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Tanzania Forest Conservation Group Technical Paper 51

Transforming Tanzania's Charcoal Sector Project

**A review of policy instruments
relevant to the integration of
sustainable charcoal production in
community based forest management
in Tanzania**

**Dar es Salaam
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About the project 'Transforming Tanzania's Charcoal Sector'

This policy review was produced as part of the project 'Transforming Tanzania's Charcoal Sector'.

The overall project goal is 'a pro-poor and climate resilient transformation of the economics and governance of charcoal and other forest product value chains.

The TTCS project has two interlinked outcomes:

Outcome 1: Sustainable and well governed value chains for charcoal and other forest products improve rural livelihoods, climate change resilience and social services in three districts.

Outcome 2: An enabling and supportive policy and institutional framework exists for well-governed, environmentally sustainable and pro-poor charcoal and other forest product value chains.

What is sustainably produced charcoal?

Sustainably produced charcoal is charcoal produced from woodlands under participatory forest management that integrates ecologically sound harvesting principles. By combining our understanding of miombo woodland ecology and standard forestry methods, the project has developed a 24 year harvesting rotation model that aims to be robustly sustainable and easy-to-use. After an area is harvested, natural regeneration is encouraged through careful fire management and exclusion of other disturbances, particularly agriculture. The model aims to sustain the biodiversity and other ecosystem values offered by natural woodland. Charcoal is produced using efficient kiln technology and is produced and transported legally.

Project duration

SDC have committed funding for the project for 4 years from December 2015 to November 2019.

Project Location

During Phase 1 (2012/15), the model was established in 10 villages in Kilosa District, Morogoro Region. During Phase 2 (2015/19), the model will be extended to another 20 villages in Kilosa, Mvomero and Morogoro Rural Districts. Advocacy and communication work is implemented nationally. The project focuses on woodland adjacent to the high biodiversity forests of the Rubeho, Nguu, Nguru and Uluguru Mountains.

The Project is financed by the Swiss Agency for Development and Cooperation (SDC)

SDC is Switzerland's international cooperation agency within the Federal Department of Foreign Affairs (FDFA).

www.eda.admin.ch/daressalaam

The project is a partnership project between three national non-governmental organisations:

Tanzania Forest Conservation Group

TFCG is a national non-governmental organization whose mission is to conserve and restore the biodiversity of globally important forests in Tanzania. TFCG is the lead partner in the implementation of the project.

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Tanzania Community Forest Conservation Network (MJUMITA)

MJUMITA is a national network of community groups involved in participatory forest management. The network provides a forum for capacity building, advocacy and communication for these groups. MJUMITA is responsible for advocating for policies that incentivize community-based forest management by integrating sustainable charcoal production.

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Tanzania Traditional Energy Development Organization (TaTEDO)

TaTEDO is a sustainable energy development organization with 20 years experience of working on rural energy issues. TaTEDO is responsible for contributing to national advocacy and communication.

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The project works closely with the District Councils of Kilosa, Morogoro and Mvomero, the Tanzania Forest Services Agency and the Forestry and Beekeeping Division in the Ministry of Natural Resources and Tourism.

Executive Summary

This review examines the degree to which policies in Tanzania currently support the integration of sustainable charcoal production into community based forest management. The review aims to inform ongoing debates within Tanzania about how national policy can contribute to enhancing the environmental, economic and social sustainability of charcoal value chains in keeping with Tanzania's modernisation agenda. Based on the findings of the review, the following changes are recommended:

Recommendations

General

- It is recommended that sustainable natural woodland management be prioritised in national policies and plans as an integral concept in Tanzania's modernisation agenda.

Forest Sector

- It is recommended that the National Forest Policy currently under revision include a policy statement explicitly supporting sustainable charcoal production in community based forest management (CBFM) areas.
- It is recommended that the Tanzania Forest Services Agency (TFS) and Local Government Authorities (LGAs) consistently implement the Forest Act's requirement for sustainable harvesting plans to be in place and to be complied with prior to issuing harvesting permits.
- It is recommended that more support be provided by local government authorities for the establishment and expansion of CBFM including sustainable harvesting.
- It is recommended that the Government and Development Partners critically review the pros and cons of prioritising tree planting over natural forest management as a strategy for securing sustainable supplies of forest products including timber and woodfuel. The assumptions underpinning the decisions to invest orders of magnitude more in tree planting than in natural forest management should be critically and participatorily reviewed. In reviewing the relative costs and benefits, the review should consider the broader benefits generated by natural woodlands including their contribution to ecosystem services and climate change adaptation and mitigation.

- It is recommended that investment in tree planting be matched by investment in sustainable natural woodland management.
- It is recommended that more government resources be allocated to the management of Central Government Forest Reserves irrespective of TFS revenues from charcoal and other forest products.
- It is recommended that more accurate and detailed data on the origin of TFS revenues be collected as a basis for an open and constructive discussion on TFS's dependence on revenues from unsustainably produced charcoal.
- It is recommended that strategies be put in place to improve the monitoring of the charcoal trade and to establish transparent reporting practices.
- It is recommended that forest policy instruments remain consistent in their alignment with the definition of village forests provided in the Forest Act including recognition of 'forests which are not reserved, which are on village land and which the management is vested in the Village Councils' and should avoid categorising such forests as general land.
- It is recommended that more research be conducted on cost-effective mechanisms to achieve well-governed CBFM.
- It is recommended that MNRT work more closely with Ministry of Agriculture, Livestock and Fisheries to address policy conflicts between agricultural policies and practices promoting the conversion of forests to farms and forest policies promoting forest conservation.

Energy Sector

- It is recommended that political leaders challenge the assumptions underpinning

the current energy sector policy focus on fuel switching given its exclusivity when considering most households' needs.

- It is recommended that the Ministry of Energy and Minerals provide leadership on traditional energy that goes beyond the promotion of fuel-switching.
- It is recommended that a national biomass energy policy be adopted with clear strategic guidance on how the country is to meet the rigid, widespread demand for woodfuels.

Land Sector

- It is recommended that sustainable forest management be explicitly recognised as a valid category of land use in order to encourage private land owners manage their woodlands sustainably and to avoid the incentive to clear forest as a way to demonstrate 'use' of their land and therefore tenure.

- It is recommended that more investment be provided for private natural forest reserves in order to encourage private land owners to maintain woodlands and to contribute to the sustainable supply of wood products including charcoal.
- It is recommended that ambiguities regarding the control of unreserved forests on village land be ironed out.

Local Government

- It is recommended that LGAs be supported to prepare, implement and monitor sustainable district harvesting plans.
- It is recommended that mechanisms be established to embed CBFM in district plans and budgets.
- It is recommended that the capacity of LGAs to use remote sensing for managing and monitoring forest product harvesting be increased.

Background to the review

Biomass energy accounts for approximately 85% - 90% of total energy consumption in Tanzania. Over 2.3 million tonnes of charcoal were consumed in 2012, a quantity predicted to double by 2030. Biomass energy generates at least US\$ 1 billion per annum, supporting the livelihoods of hundreds of thousands of suppliers, transporters and traders. Despite the importance of this industry, there are few examples within Tanzania of charcoal being produced sustainably.

Methods

The review is based on a review of 35 policy instruments from different sectors including forestry, energy, environment, agriculture and water. In the context of this review, policy instruments are defined broadly here as tools used by the Government to achieve its goals. These include national policies, laws, regulations, guidelines and strategic plans.

Results, discussion and conclusions

Although charcoal is the main form of cooking energy for urban households, there is no overall policy guiding charcoal production, trade and consumption. Instead multiple policies influence

the charcoal trade. The most detailed policy guidance is found at the production end of the value chain where the forest policy and related policy instruments provide implicit and explicit statements relevant to charcoal production and transportation. Forest sector policy instruments support sustainable harvesting of forest products in community based forest management. Statements that are supportive of sustainable harvesting are found across various forest sector policy instruments. However in many cases these statements refer primarily to timber but can be interpreted as applying to other forest products including charcoal. The Environmental Policy, 1997 is generally supportive of sustainable forest management without providing explicit statements with regard to sustainable charcoal and fuelwood production. The Energy policy is silent on sustainable charcoal production. More explicit, detailed and consolidated guidance on the integration of sustainable charcoal production in CBFM would help to foster a clearer, shared understanding of national policy amongst the diverse stakeholders involved.

The current land policy links land tenure with 'use'. Sustainable forest management is not cited as a recognised land use. This may contribute to land

owners clearing forest in order to demonstrate occupancy and therefore their tenure rights. It may also discourage private land owners from engaging in sustainable charcoal production through private forest management.

The national agricultural and livestock policies envisage the expansion of land under agriculture and livestock grazing. This risks contributing to agriculture's potency as a driver of deforestation in Tanzania particularly if communities are not benefiting directly and tangibly from the management of their forests.

Several policies including the energy, forest and environment policies present Tanzania's dependence on charcoal as a national problem. These policies consistently support fuel-switching and tree planting as strategies to reduce the

deforestation and forest degradation caused by charcoal production. There have also been periodic attempts to 'ban' charcoal. These policy options have conceptual flaws and lack empirical evidence of their effectiveness in reducing deforestation in the absence of more deliberate investment and commitment to natural forest management. More constructive, innovative and strategic thinking is needed in order to match the reality of the charcoal trade with broader objectives on sustainable natural forest management and rural development. There are opportunities for natural forest management to contribute significantly to achieving Tanzania's Development Vision 2025. To achieve a modern forestry sector that embraces natural forest management requires high level leadership and a shift in policy direction.

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Acronyms

CBFM	Community Based Forest Management
DP	Development Partner
FAO	Food and Agriculture Organisation of the United Nations
GDP	Gross Domestic Product
GN	Gazettement Notice
ha	Hectares
JFM	Joint Forest Management
LGA	Local Government Authority
LPG	Liquid Petroleum Gas
MEM	Ministry of Energy and Minerals
MJUMITA	Mtandao wa Usimamizi wa Misititu Tanzania
MNRT	Ministry of Natural Resources and Tourism
MoU	Memorandum of Understanding
PFM	Participatory Forest Management
PO RALG	President's Office Regional Administration and Local Government
TaTEDO	Tanzania Traditional Energy Development Organisation
TDV	Tanzania Development Vision
TFCG	Tanzania Forest Conservation Group
TFS	Tanzania Forest Services Agency
TP	Transit Pass
URT	United Republic of Tanzania
VFMA	Village Forest Management Area
VLFR	Village Land Forest Reserve
VLUP	Village Land Use Plan
VPO	Vice President's Office

Definitions

Following FAO, 2004

Charcoal: solid residue derived from carbonization distillation, pyrolysis and torrefaction of *fuelwood*

Fuelwood: woodfuel where the original composition of the wood is preserved.

Woodfuel: fuelwood and charcoal. Note that with regard to this definition this report varies from FAO, 2004 which defines woodfuels as all types of biomass derived directly or indirectly from woody biomass. In this report the term woodfuel does not include woody biofuels produced by digesters.

1) Introduction

1.1 Do policy instruments in Tanzania support and incentivise sustainable charcoal production?

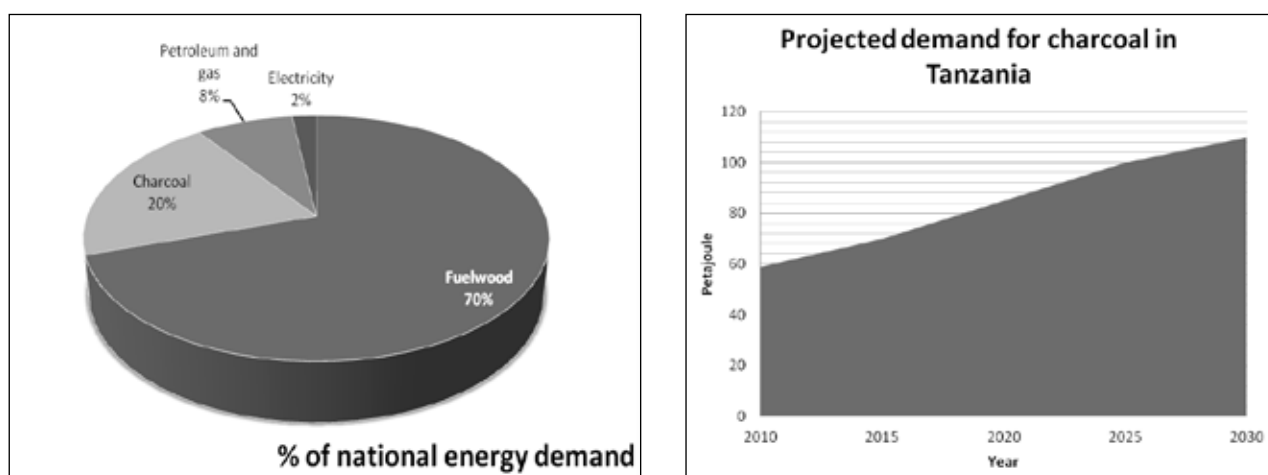
This review examines the degree to which policies in Tanzania currently support the integration of sustainable charcoal production into community-based forest management. The review aims to inform ongoing debates within Tanzania about how national policy can contribute to enhancing the environmental, economic and social sustainability of charcoal value chains in keeping with Tanzania's modernisation agenda.

Policy instruments are defined broadly here as tools used by the Government to achieve its goals. These include national policies, laws, regulations, guidelines and strategic plans.

1.2 Why biomass energy is important to Tanzania

Biomass energy¹ accounts for approximately 85 % - 90% of total energy consumption in Tanzania (URT, 2015b, Camco, 2014). Over 2.3 million tonnes of charcoal were consumed in 2012, a quantity predicted to double by 2030 (URT, 2015b). Biomass energy generates at least US\$ 1 billion per annum, supporting the livelihoods of hundreds of thousands of suppliers, transporters and traders (Camco, 2014).

Figure 1. Projected demand for charcoal up to 2030 and current distribution of national energy demand by energy carrier (based on data from Camco, 2014).



Despite the importance of this industry, there are few examples within Tanzania of charcoal being produced sustainably. As a result charcoal production is currently a key driver of forest degradation and, to a lesser degree, deforestation. Chidumayo and Gumbo (2013) estimate that about 33 % of deforestation in Tanzania is caused by charcoal production.

From a policy perspective charcoal production touches on many different policy areas although it is perceived to be largely the purview of the forestry sector. Land policies are critical in defining who has authority over the woodlands and forests where charcoal is produced. Local government laws are important in defining the governance of charcoal production. Finance and tax laws impact on how taxes are levied on charcoal. Whilst, at the fuel consumption end of the value chain, the national energy policy influences how charcoal is treated as a component of the national energy mix.

This policy review provides an overview of national policies, laws, regulations and guidelines of immediate relevance to sustainable charcoal production. Each policy document is assessed in terms of its relevance to sustainable charcoal production and whether it supports sustainable charcoal production in the context of community-based forest management. This is followed by some general observations regarding the national policy environment and recommendations on policy changes. The 35 laws, policies, regulations, guidelines and related documents included in the review are listed in Table 1.

¹ Renewable organic material such as wood, charcoal and agricultural residues.

Table 1. Policy Documents included in the Review

Over-arching policy documents

The Constitution
The Tanzania Development Vision 2025
The Five Year Development Plan 2016/17 – 2020/21

Forestry Sector

National Forest Policy, 1998
National Forest Policy Draft 2014
Forest Act, 2002
Forest (Amendment) Regulations, 2015 (GN 324)
The Forest (Charcoal Preparation, Transportation and Selling) Regulations, 2006 (GN 69)
Public Notice regarding procedures for trade in forest products, 2015
Guidelines on sustainable harvesting and trade in forest products harvested in natural forests, 2015
Guidelines for Harvesting in Village Land Forest Reserves, 2013
Joint Forest Management Guidelines, 2013
Community-Based Forest Management Guidelines, 2007
Ujue mwongozo wa uvunaji endelevu na biashara ya mazao ya misitu, 2015
Tanzania Forest Services Agency: Strategic Plan 2014 – 19
Draft National Woodfuel Action Plan, 2009
MoU to strengthen collaboration on forest governance and management between the Ministry of Natural Resources and Tourism and President's Office Regional Administration and Local Government, 2016

Energy sector

National Energy Policy 2015
National Energy Policy, 2003
Biomass Energy Strategy for Tanzania Draft 2014
Rural Energy Act, 2005
Ministry of Energy: Strategic Plan 2011/12 – 2015/16

Land

National Land Policy, Ministry of Lands and Human Settlements Development, 1997
The Land Act, 1999
The Village Land Act, 1999

Environment and Climate change

National Environmental Policy, VPO, 1997
Draft National Environment Policy, 2016
Environmental Management Act, VPO, 2004
National Climate Change Strategy, 2012

Local government and Finance

The Local Government Finances Act, 1982
The Local Government (District Authorities) Act, 1982

Agriculture

The National Agriculture Policy, 2013
The National Livestock Policy, 2006

Water

The National Water Policy, 2002
Water Resources Management Act, 2009

2) Policy review

2.1 Over-arching policy documents

2.1.1 *The Constitution of the United Republic of Tanzania*

The Constitution is both relevant to and implicitly supportive of sustainable charcoal production. The Constitution sets the nation on a course towards participatory natural resources management when it states:

27.-(1) Every person has the duty to protect the natural resources of the United Republic, the property of the state authority, all property collectively owned by the people, and also to respect another person's property.

2.1.2 *The Tanzania Development Vision 2025*

The Tanzania Development Vision 2025 aims at achieving 'a high quality livelihood for its people, attain good governance through the rule of law and develop a strong and competitive economy.'

The vision focuses on five key attributes:

- High quality livelihood.
- Peace, stability and unity.
- Good governance,
- A well educated and learning society; and
- A competitive economy capable of producing sustainable growth and shared benefits.

In terms of economic development, it is envisaged that by 2025:

'The economy will have been transformed from a low productivity agricultural economy to a semi-industrialized one led by modernized and highly productive agricultural activities which are effectively integrated and buttressed by supportive industrial and service activities in the rural and urban areas.'

In terms of economic targets, the vision states that by 2025 there will be:

'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).'

The Tanzania Development Vision is supportive of the sustainable charcoal model to the degree that it prioritises good governance and sustainable growth. However the overall economic direction is premised on industrialisation, intensive agriculture and urbanisation with less emphasis on promoting diversified rural economies that include community-based, sustainable forest management.

2.1.3 *The National Five Year Development Plan 2016/17 – 2020/21*

The current Five Year Development Plan II aims to:

'implement Tanzania's Development Vision (TDV) 2025 which aspires to have Tanzania transformed into a middle income, semi industrialized nation by 2025.'

'The Plan is built on three pillars of accelerating transformation namely, industrialization, human development, and implementation effectiveness. '

Amongst its specific objectives, those relevant to sustainable charcoal production include objectives to:

- i. Build a base for transforming Tanzania into a semi-industrialized nation by 2025;
- ii. Accelerate poverty-reducing economic growth that is broad-based and inclusive to allow shared benefits to the majority of the people through increased productive capacities and job creation especially for the youth and the disadvantaged groups;
- iii. Improve quality of life and human wellbeing;
- iv. Foster development of self-propelling domestic productive and exporting capacities;
- v. Promote requisite industrial human skills, production and trade management, operations, and quality assurance;
- vi. Consolidate Tanzania's strategic geographical location through improved environment of doing business to position itself as a regional trade and logistic hub;
- vii. Foster and strengthen plan implementation effectiveness, including prioritization, sequencing, integration and alignment of interventions;
- viii. Emphasize the role of local actors in planning and implementation, and
- ix. Assimilate global and regional solidarity agreements, specifically SDGs with the aim of mainstreaming them into the national development planning and implementation frameworks.

The plan also includes the following indicators and targets for Environment and Protection

S/N Indicator/Target	By 2025/26	2014/15	2020/21
1.1 % share of GDP Income from sustainable utilization of forest, water and marine resources	20%		10%
1.2 % of energy derived from Renewable Green Energy (biogas, LPG, Solar Energy)	70%	36%	50%
1.3 No. Of Commercial Forest Plantations established			
1.4 Increase the percentage of forest cover (Ha)	200,000	60,000	130,000
1.5 Reduced charcoal consumption in urban areas	60%	90%	30%

The plan proposes the allocation TZS 105 billion of Government revenues on tree planting.

Intervention type	Intervention Required	Cost / Source Billions of TZS			Expected results
		Gov't	Private	DPS	
National tree planting and management strategy 2016-2020	<ul style="list-style-type: none"> · Tree planting in open areas degraded areas, institutional area, water sources etc. · Improve public awareness on tree planting · Financing resources mobilization · Monitoring and evaluation at national level 	105.15			185,000 ha (280 million trees) planted every year

The plan is relevant to this review as it reflects the high level commitment to reducing charcoal consumption, tree planting and fuel-switching.

2.2 Forest Sector

2.2.1 National Forest Policy, 1998

The National Forest Policy is the highest policy instrument guiding the production end of the charcoal value chain. Until the revised national forest policy is officially approved, the National Forest Policy

1998 remains the overall guiding document for the forestry sector. The National Forest Policy 1998 aimed to tackle the following issues:

- Management of the country's forest land resources at various levels for sustainable and progressive development.
- Management of forest-based industries and other forest-based activities to contribute to the national development and equitable benefit sharing between the stakeholders.
- Conservation of the country's unique ecosystems and biological diversity, considering the needs of local populations and appropriate management and utilisation methods.
- Adaptation of the institutional framework and arrangement of the necessary human resources and financial inputs to meet the pre-conditions for the desired development.

The overall goal of the national forest policy is:

to enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of her natural resources for the benefit of present and future generations.

The objectives of the forest sector on the basis of the overall goal are as follows:

- Ensured sustainable supply of forest products and services by maintaining sufficient forest area under effective management;
- Increased employment and foreign exchange earnings through sustainable forest-based industrial development and trade;
- Ensured ecosystem stability through conservation of forest biodiversity, water catchments and soil fertility and
- Enhanced national capacity to manage and develop the forest sector in collaboration with other stakeholders.

In the context of sustainable charcoal production, relevant policy statements include the following:

Policy statement (1): To ensure sustainable supply of forest products and services and environmental conservation, all types of forest reserves will be managed for production and / or protection based on sustainable management objectives defined for each forest reserve. The management of all types of forest reserves will be based on forest management plans.

Policy statement (5): To enable sustainable management of forests on public lands, clear ownership for all forests and trees on those lands will be defined. The allocation of forests and their management responsibility to villages, private individuals or the government will be promoted. Central, local and village governments may demarcate and establish new forest reserves.

Policy statement (6): Village forest reserves will be managed by the village governments or other entities designated by village governments for this purpose. They will be managed for production and / or protection based on sustainable management objectives defined for each forest reserve. The management will be based on forest management plans.

Policy statement (9): Establishment of private woodlots and plantations for woodfuel production will be encouraged and supported through research, extension services and financial incentives.

The policy recognised that '*bio-energy is the main source of fuel for the rural population and accounts for 92% of the total energy consumption in the country*' whilst also recognising that 'the contribution of the sector is usually under-estimated because of the unrecorded consumption of woodfuels...' (p. 9).

2.2.1.2 Woodfuel

Wood fuel is the main source of energy both in rural and urban areas. Lack of alternative and affordable sources of energy has contributed to the degradation of natural forests due to practically uncontrolled harvesting of woodfuel. Efficient wood conversion technology and methods are currently scarce. A significant amount of woodfuel is also wasted as coordination between the logging companies and woodfuel suppliers is non-existent.

Policy statement (9): Establishment of private woodlots and plantations for woodfuel production will be encouraged and supported through research, extension services and financial incentives.

Direction: Private individuals will be encouraged to establish woodlots in their farms through research and extension as well as through financial incentives. Dissemination of information on appropriate technology on wood fuel production and use will be enhanced. Private investment in establishing woodfuel plantations will be promoted by introducing appropriate credit systems. The use of alternative affordable sources of energy will be promoted through research and extension.

The National Forest Policy 1998 is supportive of enterprise-oriented community based forest management by:

- providing an over-riding policy goal focused on managing forests sustainably for national development;
- providing the foundation for community-based forest management including the establishment of productive village and community forest reserves for 'all different uses of forests'.
- indicating the need for management plans to be in place as a basis for harvesting whether in productive reserves or on unreserved village land;
- recognising the importance of wood fuels to the national economy.

The policy directions on wood fuel focus on tree planting and, to a lesser extent, fuel-switching.

Sustainable charcoal production from natural woodlands is neither explicitly supported nor explicitly opposed. Despite the policy's recognition of the importance of charcoal to the nation, no specific guidance is provided as to the desired outcome for charcoal production.

2.2.2 The National Forest Policy 2014 Final Draft

The national forest policy has been under review at least since 2008 when a zero draft was circulated for stakeholder comments. The overall objective of the 2008 zero draft was '*to enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of her natural resources for the benefit of present and future generations*'. The 2008 draft promoted tree planting as an alternative source of wood fuel and '*the use of alternative affordable sources of energy and energy saving technologies*'.

The vision for the 2014 draft policy is to have a '*sustainable forest sector for the benefit of Tanzanians and the global community*'; with the mission '*to ensure supply of forest products and ecosystem services through environmental conservation and responsible management*'. The goal of the 2014 draft (which has remained largely unchanged since 2008) is: '*enhanced contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of her forest resources for the benefit of the present and future generations*'. Of its 4 objectives, the most relevant objectives are:

- i) To ensure sustainable supply of forest products and services by maintaining sufficient forest under effective management'; and
- ii) To provide employment and increase income through sustainable forest-based industrial development and trade.

The document identifies '*persistent reliance on woodfuel for energy*' to be one of the main causes of deforestation. It goes on to state that '*illegal exports of logs and charcoal have accelerated harvesting to levels above allowable cuts*' (p. 8).

In the section:

'1.2.3 Management of forest-based industries and other forest-based activities' no specific mention is made of charcoal and the focus is instead on timber.

Under the Objective 1, the section on general land, the policy statements are:

Policy statement 4) To enable sustainable management of forests on general lands, the forest will be reserved and accorded clear ownership and user rights.

5) The management of all forests reserved from general land shall be based on management plans.

The policy mentions '*collaboration with other sectors, particularly energy sector will be promoted to develop policies to guide investment in large bio-fuel production so that it does not harm the environment, particularly forests on village land.*'

Under objective 3, the draft policy states:

4.3.2 Focus area wood fuel

Woodfuel is the main source of energy for most Tanzanians. About 90 % of the total energy used in Tanzania is from wood. Woodfuel, especially charcoal, is also an important source of livelihood for rural and urban communities. Woodfuel consumption will continue to increase with increasing population due to unavailability of appropriate alternative affordable sources of energy. Lack of affordable alternative sources of energy has contributed to the degradation of natural forests due to practically uncontrolled harvesting of woodfuel. Efficient wood conversion technology and methods are unaffordable. A significant amount of material suitable for woodfuel is also wasted. Most wood mills have only one end product and their by-products are regarded as waste.

Policy statement

14) Establishment of private woodlots and plantations, planting of trees on farm for wood fuel production, efficient wood energy conversion and use technologies and alternative sources of energy will be promoted.

Directions

Establishment of private woodlots and adoption of efficient wood energy conversion and use technologies and alternative sources of energy will be promoted through research, extension services and collaboration with stakeholders. Provision of alternative livelihood to charcoal production and sale in rural areas will be promoted so as to minimise forest degradation and damage to the environment.

Draft National Forest Policy, 2014

Overall, the draft National Forest Policy is supportive of sustainable charcoal production by:

- continuing to support sustainable forest management for national development;
- continuing to support productive village land forest reserves;

As with the National Forest Policy, 1998, the policy statement and directions on wood fuel are focused on tree-planting, fuel-switching and more energy efficient technologies. Sustainable charcoal production is not explicitly mentioned in the context of wood fuels rather the policy is seeking to replace natural forests as the source of woodfuel with plantations and woodlots.

In the 2014 draft, the document appears to categorise land differently to the Village Land Act, 1999. Most of the land referred to as General Land in the draft National Forest Policy is Village Land according to the Village Land Act, 1999 and the Ministry of Lands. This is significant in the context of sustainable charcoal production in that forests on General Lands fall under the authority of the Tanzania Forest Services Agency whilst forests on village land fall under the authority of the respective village councils. By categorising village land forests as general lands the policy is substantively out of alignment with the Village Land Act, 1999. This issue was raised by civil society organisations during the policy development process. Subsequent publications by TFS are more aligned with the Ministry of Lands including the TFS Strategic Plan 2014/19 as reviewed below.

The first draft of the policy was circulated for comment in 2008. So far, it has taken 8 years to revise the policy.

2.2.3 The Forest Act 2002

The Forest Act 2002 is the most significant policy instrument in terms of sustainable charcoal production in CBFM areas as it provides the legal basis for community rights to manage and benefit from their forests and woodlands. The Forest Act empowers Village Councils (through the designated village committee) to issue permits to fell and extract timber for domestic commercial use and sale and to gather and take away specified forest produce including charcoal, from Village Land Forest Reserves.

Only Village Councils are permitted to issue permits within Village Land Forest Reserves for timber for domestic commercial use and sale and for gathering and taking away specified forest produce including charcoal. Neither the respective District Harvesting Committee nor the Tanzania Forest Services Agency (TFS) may issue permits to harvest timber or other forest produce within Village Land Forest Reserves (VLFs). The Village Council's authority to issue charcoal and timber harvesting permits within village land forest reserves is granted through the following subsections of the Forest Act 2002:

Part VI Permits and Licenses.

Section 49, Subsection (6) A village council shall, by resolution, which shall require confirmation by the village assembly, adopt the provisions of this Part with such adaptations and modifications as may be prescribed, in respect of the granting of permission to any person to undertake, for other than domestic purposes, any of the activities to which this Part refers **in a village land forest reserve or a village forest** but no such resolution shall operate to replace any arrangements providing for domestic use permits for villagers.

(7) A village council shall send a copy of a resolution referred to in subsection (6) to the district council having jurisdiction in the area where the village is situated.

(8) Notwithstanding the permits issued under this section, any person permitted to undertake the activities specified under subsection (1), shall be required to obtain licences to carry or undertake other activities connected with such permit.

The above mentioned section refers to the following permits (amongst others):

Section 49, Subsection (1) The following are the permits which, may be issued to permit the activities specified; that is to say, permits to-

(a) fell or extract timber:

(i) for domestic commercial use and sale;

(b) gather and take away specified forest produce

The Forest Act 2002 defines forest produce as follows:

Part 1. Section 2 "forest produce" means anything which is produced by or from trees or grows in a forest or is naturally found in a forest and includes bamboos, bark, bast, branchwood, canes, **charcoal**, earth, fibres, firewood, fruits, galls, gums, honey, latex, laths, leaves, litter, natural varnish, peat, plants. Poles, reads, resin, roots, rushes, sap, sawdust, seeds, slabs, timber, trees, thatch, wattles, wax, wild silk, withies, wood shes, wood oil, and any other living or inanimate object declared by notice in the Gazette to be forest produce for purposes of this Act;

In simplified terms and in the context of sustainable charcoal production, this section empowers the Village Council to issue permits for charcoal production in a village land forest reserve and in village forests provided that a resolution to that effect is in place and has been shared with the District. The authority that Section 49 grants to the village council over village forests (rather than just village land forest reserves) is often over-looked where **village forests include unreserved forests on village land** (see the excerpt from Section 4, below).

The Forest Act 2002 indicates that harvesting permits for village land forest reserves must be based on the village forest reserve management.

Section 49, Sub-section (4) No permit shall be granted under this Part unless the activity in respect of which the permit is applied for is-

(a) consistent with any forest management plan applicable to the forest reserve where it is proposed to undertake the said activity.

The Forest Act 2002 specifies that the Village Land Forest Reserve management plans shall state the fees to be paid in respect of permits as stated below:

Forest Act 2002, Part III.

Section 11, Subsection (3)

The forest management plan may contain...

k) an outline of the estimates of the financial and human resources needed to implement the management plan and **the proposals for charges and fees which may be made for access to or use of the forest and the produce of the forest** and for the division of the resources so generated by such charges and fees between the various authorities and persons likely to be involved in the management of the forest;

Furthermore the Forest Act 2002 grants the forest manager, the Village Council in the context of a VLFR, the right to dispose of any forest produce from a village land forest reserve that has been harvested illegally and confiscated accordingly as follows:

Section 97. Sub-section 1 (b)

Any forest produce in respect of which the offence has been committed and anything which has been used in the commission of the offence be forfeited to the forest reserve manager of the forest reserve where or in connection with which the offence occurred and may be disposed of by the forest reserve manager after such interval of time and in such manner as he may see fit;

In the case of a village land forest reserve, the forest manager is the village council committee allocated the duties of managing the village land forest reserve:

Part V Forest Reserves

Section 33, Sub-section (1)

A village council, may by resolution-

(d) establish a committee to manage a village land forest reserve or allocate the duties of managing a village land forest reserve to an existing committee of the village council.

(2) Where a village land forest management committee is established, it shall-

(d) be the principal village body concerned with the management of a village land forest reserve; (e) report on a regular basis to and take account of the views of the village assembly on its management of the village land forest reserve.

The Forest Act 2002 reinforces the exclusive right of Villages to charge for permits by specifically exempting forest produce from village land forest reserves or community forest reserves from government royalties:

Section 78, Sub-section (3) No royalties shall be required for the harvesting or extraction of forest produce within a village forest reserve or a community forest reserve by the resident of the village or the members of a Group as the case may be unless such a requirement is specifically provided for under any agreement under which they are managed.

The Forest Act 2002 also states that:

Section 4 (c) Village forests consist of:

- Village land forest reserves;
- Community forest reserves created out of village forests;
- Forests which are not reserved, which are on village land and which the management is vested in the Village Councils.

As noted before, this section is significant in that it reinforces the authority of the village council to manage both village land forest reserves and forests on village land that are not included in village land forest reserves. Although such forests are not included in the exemption from royalties provided for under Section 78 Subject (3), it provides the legal basis for communities to have the overall decision-making authority regarding any harvesting on village land. This is further clarified under Section 49, Subsection (6). See above.

Overall the Forest Act is supportive of sustainable charcoal production in the context of community-based forest management. The Forest Act defines the authority of the village council to decide on sustainable harvesting in village land forest reserves provided that a sustainable management plan is in place. The Forest Act also grants decision-making authority to Village Councils on harvesting in any forest on village land provided that by-laws are in place. This authority means that neither TFS nor the District can unilaterally issue harvesting permits for forest products on village land, rather that authority rests with the respective Village Councils. The Forest Act also grants exemption from Central Government royalties for forest produce from village land forest reserves. This is logical since it empowers the Village Council responsible for the management of the forest to earn the revenue from that reserve. In this way a village can generate an income that can be used to pay reserve management costs. Where revenues exceed management costs, funds can be channeled directly into community development projects. This has the dual benefit of improving livelihoods for the rural poor and incentivizing sustainable forest management by generating direct benefits for forest-owning communities.

2.2.4 The Forest (Amendment) Regulations, 2015 GN No. 324

Forest regulations are relevant in that they define the details necessary for the implementation of the Forest Act. In 2015, new regulations came into force determining fees to be paid for different permits and produce. The regulations came into force on 14/08/2015.

The 2015 regulations replace the Eighth and Fourteenth Schedules of the Forest Regulations, 2004. The regulations set the Royalty for one 75 kg bag or charcoal at TZS 16,600 or TZS 240 / kg

The Forest (Amendment) Regulations, 2015

GN. No. 324 (contd.)

ITEM 5: Charcoal	
Fees for a bag of charcoal (75 kg per bag) or (sh. 240 Tsh/kg)	16,600

The regulations also set the 'Fees for registration of forest produce dealers and Traders for each site per year'. The annual fee for a charcoal dealer or trader is set at TZS 256,000.

The regulations are interesting in that they set a lower fee for charcoal than for a comparable volume of timber. For example, if we take the BEST, 2014 conversion factors such that 0.7

t air-dry wood = 1 m³ air-dry wood and assuming a 19% wood to charcoal conversion efficiency (tonne to tonne) then it requires 7.52 m³ of wood (air-dry) [5.26 t] to make 1 t charcoal. Given that 1 kg of charcoal (equivalent to 0.00752 m³ of wood (air-dry)) is charged at TZS 240 / kg, this is equivalent to 1 m³ of wood used for charcoal being charged at TZS 31,915. This compares with the fees charged for timber which range from TZS 264,960 / m³ for Class IA down to TZS 88,320 / m³ for Class IV (Other species not listed above). This means that even for the lowest class of tree species, the charcoal tax is > 2.5 times less / m³ than for timber. To some extent this lower rate is balanced by the fact that someone harvesting a tree for timber might use only 1/3 of the biomass whilst a charcoal producer would use almost all of the harvested biomass.

Overall the regulations set the fee at approximately 20 % – 25 % of the final retail price and as such are an important determinant of the market price. The regulations also provide clarity on how charcoal producers can formalise their status.

2.2.5 The Forest (Charcoal preparation, transportation and selling) Regulations, 2006 (GN 69)

These regulations, published in June 2006, describe the composition of the District Harvesting Committee and their role in the allocation of permits to prepare charcoal. They also define rules around registration of charcoal dealers, conditions for the preparation of charcoal and transportation of charcoal.

The regulations indicate that the District Harvesting Committees will be chaired by the District Commissioner and will include the Village Chairperson and Village Executive Officer of villages where harvesting is being considered. The regulations indicate that the 'Ministry responsible for forests' will pay for the meetings.

The role of the District Harvesting Committee is defined as follows:

4 (1) The functions of the Committee shall be:

- (a) To receive and determine applications for harvesting of forest produces for purposes of:
 - (i) Logs'
 - (ii) Timbers
 - (iii) Poles
 - (iv) Firewood
 - (v) Charcoal

In accordance with the harvesting plan of the district.

- b) to co-ordinate harvesting activities within the district;
- c) to prepare a harvesting plan for the district
- d) to assist a local government authority in setting special areas under subregulation (2) of regulation 6; and
- e) to receive quarterly report on the harvesting activities from the District Forest Officer.

The regulations provide important details on dealing in charcoal specifying that charcoal dealers are required to request harvesting permits and to be registered with the District:

Dealing in charcoal

- 6 (1) The Committee shall prepare and maintain a register of all charcoal dealers in the district, under the custodian of a District Forest officer.
- (2) The local government authority shall, in its area of jurisdiction, set special areas for preparation and selling of charcoal.
- (3) Every village shall prepare and maintain a roll of charcoal dealers.

They also set conditions linking production with the District harvesting plan and setting a requirement to re-plant an equivalent area of forest to that cleared.

Condition for preparation of charcoal

7. (1) Without prejudice to any provisions of regulation 5 and 6, no person shall prepare the charcoal unless:

- (a) the activity is undertaken in the area set by the Committee;
- (b) the trees used have been selected as provided under the district harvesting plan;
- (c) a pit has been dug for that purpose;
- (d) the charcoal is prepared in the manner provided in the harvesting plan; and
- (e) in the area where trees have been felled, trees are planted and maintained by such person, either alone or in a group, as the case may be; however, trees under this paragraph may be replanted in any other area as may be directed by the village responsible for that area.

- (2) Any charcoal prepared may, subject to the provisions of sub-regulation(1) be subject of any fee, levy or charge by the village government, the Committee or any other relevant authority.

The regulations also specify conditions for the transportation of charcoal stating:

- 8 (1) No person shall, save for home consumption, transport any charcoal unless:
- a) He has a licence, issued by the Forest Office for that purpose;
 - b) he has a transit pass (TP) to be stamped on every check point;
 - c) The charcoal is transported through a route approved by the Forest Officer; and
 - d) The charcoal is to be handed over or landed to a person or an area, as the case may be approved under these Regulations
- (2) No sack of charcoal shall have a weight exceeding 28 kg
- (3) Every sack of charcoal, passing a check point shall be charged a fee to be set by the Director.

The regulations provide important guidance relevant to the formalisation of the sector at the production and transportation stages of the charcoal value chain. The regulations are particularly significant in reiterating the Forest Act's requirement for district harvesting plans to be in place prior to harvesting. They are relevant to the sustainable charcoal model in setting out requirements that need also to be observed by producers operating in village land forest reserves including registration at village and district levels and rules around transportation and transit passes that also apply to charcoal produced sustainably in village land forest reserves. The regulations contribute guidance necessary for the formalisation of the production and transportation stages of the sustainable charcoal value chain.

2.2.6 Public Notice regarding procedures for trade in forest products, 2015

In December 2015, the TFS Director issued a public notice specifying that:

Forest product harvesters must have a license from the applicable authority and there should be a government receipt that covers every sack of charcoal being transported. Transporters must have transit permits indicating the source and destination for the charcoal being transported and the amount should correspond with the harvesting license.

Charcoal may not be transported on a two-wheeled motorcycle.

Charcoal may not be sold alongside the highway.

All charcoal buyers for household use must have an official government receipt showing the number of charcoal sacks that they have purchased.

http://www.tfs.go.tz/uploads/TAARIFA_KWA_UMMA.pdf

As with the 2006 and 2015 regulations, this public notice further contributes to the formalisation of the transportation of charcoal.

2.2.7 Guidelines on sustainable harvesting and trade in forest products harvested in natural forests 2015

These guidelines, published in 2015, provide guidance on procedures for harvesting and trading in natural forest products including charcoal. The guidelines are aligned with the Forest Act, 2002 and the National Forest Policy 1998. They also reiterate some requirements from the 2006 regulations. The guidelines emphasise that harvesting must follow a forest management plan that includes sustainable harvesting.

The guidelines also indicate that:

- Charcoal traders and harvesters should be licensed and registered;
- Villages should maintain a register of charcoal producers and should record the number of sacks produced by each registered producer;
- Efficient kilns such as half-orange or Casamance kilns should be used;
- Charcoal producers must pay royalties in accordance with government regulations and must contribute 5 % of the royalty to the Tanzania Forest Fund for tree planting;

The village council are responsible for ensuring that charcoal production is conducted in a way that does not damage the environment.

The guidelines state that institutions should plant trees in order to meet their energy needs and should use energy-efficient stoves.

The guidelines go on to define the responsibilities of the District Harvesting Committees by stating that

The District Harvesting Committee shall manage harvesting in the following forests:

- a) Central Government Forest Reserves (except mangroves);
- b) Local Authority Forest Reserves (except mangroves);
- c) *Misitu ya matajiwazi*

The District Harvesting Committee is not responsible for the following forest types:

- i. Village Land Forest Reserves
- ii. Community Forest Reserves
- iii. Private Forests
- iv. Forests belonging to non-governmental institutions

However owners of the forests listed above must get expert advice from the district before harvesting.

The guidelines go on to clarify procedures for securing harvesting permits, specifying that the District Forest Officer is responsible for issuing harvesting licenses whilst transit permits can be issued by the TFS District Forest Manager or appointed forest officer.

The guidelines summarise rules for charcoal trade as follows:

Charcoal business

- a) Traders are required to pay government tax for each sack in accordance with the current Government Notice on charges on forest produce.
- b) All districts are required to designate special charcoal selling centres;
- c) Government tax must be paid on each bag of charcoal regardless of the means of transportation and all means of transportation must allow for easy and efficient checks to be made.

The guidelines clarify that the export of charcoal from Tanzania is prohibited.

The guidelines do not mention the exemption from royalties for forest products from village land forest reserves. Thus they need to be read alongside the 2013 guidelines on harvesting in village land forest reserves. In terms of whether or not the guidelines are supportive of the sustainable charcoal model, they do not include information regarding the authority of the village councils but do recognise that village land forest reserves do not fall under the authority of the District Harvesting Committee.

2.2.8 Guidelines for Harvesting in Village Land Forest Reserves, 2013

Published by the Policy and Planning Department of the Ministry of Natural Resources and Tourism in 2013, these guidelines provide 'guidance on how village land forests can be harvested for the benefit of rural communities and in a sustainable way'. The guidelines are exclusively focused on timber although charcoaling of off-cuts is mentioned as a side-benefit of the timber harvesting process.

Although focused on timber, the guidelines document three important principles that also apply to charcoal. The guidelines state that:

- p. 6. 1. Because the harvesting takes place on village land and within declared village land forest reserves, the decision to harvest does not need to be approved by the District Forest Harvesting Committee, as long as it does not conflict with the approved management plan and bylaws.
2. Revenues from harvesting in village land forest reserves can be fully retained (100%) by the village council.

3. The village council, as the highest level of government in the village will decide how much of the revenue will be reinvested back into forest management (such as forest patrols, monitoring, equipment and tools) and how much will be used for broader village development needs (such as education, health). It is important that the share of benefits be clearly agreed and documented in the management plan.

4. Villages are not required to share any of their revenues with the district or central government, other than the usual payment of taxes. Some villages have agreed with district authorities to share a small portion of revenue in return for services rendered from the district forest office. In general terms this does not usually exceed 10-15% of total revenue.

The guidelines are important for the sustainable charcoal model in elaborating on important principles set out in Section 49 of the Forest Act. It is unclear why charcoal is not referred to more explicitly in these guidelines given its economic importance.

2.2.9 Joint Forest Management Guidelines, 2013

These guidelines, published by MNRT in December 2013 provide guidance on the facilitation of joint forest management. The guidelines summarise the legal basis for joint forest management as well as providing non-binding guidelines on how to establish joint forest management for protective and productive forest reserves. The guidelines are relevant to integrating sustainable charcoal production into the joint management of productive government reserves. No particular details are provided on integrating sustainable charcoal production although the guidelines provide guidance on benefit sharing including recommending that joint management agreements should give communities the right to:

- 32% of fines retained in the village from offences committed in the VFMA, the remaining part to go to the owner of the forest
- 46% of the net revenue from confiscated forest products goes to Village Government and the other 54% goes to TaFF/District Council. The confiscated equipment and tools are remitted to relevant forest authorities
- 19% of timber royalty fee is paid directly to village government and the remaining is paid to the owner of the forest

MNRT, 2013, p.20.

2.2.10 Community Based Forest Management Guidelines: For the establishment of Village Land Forest Reserves and Community Forest Reserves, 2007

These guidelines, published by MNRT in January 2007 provide guidelines on the facilitation of community-based forest management. The guidelines summarise the legal basis for community-based forest management as well as providing non-binding guidelines on how to establish community-based forest management. The guidelines are relevant to integrating sustainable charcoal production into the management of village and community forest reserves by providing guidance on the over-arching governance structure for CBFM.

Key statements in the guidelines that are relevant to the sustainable charcoal model include the following:

Community Based Forest Management refers to forest management that takes place on village land, where local people play a role as both managers and forest owners. Management is exercised through village institutions elected by all community members. The role of the districts is to support and assist the communities to manage their own forests sustainably. 'Management' in CBFM includes all aspects of forest management, such as forest protection, regulation of access and use of the forest, and actions to rehabilitate or develop the productive capacity of the forest.

The central institutional framework for rural communities in Tanzania is the village: a recognised group of people living in a recognised area (**Village Area**) and with the power to elect its own government (**Village Council**) to manage its affairs. Village Councils already have well developed roles and powers which can be put to good use in CBFM. This includes the right to make **Village Bylaws**, which enable local rules to be given the full weight of formal law.

Village Councils are by law accountable to village members, acting upon their behalf. Villagers tend to be more accountable to their own communities than to outsiders. Village based boundaries may already run through a forest, giving natural divisions among village communities.

CBFM is based on **reservation**; the act of setting aside an area to forest development (protection and/or production). Two main reserving processes occur in CBFM:

- Villagers are assisted to define and declare a **Village Land Forest Reserve (VLFR)** out of common land in the village area.
- Smaller groups in the community are assisted to define and declare **Community Forest Reserves (CFR)** on land, which they own together on village land.

The guidelines reiterate several important principles relevant to sustainable charcoal production:

The legal basis for CBFM

The Village Land Act (1999), The Local Government Act (1982), The Forest Act (2002) and the Forest Regulations (2004) provide the legal basis for villages to own and manage forest resources on village land in ways that are both sustainable and profitable. The Forest Act provides incentives to rural communities to progressively "reserve" unprotected woodlands and forests currently outside forest reserves, estimated to be in excess of 19 million hectares. These incentives include the following:

- Waiving state royalties on forest produce This means in principle that villages do not have to follow government timber royalty rates but can sell their produce at prices chosen by them (Forest Act: Section 78 (3)).
- Retaining 100% of revenue from sale of forest products Villagers can, if they chose, retain 100% of the income from the sale of forest produce. In many cases, however, they may chose to share a portion with the district in return for services rendered. The percentage to be shared with the district is set by the village and not the district. This does not mean, however, that other taxes (income tax, VAT) are avoided.
- Levying and retaining fines Fines payable under the Forest Act apply to National and Local Authority Forest Reserves and are sent to Treasury. Fines levied on village land in respect of Village Land or Community Forest Reserves will be retained by the Village – so long as they are described in "Approved Village Bylaws" (see later in this chapter)
- Exemption from the "reserved tree species list" The Forest Act protects commercially important or endangered tree species (reserved tree species) on general land, and places their management with the district forest officer. Once under village management, decisions about harvesting are transferred to the village administration. (Forest Act, Section 65 (3))
- Confiscation of forest produce and equipment from illegal harvesting Any forest produce or equipment used to illegally harvest in a village land forest reserve may be confiscated and sold by the "forest reserve manager" (Forest Act, Section 97 (1)(b)) – which in this case is the village council and proceeds be used to the benefit of the village.

The guidelines are important in clearly reiterating the extent of village councils' authority over forest product harvesting in village land as well as Village Councils' right to exemption from State Royalties and their right to retain revenues from the sale of forest products and to retain illegal forest produce from village land.

2.2.11 Ujue mwongozo wa uvunaji endelevu na biashara ya mazao ya misitu. MNRT 2015.

This leaflet provides guidance on harvesting, transporting and trading forest products. The leaflet begins by stating that:

For any harvesting of forest products there should be a management plan for that forest which will include a harvesting plan for that forest. The harvesting plan will include, among other things, the harvesting volume for a particular forest area. Harvesting should follow laws and regulations.

The leaflet goes on to outline the authority of the District Harvesting Committee by stating that:

'Harvesting of forest products will be managed by the District Harvesting and Management for forest products Committee. The District Harvesting Committee has authority over the following

types of forests:

Local Authority Forest Reserves

General Land inside the boundaries of the respective district.

Jointly managed forests

Central government forest reserves that are not catchment forests.

The powers of the District Harvesting Committee do not apply to:

Village forest reserves

Community forest reserves

Private forests.

In the case of the village forest reserves, community forest reserves and private forest reserves, the owners will need to seek technical advice from the District before harvesting.

The leaflet then goes on to summarise the relevant guidelines including describing requirements for charcoal producers to have a license, to use efficient production techniques and to contribute 5 % to the special tree planting fund. The leaflet demonstrates the Ministry's efforts to raise awareness on relevant regulations, an important step in formalising forest product trades.

2.2.12 Tanzania Forest Services Agency: Strategic Plan 2014 – 19

The TFS strategic plan is relevant to this review as it provides a greater level of detail on how TFS plans to fulfil its responsibilities in relation to the national forest policy and provides an insight into how the Government perceives the charcoal sector.

The TFS second Strategic Plan covers the period from July 2014 to June 2019. The plan focuses on development of resources and assets and improvement of the management systems.

2.1.1 Forest Resources

The distribution of forests in terms ownership / management includes 15.84 mil ha (35%) under the Central Government through TFS; 3.36 mil ha (7%) under Local Government; 21.6 mil ha (45%) under village governments; 3.36 mil ha (7%) of private sector; 2.4 mil ha (5%) as forests in general lands and approximately 480,000 ha (1%) other ownerships such as sacred forests.

The government puts emphasis on Participatory Forest Management (PFM) as a policy approach to effectively manage the unreserved forests under village lands.

Importance of forests

Biomass energy constitutes about 92% of the energy consumed in Tanzania. Charcoal is one of the largest industries in Tanzania, employing tens of thousands of rural people and supplying energy to millions of both urban and semi-urban households.

Key challenges

Overdependence on biomass energy providing 92% of energy needs is greatly contributing to degradation of forest resource.

In terms of targets the strategic plan includes the following:

- Wood fuel action plan implemented by June 2019

As with other documents, there is an absence of guidance on sustainable charcoal production in the context of CBFM. Charcoal production is presented as a problem whereby the solution is the implementation of the woodfuel action plan as described below.

2.2.13 Draft National Woodfuel Action Plan, 2009

In 2009, Energy for Sustainable Development (T) Limited was requested to develop a National Woodfuel Action Plan. The plan was developed based on widespread stakeholder consultation and a review of the available literature. The document is less of a plan and more of a policy options paper. The document

reviews a number of policy options including:

- Fuel switching
- Promotion of woodlots to sustain woodfuel supply
- Promotion of efficient woodfuel stoves
- Promotion of efficient kilns for improved wood to charcoal conversion
- Participatory forest management as a tool to promote sustainable charcoal production
- Prohibiting woodfuel use in the public institutions
- Promotion of voluntary carbon financing to incentivize villages to produce charcoal sustainably
- Differential taxation for different kinds of charcoal
- Exonerating biomass briquettes from all taxes

Amongst its recommendations, it states:

...woodfuel policies should advocate a combination of clear rules, transparency, enforcement, strong incentives, awareness creation and capacity development. Key issues that need to be driven by policies include:

- Creation of specific policy and strategies that support sustainable woodfuel production, transportation and utilization,
- Develop and implement differential tax for charcoal – as a way of incentivising sustainable charcoal production,
- Exempt biomass briquettes, biogas stoves, gas cookers from all forms of tax– as a way of increasing adoption of alternative fuels.

Creating government policies and strategies that support sustainability of woodfuel would contribute significantly to lessening the demand for charcoal and firewood.

The action plan then goes on to recommend a number of initiatives aimed at supporting sustainable charcoal production. Overall the draft woodfuel action plan is supportive of sustainable charcoal production embedded in CBFM and is one of the few documents to provide specific details recommending ways in which sustainable charcoal production can be implemented. Finalisation of the Woodfuel Action Plan is included in the TFS Strategic plan for 2014 / 19. At the time of publishing this report (November 2016), the plan had not been made public.

2.2.14 Memorandum of understanding to strengthen collaboration on forest governance and management between the Ministry of Natural Resources and Tourism and President's Office Regional Administration and Local Government, 2016

In May 2016, a Memorandum of Understanding was signed between the Ministry of Natural Resources and Tourism and the President's Office, Regional Administration and Local Government with the aim of strengthening collaboration between the two government departments on forest governance and management. The MoU is relevant to this review because it defines roles and responsibilities for the two government departments in relation to sustainable forest management and is one of the few government documents to refer specifically to sustainable charcoal production. In the 'background' section of the MoU, it reiterates TFS's recognition that 45% of the land area of Tanzania is village land with only 5 % as general land.

The mandate for TFS is summarised as follows:

'TFS Agency has been given the mandate for the management of national forest reserves (natural and plantations), bee reserves and forest and bee resources on general lands. The Forest and Beekeeping Division remained with the responsibilities of development of the forest policy, laws and regulations and overseeing the implementation of the sector. One of the core functions of TFS is conservation of all forests in the country.

The last sentence of this statement presents an interpretation of the role of TFS as having over-arching responsibility for all forests whether in national parks, game reserves or on village land.

Whilst the role of local government authorities are described as follows:

Local government authorities are responsible for the management of Local Authority Forest Reserves. Local Government Authorities collect royalties and license fees for harvesting of forest products, including commercially-traded wood fuels, as well as identify areas where these products can be harvested. LGAs are permitted to retain 5% of the value of wood fuels in the form of a District ' Cess' (a local government tax).

The document cites unsustainable charcoal production as a key reason for the MoU:

In the mid-2000s, illegal charcoal trade accelerated environmental destruction and caused evasion of revenue collection. As such, in 2007 Forest and Beekeeping Division (FBD) issued harvesting guidelines (which was revised in 2015), that mandated District Harvesting Committees (DHCs) to appraise and approve harvesting requests in areas suitable for harvesting of forest products. However, most of the forests found in village and general lands are not reserved and do not have the management and harvesting plans hence are not harvested according to the harvesting guidelines. It is in these forests where unsustainable harvesting is taking place and financial losses are rampant. In response to this situation, MNRT and PO RALG have agreed to enter into an MoU in order to achieve sustainable forest management in the country.

The MoU then states that:

'Whereas MNRT has a mandate of managing Central Government Forest Reserves and Forests on general land through Tanzania Forest Services Agency'

Whereas PO RALG has mandate of managing of managing Local Authority and Village Land Forest Reserves through local government authorities

Whereas unreserved forests on village and general land are not managed properly due to lack of management and harvesting plans

Therefore the parties agreed to establish a cooperation regarding forest conservation, management and sustainable management as follows...

Again the rationale for the MoU is explained in terms of the control of harvesting in unreserved village land forests.

The strength of the MoU is considerably weakened by the statement that:

Article 2 Mutuality

2. Each Party retains the right to adopt and pursue its own internal decided practices towards sustainable forest management.

In Article 4, more detail is provided on each Parties' responsibilities:

Article 4 Joint Responsibilities

The Parties agreed to the following joint responsibilities:

- i. Ensure TFS and LGAs establish Village Forest Reserves, National Forest Reserves, Local Authority Forest Reserves and advocate Joint Forest Management
- ii. Ensure TFS and LGAs prepare management and harvesting plans to all forest reserves.
- iv. Ensure TFS and LGAs control forest encroachment due to grazing, settlement, farming and other human activities.
- v. Ensure TFS and LGAs establish proper mechanism in sustainable charcoal production and forest conservation.
- vi. Ensure TFS and LGAs enforce forest laws and its regulation and interpretation of the same.
- vii. Ensure that harvesting committee receive and make proper decision on applications for harvesting of forest products.

Responsibilities of MNRT:

- i. Ensure that TFS facilitate joint patrols and forest operations.

- ii. Ensure that TFS create awareness on compliance of forest laws and its regulations.
- iii. Ensure that TFS facilitates the District Harvesting Committee.
- iv. Ensure that TFS hammer all stumps and logs and issue Transit Pass to forest products harvested in the forests with management and harvesting plans.

Responsibilities of PO RALG:

- i. Through RSs ensure that LGAs facilitate development and approval of village by laws on forest management.
- ii. Through RSs ensure that LGAs enforce village by laws on forest management.
- iii. Through RSs ensure that LGAs issue harvesting licenses in the natural forests with management and harvesting plans and collect revenue accrued and bank the same accordingly.
- iv. Through RSs ensure that LGAs prepare monthly progress reports both implementation and financial including revenue returns and will be submitted to RSs and TFS zone offices respectively.

The MoU is signed by the two Permanent Secretaries (not by the Ministers).

Overall the MoU describes a role for TFS and LGAs working together to establish forest management and sustainable harvesting and to address drivers of deforestation together.

In terms of harvesting, the MoU makes a clear distinction between the right of LGAs to issue the harvesting permits whilst TFS is given sole responsibility to 'hammer all stumps and logs and issue Transit Pass in the forests with management and harvesting plans'. It is interesting that the term 'the forests' is stated here, apparently giving a mandate to TFS in all forests including village land forest reserves. This effectively gives TFS a 'strangle-hold' over all timber harvesting under CBFM. This does not apply to charcoal production since the hammering procedure does not apply in the context of charcoal. That the villages who own the forests are not party to the MoU and have not consented to authorise TFS to extend its powers in relation to village land forests poses serious legal questions about the validity of the MoU.

The wide ranging duplication of roles has been chosen as a solution to the problem rather than the alternative solution of empowering local government to fulfill its responsibilities more effectively. The cost-effectiveness and efficiency of this approach is not analysed. Given growing recognition of TFS's dependence on revenues from forest products harvested from village land forests without management plans, there is a risk of further entrenching this environmentally damaging conflict of interest for TFS.

2.3 Energy Sector

2.3.1 National Energy Policy, 2015

A new National Energy Policy was adopted in 2015. The 2015 policy is focused on 'modern energy' where this is defined by the Policy as:

Modern Energy - Means energy that is based on petroleum, electricity or any other energy forms that have commercialized market channels, a higher heating or energy content value than traditional energy.

The term 'traditional energy' is not defined.

The policy recognises the importance of charcoal to national energy consumption stating that:

1.2 The national energy balance indicates dominance of biomass use in the form of charcoal and firewood and its contribution to the total national energy consumption is about 85 percent. ... Charcoal consumption mainly in urban areas has nearly doubled over the past ten years due to urbanisation, high prices or scarcity of other alternatives particularly kerosene, electricity and LPG. It is projected that demand for charcoal, without supply and demand side interventions will double by 2030, from approximately 2.3 million tonnes of charcoal in 2012. The Government has been promoting substitution of charcoal and firewood by providing tax relief to stimulate the use of LPG in the country.

This is the only text in the policy that refers specifically to charcoal.

Despite the economic and social importance of woodfuel, the policy deals exclusively with those forms of energy included in the policy's definition of modern energy and provides no policy guidance relevant to consumption or production of woodfuel except in the context of electricity generation from biofuels. This is despite the scope of the policy which is stated to include renewable energy.

2.1 Vision and Mission

2.1.1 Vision

A vibrant Energy Sector that contributes significantly to economic growth and improved quality of life of Tanzanians.

2.1.2 Mission

To provide reliable, affordable, safe, efficient and environment friendly modern energy services to all while ensuring effective participation of Tanzanians in the sector.

2.2 Objectives of the National Energy Policy

2.2.1 The Main Objective

To provide guidance for sustainable development and utilization of energy resources to ensure optimal benefits to Tanzanians and contribute towards transformation of the national economy.

2.3 Scope of the Policy

The Policy document covers the following areas or sub-sectors:

- (i) Electricity generation, transmission, distribution, interconnection, power trading and rural electrification;
- (ii) Petroleum and gas upstream, midstream and downstream activities;
- (iii) Renewable energy, energy conservation and energy efficiency including Feed-in-tariff; and
- (iv) Cross-cutting issues including subsidies, institutional, legal, regulatory as well as monitoring and evaluation frameworks.

The policy promotes energy efficient biomass conversion technologies in the context of small-scale industries as follows:

3.1.3 Energy Efficiency and Conservation

Energy Efficiency in Agro-based and Small Scale Industries: Many small-scale and agro-based industries including baking, brick burning, tobacco curing, tea drying, fish smoking industries use significant amount of firewood. Application of thermal efficient end-use technologies would minimize consumption of the firewood and therefore contributing towards reducing the rate of deforestation and energy cost to end-user.

Objective: *To promote energy efficiency and conservation in all sectors of the economy.*

(iii) Facilitate efficient biomass conversion and end-use technologies;

The section on renewable energy resources is presented in the context of renewable energy contribution to electricity generation as follows:

3.1.4 Renewable Energy Resources

Issue: *Scaling-up utilisation of renewable energy resources.*

Tanzania has a huge resource base of renewable energy resources which include wind, solar, biomass, small-scale hydro, geothermal, tidal, waves, and ocean thermal conversion. Renewable energy technologies currently in use in the country include solar thermal, solar photovoltaic (PV), wind and biomass (solid, liquid, gaseous).

Biomass: Tanzania has considerable sources of biomass including agricultural and forest bio-residues which in combination with the woodlands, meet the majority of household energy needs. Biomass exists in three forms: liquid, gaseous and solid. Challenges associated with biomass include: low conversion and end-use efficiency; deforestation; indoor emissions; inadequate legal and institutional framework to support sustainable production, distribution, supply and use of wood fuel.

Objective: *To enhance utilisation of renewable energy resources so as to increase its contribution in diversifying resources for electricity generation.*

Policy statements

The Government shall:

- (i) Promote renewable energy sources and sustainable use of biomass for power generation;
- (ii) Facilitate integration of renewable energy technologies in buildings and industrial designs;
- (iii) Establish Feed-in-Tariffs for renewable energy technologies;
- (iv) Establish frameworks for renewable energy integration into the national and isolated grids; and
- (v) Promote sustainable biofuel production and usage.

It is interesting that a pre-final draft of the National Energy Policy included the following objective and statements:

Objective: To enhance production and rational use of solid biomass resources.

Policy statements

The Government shall:

- (i) Promote efficient conversion and use of solid biomass;
- (ii) Encourage sustainable production of solid biomass;
- (iii) Promote and enhance fuel-switch from wood fuel to other sources for cooking;
- (iv) Promote modern use of solid biomass for generation of electricity;
- (v) Create awareness and develop capacity for bio-electricity generation;
- and (vi) Provide incentives for private investment in bio-electricity generation

However the objective was removed and subsumed into the general energy efficiency objective cited above; and the crucial policy statement (ii) was removed.

Thus, whilst the policy recognises that woody biomass provides 85 % of the countries energy consumption and that demand for charcoal is projected to increase, none of the 101 policy statements provide guidance on solid biomass energy as a domestic cooking fuel except in the context of electricity generation. Whilst the National Energy Policy does not explicitly support sustainable charcoal production, nor does it seek to prohibit it. There is instead a vacuum of policy guidance on woodfuel for domestic cooking in terms of

its role in the national energy sector except in so far as to recognise that currently it is *de facto* the most important form of energy to the country.

Under the section on ‘Safety, occupational health and environment’ the policy states that:

Energy activities such as ... uncontrolled use of woodfuel; can negatively impact on ecological and environmental systems. To mitigate anticipated effects, energy projects are subjected to Environmental and Social Impact Assessments (ESIAs) and Strategic Environmental Assessment (SEA).

Three policy statements relate to this issue:

- (i) Enforce environmental, health and safety standards and laws governing the Energy Sector;
- (ii) Ensure that contractors in the energy sector establish a decommissioning fund for environmental restoration where appropriate; and
- (iii) Strengthen institutional capacity in monitoring and enforcement of laws and regulations on safety, occupational health and environmental management.

The policy has left a significant gap in terms of strategic, policy-level guidance on how woodfuel energy demand is to be met in the immediate future. Whilst clear emphasis is placed on fuel-switching as the longer term solution, there is an absence of guidance on how to meet current demand for woodfuel apart from generalised comments about improving the efficiency of biomass conversion.

2.3.2 National Energy Policy 2003

A brief review of the former National Energy Policy is relevant in mapping the overall trend of the national energy sector towards a focus on electricity and fossil fuels. Overall the National Energy Policy, 2003 was more supportive of the sustainable charcoal production as reflected in its intention to promote more efficient energy production; and to promote energy production in a more environmentally sound way. Although the policy did not refer to sustainable woodland management for charcoal production, it did specifically promote efficient kiln technology.

As with the 2015 policy, the National Energy Policy 2003 recognised the importance of biomass energy:

‘Tanzania’s energy demand is characterised by a low per capita consumption of commercial energy (petroleum and electricity) and a high dependence on non commercial energies, including biomass fuels in the form of firewood, charcoal and bio-waste. Biomass energy for the foreseeable future will remain the main energy source.’ (NEP, 2003 p. 24).

The policy aimed to promote more environmentally sound energy supply.

‘The national energy policy objectives are to ensure availability of reliable and affordable energy supplies and their use in a rational and sustainable manner in order to support national development goals. The national energy policy, therefore, aims to establish an efficient energy production, procurement, transportation, distribution and end-use systems in an environmentally sound and sustainable manner.’ (NEP, 2003).

The policy recognised that the household sector constitutes the largest share of the total energy consumption, and that wood fuel is the largest source of household energy. The main focus of the policy statements pertaining to household energy is on energy efficiency and fuel switching.

NEP 2003 policy statements on the household sector

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

The policy treats charcoal and fuel wood as forms of renewable energy:

NEP 2003 definition of renewable energy technologies

Renewable energy technologies currently in use in the country include improved wood-fuel stoves and charcoal production practices, biogas, windmills, and solar thermal and photovoltaics (PV).

Again there is a focus on promoting more efficient technologies as reflected in the following policy statement:

NEP 2003 policy statement on renewable energy

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

With regard to rural energy, the policy again promoted fuel switching:

NEP 2003 policy statement on rural energy

It is, therefore, a national challenge to increase access to commercial energy in the rural areas and facilitate a diversification of energy services.

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

Overall there are many similarities between the 2003 and 2015 policies however a noticeable difference is the removal of specific statements about improving charcoal production efficiency and the narrowing of the focus on renewable energies in the 2015 policy, to just focus on renewable energy carriers' contribution to electricity generation. This is significant in that it effectively excludes fuelwood and charcoal from the scope of the policy.

2.3.3 Biomass Energy Strategy for Tanzania, Draft 2014

At the request of the Ministry of Energy and Minerals (MEM) in 2010, the European Union Energy Initiative Partnership Dialogue Facility (EUEI PDF) supported the development of a Biomass Energy Strategy (BEST) in Tanzania. The strategy and action plan were submitted for approval in 2014. As of November 2016, the strategy had not been approved.

The primary goal of the BEST Tanzania Strategy is to make biomass energy sustainable in Tanzania. There are five groups of actions within the BEST Tanzania Strategy designed to ensure that biomass energy is sustainable in Tanzania along the entire value chain:

- National and local policies;
- Forestry supply side measures that ensure sustainability of biomass energy supplies;
- Improved efficiencies of biomass energy utilisation;
- Commercially viable biomass alternatives to charcoal and commercial wood energy; and
- Commercially viable non-biomass alternatives to charcoal and commercial firewood.

The strategy document includes detailed reviews of: the policies affecting biomass energy; biomass and non-biomass energy supply and demand; and different future energy scenarios for Tanzania.

In terms of charcoal, the strategy recommends that:

Expanding TFS's mandate is essential in order to work closely with villages, local authorities and the private sector to improve supply, efficiency of supply and revenue collection (for villages, local governments and the central government). p. 74.

The BEST strategy has the potential to offer policy guidance on biomass energy however in the absence of any policy statements on woodfuel within the 2015 National Energy Policy, it is unclear where its broader policy anchor lies. In most cases a strategy elaborates a policy statement however in this case there is no policy statement for BEST to link with. This risks the marginalisation of BEST and any strategy aiming to improve the sustainability of woodfuel supply.

2.3.4 Rural Energy Act, 2005

The Rural Energy Act, 2005 provides the legal basis for promoting the adoption of 'modern energy' in rural areas where modern energy is defined as:

"Modern energy" means energy that is based on petroleum, electricity or any other energy forms that have commercialized market channels, a higher heating or energy content value than traditional biomass

fuel, and that which may be easily transported stored and utilized;

The Act states that:

The principles of Rural Energy Development shall be as follows that

- (a) modern energy supply to rural areas promotes growth in economic production and productivity as well as social welfare;

In the context of this review, this is significant as it represents a key policy tool underpinning the promotion of alternatives to biomass, primarily electricity, for rural communities. The Act also provides for the establishment of the Rural Energy Agency, the Rural Energy Board and the Rural Energy Fund.

Amongst the responsibilities of the Board, the Act includes the following:

- (c) 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.

This is relevant as it implies that grant applications will consider the economic return on investments in considering projects for support. Given that most rural households cannot afford electricity at current prices, it seems unlikely that projects aimed at providing electricity for household cooking will be prioritised. Thus the policy seems more targeted at providing alternative sourcing of lighting and powering other electronic devices rather than replacing biomass as a cooking fuel i.e. it is more about diversifying power options for rural communities rather than replacing biomass energy for cooking.

2.3.5 Ministry of Energy: Strategic Plan 2011/12 – 2015/16

According to the MEM 2011/12 – 2015/16 strategic plan, the ministry's mission is to promote, facilitate, regulate and monitor the development and sustainable utilisation of energy and mineral resources for the benefit of Tanzanians. Their 5 year strategic plan has five strategic objectives:

Strategic Objective A: HIV and AIDS infection reduced and support services to employees improved.

Strategic Objective B: Implementation of the National Anti-Corruption Strategy effected, enhanced and sustained.

Strategic Objective C: Sustainable development and management of energy resources for national development enhanced.

Strategic Objective D: Sustainable development and management of mineral resources for national benefit improved.

Objective E: Resources management and support services improved.

Charcoal fits under:

Strategic Objective C: Sustainable development and management of energy resources for national development enhanced.

This objective aims at ensuring adequate supply of energy to increase social and economic welfare. This will be achieved by: supply of adequate and reliable energy to the Nation, particularly to the rural community; facilitating and promoting the development of energy mix (coal, natural gas, wind, solar, biomass); and promoting energy efficiency and demand side management. Expected results will be: increased investment and economic growth; increased generation and access to electricity; decreased power outages; reduction in rate of deforestation; increased production of natural gas; increase in oil and gas exploration activities; and reduction of energy losses.

MEM, 2012. p. 12

The strategic plan makes no mention of charcoal; and the only mention of biomass is in the statement quoted above i.e. as something to include in the energy mix. There are no targets or indicators related to charcoal production or consumption. Targets under strategic objective C all relate to electricity or natural gas and are thus aligned with the National Energy Policy's silence on woodfuel. This points to the absence of a national strategy on the provision of reliable, affordable and sustainable energy for most rural and urban households. There is no policy tool even attempting to match current and projected demand for domestic cooking energy with a realistic plan on where that energy is going to come from.

2.4 Land

2.4.1 The National Land Policy 1997

The National Land Policy is relevant to sustainable charcoal production as it provides the basis for Tanzania's approach to land tenure and therefore *forest* land tenure. The 1997 National Land Policy aimed to provide a comprehensive policy that would help to address the many land-related issues that had arisen since Independence whilst still retaining:

1.1 'four central land tenure tenets:

- That land is publicly owned and vested in the President as a trustee on behalf of the citizens;
- Speculation in land will be controlled;
- Rights of occupancy whether statutory or customary are and will continue to be the only recognised types of land tenure; and
- Rights and title to land under any consolidated or new land law will continue to be based mainly on use and occupation.'

The objectives of the National Land Policy include to:

2.1 Promote an equitable distribution of and access to land by all citizens.

2.2 Ensure that existing rights in land especially customary rights of small holders (i.e. peasants and herdsmen who are the majority of the population in the country) are recognised, clarified, and secured in law.

2.4 Ensure that land is put to its most productive use to promote rapid social and economic development of the country.

2.8 Protect land resources from degradation for sustainable development.

Tanzania has retained a land tenure structure that deliberately excludes the concept of 'freehold' and is instead based on the principle that all land is public land where tenure is defined in terms of 'rights of occupancy'. The National Land Policy identifies five important characteristics of this system:

Section 3.0

- i. There is a definite term for the occupation and use of the land granted.
- ii. Development conditions are imposed on the holder of that land.
- iii. The holder has to pay rent to the Government
- iv. The Preident of URT may revoke the Right of Occupancy of the landholder.

In terms of community land rights, the National Land Policy states that:

4.1.1 (iii) Village Councils will administer village lands and their powers will be subject to limitations embedded in the laws and procedures.

(iv) Consultation **and consent** of a Village Council will be required whenever alienation of Village Lands is necessary.

The National Land Policy provides guidance on forest tenure and other sensitive areas as follows:

4.2.10 Mechanisms for protecting sensitive areas will be created. Sensitive areas include water catchment areas,...mountains, forests,..rivers, river basins and banks... and areas of biodiversity. These areas or parts of them should not be allocated to individuals.

Definitions of the sensitive area categories referred to are not provided.

Section 7.0 Land Use Management provides relevant guidance on forestry issues.

Section 7.1 Land use coordination states that:

'At present licenses, rights and claims such as for mining, water rights, hunting rights / leases and timber harvesting licenses are issued without regard to existing land tenure rights. This crease land use

conflicts and disputes between the allocatees of land and other users.'

7.1.1 Policy statements

- i) Before user rights such as for mining, timber harvesting, hunting, etc are considered, existing land tenure rights should be recognised.
- ii) An Interministerial Committee should be formed by the relevant ministries to ensure consultation between the issuing authorities and the Ministry responsible for Lands.
- iii) The government will ensure that permits, licenses, claims and rights for exploitation of natural resources are issued in line with land use policies, and environment conservation policies and programmes.

The policy then goes on to address a few key issues individually including agricultural land use and livestock both of which are relevant to the current review:

7.2.0 Agricultural Land Use

There are growing conflicts between agriculture and other land uses as both human and animal populations increase. This has resulted in the encroachment of forest, woodland, wildlife and rangelands.

7.2.1 Policy Statements

- i) Multiple land use techniques will be encouraged in areas of conflicting land use.
- ii) Community involvement in resources management, land use planning and conflict resolution will be necessary.
- iii) Agricultural land will be identified, set aside for agricultural use and protected against encroachment by pastoralists.
- iv) Resource sharing will be promoted.

In relation to livestock, the policy notes that:

7.3.2 The free movement of pastoralists with the cattle bring about land ownership and land use conflicts with settled communities. Unregulated movement of livestock causes land degradation in areas through which they pass.

7.3.3 Policy statements

- i) Shifting agriculture and pastoralism will be prohibited.

The policy goes on to give specific guidance related to wetlands, coastlines, fisheries and hazard lands. There is no specific section on land use management for areas of forest or woodland.

In terms of land uses, the policy makes no mention of charcoal production. Only timber harvesting is mentioned as a forest use. Charcoal is not mentioned specifically in the policy.

Overall the national land policy attempted to safeguard community rights to land and to promote planning and practices that would prevent land degradation. The policy is founded on the 'use it or lose it' principle however the concept of 'use' is not defined either to include or exclude sustainable charcoal production. Some other uses are more explicitly covered including agriculture both for crop cultivation and livestock, mining and settlements. The policy also recognises community rights to manage communal areas of village land.

2.4.2 The Land Act, 1999

The Land Act, 1999 Section 4 categorises land into three categories:

- (a) general land;
- (b) village land;
- (c) reserved land.

The Land Act defines general land as follows:

"general land" means all public land which is not reserved land or village land and includes unoccupied or unused village land;

No definition and therefore no explicit limits are set on what is meant by the term 'use' in this context.

2.4.3 The Village Land Act, 1999

The Village Land Act reiterates the principles laid out in the National Land Policy, 1997, including the principle '*to ensure that land is used productively and that any such use complies with the principles of sustainable development.*'

The Village Land Act includes definitions of some key terms of relevance to this review:

"Certificate of customary right of occupancy" means a certificate issued under Section 29 of the Land Act, 1999

"Certificate of village land" means a certificate issued under section 7 of this Act

"Customary right of occupancy" means right of occupancy created by means of the issuing of a certificate of customary right of occupancy under Section 27 of this Act and includes deemed right of occupancy.

The Act provides for different mechanisms to classify the location and boundaries of a village's land:

Section IV 7. Management and Administration (I) Village land shall consist of:

- (a) land within the boundaries of a village registered in accordance with the provisions of section 22 of the Local Government (District Authorities) Acts 1982.
- (b) land designated as village land under the Land Tenure (Village Settlement) Act 1965.
- (c) land the boundaries of which have been demarcated as village land under any law or administrative procedure in force at any time before this Act comes into operation whether that administrative procedure based on or conducted in accordance with any statute law or general principles of either received or customary law applying in Tanzania and whether the demarcation has been formally approved or gazetted or not;
- (d) land, the boundaries of which have been agreed upon between the village council claiming jurisdiction over that land and
 - (i) where the land surrounding or contiguous to that village is village land, the village councils of the contiguous village;
 - (ii) where the land surrounding or contiguous to that village is general land the Commissioner; or
 - (iii) where the land surrounding or contiguous to that village is reserved land the official or public organisation for the time being responsible for that reserved land; or
 - (iv) where the land Which is claimed as a part of the land of, or is surrounding or contiguous to, that village is land which has been declared to be urban land or peri-urban land, the local authority having jurisdiction over that urban land or peri-urban land; or
- v) where the land which is claimed as part of the land or or is surrounding or contiguous to, that village is land which is occupied and used by a person or body under a right of occupancy, that person or body;
- (e) land, other than reserved land, which the villagers have been during the twelve years preceding the enactment of this Act regularly occupying and using as village land in whatever manner such persons or the village assembly or village council were allocated such land including land:
 - (i) Lying fallow at any time during the said preceding twelve years;
 - (ii) Used for depasturing cattle belonging to villagers or to persons using that land with the agreement of the villagers or in accordance with customary law; land customarily used for passage or land used for depasturing cattle.

These multiple definitions are important as it means that villages do not need to have village land

certificates in order to access their full rights. The Act also defines the roles and powers of the Village Council in managing Village Land:

Management of Village Land

8 (1) The village council shall, subject to the provisions of this Act, be responsible for the management of all village land.

(2) The Village Council shall exercise the functions of management in accordance with the principles applicable to a trustee managing property on behalf of a beneficiary as if the council were a trustee of, and the villagers and other persons resident in the village were beneficiaries under a trust of the village land.

(3) In the management of village land, a village council shall have regard to

- (a) the principle of sustainable development in the management of village land and the relationship between land use, other natural resources and the environment in and contiguous to the village and village land;
- (b) the need to consult with and take account of the views and, where it is so provided, comply with any decisions or order of any public officer or public authority having jurisdiction over any matter in the area where the village land is;
- (c) the need to consult with and take account of the views of other local authorities having jurisdiction in the area where the village land is.

The Act also defines the the role of a Certificate of Village Land as follows:

Section 7. Subsection (7)

A certificate of village land shall:

- (a) be issued in the name of the President;
- (b) confer upon the village council the functions of management of the village land.
- (c) affirm the occupation and use of the village land by the villagers under and in accordance with the customary law applicable to the land in the area where the village is situate.

Overall the Village Land Act is significant in defining Village Land which is the land category that the majority of Tanzania's unreserved forests and woodlands fall into; and for bestowing upon the Village Council the responsibility to manage village land including the natural resources occurring on the village land based on principles of sustainable development.

2.5 Environment and Climate Change

2.5.1 National Environmental Policy 1997

The National Environmental Policy 1997 describes its role as:

- 'Development of consensual agreement at all levels for the challenge of making trade-offs and the right choices between immediate economic benefits to meet short-term and urgent development needs, and long-term sustainability benefits;
- Development of a unifying set of principles and objectives for integrated multisectoral approaches necessary in addressing the totality of the environment.'

The policy set out to mainstream environmental considerations into decision-making; and to promote sector and cross-sector policy compatibility and synergies. The policy is relevant to this review for two key reasons: i. its role in promoting coordination between sectors on issues of environmental sustainability including in relation to forest management and energy supply; and ii. the high level commitment to promoting environmentally sustainable development.

The policy identifies deforestation as one of six major environmental problems that the country is facing and singles out wood-fuel production as a deforestation driver.

Of its six objectives, the two that are most relevant to this review are:

- To ensure sustainability, security and equitable use of resources for meeting the basic needs of the present and future generations without degrading the environment or risking health or safety;
- To prevent and control degradation of land, water, vegetation and air which constitute our life support systems;

The policy has a focus on poverty eradication, and states that:

a proactive policy objective of natural resource conservation oriented towards the reduction of the vulnerability of the poor shall be pursued. Sectoral policies and programmes to address poverty eradication shall take due account of the need for sustainable resource exploitation.

The policy goes on to outline sectoral policy objectives pertaining to the environment.

Under Energy, the policy states that:

Energy

52. The main objective is the sound management of the impacts of energy development and use in order to minimise environmental degradation. The policy objectives to be pursued are:-

- a) minimisation of woodfuel consumption through the development of alternative energy sources and woodfuel energy efficiency;
- b) promotion of sustainable renewable energy resources;
- c) assessment and control of development and use of energy; and
- d) energy efficiency and conservation.

Whilst for forestry it states;

Forestry

59. The main objective is the development of sustainable regimes for soil conservation and forest protection, taking into account the close links between desertification, deforestation, freshwater availability, climate change and biological diversity. The following policy objectives shall be pursued:

- a) Rational exploitation of forest resources accompanied with reforestation and afforestation programmes shall be promoted and enforced to meet requirements of domestic consumption and export earnings in a sustainable manner;

- b) forest/tree cover shall be increased through afforestation;
- c) proper management and law enforcement shall be practised for all public lands;
- d) natural forest with biological diversity value and genetic resources shall be conserved; account will be taken of the dangers of monoculture and to the extent possible natural forests will not be replaced by exotic species; and farmers, business communities, non-governmental organisations, schools and others will be motivated to embark on tree planting. Financial and other incentives will be encouraged.

The National Environmental Policy 1997 is currently under review.

2.5.2 Draft National Environmental Policy, Version of May 2016

Relative to the 1997 Environmental policy, the 2016 draft policy begins by broadening the range of environmental issues considered to include *inter alia* climate change, invasive alien species, biofuels, genetically modified organisms (GMOs); and oil and gas management. The policy also highlights that the issues prioritised in the 1997 policy, remain relevant today. In the context of deforestation and land degradation the policy states that:

2.1 Deforestation remains alarmingly high especially in woodlands and natural forests where inappropriate agricultural practices are common.

2.5 Deforestation

Tanzania is still facing high deforestation and forest degradation of 372,000 ha per year². The main driver is the rapidly growing population, which is largely dependent on wood fuel to meet the daily energy needs. In addition, there are combined effects on the resources of expansion of settlements and agriculture, overgrazing, firewood and charcoal production, uncontrolled fires, timber extraction, development of infrastructure/industry, mining, refugees and most recently the introduction of large scale agriculture (e.g. biofuel production mainly in the general lands).

Here wood fuel demand for a growing population is presented as the main driver of deforestation and forest degradation, with agriculture cited as exerting additional pressure. This assumption that charcoal is the main driver of deforestation has been challenged by several authors including Chidumayo and Gumbo, (2013) and Mwampamba *et al.* (2013) who demonstrate that charcoal is primarily a driver of forest degradation whilst agriculture is the main deforestation driver.

The policy recognises the shortcomings of the 1997 policy and the persistence of environmental problems despite the 1997 Environmental Policy and goes on to emphasise the policy's foundation in Tanzania's vision of a future that embraces concepts of sustainable development.

3.0 Policy Justification

...this Policy aims at articulating ambitions and desire of the Government to improve environmental management in the country and support sustainable development and attaining better quality of life for present and future generations.

The policy mission and objectives retain an emphasis on coordination and mainstreaming of environmental issues as was prominent in the 1997 policy:

4.1 Vision

To have a healthy and sustainably managed environment for present and future generations.

4.2 Mission

To strengthen environmental management through mainstreaming environmental considerations into development actions.

Objectives

Overall Objective

To provide a national framework for guiding harmonized and coordinated environmental management for the improvement of the welfare of present and future generations.

2 MNRT (2013). *National Forestry Resources Monitoring and Assessment (NAFORMA)*. Tanzania Forest Services

In the context of this review, the most relevant specific objectives are as follows:

4.1.2 Specific Objectives

The specific objectives to realize the main objective are:

- i) To strengthen sectoral and cross-sectoral institutional and regulatory coordination for harmonization of planning and management of environmental issues;
- ii) To protect and conserve ecosystems and natural resources, and invaluable natural and man-made heritage;
- iii) To integrate and mainstream environmental concerns in all economic and social development actions;
- iv) To promote wider stakeholder participation in environmental management;
- v) To address emerging and other critical environmental issues including climate change, e-waste, invasive alien species, genetically modified organisms (GMOs), biofuels and chemicals management;
- vi) To accelerate environmentally and economically sustainable growth in order to improve the health, sustainable livelihood, income and living condition of the poor majority with greater equity and self reliance;

Relative to the 1997 policy, specific references to biodiversity conservation have been omitted.

Whilst the 1997 policy distinguished between cross-cutting themes and sectoral policies, the 2016 draft policy uses categories of: thematic, sectoral and cross-cutting issues and policies.

The 2016 draft policy retains forestry under the sectoral policies and issues, with the following objective and policy statements:

Objective

To promote forest management practices that ensure sustainable supply of forest products and ecosystem services

Policy Statements

- i) Promote measures to address the drivers of deforestation and forest degradation;
- ii) Ensure developments in forest areas comply to Environmental Impact Assessment and other environmental considerations; and
- iii) Promote programmes that contribute to poverty reduction and improvement of livelihoods for forest dependent communities.

Compared with the 1997 policy, there is less emphasis on tree planting and biodiversity conservation whilst greater emphasis is placed on the role of forests supplying forest products and ecosystem services; and on poverty reduction.

In terms of energy, a section on the energy sector has been excluded compared with the 1997 policy. Instead different energy carriers are covered separately. For example biofuels and oil and gas are treated as separate sections under thematic policies. Coal is not mentioned. The section on biofuels is ambiguous as to whether it refers to charcoal and could be interpreted as being focused on agro-biofuels such as jatropha.

Biofuels

Issues

Unsustainable biofuel production and processing can cause negative impacts on the environment such as extensive land clearance leading to loss of biodiversity and habitats as well as GHG emissions; social risks and conflicts that are associated with relocating local communities; soil degradation, nutrient and water depletion and pollution. Poor site-species matching result in poor performance of biofuels.

Objective

To promote sustainable production, processing, and utilization of biofuels.

Policy Statement

Promote environmentally friendly biofuels production and utilization.

Overall the draft National Environmental Policy is explicit in its support for forest conservation and reducing deforestation; and emphasises rural poverty reduction. However, the policy does not offer explicit support for sustainable charcoal production.

2.5.3 Environmental Management Act, 2004

The objective of the Environmental Management Act, 2004 is 'to provide for and promote the enhancement, protection, conservation and management of the environment.'

The Act provides the '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'.

The Act outlines the responsibilities of the Minister for Environment, Director for Environment and the National Environmental Management Council whilst emphasising that everyone has a duty to comply with and enforce the act.

The Act takes precedence over sector legislation.

'232. Where the provision of this Act is in conflict or is otherwise inconsistent with a provision of any written law relating to environmental management, the provisions of this Act shall prevail to the extent of such inconsistency'.

Although the Environmental Policy cites deforestation as one of the six major national environmental issues, no specific mention is made in relation to tackling deforestation. Instead forest sector issues are embedded in the more general principles enshrined throughout the act including:

- the precautionary principle;
- the principle of public participation in the development of policies, plans and processes for the management of the environment;
- the principle of of inter-generational equity and intra-generational equity.

2.5.4 National Climate Change Strategy, 2012

The national Climate Change Strategy is relevant to sustainable charcoal production given the complex relationship between charcoal and climate change mitigation and given charcoal's role as both a major driver of forest degradation and in its potential role in incentivizing sustainable forest management. Sustainable charcoal production also has potential to contribute to climate change adaptation by offering an alternative rural livelihood to agriculture. Early on in the strategy the policy identifies fuel-switching as a means for Tanzania to reduce greenhouse gas emissions with its concomitant assumptions that fuel-switching to coal will a) reduce greenhouse emissions; and b) reduce deforestation.

The 2012 National Climate Change Strategy underscores the fact that all countries have to play a role in addressing climate change consistent with their unique national circumstances. Tanzania will do its part, in particular by improving the energy availability to reduce deforestation, improve energy diversification and efficiency of her major energy consuming sectors, including, power generation, manufacturing, and transportation. Sustainable production and use of coal will remain central to ensuring the availability of affordable and reliable energy sources in the country.

With over 33.5 million hectares of forestry reserves and sizable rural land under forest cover, Tanzania's commitment to the conservation of its forests is timely, considering that these contribute to sustainable development and act as a sink of greenhouse gases produced elsewhere. The Strategy provides strategic interventions to ensure that the communities and the nation as a whole benefit from such global services.

The strategy describes its goal and objectives as follows:

The goal of the Strategy is to enable Tanzania to effectively adapt to climate change and participate in global efforts to mitigate climate change with a view to achieving sustainable development in line with the Five Years National Development plan; the Tanzania Development Vision 2025, as well as national sectoral policies. It is expected that this Strategy will reduce vulnerability and enhance resilience to the impacts of climate change. The implementation of the Strategy will enable the country to put in place measures to adapt to climate change and mitigate GHG emissions in order to achieve sustainable national development through climate resilient pathways.

Goal: To enhance climate change resilience of forests for continued supply of the ecosystems goods and services.

The specific objectives of this Strategy are:

- a) To build the capacity of Tanzania to adapt to climate change impacts.
- b) To enhance resilience of ecosystems to the challenges posed by climate change.
- c) To enable accessibility and utilization of the available climate change opportunities through implementation.
- d) To enhance participation in climate change mitigation activities that lead to sustainable development.
- e) To enhance public awareness on climate change.
- f) To enhance information management on climate change.
- g) To put in place a better institutional arrangement to adequately address climate change.
- h) To mobilize resources including finance to adequately address climate change.

With regard to the forestry sector the proposed strategic objectives and interventions are:

Strategic objectives

- a) To mainstream climate change aspect into forest management practices
- b) To promote use of lesser known tree species.
- c) To promote alternative livelihood to forest dependent communities.
- d) To promote use of non-timber materials
- e) To Promote deliberate greening activities

Strategic interventions

- a) Enhancing control of forest fire, disease and pest breakout.
- b) Enhancing conservation of forests biodiversity and control of invasive species.
- c) Supporting alternative livelihood initiatives for forest dependent communities.
- d) Promoting establishment of woodlots.
- e) Establishing comprehensive monitoring system for forest resources and ecosystem conditions
- f) Strengthening and up scaling of community based forest management best practices
- g) Promoting use of non wood construction materials.
- h) Promoting energy efficient technologies.
- i) Enhancing decentralization of forest management

In terms of the energy sector, the strategy's goal, strategic objectives and strategic interventions are:

Energy

Goal: To enhance resilience of energy sector to climate change.

Strategic objectives

- a) To promote and improve use of alternative energy sources.
- b) To promote use and acquire efficient energy technologies in household, public and industrial sectors

Strategic interventions

- a) Promoting diversification of energy sources including non – traditional.

- b) Supporting development and utilization of community based offgrids/mini-grids
- c) Promoting clean coal for energy generation.
- d) Promoting development and use of energy efficient technologies.
- e) Promoting application of cogeneration in industrial sector.
- f) Promoting energy plantations to reduce pressure on catchment natural forests.

Also of relevance are its goal, strategic objectives and strategic interventions on land use:

Land use

Goal: To have resilient land use plans (land Management systems) for sustainable development.

Strategic objectives

- a) To promote and enhance sustainable land use planning at all levels
- b) To mainstream climate change into land use planning.

Strategic interventions

- a) Reviewing and enforcing land use master plans.
- b) Exploring and promoting sustainable land management technologies.
- c) Promoting and supporting effective land use planning at all levels.

The National Climate Change Strategy recognises that Tanzania can contribute to global climate change mitigation efforts by reducing emissions of greenhouse gases from deforestation and forest degradation. It then goes on to propose strategies and objectives focused on tree planting and promoting alternatives to natural forest products. The strategy supports CBFM and improved protected area management as mechanisms to reduce deforestation.

2.6 Local Government and Finance

2.6.1 *The Local Government Finances Act, 1982*

This Act (including amendments made to it since its enactments in 1982 up to 30th June, 2000) is relevant to sustainable charcoal production as it sets out eligible sources of revenue for village councils and other layers of local government. The Act also prescribes how local governments funds and resources shall be managed. With regard to the management of funds at village level, the Act states that:

9.-(1) Subject to the following provisions of this section, and to such specific or general directions as the Regional Commissioner may, with the prior approval of the Minister, give to a district council, regarding the finances of villages, the revenues, funds and resources of a village council shall consist of-

- (a) all receipts derived from any trade, industry, works, service or undertaking carried on or owned by the village;
- (b) all moneys derived from licences, permits, dues, fees, charges or tariffs specified by any by-law made by the village council;
- (f) all moneys derived from fines imposed in respect of any contravention of any by-laws made by or in respect of the village council;
- (i) all taxes imposed on sources of income excluded from the requirements of sections 57, 58 and 79 of the Income Tax Act, and of the following type listed below collected within the boundaries of villages and non major trading centres:
....
 - (d) Charcoal business
 - (e) Timber sales
- (2) Subject to subsection (3), every village council may make by-laws to prescribe reasonable fees, charges and tariffs for any licence or permit issued by the village council.
- (3) Any fees, charges or tariffs prescribed under subsection (2) shall be subject to any limitations which may be imposed by any written law or to rates which may be prescribed by the district council in whose area of jurisdiction the village is situated.
- (4) Any other moneys lawfully derived by a village council from any other source not expressly specified in subsection (1) shall be and form part of the revenues, funds and resources of that village council.
- (5) Subject to subsection (6), all revenues of a village council shall be paid into the general fund of the village council. Act No. 21 of 1970 Act No. 23 of 1972 Act No. 33 of 1973 No. 9 Local Government Finances 1982 211
- (6) Any receipt derived from any trade, Industry, works, services or other undertaking carried on or owned by a village council in whole or in part may be paid into a separate fund to be maintained by the village council for the purposes of that trade, industry, works service or other undertaking, as the case may be, from which the revenue is derived.

2.6.2 *The Local Government (District Authorities) Act, 1982*

This Act aimed to make better provisions for local government. It provides the legal basis for the establishment and existence of districts, townships, divisions, wards and villages. The Act describes the composition and operations of District and Township Committees. Of significance in the context of this review is the power given to Village Councils and Village Assemblies. This is relevant to the sustainable charcoal model in that it defines the authority of the Village Council to make decisions over issues such as land use and forest management.

Functions of Village Government Organs

141. A village assembly is the supreme authority on all matters of general policy-making in relation to the affairs of the village as such, and shall be responsible for the election of the village council and the removal from the council of any or all of the members of the council and for the performance of any other functions conferred upon it – by or under the Act or any other written law.

142 (1) A village council is the organ in which is vested all executive power in respect of all the affairs and business of a village.

(2) In addition to any functions conferred upon it by or under this Act or any other written law, a village council shall:

- (a) do all such acts and things as are necessary or expedient for the economic and social development of the village;
- (b) initiate and undertake any task, venture or enterprise designed to ensure the welfare and well being of the residents of the village;
- (c) plan and co-ordinate the activities of and render assistance and advice to the residents of the vilalge engaged in agricultural, horticultural, forestry or other activity or industry of any kind.

This Act also provides the legal basis for villages' role in making by-laws.

2.7 Agriculture

2.7.1 The National Agriculture Policy 2013

As is stated in its foreword:

The National Agriculture Policy 2013 (NAP 2013) revolves around the goals of developing an efficient, competitive and profitable agricultural industry that contributes to the improvement of the livelihoods of Tanzanians and attainment of broad based economic growth and poverty alleviation. The Government is committed to bring about a green revolution that entails transformation of agriculture from subsistence farming towards commercialization and modernization through crop intensification, diversification, technological advancement and infrastructural development.

The policy's mission is:

To facilitate the transformation of the agricultural sector into modern, commercial and competitive sector in order to ensure food security and poverty alleviation through increased volumes of competitive crop products.

In terms of land, the policy states

'The National Agriculture Policy 2013 also takes into account the existence of huge potential and opportunities for development of the agricultural sector. Whereas 44 million hectares of land are suitable for agricultural production, only 10.8 million hectares (24 percent) are cultivated mostly under subsistence agriculture.

The potential exists for expansion of agricultural area under cultivation for small, medium and large-scale farming in areas with available land for expansion while intensive farming shall be applied in densely populated areas with the aim of commercializing agriculture in Tanzania.'

The policy is relevant in the context of this review for various reasons including:

- i. that charcoal is not mentioned once in the policy. Thus charcoal's absence from other policies cannot be attributed to its presence in the agricultural policy. Similarly woodfuels are not mentioned and energy is only mentioned in the context of bio-fuel crop cultivation.
- ii. that the policy promotes the expansion of crop production land and views the abundance of land as a key opportunity for achieving the policy's objective of increasing production. Thus agriculture is in direct competition with sustainable forest management as a land use. The policy explicitly recognises the role of agriculture as a driver of deforestation only in the context of the expansion of biofuel production. This is despite other research that highlights the role of other crops including maize and sesame cultivation in driving deforestation.
- iii. that the policy recognises the dependence of agriculture on the natural environment for water, soil erosion control and biodiversity.
- iv. that most charcoal producers are also small-scale farmers. Thus the strategies intended to change the agricultural practices of small-scale farmers are likely to impact their charcoal-producing activities.

In its treatment of Environment as a cross-cutting issue, the policy sets out the following objective and statements relevant to this review:

3.25.2 Objective

Agricultural practices that sustain the environment promoted.

3.25.3 Policy Statements

- iii) Public awareness on sustainable environmental conservation and environmental friendly crop husbandry practices (sustainable agriculture) shall be promoted;
- iv) The Government shall enforce environmental laws and regulations that minimize environmental degradation as of result of agricultural activities;
- vii) Efficient use of renewable natural resources shall be strengthened.

2.7.2 The National Livestock Policy, 2006

The vision, mission and overall objective of the national livestock policy, 2006 are as follows:

2.1 Vision

The livestock industry has a clear development vision, based on the Tanzania Development Vision 2025 which states that:-

“By year 2025, there should be a livestock sector, which to a large extent shall be commercially run, modern and sustainable, using improved and highly productive livestock to ensure food security, improved income for the household and the nation while conserving the environment.”

2.2 Mission

The mission of the livestock industry is:-

“To ensure that livestock resource is developed and managed sustainably for economic growth and improved human livelihoods”.

2.3 Objectives

The overall objective of the National Livestock Policy is to develop a competitive and more efficient livestock industry that contributes to the improvement of the well being of the people whose principal occupation and livelihood is based on livestock.

The policy does not mention charcoal at all. It is relevant to the current review because of conflicts that are arising frequently due to livestock grazing in village land forest reserves including in charcoal forest management units, with implications for the rate of woodland regeneration. Pastoralists are also known to use fire as a means to clear undergrowth in woodlands in order to stimulate fresh growth of grass as fodder for cattle; to keep the understorey open to ease the passage of the livestock and to make it easier to spot potential livestock predators.

The policy includes 20 million hectares of ‘fallow and forestland’ in its estimate of the national rangeland resource.

In keeping with other policies’ focus on fuel-switching the livestock policy states that:

Bio-gas utilization is environmental friendly as it reduces use of fuel wood thus minimizing deforestation, and fosters organic farming.

And includes the policy objective:

To promote the production and utilization of manure and bio-gas in order to improve the livelihood of livestock farmers while conserving the environment.

The policy recognises the link between livestock and deforestation in the following statement:

Increased livestock populations and human activities related to livestock production in some areas of the country have resulted in over exploitation of natural resources. This has led to over grazing, soil erosion, deforestation, destruction of water sources and environmental pollution.

2.8 Water

2.8.1 National Water Policy, 2002

The main objective of the National Water Policy is to develop a comprehensive framework for sustainable development and management of the Nation's water resources, in which an effective legal and institutional framework for its implementation will be put in place.

The policy distinguishes between three key areas:

- (i) Water Resources Management,
- (ii) Rural Water Supply, and
- (iii) Urban Water Supply and Sewerage.

Although the policy does not mention charcoal at all, it does recognise that, *'forests have an important effect on the conservation of water resources'* and specifically refers to deforestation as being *'responsible for soil erosion which contributes to generating sediments that are eventually deposited in reservoirs, thereby reducing their storage capacities and hence useful life.'*

In its review of the energy sector, the policy equates energy with electricity stating that:

More than 60% of energy produced in the country, is from hydropower plants and more potential is available for development, for instance, in River Mara and River Kagera. However, development of hydropower in these rivers requires agreements among riparian countries.

2.8.2 Water Resources Management Act, 2009

The Act *'provides for the institutional and legal framework for sustainable management and development of water resources; to outline the principles for water resources management; to provide for the prevention and control of water pollution; to provide for the participation of stakeholders and the general public in implementation of the National Water Policy, repeal of the Water Utilization (Control and Regulation) Act and to provide for related matters.'*

3) Discussion

3.1 General review of sector policy instruments in the context of sustainable charcoal production

Although charcoal is the main form of cooking energy for urban households, there is no overall policy guiding charcoal production, trade and consumption. Instead multiple policies influence the charcoal trade. The most detailed policy guidance is found at the production end of the value chain where the forest policy and related policy instruments provide implicit and explicit statements relevant to charcoal production and transportation. Forest sector policy instruments support the integration of sustainable charcoal production in community based forest management. Supportive statements are found across various policy instruments. The Environmental Policy also supports sustainable production. The Energy policy is silent on sustainable charcoal production. More explicit, detailed and consolidated guidance on the integration of sustainable charcoal production in CBFM would help to foster a clearer, shared understanding of national policy amongst the diverse stakeholders involved.

Several policies including the energy, forest and environment policies present Tanzania's dependence on charcoal as a national problem. These policies consistently support fuel-switching and tree planting as strategies to reduce the deforestation and forest degradation caused by charcoal production.

3.1.1 Forest Sector

Various forestry sector policy instruments including the National Forest Policy, the Forest Act and related regulations support sustainable harvesting from natural woodlands and set rules around production and transportation. Policy instruments consistently require that harvesting be based on sustainable harvesting plans; and that efficient kilns be used. The Forest Act provides the legal basis for integrating sustainable charcoal production into community based forest management and grants communities legal control over all forests on village land. The Forest Act also grants villages the exclusive right to charge royalties for produce from village land forest reserves. This is particularly important for the sustainability of CBFM as it allows communities to retain revenues that they can then directly re-invest in the management of the village forest reserves. Although Forestry policy instruments do provide a supportive framework for sustainable charcoal production, it is not explicitly supported.

Most recently, the 2016 MoU between TFS and PO RALG suggests a preference for granting greater control to TFS i.e. Central Government for the management of forests on village land rather than addressing the Local Government Authorities' capacity constraints in relation to sustainable forest management on village land. As highlighted in other studies, TFS revenues over the last decade have increased on the back of widespread illegal harvesting. If harvesting is controlled and if Districts and Villages wrest control of their forests and thereby turn off the flow of charcoal royalties to TFS, where is TFS going to get its revenues from? This apparent conflict of interest within the forestry sector urgently needs to be addressed.

3.1.2 Energy Sector

Woody biomass supplies 85 % of the energy consumed in Tanzania (URT, 2015). Not one of the 101 policy statements in the 2015 National Energy Policy addresses woodfuel consumption. The Ministry of Energy and Minerals has washed its hands of responsibility to provide oversight for the supply of energy for cooking for the majority of rural and urban households.

In general there is a significant disconnect between the way that charcoal is treated in national policies and its economic importance. This is most apparent in the National Energy Policy 2015 where the policy recognises that woodfuel is the most widely used form of energy in Tanzania but then omits to provide any policy objectives or statements to provide national guidance on how woodfuel should be managed. Whilst the policy is explicit in its aim of shifting Tanzania towards electricity and fossil fuels, the reality now and for at least the next 10 – 20 years, is that the majority of Tanzanians depend on woodfuel for cooking. Thus the policy fails to provide much-needed policy guidance on sustainable energy supplies for the majority of rural and urban households. The policy may therefore be seen as primarily serving an urban elite and the electricity generation and fossil fuel industry. Whilst rural electrification is promoted by the policy, this is primarily in the context of lighting and rural enterprise development rather than for domestic cooking.

Whilst the promotion of electricity and fossil fuel use are valid policies in the context of growing national energy demand and broader development goals, a policy should also provide clear guidance on how to manage the present situation. By focusing on a solution that may only be achievable for the majority of Tanzanians in 20 years or so, it leaves a policy vacuum around the present situation. This lack of guidance is a major factor driving the uncontrolled and unsustainable woodfuel production in Tanzania. Most households have no choice but to cook with charcoal or firewood. By failing to provide policies and strategies as to how this can be supplied in a sustainable way, the Government must accept responsibility for the uncontrolled and destructive trends that characterise the current supply chain.

The Ministry of Energy and Minerals appears to have ‘washed its hands’ of taking responsibility for overseeing ‘traditional’ energy. In the foreword to the National Energy Policy the Minister states that the role of the policy is to ‘enhance provision of adequate, reliable and affordable modern energy services to Tanzanians in a sustainable manner’ and that the role of MEM is to lead the implementation of the policy. If that is the case then which ministry is responsible for ‘traditional’ energy? Whilst the Ministry of Natural Resources and Tourism provides some oversight in relation to harvesting and transportation of charcoal as a forest product, MNRT’s remit is certainly not to ensure sustainable national energy supplies. There is a strong case to be made for MEM to fulfill a role in ensuring a sustainable supply of ‘traditional energy’ as part of a transitioning process. With the National Energy Policy now approved this will require a separate biomass policy. In the absence of a higher level policy anchor, the long-awaited Biomass Energy Strategy is unlikely to trigger the political support that is needed to address this challenging area.

3.1.3 Land

Fundamental to Tanzania’s land policy is the principle that *‘rights and title to land under any consolidated or new land law will continue to be based mainly on use and occupation’*. Since maintaining forest or woodland for the sustainable harvesting of forest products including charcoal is not formally recognised as a valid ‘use’, the land policy incentivizes land owners to clear woodland and forest or risk their right of occupancy. Formal recognition that sustainable forest management is a recognised use for land would remove this incentive to clear forest as a means to demonstrate occupancy. Other policy instruments in the land sector are significant in establishing community authority over village land and for the clear distinction that is made between village land and general land. The Village Land Act’s definitions of village land are particularly significant in this context.

3.2 Comparing sustainable charcoal production with other policy solutions

There is a deep-rooted antipathy towards charcoal in Tanzania. Given the chaotic and destructive nature of the trade at present, this is understandable. However, many of the policy solutions that are proposed to address this, are flawed or limited in potential scope particularly from a forest conservation and rural development perspective. In this section we briefly review some of the policy options frequently proposed.

3.2.1 Tree planting

Several policies including the forest policy and national climate change strategy propose that more trees should be planted as a source of biomass for wood fuel production. The logic for this suggestion is that if charcoal can be produced from plantations, pressure on natural forests will be reduced. In that way deforestation will be reduced and there will be a well-controlled supply of wood as an alternative input source for charcoal production.

Analysing this option

Tree planting does have a role to play in a longer term sustainable energy strategy. However it will only address deforestation if combined with incentives to maintain natural forest cover and / or to put in place effective deterrents to deforestation. Tree planting in isolation will not prevent deforestation and, under some circumstances, may even drive conversion of natural woodland to exotic plantations or agriculture.

Deforestation in Tanzania is largely driven by agriculture with charcoal production often comprising a step on the pathway from forest land to farm land. Whilst planting trees could provide an alternative biomass source to natural woodland for charcoal production it does not prevent the forest from being cleared for agriculture. Therefore preventing deforestation also requires policies that tackle the conversion of forest land to agriculture by changing agricultural practices as well as changing policies that promote

the expansion of agricultural land; and through policies that encourage communities to maintain natural forest cover.

From an economic perspective trees in unreserved natural forests are low cost inputs to the charcoal value chain. The main cost of natural forest trees is the labour required in accessing the tree i.e. the walking time and effort to reach the tree. This compares with the multiple costs associated with tree planting including accessing tree seeds, managing a tree nursery, protecting a tree seedling from fire, foraging, weeds and disease as well as the opportunity cost of allocating farm land to tree cultivation. As such it is more rational for a charcoal producer to select the low cost input of wood from an unreserved forest tree than it is to expend labour and resources in cultivating a tree. Thus, for charcoal producers to select a planted tree as the input to charcoal production compared with an unreserved forest tree, the natural forest tree needs to be made more expensive. Otherwise the charcoal producer, as a rational economic being, will select the low-cost natural forest tree rather than expending resources in cultivating a planted tree. Again this points to the importance of establishing natural forest management alongside tree planting in order to establish cost barriers to accessing natural forest trees in the form of harvesting permit fees and / or risks of fines for illegal harvesting.

In addition, tree owners are more likely to sell their planted trees for timber and poles than to convert it to charcoal given the higher prices that they can secure for those products. It is therefore a flawed assumption that tree planting will reduce deforestation in the absence of measures to limit access to natural forest trees. Furthermore tree planting in the absence of increased protection for natural forests is likely to result in an increased supply of timber but is unlikely to substitute natural woodland for charcoal production. The biggest challenge in conserving forests on village land is to provide an incentive for farmers, land owners and village leaders to choose to maintain forests rather than to convert that forest land into farm land.

Put simply, programmes that aim to promote tree planting run three key risks. Firstly they are based on an empirically unproven and conceptually flawed assumption that planted trees will replace natural forest trees as an input to charcoal production given that tree owners are more likely to sell their trees for timber or poles than for charcoal; and are likely to continue to prefer the low-cost natural forest trees as an input to charcoal production.

Secondly they give the impression of 'doing something' to address deforestation without actually tackling the underlying deforestation driver i.e. conversion of woodland to agricultural land resulting in the allocation of resources to tree planting instead of investing those resources in the management of natural forests or in strategies to address the underlying deforestation driver i.e. agriculture. In a resource-stretched sector like the forestry sector this displacement of effort and resources is particularly inefficient.

Thirdly they incentivize farmers to replace indigenous vegetation / woodlands and forests with monocultural plantations of exotic tree species. This may be very directly where natural vegetation is directly converted to plantations or indirectly by displacing agriculture from the plantation area into natural forest. Such programmes are effectively paying farmers to convert natural forest into pine, eucalyptus or teak plantations and reinforce the perception that exotics are better than indigenous species. This is problematic for ecological reasons including the loss of biodiversity values and replacement of the natural ecosystems with monocultures. Economically it is also inefficient since it costs more to establish and manage a plantation of exotic tree species than to manage an area of regenerating natural woodland.

3.2.2 Charcoal bans

Tanzania has a history of national and local charcoal bans. The logic in this approach is that if charcoal is made illegal, it will deter producers from making charcoal and will force charcoal users to switch to alternatives.

Analysing this policy option

Charcoal bans have not worked because: i. the Government cannot enforce them given the vast number of people who are involved in the trade and consumption of charcoal; ii. the lack of affordable alternatives; and iii. charcoal's role in meeting households' fundamental need to cook. Historically charcoal bans have been linked with increased prices and corruption in the charcoal sector without contributing to improving the sustainability of supply.

3.2.3 Fuel switching

The National Energy Policy 2015, National Forest Policy 1999 and National Climate Change Strategy all promote fuel-switching as a solution to the problem of charcoal driven deforestation i.e. adoption of electricity, LPG and kerosene for cooking instead of charcoal and fire wood. Some critics complain that efforts to promote sustainable charcoal are 'regressive' and even characterise such efforts as an attempt to prevent Tanzanians from enjoying the benefits of modern energy sources.

Analysing this policy option

Whilst this would seem to be a logical solution it is problematic for three reasons:

- i. models project that most Tanzanians will use woodfuel (charcoal or fire wood) for cooking for at least the next 20 years given persistent economic and cultural barriers to adopting electricity, LPG and kerosene for cooking. Electricity and LPG are too expensive, inaccessible and unreliable for the majority of households.
- ii. Models also show that whilst the number of households switching to other fuels is increasing, so is the total number of urban households due to population growth and rural-urban migration. Thus whilst the absolute number of households using alternatives may be increasing, the % is shifting more slowly due to rural-urban migration.
- iii. The focus on fuel-switching has become an excuse not to look strategically at how biomass energy demand is going to be met over the next 20 years. From an energy security perspective, there is no clear plan as to how Tanzania's growing urban populations are going to meet their domestic energy needs. Where is the fuel going to come from? Where are the trees that are going to be cut down to supply all the charcoal that is fuelling the cities? Leaving it out of national policy means leaving those decisions to the hundreds of thousands of producers currently transforming woodlands to charcoal.

Whilst fuel-switching should remain part of the policy response, a policy should also provide clear guidance on how to manage the present situation. By focusing on a solution that may only be achievable in 20 years or so, it leaves a policy vacuum around the present situation.

4) Conclusions

In terms of sustainable charcoal production, at the policy level, no national policy explicitly supports sustainable charcoal production from natural woodlands. Sustainable charcoal is implicitly supported in forestry sector policy instruments and deliberately ignored in the National Energy Policy. The strategies selected to address problems associated with the current charcoal market include tree planting, fuel switching and criminalisation of the trade. These options are conceptually flawed and lack empirical evidence of their effectiveness. More constructive, innovative and strategic thinking is needed in order to match the reality of the charcoal trade with broader objectives on sustainable forest management and rural development. There are opportunities for the forestry sector to contribute significantly to achieving Tanzania's Development Vision 2025 but it requires a change of course and high level leadership.

5) Recommendations

Forest Sector

It is recommended that the National Forest Policy currently under revision, explicitly recognises the potential for sustainable charcoal production to incentivise community based forest management. The policy should include a policy statement explicitly supporting sustainable charcoal production in CBFM areas. Given the scale of the trade, it is important that the Government issue clearer policy statements and guidelines on the integration of sustainable charcoal production into Village Land Forest Reserves and unreserved village land forests.

It is recommended that forest policy instruments remain consistent in their alignment with the definition of village forests provided in the Forest Act including recognition of 'forests which are not reserved, which are on village land and which the management is vested in the Village Councils' and should avoid categorising such forests as general land. Previous drafts of the National Forest Policy currently under review include references to General Land that appear to contradict the categorisation of land by the Land Act 1999 and the Village Land Act 1999.

It is recommended that more accurate and detailed data on the origin of TFS revenues be collected as a basis for an open and constructive discussion on TFS's awkward dependence on revenues from charcoal fees. Available data suggest that TFS is dependent on revenues from the current flow of unsustainably harvested charcoal from village land and that if charcoal harvesting is brought under the control of LGAs, TFS revenues would be significantly reduced. Given significant political pressure on TFS to meet revenue targets this information is critical since it lies at the heart of a potential conflict of interest affecting TFS. The conflict of interest can be described as follows. TFS performance is measured (in part) in terms of the revenues that it collects. It appears that a significant proportion of the revenues that TFS collects come from charcoal produced from village land. If villages were to wrest control of those forests by including them in village land forest reserves, this source of revenue to TFS would dry up and TFS would not meet its revenue collection targets. There is therefore a risk that TFS may not proactively support and may even obstruct the integration of charcoal production into CBFM in order to meet its revenue performance targets. The absence of data on the proportion of TFS's revenues currently coming from charcoal has concealed the scale TFS's dependence on unsustainably produced charcoal. However it seems likely that the current, almost complete absence of sustainable charcoal harvesting plans in Tanzania is due, at least in part, to TFS's right to collect revenues from charcoal from village land so long as the charcoal is not produced according to a sustainable harvesting plan. Ironically this also suggests that TFS's accountability for revenue generation is aligned with the current pattern of un-managed and environmentally destructive charcoal production.

It is recommended that more government resources be allocated to the management of Central Government Forest Reserves irrespective of TFS revenues from charcoal and other forest products. For TFS to fulfill its mandate to manage protective Central Government Forest Reserves, as set out in the Forest Act 2002, they need to be granted alternative funds to break the dependence on revenues from unsustainably harvested charcoal.

It is recommended that strategies be put in place to improve the monitoring of the charcoal trade and to establish transparent reporting practices.

It is recommended that TFS and LGAs consistently implement the Forest Act's requirement for sustainable harvesting plans to be in place and to be complied with prior to issuing harvesting permits.

It is recommended that more support be provided by local government authorities for the establishment and expansion of CBFM including sustainable harvesting.

It is recommended that more research be conducted on cost-effective mechanisms to achieve well-governed CBFM.

It is recommended that the Government and Development Partners critically review the pros and cons of prioritising tree planting over natural forest management as a strategy for securing sustainable supplies of forest products including timber and woodfuel. The assumptions underpinning the decisions to invest

orders of magnitude more in tree planting than in natural forest management should be critically and participatorily reviewed. In reviewing the relative costs and benefits, the review should consider the broader benefits generated by natural woodlands including their contribution to ecosystem services and climate change adaptation and mitigation.

It is recommended that MNRT work more closely with Ministry of Agriculture, Livestock and Fisheries to address policy conflicts between agricultural policies and practices promoting the conversion of forests to farms and forest policies promoting forest conservation.

Energy Sector

It is recommended that the Ministry of Energy and Minerals provide leadership on traditional energy that goes beyond the promotion of fuel-switching.

It is recommended that a national biomass energy policy be adopted with clear strategic guidance on how the country is to meet the rigid, widespread demand for woodfuels.

Land Sector

It is recommended that sustainable forest management be explicitly recognised as a valid category of land use in order to encourage private land owners to select woodland management and to avoid the incentive to clear forest as a way to demonstrate 'use' and therefore tenure.

It is recommended that more investment is provided for private natural forest reserves in order to encourage private land owners to maintain woodlands and to contribute to the sustainable supply of wood products including charcoal.

It is recommended that ambiguities regarding the control of unreserved forests on village land be ironed out.

It is recommended that more effort be put into resolving boundary disputes between villages in order to safeguard forests in contested areas.

Local Government

It is recommended that LGAs be supported to prepare, implement and monitor sustainable district harvesting plans.

It is recommended that mechanisms be established to embed CBFM in district plans and budgets.

It is recommended that the capacity of LGAs to use remote sensing for managing and monitoring forest product harvesting be increased.

6) References

- Camco Clean Energy (Tanzania) Limited, 2014. *Tanzania Biomass Energy Strategy and Action Plan*. Africa-EU Renewable Energy Cooperation Programme. P. 138
- Chidumayo, E. N. and Gumbo, D. J. 2013. The environmental impacts of charcoal production in tropical ecosystems of the world: A synthesis. *Energy Sustain. Dev.* 17 (2), 86 – 94.
- Food and Agriculture Organisation, 2004. *Unified Bioenergy Terminology*. Rome: Food and Agriculture Organisation of the United Nations. P. 50.
- Forestry and Beekeeping Division, 2007. *Community-Based Forest Management Guidelines*.
- Forestry and Beekeeping Division, 2009. *Draft National Woodfuel Action Plan*.
- Mbwambo, L. 2015. The distribution of powers and responsibilities affecting forests, land use, and REDD+ across levels and sectors in Vietnam: A legal study. <http://doi.org/10.17528/cifor/005649>
- Ministry of Energy and Minerals, 2011. *Strategic Plan 2011/12 – 2015/16*.
- Ministry of Natural Resources and Tourism, 2013. *Joint Forest Management Guidelines*.
- Ministry of Natural Resources and Tourism, 2015. *Ujue mwongozo wa uvunaji endelevu na biashara ya mazao ya misitu*. p 1-2. Dar es Salaam.
- Tanzania Forest Services Agency, 2013. *Guidelines for Harvesting in Village Land Forest Reserves*. Pp 1 – 8. Dar es Salaam.
- Tanzania Forest Services Agency, 2013. *Tanzania Forest Services Agency Strategic Plan*. July 2014 – June 19.
- Tanzania Forest Services Agency, 2015. *Mwongozo wa uvunaji endelevu na biashara ya mazao ya misitu yanayovunwa katika misitu ya asili*. P 1 – 24. DSM.
- Tanzania Forest Services Agency, 2015. *Public Notice regarding procedures for trade in forest products*.
- Tanzania Forest Services Agency, 2015. *Kutangaza taarifa kwa umma juu ya kuzingatia taratibu za biashara ya mazao ya misitu*. http://www.tfs.go.tz/uploads/TAARIFA_KWA_UMMA.pdf
- United Republic of Tanzania. *The Constitution of the United Republic of Tanzania, 1977*. Cap 2.
- United Republic of Tanzania, *The Local Government Finances Act, 1982*. Act No. 9 of 1982.
- United Republic of Tanzania, *The Local Government (District Authorities) Act, 1982*. Act No. 7 of 1982.
- United Republic of Tanzania, *National Land Policy, 1997*.
- United Republic of Tanzania, *National Environmental Policy, 1997*.
- United Republic of Tanzania, *National Forest Policy, 1998*.
- United Republic of Tanzania. *The Tanzania Development Vision, 1999*.
- United Republic of Tanzania, *The Land Act, 1999*. Act No. 4 of 1999. Cap 113.
- United Republic of Tanzania, *The Village Land Act, 1999*. Act No. 5 of 1999. Cap 114.
- United Republic of Tanzania, *The Forest Act, 2002*. Act No. 14 of 2002.

United Republic of Tanzania, National Water Policy, 2002.

United Republic of Tanzania, National Energy Policy, 2003.

United Republic of Tanzania, The Environmental Management Act, 2004. Act No. 20 of 2004.

United Republic of Tanzania, The Rural Energy Act, 2005. Act No. 8 of 2005.

United Republic of Tanzania, The Forest (Charcoal Preparation, Transportation and Selling) Regulations, 2006 (GN 69).

United Republic of Tanzania, National Livestock Policy, 2006.

United Republic of Tanzania, The Water Resources Management Act, 2009. Act No. 11 of 2009.

United Republic of Tanzania, National Agriculture Policy, 2013.

United Republic of Tanzania, National Forest Policy (Draft), 2014.

United Republic of Tanzania, Forest (Amendment) Regulations, 2015 (GN 324)

United Republic of Tanzania. The National Energy Policy, 2015b.

United Republic of Tanzania, the National Five Year Development Plan 2016/17 – 2020/21, 2016.

United Republic of Tanzania, National Environmental Policy (Draft), 2016.

United Republic of Tanzania, 2016. Memorandum of understanding to strengthen collaboration on forest governance and management between the Ministry of Natural Resources and Tourism and President's Office Regional Administration and Local Government

Vice President's Office, United Republic of Tanzania. 2012. National Climate Change Strategy.

