The principal objective of a RP should be to **re-establish (or even improve) the social and economic productivity** of the displaced community. It is therefore essential to approach all aspects of resettlement in a systematic manner, from project preparation to the re-establishment of the

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community life at the new location People who are being resettled should be directly involved in the planning, implantation, monitoring and evaluation of the resettlement plan [BG 1.2.2.3: (6,3 - 4)]

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### **Environmental Management Act**

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The Minister shall disapprove and recommend to the licensing authority that the project should not be licensed or, where the licence has been issued, be cancelled if: the project or undertaking is likely to **cause significant adverse impact** on the environment; there are no alternatives which can mitigate or remedy the significant likely harm to the environment; there are compelling social, economic, health, cultural, or religious reasons which may or are likely to lead to **irreversible impact on the society** [Article 93- (a – b,d)].

The Council may, during the review process, visit for purposes of inspection or verification any site or place associated with the proposed project or undertaking at the proponent's cost. The Environmental Impact Statement review process shall be based on the following criteria: the balance between short and long term **socio-economic benefits of the project** and the detriment to the human and physical environment; the **nature of the project** or undertaking and how it is likely to meet environmental standards; the possible mitigation alternatives or other remedial measures; comments received during public hearings and other consultative processes under this Part; and any other review criteria as prescribed in the regulations [Article 88- (1, 2a – e)].

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### **Public participation, general**

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#### **Biofuels Guidelines**

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Investor shall:

- b) Be required to consult and **involve the public** during the feasibility study or project planning phase. Consultation shall include:
    - v) The local communities
    - vi) The local authorities
    - vii) District authorities
    - viii) Regional authorities
  - e) Be required to provide a brief description on how local community will fully participate in project(s)
  - f) Show how project(s) may contribute in improving social services at the project area
- Ensure locals' share holding in the business (in cash and land-assets) where appropriate, including out growers [BG 1.2.3.1: (10.1)]
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#### **Environmental Management Act**

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The public shall have the right to **participate in decisions** concerning the design of environmental policies, strategies, plans and programmes and to participate in the preparation of laws and regulations relating to the environment. The Council and other relevant authorities shall establish mechanisms to collect and respond to public comments, concerns and questions related to the environment [Article 178- (2)].

The object and purpose for which the Council (NEMC) is established is to undertake enforcement, compliance, review and monitoring of environmental impact assessment and in that regard, **shall facilitate public participation in environmental decision making** [Article 17- (1)]

The Minister may, on recommendation of the National Environmental Advisory Committee, declare any area of land which is ecologically fragile or sensitive to be an Environmental Protected Area. In determining whether or not to declare any area as an Environmental Protected Area, the Minister shall have regard to representations made by any person **or non-governmental organizations** with sufficient public or private interest in the area, and the **interests of the local communities** in or around the area. The Management of the Environmental Protected Area shall vest in the Council (NEMC) [Article 47- (1, 3a, 4)].

There shall be appointed or designated by the Minister responsible for regional administration a person to be known as the Regional Environment Management Expert who shall be charged with the **responsibility of advising the local authorities** on matters relating to the implementation and enforcement of this Act. The Regional Environment Management Expert shall be a link person between the region in which he is employed with the Director of Environment and the Director-General [Article 35-1, 2)].

The Council (NEMC) may/.../ either alone or **in association with any other person or body of persons; initiate and evolve procedures** and safeguards for the prevention of accidents which may cause environmental degradation and evolve remedial measures where accidents occur; undertake, in co-operation with relevant sector Ministries programmes intended to **enhance environmental education and public awareness** about the need for sound environmental management as well as for enlisting public support and encouraging the effort made by other entities in that regard;  
[Article 18- (1g – h)]

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### **Public participation specifically**

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#### **Biofuels Guidelines**

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Resettlement Plan shall identify and describe all **Project Affected Persons (PAP: s)** and the assets that they will lose (i.e. conducting a socio-economic survey of the PAP: s) [BG 1.2.2.4: (6.6a)]

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## Environmental Management Act

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.../ the Council shall adopt guidelines on **public participation, especially those likely to be affected** by the project being the subject of an Environmental Impact Assessment study or review. Environmental Impact Statement, the Council shall-

- (a) circulate it for written comments from various institutions and government agencies;
- (b) notify the public by any appropriate means of the place and time for reviewing the Environmental Impact Statement and submitting written comments in a prescribed manner; and
- (c) solicit oral or written comments by any appropriate means, of the people who will be affected [Article 89- (1a – c)].

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## Disputes

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### Biofuels Guidelines

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**In case of any dispute**, not settled amicably, the matter shall be referred to the Courts of law of United Republic of Tanzania (BG 1.3.2: (19))

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## Environmental Management Act

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Each Environmental Management Committee shall, in relation to an area to which it is established, have powers to; require any person to provide information or explanation/.../**resolve conflict** among individual persons, companies, agencies, non governmental organisations, Government departments or institutions about their respective functions, duties, mandates, obligations or activities/.../inspect and examine any premises, street, vehicle, aircraft or any other place or article which it believes or have reasonable cause to believe that pollutant or other articles or substances believes to be pollutant is kept or transported, require any person to remove at own cost any article or substance from any place/.../ initiate proceedings of civil or criminal nature against any person, company, agency, department or institution that fails or refuses to comply with any directive issued by any of such Committees [Article 41- (b – f)].

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## Research

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### Biofuels Guidelines

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It is/.../important for the investors/developers to **support research activities** for their respective crops. Research findings should be taken back to the biofuel industry through extension services [BG 1.3.4: (20)] .

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## Environmental Management Act

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The Council (NEMC) may/.../ either alone or **in association with any other person or body of persons**, carry out surveys which will assist in the proper management and conservation of the environment; **undertake and co-ordinate research**, investigation and surveys in the field of environment and **collect, and disseminate information** about the findings of such research, investigation or survey; identify projects and programmes or types of projects and programmes, for which environmental **audit or environmental monitoring** must be conducted; **enforce and ensure compliance of the national environmental quality standards; initiate and evolve procedures** and safeguards for the prevention of accidents which may cause environmental degradation and evolve remedial measures where accidents occur [Article 18- (1e – g)]

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## Environmental Impact Assessment

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### Biofuels Guidelines

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Investor:

- d) Shall carry out EIA prior to the beginning of the project as per EIA regulations
- e) Shall be required to submit EIA statement to the biofuels one stop center
- f) May be required to carry out HIA after commencement of the project implementation

[BG 1.2.4: (11)]

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## Environmental Management Act

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Any person, being a proponent or a developer of a project or undertaking of a type specified in the Third Schedule to this Act, to which **Environmental Impact Assessment** is required/.../, shall undertake or cause to be undertaken, at his own cost, an environmental impact assessment study/.../out prior to the commencement or financing of a project or undertaking. A permit or licence for the carrying out of any project or undertaking in accordance with any written law shall not entitle the proponent or developer to undertake or to cause to be undertaken a project or activity without an environmental impact assessment certificate issued under this Act. Any person, who contravenes subsection (3), commits an offence. The Council shall maintain a register of experts and firms of experts authorized to conduct Environmental Impact Assessment. [Article 81- (1, 2, 3, 4), 83- (3)]

The Council may, at any time after the issuance of an EIA Certificate, require the holder of such certificate to conduct a fresh EIA study at his own cost and submit an Environmental Impact Statement within such time as the Council may prescribe if: .../ environmental threats which could not be reasonably foreseen at the time of the study or review .../ information or data given by the proponent or undertaking in previous EIA process was inaccurate, false or intended to mislead the Council [Article 97- (a – b)].

Where the results of monitoring indicate non-compliance with the EIA, the holder of the EIA Certificate may be required: to take all reasonable measures to mitigate the impact of such non compliance and report such measures to the Council or to pay a fine imposed by way of administrative measure by the Council for such non

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compliance. The Council may recommend to the Minister for revocation of EIA Certificate if the results of an additional monitoring indicate persistent non-compliance with the conditions stipulated in the EIA Certificate and the Council may institute proceedings in a court of law for damages for any injury that may have occurred as a result of such non-compliance [Article 100- (1a –b, 2)].

Each sector environmental section shall be required-

- (a) to advise on and, in collaboration with other bodies, implement the policies of the Government/...
- (b) to coordinate the activities related to the environment within the Ministry;
- (c) to ensure that environmental concerns are integrated into the ministry or departmental development planning and project implementation/...
- (d) to collaborate with other institutions or agencies/...
- (e) to prepare and coordinate/.../at the national and local levels/...
- (f) to promote public awareness/.../through educational programmes and the dissemination of information;
- (i) to undertake analysis of environmental impact of sectoral legislation, regulations, policies, plans, strategies and programs through **strategic environmental assessment**;
- (j) to ensure that sectoral standards are environmentally sound;
- (k) to oversee the preparation and implementation of **Environmental Impact Assessments required for investments** in the sector;
- (m) in conjunction with the Ministry responsible for local government, to provide environmental **advice and technical support to district level staff** working in the sector [Article 31- (1a- f, I – k, m)].

All relevant sector Ministries and local government authorities shall mainstream respective parts of the National Implementation Plan/.../ (f) involvement of industry particularly with reference to sharing the costs for disposal and taking responsibility of disposal of persistent organic pollutants;

- (g) promotion of appropriate pesticide and chemicals management practices;
  - (q) compensations, clean-ups and emergency response to hazardous substances released into the environment and clean-up of inactive hazardous waste disposal sites;
- [Article 77- (4, 5f – g, q)]

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## **Change in use**

### **Biofuels Guidelines**

The land will be granted to the investor/developer on condition that he/she must use the land for the applied purpose. As far as biofuels are concerned, the investor/developer shall use the land for specified energy crop (s) and not otherwise. In case of any change of use, the investor/developer must apply for re-grant, which is not automatic [BG 1.3.3: (5)]

### **Environmental Management Act**

The Council may, at any time after the issuance of an EIA Certificate, require the holder of such certificate to conduct a fresh EIA study at his own cost and submit an Environmental Impact Statement within such time as the Council may prescribe if there is substantial change or modification/.../ in the manner in which the project is being operated [Article 97- (a)].

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## **Production process**

### **Biofuels Guidelines**

Investor is required to submit the following information to the biofuels one stop center: detailed process flow sheet and process lay out of the anticipated plant, detailed equipment specifications and drawings for all equipment in the plant, operation manuals of major equipment in the plant, a list of all chemicals that will be used; and where appropriated (in case of less known chemicals) a material safety data sheet for each chemical has to be provided. Any other technical information relevant to the proposed plant [BG 2.1: (12.1a - c)]

### **Environmental Management Act**

It shall be the duty of every organization and individual producing, transporting, trading, using, storing or disposing of chemicals, oil, toxic substances, inflammable or explosive substances, to comply with regulations prescribed by the Minister on safety for human and other living beings and avoid causing environmental degradation [Article 110- (4)].

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## **Distribution**

### **Biofuels Guidelines**

The investor/developer should ensure that containers are reusable as many times as possible/.../The producer devises a mechanism for collection of used containers including obsolete ones for possible re-cycling or disposal [BG 3.2 (13c, g)]

### **Environmental Management Act**

For the purposes of ensuring minimization of the solid waste in their respective geographical areas of jurisdiction,; for mechanisms to be put in place to involve the private sector and Non-Governmental

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Organisations on planning, raising awareness among producers, vendors, transporters, manufacturers and others on the need to have appropriate containers and enhance separation of waste at source [Article 114- (1c)].

The local government authorities shall ensure that industries located within their geographical respective areas of jurisdiction provide adequate space and facilities for managing all solid waste generated from such industries before they are collected for disposal at designated places [Article 116- (1)].

### Aspects of sustainability regulated within Environmental Management Act

	Observed + / -	Relevance	Congruence with B.G.	Effectiveness
Considering aspects of sustainability in general	+			2
<p>The objective of Environmental Management Act 2004 is to provide for and promote the enhancement, protection, conservation and management of the environment/.../provides a legal framework necessary for co-ordinating harmonious and conflicting activities with a view to integrating such activities into an overall sustainable environmental management system by providing key technical support to Sector Ministries/.../every person exercising powers under this Act shall observe the principle that:</p> <p>(a) the environment is the common heritage of present and future generations;</p> <p>(b) adverse effects be prevented or minimised through long-term integrated planning and coordination, integration and co-operation of efforts, which consider the entire environment as a whole entity;</p> <p>(c) the precautionary principle, which requires that where there is risk of serious irreversible adverse effects occurring, a lack of scientific certainty should not prevent or impair the taking of precautionary measures to protect the environment;</p> <p>(d) the polluter pays principle, which requires that any person causing adverse effect on the environment shall be required to pay in full social and environmental costs of avoiding, mitigating, and or remedying those adverse effects;</p> <p>(e) the public participation principle, which requires the involvement of the people in the development of policies, plans and processes for the management of the environment;</p> <p>(f) access to environmental information, which enables citizens to make informed personal choices and encourages improved performance by industry and government;</p> <p>(g) access to justice, which gives individuals, the public and interest groups of persons the opportunity to protect their rights to participation and to contest decisions that do not take their interest into account;</p> <p>(h) the generation of waste be minimised, wherever practicable, waste should, in order of priority, be re-used, recycled, recovered and disposed of safely in a manner that avoids creating adverse effects or if this is not practicable, is least likely to cause adverse effects;</p> <p>(i) the environment and natural resources are vital to peoples livelihood, to be used</p>				

	<p>sustainably in order to achieve poverty reduction, and social economic development;</p> <p>(j) non-renewable natural resources only be used prudently, taking into account the consequences for the present and the future generations; and</p> <p>(k) renewable natural resources and ecosystems only be used in a manner that is sustainable and does not prejudice their viability and integrity.</p> <p>(4) With regard to observance of the principles stipulated under subsection (1), the Minister shall be overall responsible for fostering co-ordination between the Government, local government authorities and other bodies engaged in environmental management as a cross-cutting issue and shall in that respect maintain a system of collaboration, consultation and co-operation with any person having functions provided under this Act [Article 7- (1 – 4)].</p>		
<b>1. GHG balance</b>			
	<p>The Minister shall, in consultations with relevant sector Ministries:</p> <p>(d) review and approve any measures undertaken to address climate change by any institution, firm, sector or individuals be it foreign or local, including those related to the use of land, water, forests or any other ecosystems within the United Republic to sequester greenhouse gases; and</p> <p>(e) project national positions at global level on how to deal with the problem of climate change in the context of the United Nations Framework Convention on Climate Change, and its related Protocol(s) [Article 75- (d – e)].</p>		
<b>2. Airborne emissions on local level</b>			
<b>3. Biodiversity</b>			3
	<p>The Minister shall strive to attain the conservation of <b>biological diversity</b>, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.</p> <p>(2) The powers of the Minister under this section shall in general include regulating <b>appropriate access to genetic resources</b> and by appropriate transfer of relevant technologies, taking into account all rights over those resources, indigenous knowledge, technologies and appropriate funding.</p> <p>(3) The Minister may/.../ consultation with relevant sector Ministry, make regulation prescribing:</p> <p>(a) the development of national strategies, programmes or plans for the conservation and <b>sustainable use of biological diversity</b>;</p> <p>(b) <b>adaptation</b> of such existing strategies, plans or programmes for the purposes of conservation of biological diversity;</p> <p>(c) integration/.../sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies;</p> <p>(d) identification of the components of biological diversity important for conservation and sustainable use, having regard to any international standards applicable to Tanzania;</p> <p>(e) <b>monitoring</b> through sampling and other techniques, the <b>components of biological diversity</b>, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use;</p> <p>(f) identifying the processes and categories of activities/.../adverse impacts on the conservations equitable sharing and sustainable use of biological diversity/...</p> <p>(g) maintenance and organization: (i) by any mechanism; or (ii) data derived from identification and monitoring activities pursuant to this section [Article 66- (1, 2, 3a – g)].</p>		
<b>4. Soil erosion</b>			
<b>5. Depletion of fresh water resources</b>			
	<p>Without prejudice to the provisions of any other relevant written law, the Council and local government authorities responsible for environmental matters, shall issue guidelines and prescribe measures for the protection of riverbanks, rivers, lakes or lakeshores and shorelines. Where guidelines and measures have been prescribed pursuant to subsection (1), it shall be an offence to carry out any of the following activity without prior authorization or permit issued by the Minister: <b>deposit a substance</b> in a river, river bank, lake or, lakeshore, shoreline or wetland or in or under its bed, which is likely to have adverse environmental effects on river, river bank, lake or lakeshore shoreline or wetland</p>		

	<p><b>direct or block</b> a river, river bank, lake or, lakeshore, shoreline or wetland from its natural course; or <b>drain a river or lake</b> [Article 55- (1, 2d – f)].</p> <p>Every applicant for water use permit issued under the relevant laws governing management of water resources, abstraction and use of water, shall be required to make a statement on the likely impact on the environment due to the use of water requested/.../by water use permit holders of the following conditions:</p> <p>(a) obligation to return water after its use to the body of water from which it was taken;</p> <p>(b) ensuring that water that is returned to any specified source is not polluted; and</p> <p>(c) taking of the precautions to the satisfaction of the Water Officer to prevent accumulations in any river, stream or water course of silt, sand, gravel, stones, sawdust refuse, sewerage, sisal waste or any other substances likely to affect injuriously the use of such water by human and other components of environment [Article 60- (1, 2a – c)].</p>			
<b>6. Nutrient losses and soil nutrient depletion</b>				
<b>7. Deforestation</b>				
	<p>The Minister shall, in consultation with Minister responsible for forestry or as the case may be, energy, promote the use of renewable sources of energy by:</p> <p>(a) <b>promoting research</b> in appropriate renewal sources of energy;</p> <p>(b) creating incentives for the <b>promotion of renewable sources of energy</b>;</p> <p>(c) promoting policies and measures for the <b>conservation of non-renewable sources of energy</b>; and</p> <p>(d) taking measures to encourage the planting of trees and woodlots by individual users, institutions and by community groups [Article 64- (a – c)].</p>			
<b>8. Pollution of chemicals</b>				
	<p>All relevant sector Ministries and local government authorities shall mainstream respective parts of the National Implementation Plan/.../ (f) involvement of industry particularly with reference to sharing the costs for disposal and taking responsibility of disposal of persistent organic pollutants;</p> <p>(g) promotion of appropriate <b>pesticide and chemicals management practices</b>;</p> <p>(q) compensations, clean-ups and emergency response to hazardous substances released into the environment and clean-up of inactive hazardous waste disposal sites [Article 77- (4, 5f – g, q)]</p> <p>It shall be an offence for any person to pollute or permit any other person to pollute the environment in violation of any standards prescribed under this Act or any other written law regulating a segment of the environment. In determining whether or not to issue a licence/.../the Council or any other person empowered to make the decision shall seek to ensure that the prescribed best practicable option is adopted/.../ means the best method for preventing or minimizing adverse effects on human health, life or the environment [Article 106- (1, 2, 3)].</p>			
<b>9. Use of GMO:s</b>				
	<p>Without prejudice to any law governing biosafety and biotechnology, any person who develops, handles, uses, import or export genetically modified organisms (<b>GMO</b>) and, or their product shall be under general obligation to ensure that such organisms do not harm, cause injury or loss to the environment and <b>human health</b> including socio-economic, cultural and ethical concerns. The harm, injury or loss include personal injury, damage to property, financial loss, and damage to environment or to biological diversity [Article 69- (1, 2)].</p>			
<b>10. Waste treatment</b>				
	<p>For purposes of facilitating <b>pollution prevention</b> and control measures, the Minister may prescribe rules obliging submission of information to either the Council or any designated person, by a person who owns or operates an <b>irrigation project scheme</b>/.../<b>industrial production plant</b>, industrial wastes treatment plant, solid waste disposal site or facility, trading and storage facility for petroleum products, workshop or any other undertaking which discharges or is likely to discharge effluents or other pollutants into the environment/.../Any person who contravenes the requirement to furnish information to the Council or any designated person, commits an offence [Article 112- (1a, 3)]</p>			
<b>11. Food supply</b>				
	<p>Among other institutions, the Tanzania Food Drugs and Cosmetics Authority, shall keep the Council updated on matters relating to their respective functions which have or may have great impact on the environment [Article 170- (1c)]</p>			
<b>12. Property and use rights</b>				
	<p>Any Environmental Inspector who observes the discharge of a contaminant into the</p>			

	<p>environment in an amount, concentration or manner that constitutes a risk to <b>human health or property</b> or that causes or has the potential to cause adverse effects on the environment may serve an emergency protection order [Article 197- (1)]</p> <p>Every person exercising powers under EMA shall observe the principle that: the environment is the <b>common heritage of present and future generations</b>; the <b>public participation principle</b>, which requires the involvement of the people in the development of policies, plans and processes for the management of the environment; access to environmental information, which enables citizens to make informed personal choices and encourages improved performance by industry and government; access to justice, which gives individuals, the public and interest groups of persons the opportunity to protect their <b>rights to participation and to contest decisions that do not take their interest into account</b>; the environment and natural resources are vital to peoples livelihood, to be used sustainably in order to achieve poverty reduction, and social economic development; renewable natural resources and ecosystems only be used in a manner that is sustainable and does not prejudice their viability and integrity. With regard to (these) principles/.../the Minister shall be overall responsible for fostering co-ordination between the Government, local government authorities and other bodies engaged in environmental management as a cross-cutting issue/.../maintain a system of collaboration, consultation and co-operation with any person having functions provided under this Act [Article 7- (3e – g, l – k, 4)].</p>			
<b>13. welfare, and social conditions of local population, and capacity building</b>				
	<p>The public shall have the right to <b>participate in decisions</b> concerning the design of environmental policies, strategies, plans and programmes and to participate in the preparation of laws and regulations relating to the environment. [Article 178- (2)].</p> <p>The object and purpose for which the Council (NEMC) is established is to.../ <b>facilitate public participation in environmental decision making</b> [Article 17- (1)]</p> <p>The Minister may, on recommendation of the National Environmental Advisory Committee, declare any area of land which is ecologically fragile or sensitive to be an Environmental Protected Area. /.../ the Minister shall have regard to representations made by any person <b>or non-governmental organizations</b> with sufficient public or private interest in the area, and the <b>interests of the local communities</b> in or around the area. [[Article 47- (1, 3a, 4)].</p> <p>There shall be appointed or designated by the Minister responsible for regional administration a person to be known as the Regional Environment Management Expert who shall be charged with the <b>responsibility of advising the local authorities</b> on matters relating to the implementation and enforcement of this Act. The Regional Environment Management Expert shall be a link person between the region in which he is employed with the Director of Environment and the Director-General [Article 35-1, 2)].</p>			
<b>14. Employment wages and remuneration</b>				
	<p>.../employments or contracts of service made with respect to the performance of the functions or the exercise of the powers conferred on the Council before the commencement of this Act, shall be treated as if they were made, performed or exercised pursuant to the provisions of this Act [Article 231- (3)].</p>			
<b>15. Inequity; women, children, indigenous people etc.</b>				
<b>16. Education</b>				
	<p>Education relating to environmental protection matters, as for example; the responsibilities of NEMC [Article 18], environmental sections within Ministries [Article 31], Authorities managing national protected areas [Article 49].</p>			
<b>17. Health care</b>				
	<p>Every person living in Tanzania shall have a right to clean, safe and healthy environment, meaning the right of access to the various public elements or segments of the environment for recreational, educational, health, spiritual, cultural and economic purposes [Article 4- (1, 2)]. Further specified as consequences of, for example, use of GMO [Article 69], chemicals [Article 78] and waste treatment [Article 118].</p>			

18. Strength and diversification of local economy				
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**Of relevance for environmental management, although not specifically related to given indicators of sustainability**

**Protection order**

Any Environmental Inspector who observes the discharge of a contaminant into the environment/.../that constitutes a risk to human health or property or that causes or has the potential to cause adverse effects on the environment may serve an emergency protection order on: the owner, manager or person in control of the premises, vehicle, vessel, aircraft or equipment from which the discharge was or is being made; any person who, at the time when the discharge occurred, was the owner, manager of person in control/...; any person who caused or permitted the discharge. An emergency protection order may require the person on whom it is served to take any measures that will assist in reducing or eliminating the risk or harm/...; to stop the discharge; to control the discharge; to clean up or remove the contaminant or other substance from any place; or to prevent a recurrence of the discharge. Any person on whom an emergency protection order is served shall comply with the requirements/.../by the date or dates specified in the order and if no date is specified that person shall comply with the order immediately. A person who contravenes subsection (3), commits an offence and shall, on conviction, be liable to a fine not exceeding ten million shillings or to imprisonment to a term not exceeding one year and if the person failed to comply with a requirement specified in the order/.../shall be liable to a further fine not exceeding one hundred thousand shilling for every day or part of a day after the date specified in the order/... Any person on whom an emergency protection order has been served may apply to the Minister for a review in accordance with procedure that the Minister may prescribe [Article 197- (1a – c, 2a – d, 3, 4, 5)]. Basically the same procedures shall take place in the case when NEMC has reasonable grounds to believe that an activity is resulting in or is likely to result in an adverse effect, or that a person is or will be in possession or control of a substance or thing that may have the same result. The prevention order may then require the person against whom it is made to create a written emergency response plan that is adequate to reduce or eliminate the risk. Disobedience of authority order shall then make the person in control liable to a fine up to one million shillings or to imprisonment to a term of up to one year [Article 195, 196]

**Appendix 8. Energy and Water Utilities Regulatory Authority Act, 2001 evaluated against Draft Biofuels Guidelines and criteria of sustainability**

**Energy and Water Utilities Regulatory Authority Act, 2001**

EWURA Act is the regulatory framework that describes the responsibilities and duties of the Energy and Water Utilities Regulatory Authority, (EWURA). EWURA shall strive to enhance the welfare of Tanzania society by; promoting effective competition and economic efficiency; protecting the interests of consumers; protecting the financial viability of efficient suppliers; promoting the availability of regulated services to all consumers including low income, rural and disadvantaged consumers; enhancing public knowledge, awareness and understanding of the regulated sectors including:

- (i) the rights and obligations of consumers and regulated suppliers;
- (ii) the ways in which complaints and disputes may be initiated and resolved;
- (iii) the duties, functions and activities of the Authority.

Taking into account the need to protect and preserve the environment [Article 6]. The functions of EWURA shall be, subject to sector legislation;

- 
- (i) to issue, renew and cancel licences;
  - (ii) to establish standards for goods and services;
  - (iii) to establish standards for the terms and conditions of supply of goods and services;
  - (iv) to regulate rates and charges;
  - (v) to make rules;

And to monitor the performance of the regulated sectors in relation to

- (i) levels of investment;
- (ii) availability, quantity and standard of services;
- (iii) the cost of services;
- (iv) the efficiency of production and distribution of services; and
- (v) other matters relevant to the Authority;

And also; facilitate the resolution of complaints and disputes; disseminate information; consult with other regulatory authorities; perform such other functions as are conferred to administer this Act. In the performance of its functions, EWURA shall not award or cancel a major or exclusive licence having a term of five or more years without Prior consultation with the Minister and the relevant sector Minister [Article7- (1a – i, 3)]

EWURA shall be governed by a Board of Directors consisting of seven members; A Chairman, appointed by the President, and the five non-executives, appointed by the Minister after consultation with the relevant sector Ministers. The President acting in accordance with the advice of the Sector Minister and the Minister may remove a member from office at any time if: the member is declared bankrupt; the member is convicted of a criminal offence; the President decides that the member should be removed because at a conflict of interest; [Article 8- (1, 2a – c)]

Whenever there is to be appointed a member or members of the Board, there shall be established a Nomination Committee composed of the Permanent Secretary, who shall be the Chairman, and two other persons representing the private sector. One of the two shall be nominated from a legally recognised body representative of private sector interests, and the other person shall be nominated by the Council (EWURA Consumer Consultative Council) [Article 9- (1, 2)].

The Council shall consist of not less than six members nor more than ten members, appointed by the Minister. In the role of representatives of private sector interests, the Council shall be ruled by knowledge and understanding of the interests of consumers and that of the regulated services, including the interest of; low income, rural and disadvantaged persons; industrial and business users; government and community organisation. The Council shall provide views and information to and consulting with the Authority, Minister and sector Ministers, and also consult with industry, government and other consumer groups on matters of interests to consumers of regulated goods and services [Article 30- (1, 2, 4a – c), 31- (1a, d)].

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## **General correspondence according to Biofuels Guidelines**

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### **Equal terms in market participation**

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#### **Biofuels Guidelines**

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Out growers through their established associations will enter into contract agreement(s) with investor/developer(s) to ensure fair prize for energy crops/biofuel products

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#### **Energy and Water Utilities Regulatory Authority Act**

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EWURA shall carry out regular reviews of rates and charges, taking into account:

- (a) the **costs of making, producing and supplying** the goods or services;
  - (b) the **return on assets** in the regulated sector;
  - (c) any relevant benchmarks including international **benchmarks for prices**, costs and return on assets in comparable industries;
  - (d) the financial implications of the determination;
  - (e) the desirability of establishing maximum rates and charges, and in carrying out regular reviews of rates and charges;
  - (f) any other factors specified in the relevant sector legislation;
  - (g) the consumer and **investor interest**; and
  - (h) the desire to promote competitive rates and attract market;
  - (i) any other factors the Authority considers relevant.
- [Article 17- (1, 2a – i)]

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#### **Fair competition**

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#### **Biofuels Guidelines**

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- One of the implicit - but still main - objects of the BG is to be part of the regulatory framework, aiming to build the foundation to fair and equal production [author's understanding].

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#### **Energy and Water Utilities Regulatory Authority Act**

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In carrying out its functions and exercising its powers under this Act, and under sector legislation in relation to particular markets for regulated services, the Authority shall take into account:

- (a) **whether the conditions for effective competition exist in the market**;
  - (b) whether any exercise by EWURA is likely to cause any lessening of competition or additional
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costs in the market and is likely to be detrimental to the public;

(c) whether any such detriments to the public are likely to outweigh any benefits to the public resulting from the exercise of the powers.

(2) EWURA shall deal with all competition issues/.../making appropriate recommendations to the Tanzania Bureau of Standards, the Commission or any other relevant authority in relation to:

(a) any contravention of the Fair Competition Act, 1994, the Tanzania Bureau of Standards Act, 1975 or any other written law;

(b) actual or potential competition in any market for regulated services; and

(c) any **detriments likely to result to the members of the public** [Article 20- (1a – c,2a – c)].

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## Aspects of sustainability regulated within Energy and Water Utilities Regulatory Authority Act

	Observed + / -	Relevance	Congruence with B.G.	Potency
Considering aspects of sustainability in general	+			1
	Energy and Water Utilities Regulatory Authority, (EWURA) shall strive to enhance the welfare of Tanzania society by taking into account the need to protect and preserve the environment. [Article 6- (f)]			
1. GHG balance				
2. Airborne emissions on local level				
3. Biodiversity				
4. Soil erosion				
5. Depletion of fresh water resources				
6. Nutrient losses and soil nutrient depletion				
7. Deforestation				
8. Pollution of chemicals				
9. Use of GMO:s				
10. Waste treatment				
	EWURA shall strive to enhance the welfare of Tanzania society by; enhancing public knowledge, awareness and understanding of the regulated sectors including: the rights and obligations of consumers and regulated suppliers, taking into account the need to protect and preserve the environment [Article 6].  The functions of EWURA shall be, subject to sector legislation; to establish standards for goods and services; to establish standards for the terms and conditions of supply of goods and services [Article7- (1)]			
11. Food supply				
	EWURA shall strive to enhance the welfare of Tanzania society by; protecting the interests of consumers; promoting the availability of regulated services to all consumers including low income, rural and disadvantaged consumers [Article 6].  The functions of EWURA shall be, subject to sector legislation; to establish standards for the terms and conditions of supply of goods and services [Article7- (1)]			
12. Property and use rights				
	EWURA shall strive to enhance the welfare of Tanzania society by; protecting the interests of consumers; promoting the availability of regulated services to all consumers including low income, rural and disadvantaged consumers; enhancing public knowledge, awareness and understanding of the regulated sectors including: (i) the rights and obligations of consumers and regulated suppliers; (ii) the ways in which complaints and disputes may be initiated and resolved;			

	<p>(iii) the duties, functions and activities of the Authority [Article 6].</p> <p>The functions of EWURA shall be, subject to sector legislation;</p> <p>(i) to issue, renew and cancel licences;</p> <p>(ii) to establish standards for goods and services;</p> <p>(iii) to establish standards for the terms and conditions of supply of goods</p> <p>EWURA shall not award or cancel a major or exclusive licence having a term of five or more years without Prior consultation with the Minister and the relevant sector Minister [Article7- (1a – i, 3)]</p>		
<b>13. welfare, and social conditions of local population, and capacity building</b>			
	<p>EWURA shall strive to enhance the welfare of Tanzania society by; promoting effective competition and economic efficiency; protecting the interests of consumers; promoting the availability of regulated services to all consumers including low income, rural and disadvantaged consumers; enhancing public knowledge, awareness and understanding of the regulated sectors including:</p> <p>(i) the rights and obligations of consumers and regulated suppliers;</p> <p>(ii) the ways in which complaints and disputes may be initiated and resolved;</p> <p>(iii) the duties, functions and activities of the Authority.</p> <p>taking into account the need to protect and preserve the environment [Article 6].</p> <p>In carrying out its functions conferred under EWURA, the Council shall:</p> <ul style="list-style-type: none"> <li>• represent the interests of consumers by making submissions to, providing views and information to and consulting with the Authority, Minister and sector Ministers;</li> <li>• receive and disseminate information and views on matters of interest to consumers of regulated goods and services;</li> <li>• establish regional and sector consumer committees and consult with them;</li> <li>• consult with industry, government and other consumer groups on matters of interests to consumers of regulated goods and services;</li> <li>• establish local and sector consumer committees and consult with them [Article 31- (1a – e)]</li> </ul>		
<b>14. Employment wages and remuneration</b>			
	<p>EWURA shall strive to enhance the welfare of Tanzania society by; protecting the financial viability of efficient suppliers; enhancing public knowledge, awareness and understanding of the regulated sectors including:</p> <p>(i) the rights and obligations of consumers and regulated suppliers;</p> <p>(ii) the ways in which complaints and disputes may be initiated and resolved;</p> <p>[Article 6].</p> <p>The functions of EWURA shall be, subject to sector legislation;</p> <p>(iii) to establish standards for the terms and conditions of supply of goods and services [Article7- (1a – i, 3)]</p>		
<b>15. Inequity; women, children, indigenous people etc.</b>			
<b>16. Education</b>			
	<p>EWURA shall strive to enhance the welfare of Tanzania society by; enhancing public knowledge, awareness and understanding of the regulated sector, taking into account the need to protect and preserve the environment [Article 6].</p>		
<b>17. Health care</b>			
<b>18. Strength and</b>			

<b>diversification of local economy</b>				
	<p>EWURA shall strive to enhance the welfare of Tanzania society by; promoting effective competition and economic efficiency; protecting the financial viability of efficient suppliers; promoting the availability of regulated services to all consumers including low income, rural and disadvantaged consumers [Article 6].</p> <p>The functions of EWURA shall be, subject to sector legislation;</p> <ul style="list-style-type: none"> <li>(i) to issue, renew and cancel licences;</li> <li>(ii) to establish standards for goods and services;</li> <li>(iii) to establish standards for the terms and conditions of supply of goods and services;</li> <li>(iv) to regulate rates and charges;</li> <li>(v) to make rules;</li> </ul> <p>And to monitor the performance of the regulated sectors in relation to</p> <ul style="list-style-type: none"> <li>(i) levels of investment;</li> <li>(ii) availability, quantity and standard of services;</li> <li>(iii) the cost of services;</li> <li>(iv) the efficiency of production and distribution of services; and</li> <li>(v) other matters relevant to the Authority;</li> </ul> <p>And also; facilitate the resolution of complaints and disputes; disseminate information; consult with other regulatory authorities; perform such other functions as are conferred to administer this Act. In the performance of its functions, EWURA shall not award or cancel a major or exclusive licence having a term of five or more years without Prior consultation with the Minister and the relevant sector Minister [Article7- (1a – i, 3)]</p>			

## **Appendix 9. The Tanzania Industrial Research and Development Organization Act 1979, relevant articles**

3.-(l) There is hereby established an Organization to be known as Tanzania Industrial Research and Development Organization. 5.-(l) There shall be established a Council which shall, subject to this Act, be responsible for the performance of the Organization and functions and management of the affairs of the Organization. 4.-(l) The functions of the Organization shall be:

- (a) to carry out, and promote the carrying out of, applied research designed to facilitate the evaluation, development and use of local materials in industrial processes;
  - (b) to carry out research in various aspects of local and foreign industrial techniques and technologies, and evaluate their suitability for adaptation and alternative use in local industrial production;
  - (c) to promote or provide facilities for, the training of local personnel for carrying out scientific and industrial research;
  - (d) to monitor and co-ordinate applied research carried out within Tanzania, or elsewhere on behalf of or for the benefit of the Government of Tanzania, and to evaluate the findings of that research;
  - (e) to establish a system for the registration of, and to register, the findings of applied research carried out within Tanzania, and to promote the practical application of those findings in industrial production;
  - (f) to establish and operate a system of documentation and dissemination of information on any aspect of applied research carried out by or on behalf of the Organization;
  - (g) to provide to the Government, and to firms or organizations engaged in industrial production, technical and advisory services, and advice and guidance on technical matters, necessary for the furtherance of, or relating to, industrial activity;
  - (h) to advise the Government and firms or organizations engaged in industrial production, on the adaptation of technology in industrial production-;
  - (i) to provide to the Government, and to firms or organizations engaged in industrial production, advice and assistance relating to the provision of technical facilities in industrial enterprises, and the establishment of systems for the control and regulation of industrial processes, so as to improve performance and to avert or minimize the sources of industrial pollution;
  - (j) to do any thing which may be necessary to uphold and support the (credit of the Organization, to obtain and justify public confidence, to avert or minimize any loss to the Organization and to facilitate the proper and efficient performance of its functions.
- (2) In particular, but without prejudice to the generality of subsection (1), the Organization may-
- (a) undertake, either alone or in association with any person or body of persons within or outside Tanzania, the establishment, equipment and management, on a zonal or sectoral basis, of a centre or teentres within Tanzania for the performance of any of its functions;
  - (b) carry out, and promote the carrying out of, applied research and investigation into the causes, and the ways of abating and preventing industrial pollution;
  - (c) in co-operation with the Government or any person or body of persons, evaluate and, if necessary, adapt foreign technological processes for use in Tanzania;
  - (d) provide to industrial enterprises technical services connected with the design of prototype industrial plants, machinery and equipment for manufacture or use in Tanzania;

(e), provide to industrial enterprises technical services connected with the repair and maintenance of industrial plants, machinery and equipment.

(3) For the purposes of the better performance of its functions the Organization shall establish and maintain a system of consultation and co-operation with any person or body of persons established by or under any written law and having functions related to those specified in subsection (1) or (2) or which relate to technological research or to industrial development generally.

9.-(1) For the Purposes of the proper performance of its functions under this Act, the Organization may require in writing any firm or organization engaged in industrial production or in technological research within Tanzania to furnish to it such information relating to industrial production or technological research as the Organization may specify.

(2) Every firm or organization which is required to furnish information under subsection (1) shall comply with the requirement and any firm or organization which refuses or fails to comply with that requirement shall be guilty of an offence and shall be Fable on conviction to a fine not exceeding fifteen thousand shillings.

The Tanzania Industrial Research and Development Organization is a Government Parastatal Organization functioning within the auspices of the Ministry of Industry, Trade and Marketing. Tanzania Industrial Research and Development Organization (TIRDO) is a multi-disciplinary research and development organization established by an Act of Parliament No. 5 and it became operational on 1st April, of 1979. The departments of the organization are composed of the following divisions: Material science, Information technologies, Fibre technologies (textile, leather etc), Food processing and biotechnology, Renewable energy and environmental mitigation, and Agro processing and industrial chemistry. The Energy management Centre has got expertise and enough experience to offer advice on efficient use of energy. Quantification on energy losses in industry can be reasonably established on the energy carriers such as steam pipes, heating sources such as boilers and furnaces and on energy converters such as evaporators and cooling systems. Examining energy use and efficiency of equipment, processes, lighting and on building envelop conditioners (HVAC). Some research are conducted on particleboards, which are made using remains from coffee, rice husks, coconut core, and now more experiments are being done to use remains from sugarcane industries (Bagasse). <http://www.uiri.org/sites/uiiri.org/myzms/content/e773/e817/Tanzania.pdf>

## **Appendix 10. Policy statements within Energy Policy**

### **Transport sector**

1. Promote energy efficiency and conservation in the transport sector.
3. Promote fuel switch from petroleum to other alternative environmentally friendly fuels.

### **Manufacturing Sector**

4. Ensure adequate energy supply in order to meet energy demand of the manufacturing sector.

### **Household Sector**

7. Promote efficient end-use technologies and good household's practices.
8. Promote energy efficient buildings and facilitate wider application of alternative sources of energy for cooking, heating, cooling, lighting and other applications.

### **Agriculture Sector**

10. Ensure sufficient and cost-effective energy to meet the increasing demand in agriculture sector
11. Promote efficient use of energy in irrigation, agro-processing and other agricultural activities.
12. Identify and facilitate agro-processing centres with appropriate energy alternative, with emphasis on electrification in order to promote small-scale industry, employment creation and economic growth.
13. Create an enabling environment for governmental institutions and private sector, which are engaged in research and development, and the distribution of energy products and development of appropriate energy technologies for agriculture.

### **Commerce Sector**

16. Promote fuel switch by encouraging efficient use of alternative sources.

### **Information Technology Sector**

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### **Electricity**

19. Promote supply of commercial electricity to the population in rural, urban and small townships with economic growth potential, either through the national grid or non-grid systems, depending on cost-effectiveness.
20. Competition, as a principle to attain efficiency, shall apply for the electricity market. The electricity sub-sector shall be restructured to allow for diversity, private participation, competition, innovation and investment by domestic and foreign actors.
22. Generation of electric power shall be fully open to private and public investors as independent power producers. Investment shall be based on economic and financial criteria considering open access to regional network, balanced domestic supply and environmental impacts.
23. Emphasis shall be on an open access to the grid for sellers and buyers of electricity in accordance with agreed trading arrangements in order to achieve an efficient competition in generation.
24. Regional grid interconnections shall be given high priority in the investment to ensure reliable supply, exploiting low cost energy sources for regional trade and balancing the erratic availability of

hydro-based power. Tanzania shall actively be involved in future electricity trading with EAC and SADC through the development of the Southern African Power Pool (SAPP).

25. Priority shall be placed on developing domestic power generation capacity based on indigenous fuel resources to meet increase in demand. The development of indigenous resources and regional trade shall be implemented in a balanced manner in order to ensure reliable and efficient energy sources.

26. As a step in the development of a competitive market within generation and distribution, there shall be an opening for strategic partnerships with suitable, technically and financially strong investors in the electricity sub-sector.

27. Tanzania shall conduct research within the country and take part in international research, development and application of commercially viable, large-scale technologies for renewable electricity generation.

28. The Government will support structural models (e.g. ownership, contracts) in the distribution system, which will ensure competition and higher level of investment for improvements of the technical and commercial systems.

30. A national independent regulator will be established to oversee fair and sound business conditions and practices of the sub-sector.

31. The main roles of the regulator shall be to protect the public from monopolistic pricing by regulation of tariffs and services and against unfair trade practices by monitoring and influencing market behaviour. The regulator shall also ensure open access to transmission and distribution networks and promote competition.

#### **Petroleum**

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#### **Natural Gas**

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#### **Renewable Energy**

44. Create a legal framework that is conducive for growth of renewable energy utilisation, including the establishment of the "Rural Energy Executive Agency". The legal mandate of the agency shall include promotion of applied research, raising awareness and utilisation of renewable energy.

45. Create an institutional structure and mechanisms to address technical and financial barriers to the use of renewable energy and availability of energy services through a "Rural Energy Executive Agency".

46. Introduce and support appropriate fiscal and financial incentives for renewable energy development to complement a "Rural Energy Fund", whose objectives include renewable energy programmes and projects development projects. The legal mandate of the fund shall be to finance or subsidise various energy services in areas where there is a potential for economic growth

47. Establish norms, codes of practice, guidelines and standards for renewable energy technologies, to facilitate the creation of an enabling environment for sustainable development of renewable energy sources.

48. Promote efficient biomass conversion and end-use technologies in order to save resources; reduce rate of deforestation and land degradation; and minimising climate change threats.

49. Ensure inclusion of environmental considerations in all renewable energy planning and implementation, and enhance co-operation with other relevant stakeholders.

50. Support research and development in renewable energy technologies.

#### **Coal**

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#### **Rural Energy**

54. Create an institutional structure and legal framework, including a "Rural Energy Executive Agency", to promote application of renewable energy and availability of energy services in the rural areas.

55. Establish a "Rural Energy Fund" to meet the financial constraints of the rural energy supply, including renewable energy and rural electrification.

56. Promote application of alternative energy sources other than fuel wood and charcoal, in order to reduce deforestation, indoor health hazards and time spent by rural women in search of firewood.

57. Promote entrepreneurship and private initiative in the production and marketing of products and services for rural and renewable energy.

58. Ensure continued electrification of rural economic centres and make electricity accessible and affordable to low income customers.

59. Facilitate increased availability of energy services, including grid and non-grid electrification to rural areas. This includes the electrification of all district headquarters by the year 2005.

61. Support Research and Development on rural energy.

65. Facilitate international collaboration in research, exchange of data, information and documentation.

#### **Energy Efficiency and Conservation**

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#### **Energy Trade and Co-operation**

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#### **Energy Information System**

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#### **Environment, Health and Safety**

67. Promote environmental impact assessment as a requirement for all energy programmes and projects.

69. Promote development of alternative energy sources including renewable energies and wood fuel end-use efficient technologies to protect woodlands.

70. Promote disaster prevention; response plans; and introduces standards for exploration, production, conversion, transportation, distribution, storage and fuels end-use.

#### **Investment**

71. Promote private initiatives at all appropriate levels and make local and foreign investors aware of the potentials within the energy sector.

72. Ensure that a transparent and predictable institutional framework, including incentives, is in place to provide for an enabling environment for investment in the energy sector.

#### **Gender Issues**

73. Promote gender equality within the energy sub-sectors both on the demand and supply and enhance the participation of women in assessment, design, evaluation, and decision-making of energy development plans and programmes.

74. Facilitate education and training for women in all energy aspects.

75. Promote awareness on gender issues in regard to men and women's social roles in the energy sector, including training on appropriate technologies.

76. Promote awareness and advocacy on gender issues in the energy sector.

#### **Education**

77. Encourage inclusion of energy aspects in education curricula for schools, vocational training centres, colleges and other relevant learning institutions; emphasis should be on practical aspects including physical demonstration, installations and operation.

#### **Human Resources Development**

78. Encourage local and foreign investors and other financiers in the sector to train Tanzanians in essential skills.

79. Encourage and appropriately reward good performance and conduct by individuals or organisations in the sector.

#### **WAY FORWARD**

(a) Strategic Action Plan for implementation of the energy policy directions needs to be prepared.

(b) The policy should be reviewed when the need arises in order to take into account major developments in the national economy.

## Appendix 11. Sugar Industry Act 2001, relevant articles

The National Sugar Institute shall:

- (a) have perpetual succession and a common seal;
- (b) in its corporate name be capable of suing and being sued;
- (c) be capable of purchasing or acquiring any movable and immovable property.
- (2) The provisions of the Second Schedule shall have effect as to the constitution, tenure of office, management and proceedings of and other matters relating to the Council of the Institute. Sugar industry Act.

The Council shall have the main function (a) to provide central training for the sugar industry;

(b) to train persons as may be approved by the Council in such skills as may be required by, the sugar industry, including sugarcane production, harvesting, processing and quality control, factory engineering.

farm machinery and equipment engineering, basic crafts, general management and finance.

(c) to continuously assess the training needs of the sugar industry with a view to developing appropriate

training programmes and to upgrade human resources skills in order to improve productivity;

(d) to carry out studies or investigations relating to work performance including job specifications and work

standards, with the aim of improving productivity;

(e) to carry out studies or research in sugar technology, chimney and equipment and information systems to

be used by the sugar industry;

(f) to provide technical consultancy services;

(g) to provide such other training outside the sugar industry on commercial basis as may be so approved by

the Council from time to time

(h) to do all such things which in the opinion of the Council, are beneficial and necessary for the development of human resources in the sugar industry.

The power to carry out the operations and management of the Institute shall vest in the Council

The Board shall have the power to register sugar exporters, importers and industrial users of sugar and users of sugar by-products.

. (Sugar Industry Act 2001, Article 3, 6, 13)