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Bioenergy Policy Review in Tanzania

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WORKING GROUP**

PISCES

Policy Innovation Systems for Clean Energy Security (PISCES) is a five-year Research Programme Consortium funded by the UK's Department for International Development (DFID) to develop new knowledge for the sustainable use of bioenergy to improve energy access and livelihoods in poor communities. PISCES is led by the African Centre for Technology Studies (ACTS), Kenya with lead partners Practical Action, M.S. Swaminathan Research Foundation (MSSRF), the University of Dar es Salaam and the University of Edinburgh, together with a network of national and international partners and collaborators.

Policy Working Group (PWG)

The Policy Working Group (PWG) of PISCES is an expert working group whose objective is to develop a consultative and participatory policy methodology to discuss the policy issues and guide policy statements on bioenergy. The group, with focus on Kenya and Sri Lanka, aims to achieve this by bringing together policy makers, stakeholders and experts to develop a combined methodology on participatory policy dialogue and apply the same in developing bioenergy policy.

Summary

Biofuel is a fast growing sector in Tanzania. Some companies are acquiring big tracts of land, some up to 400,000 hectares for growing biofuel crops. It is believed that the country has a reserve of 88 million hectares for agriculture. The government is committed to promoting the sector through providing attractive incentive packages for investors. But the biofuels sector presents both opportunities and risks and the outcome would depend on the specific context of the country and the policies. This report is a result of review work done on policies, laws and strategies related to bio-energy. It also combines a review from other research work locally and internationally. The major findings are that most of the current policies are silent on the bio-energy sector. This is not surprising as commercial biofuel is relatively new in the country. Nevertheless, the impact of biofuel in the country has started to emerge. Major issues of concern have been on land acquisition and compensation procedures. The issues of sustainability (economic, social and environment) are also pertinent, making the need of having a Biofuel policy in the country urgent. There are also issues of rural poor and access to clean bio-energy which has been a big challenge since independence and it is not clear as to how this booming sector will benefit the Tanzania economy and in particular the rural poor.

Introduction

In recent years there has been a growing interest in the biofuel sector in Tanzania. Local and multilateral companies are acquiring big portions of land, some in the range of 400,000 hectares in many parts of the country (Silayo et. al. 2008). Nearly half of Tanzania's land area has been identified as suitable for biofuel production (GTZ 2005). It is argued that Tanzania has the potential of becoming a world

leader in biofuel production from its 88 million hectare reserve (Kearney, 2006) and less than 6 per cent of this land has been utilised. Also there is strong government commitment to the promotion of the sector and the investment climate is favourable (URT 2008). This paper is about bioenergy policy review in Tanzania. The objectives and rationale for reviewing bio-energy related policies is therefore:

- To address missing/critical issues in the current biofuel related policies and laws to be taken on board in the upcoming Biofuel Policy,
- Despite the long term research and efforts on clean bio-energy over 90per cent of Tanzanians still use biomass (firewood and charcoal) as their primary source of energy. Majority are still using the inefficient and destructive methods. The review wishes to address the question: what has gone wrong and how the upcoming policy should address this?
- Biofuels present both opportunities and risks. The outcome would depend on the specific context of the country and the policies adopted. The review intends to identify the opportunities and risks.
- Biofuel policies are needed to preserve the goal of food security, protect poor farmers, promote broad-based rural development and ensure environmental sustainability. The study will to assess whether the existing policies addressed these basic needs.
- The demand for agricultural feedstocks (sugar, maize, oilseeds) for liquid biofuels will continue to grow, putting upward pressure on food prices. The survey intends to assess how the policies will affect future demands.
- In Tanzania, we have started experiencing problems of biofuel-related policies, especially on land issues and compensation. The study will take inventory of the problems faced so far and assess potential for such problems in future.

This report presents findings from policies, laws, plans and strategies reviews in relation to biofuel. The report also includes a review from other research work in the sector worldwide.

Review Of The Bio-Energy Related Policies

The National Forest Policy (1998)

This policy intends to ensure sustainable supply and use of forest products including bio-energy, firewood and charcoal through participation of key stakeholders in joint forest management and communal based forest management. The overall goal of the New 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 policy highlights the importance

of forest resources in rural areas as the main source of energy and probably the only source of energy by the majority.

The policy further acknowledges fuelwood and charcoal as one of the income generating activities besides agriculture to rural and urban people in all regions of Tanzania. For women, harvesting fuelwood from natural forests and selling could earn about Tshs18,000 per month while for charcoal producers the average monthly profit is about Tshs62,000. The ongoing large scale biofuel invest-

ment is likely to reduce access to these natural resources and this will affect the livelihood options by the rural communities.

On forest management, the policy advocates joint management of resources between the government and communities and other local bodies and other decentralized concerns that in most cases have a stake in the resource. This is what is suggested in the forest policy to ensure sustainable management of forests. The policy also captures this new thinking and communities and other local bodies and private individuals will be allowed to manage natural forests and get the financial incentives to establish private forests. However, the policy has put little emphasis on establishing more woodlots for biofuel; which is threatening the sustainability of livelihoods in rural areas. Furthermore, the policy does not consider commercial biofuels.

The National Energy Policy (2003)

In Tanzania solid bioenergy (woodfuels, agro/forest residues) still accounts for 90 per cent of total energy consumed, while modern commercial energy contribution is as follows: petroleum 7 per cent, electricity 1.4 per cent others 1.6 per cent (TaTEDO 2008, Energy Policy 2003). This policy intends to promote efficient conversion and use of bio-energy to reduce land degradation, deforestation and mitigate climate change. However, generally speaking, the energy policy in Tanzania is not clear and lacks proper guidance from the government in the form of policy goals and strategies defining the energy sector and energy development. At the moment, it is not clear which energy type Tanzania is prioritizing for the transport sector between gas, oil or biofuel. It is also not clear which transport system Tanzania is promoting or will promote in the short and long term. Tanzania seems to be supporting all forms and types of energy from gas, hydro-power, coal, diesel powered generators, biomass and biofuel, but it will be difficult to develop all of these (WWF 2008). Choices and priorities have to be made about which form of energy use should be prioritised. The bioenergy sector in Tanzania could be better guided if these issues were resolved. Like

the National Forest Policy, Bioenergy Policy is silent on woodlot biofuel development for sustainable fuelwood (firewood and charcoal) production in the country. Also this policy is silent on commercial biofuels. For example, it does not provide guidance on whether biofuels have to be processed to their final use form or transported raw or in crude form for processing abroad and then import finished goods.

3.2 Draft guidelines released by the NBTF in September 2008

The guidelines on biofuel policy are a good step towards regulating the biofuel sector. The NBTF (NBTF in full) guidelines outline that the biofuel industry will promote sustainable development and improve the livelihoods of Tanzanians. However, the guidelines remain unspecific about how these goals will be achieved. The document also states that in order to reduce the anticipated risks and capture the opportunities, it will be necessary to take into consideration issues of sustainability in tandem with principles of sustainable development. There is no principles outlined and some of the suggestions are actually contrary to the stated goal of sustainable development like the issues about land and impact on biodiversity.

The main positive features of the NBTF on biofuel

The potential benefits of biofuels are immense, and they include among others:

- Enhancing energy security, especially in the transport sector;
- Creation of employment and diversification of rural economy;
- Creation of market for agricultural energy crops;
- Saving of foreign exchange equal to the value of imports substituted;

- Contribution to cleaner environment through reduction of green house gases and other vehicular emissions;
- Potential to halt deforestation and desertification, as they include drought resistant crops like *Jatropha curcas*, Sisal, Cassava and Sweet Sorghum;
- Renewability;
- Replacing fossil fuels especially in vehicles;
- Facilitates technology transfer;
- Enhancing food security

However, the impact so far contradicts some of these objectives. Some companies are blamed for causing deforestation and clearing of forest even in areas considered to be of high biological value. In addition, none of the risks associated with each of these benefits are addressed like how the issues of food security will be enhanced if highly productive land is given over to large-scale plantations growing feedstock for biofuel? Some companies have attempted to invest in paddy cultivation areas in the south of Tanzania, thus reducing the areas under food production.

The document then states that properly implemented biofuel projects will bring about a win-win situation to all involved parties. However, it is not clear what are these win-win situations and how they will be achieved. Furthermore, the document does not include the issue of transparency in regards to the process of decision making and granting of biofuel investments, allocation of land, benefits sharing and creation of linkages with local economy. For example, it is stated that the Biofuels One Stop Centre is responsible for coordination, endorsement and monitoring biofuels investments and development in the country. The Biofuels One Stop Centre is also the source of information on biofuels development in the country. But the role and mandates of other key institutions such as the

Ministry of Energy and Minerals (MEM), and the Tanzania Investment Centre (TIC) are not clear in the document.

Of serious concern, is that these guidelines and policies do not specifically give direction on the final form of biofuel and it is silent on the energy access of the rural poor who reside on these vast farms of biocrops.

3.4 The National Land Policy, 1997

Land is at the centre of biofuels production. This is because large tracks of land are required to gain maximum profit from biofuels for both ethanol (as in the case of sugar plantation) and biodiesel (in the case of oil crops production).

The policy recognized the confusion and uncertainty regarding land tenure and management authority over most land in Tanzania. The policy sought to dispel this confusion by reiterating the government of Tanzania's general underlying right to land, but clearly recognizing and clarifying customary and other use rights to land.

The overall aim of the National Land Policy is to promote and ensure a secure land tenure system, to encourage the optimal use of land resources, and to facilitate broad-based social and economic development without endangering the environment. Some of the specific objectives of the policy include:

- To promote an equitable distribution of, and access to, land by all citizens
- To ensure that existing rights in land, especially customary rights of smallholder peasants and herdsmen are recognized, clarified and secured in law
- To streamline the institutional arrangements in land administration and land dispute adjudication and also make them more transparent, and
- To protect land resources from degradation for sustainable development.

Despite all these, the policy has its own weaknesses. The main weakness of the policy is to treat land as valueless, and because of this, large pieces of land are taken from farmers free of charge except when there are some investments. While the policy does not allow for land sale, the developers are taking land from villagers for so many years, some up to 99 years. This not only denies rural people access to the land for livelihoods, but also compensation for the lost livelihoods.

The National Water Policy

Tanzania's policy has changed from free water to purchasing water. Many investors on biofuel projects are now buying water rights for irrigation purposes. Water is needed to produce feedstocks as well as convert plant material into fuel. According to Sexton et. al. (2009), evapo-transpiration by energy crops constitutes much of the water consumed in biofuel production. By some estimates, the water consumed by energy crops through evapo-transpiration could by 2110 meet and even exceed the total water used for evapo-transpiration by global croplands in 2002 (Fingerman and Torn, 2008). Furthermore, as prices for agricultural commodities rise because of biofuel-induced demand, farmers will also find it profitable to use more chemicals per unit of land. Higher input prices could also induce the adoption of pest-control technologies, but unless such conservation is considerable, more chemical use will lead to increased pollution of water resources from farm runoff and groundwater percolation (Sexton et. al., 2009). Also there is lack of data and information to inform policy and strategies for balanced water allocation, and inadequate funds for operation, maintenance and expansion of water supply systems (Kashaigili et. al. 2003).

Environmental Policy (1997) encourages investment in biomass development vital for environmental protection and poverty reduction. No specific reference is made to liquid biofuels. The National Environmental Law of 2004 also requires all projects on biofuel to undergo mandatory EIAs. Nevertheless, most of the EIAs have been weak and as such do not help in decision making (Mwakaje

2010, WWF 2008). One of the reasons has been low capacity among the EIA practitioners; but corruption and poor governance has also contributed to ineffective EIA as decision making tools.

Agriculture and Livestock Policy (1997) promotes sustainable food security, income generation, employment and export enhancement through use of environmentally friendly practices and technologies. However, the policy has no specific issues on biofuel or specific reference made to liquid biofuels. The BEFS analysis looks at the potential of cassava, sugar cane, palm oil, jatropha, sweet sorghum and sunflower for bioenergy production. On the other hand, the most important food security crops in Tanzania are maize, cassava and rice. The study cautions that all bioenergy production in Tanzania would have to be compatible with the food requirements of the country (BEFS/FAO 2010). However, it is difficult to believe that such a risk of food security could be observed should the benefit from energy selling outweigh other uses including food. The biofuel projects might also have negative impact on gender. Cash crops will benefit more men than women as in many parts of the country; cash crops are for men while food crops are women issues.

Land Act and Village Land Act (1999)

The Land Act and Village Land Act came into force in 2001. It provides the overall framework for land rights to be exercised and administered. The laws represent a substantial reform on the prior tenure framework that had been in existence since 1923. The Acts retain ownership in the hands of the president as a trustee for all Tanzanians, making land tenure a matter of usufruct rights as defined by various leasehold periods and conditions. An important reform in the Land Act makes 'customary rights of occupancy' legally equivalent to any 'deemed' or 'granted rights of occupancy'. This measure was designed to remove the 'dualistic' character of land rights that had prevailed since the colonial era.

The Acts establish three basic categories of land: 'General', 'Reserved' and 'Village' Land.

Reserved Land is land set aside by sectoral legislation as national parks, game reserves, forest reserves, marine reserves, and so forth, and makes up around 30-40 per cent of Tanzania's total land area. Village Land is defined as the land within the demarcated or agreed boundaries of village, which are in turn defined by local government legislation passed in the 1970s and early 1980s. The Village Land Act provides the legal framework for management and administration of Village Land, which is by definition held under customary rights of occupancy held in perpetuity (see Wily, 2003). Village Land is under the managerial authority of the Village Councils, which are answerable for land management decisions to the Village Assembly. General Land is any land which is not reserved or village land, and may somewhat confusingly include village land which is 'unoccupied or unused' (Alden Wily, 2003). General land is under the authority of the Commissioner of Lands in the Ministry of Lands, Housing and Human Settlements Development.

The Land Act explicitly aims to create a land administration framework which will facilitate making land available for private or foreign investment. It is primarily General Land, which is under central government control, which is envisioned as being used for allocation to commercial investors.

The Tanzania Investment Centre (TIC) plays a key role in identifying land which is available for investment, which it has organized into a so-called 'land bank' comprising over 2.5 million hectares to which investors may apply.

Much of the land identified as suitable for investment in different parts of the country is, however, Village Land and is used or occupied by local communities in various ways. Even seemingly unoccupied lands traditionally may be important areas for seasonal livestock grazing, extraction of forest products, or other important livelihood uses (Mattee and Shem, 2006). Village Land may not be allocated to foreigners or foreign-owned companies; foreigners may only obtain land for purposes of investment from the holder of a granted right of occupancy, which may be a private individual or entity, or the government (Ministry of Lands or TIC). Village Land may be allocated to a Tanzanian individual or company, although allocations in excess of 250 acres of land require approval of the Commissioner of Lands. Amendments to the Land Act passed in 2004 also provide for joint ventures to be established between private companies and villages, whereby land is used for commercial purposes but villages retain their rights over the land subject to certain agreed limitations.

Legal And Policy Gaps

The above review for different policies highlights gaps for almost all policies and this justifies further the need to have a biofuel policy.

The biofuel policy should fill at least most of the gaps in the existing policies but also come with new innovations to suit the sector including blending targets. Some of the policy gaps include.

- Adequate compensation for land is required. One-off payments for land compensation are unlikely to be satisfactory in the long term. Other payment schemes should be considered such as communities becoming minority shareholders in the investing company and receiving regular dividends.
- The rights of the community to access and use resources to produce adequate food should be protected.
- Leasing land to investors for 99 years as it is the current practice is too long for a land that is taken from the villages. Because of this, it is advised that the government should reduce the land leasing period for biofuel investments to a maximum period of 25 years while also taking into consideration the continued

need for the expansion and development of settlements and infrastructure. Further, land should not be sold to investors; this will necessitate review of the Land Acts.

- Village Councils shall be guided by the Biofuels One Stop Centre on the procedures and restrictions of giving land to investors once the biofuel project is approved in their area by the Biofuels Steering Committee. Capacity building and empowerment of the councils is essential.
- No forced displacement of people should be allowed for biofuel development. Resettlement is a sensitive issue which should be handled with care. Investors are therefore encouraged to use an outgrowers model or a hybrid model i.e. plantation and outgrowers to avoid the displacement of people from their land.
- The government should encourage outgrowers to form associations and cooperatives that can enter into contract agreements which also encourage outgrowers to invest in value adding. There should be a win-win situation between local outgrowers and farming and industrial investors. Incentives are needed that allow feedstock producers to have a share in biofuel processing and value-adding.
- Bio-energy policy should facilitate rural poor access to clean energy through credits, increase in incomes.
- Biofuels should be processed to their final form of use within the country and only export the finished products
- Thorough research should be done on biofuel in relation to carbon emissions and climate change.
- Water reserve should be adequately studied and water prices should reflect scarcity.

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