Mtandao wa Vikundi vya Wakulima Tanzania

Assessing Impact of Biofuel Investments on Local Livelihoods in Tanzania: A case of Kisarawe, Bagamoyo and Kilwa Districts

Study Report

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EXECUTIVE SUMMARY

Objective

The main objective of this study was to assess the impacts of biofuel investments in local livelihood systems and local economy in Tanzania. Specifically, this study intended to assess the procedures used by investors to acquire land and determine whether they adhered to regulations governing biofuels investment; describe the practices of biofuel investments in the study area; assess the socio-economic and environmental impact of biofuels investments in the study areas; assess delivery of promises by investors for local development; assess perceptions of smallholder farmers on biofuel investments in the study area; and finally develop recommendations based on whether the local population have benefited from the biofuel investments in their localities.

Approach Methodology

To attain the mentioned objectives, the study was carried out in three districts namely Kisarawe, Kilwa, and Bagamoyo. In Kisarawe District, this study covered 9 villages representing 11 project villages under the SunBiofuel project. The involved villages in Kisarawe District were Mtamba, Mhaga, Marumbo, Palaka, Mtakayo, Mitengwe, Chakenge, Kidugalo, and Vilabwa. The Bagamoyo District covered 3 villages namely Matipwili, Kiwanga and Makurunge, which were targeted by the SEKAB Tanzania for contract farming to supplement biofuel feedstock requirement due to inadequate land secured by the company. In Kilwa District, two out of four villages namely Mavuji, and Migeregere under BioShape (T) Co. Ltd were covered.

A combination of methods were used during data collection; review of relevant documents to generate information that was relevant to the study area and examine the environmental context in which the research was done. Data collection in selected villages involved triangulation approach to validate information collected from different sources. For the sake of triangulation, personal interviews to farmers and Focus Group Discussions (FGDs) of between 8 – 10 people were carried out in each village and the key informant interviews guided by a checklist was used for the district officials, wards and village leaders such as Ward and Village Executive Officers (WEO & VEO), Sub-Village Chairmen, SunBiofuel Company's Managers and

Officials. However, SEKAB and BioShape Company's Management representatives were not available for the key informant interviews since the companies had closed down during the study.

Land acquisition process

Examining land acquisition processes used by investors to acquire land, this study focused on whether investors involved community in the process of land acquisition and if they had performed Environmental Impact Assessment (EIA). The findings revealed that SEKAB in Bagamoyo District negotiated with the Prisons Department, in the Ministry of Home Affairs to secure 200ha of Prison's land in Bagamoyo District and the Zanzibar Revolution Government on the other side to secure 800h of RAZABA Ranch and had minimum consultation with the community with the intention to engage them in contract farming. On the other hand, Sunbiofuels and Bioshape companies in Kisarawe and Kilwa Districts respectively, consulted directly the communities to negotiate for land deals. To win the community consent both companies advanced several catch promises to the community i.e. employment creation, construction of roads, schools, bore holes for water, dispensaries, etc, which were at the end not fulfilled. This study noted that there were no legal contracts between villages and investors to hold investors accountable for not fulfilling the promises. In this case the companies could only implement voluntarily, without being held accountable. It became evident that this happened because the community was not given any legal support during negotiations. Given the fact that the communities are not experienced with contract negotiations in the absence of legal support they were on a weaker position to close favorable deals.

According to the Investment Act of 1997, investors get approval of land for investment after they have submitted an EIA report to the TIC. The findings indicate that all companies complied with the regulation to secure approval of the investment projects. However, this study considers the procedure put by the government to conduct EIA is flaw for one main reason; the investment policy gives mandate investors to conduct EIA on his/her own as a pre-condition for project approval by the TIC. In view of this practice, this study considers the process to be subjective and lack objectivity, because it is almost impossible for investors who are interested

in investing to submit a fair report with negative implications on the environment and social consequences that may jeopardize their privilege of acquisition of land for investment. The responsible practice could be the government to commission an independent consultant or use government agency to carry-out an EIA and give independent opinion.

Land evaluation and compensation

The Land evaluation and compensation was another aspect that was examined by this study. The findings revealed several shortfalls. For example, the evaluation process was not transparent to land owners especially in Kisarawe District; the land owners were not informed of the size of land which they offered to investors; this include the Village Executives (VEO) were not aware on the exact land that each village land offered to the investors. This raised several questions; first, if the land owners were not informed about the size of land and properties found on their land how did they arrive at the values for compensations? Second, if the regulations require investors to be granted derivative right after fully compensation of acquired land, why then Sunbiofuel and Bioshape were granted right of occupancy? The worse scenario was; Sunbiofuel was granted the right of occupancy even before paying fully compensation to the village land contrary to the land laws. This study considers this to be serious violation of regulations, which give indication of how multinational cooperates can misuse economic powers to twist regulations in their favour. Basically, this is threatening the survival of smallholder farmers who may not be able to influence the regulatory machineries in the government.

Practices of biofuels companies

In view of the practices of biofuel investment companies, this study observed that Sunbiofuel and Bioshape company acquired 8,200 ha and 34,000ha of Land in Kisarawe and Kilwa Districts, respectively. Of the acquired land 2,000 ha and 400ha were cleared and planted jatropha in Kisarawe and Kilwa Ditricts. Sunbiofuels and Bioshape employed about 700 and 1000 employees, respectively. In light of these figures, Bioshape secure large piece of land beyond the allowed amount of land by the Tanzania National Guidelines for Sustainable Liquid Biofuels

development, which limit at 20,000ha. However, during the survey both companies had closed down their operations and there were speculations that the Sunbiofuels company was set to be sold out to Thirty Degree East Co. LTD. Failure of companies to sustain operations, people lost jobs, village land in Kisarawe had not received compensations, and social services were not provided as promised. Despite the company's closure of operations the surrounding community is still not accessible to the common pull resources that they used to enjoy before the company had secured the land. This is because the company is holding right of occupancy for 99 years, which is again contrary to the National Guideline of Liquid Biofuels that limit land tenure at 25 years, with the initial of 5 years of trial.

Socio-economic and environmental impacts

It was also interesting to examine the social and environmental impacts of biofuel investments in the study areas. The findings recorded several social impacts in the study area. There were dramatic changes in labor pattern as a result of companies operations in the study area; labor force was drawn from the households to work for the company. For examples, the results show that family labor force in agriculture dropped from 72% before company invested in 2007 to 38% during the company life time. The work pattern shifted by putting more burden of farm work to women of whom before the company investments only 9% of women were engaged on household farming and men accounted for about 15% of household labor force. However, during the company life time more men were employed in the company; consequently, about 25% of household labor force was accounted by females and men dropped to less than 10%. Despite the slight increase in use of hired labor, women still carried relatively higher work load than men.

This study also considered important to examine the change in consumption behavior before the company life time and during the company life time. This was done by examining the purchasing pattern of the basic commodities like maize, cassava, firewood, charcoal, and water. The findings were striking, there were dramatic changes in terms of consumption behavior. For instance, before investment only 16%, 9%, and 34% of community used to buy maize, cassava, and vegetables. However, during the companies' life time the findings show that 42%, 16%, and

44% of community indicated to buy maize, cassava, and vegetables for home consumption. This shift is immense for the time span of two years and could have significant implications on food security given the fact that the wage of Tsh 100,000/= was and still inadequate to hire farm labor to work in their farm.

Looking at the land size acquired by SEKAB / Eco-Energy, Sunbiofuel / Thirty Degree East (8,200ha), and Bioshape (34,000ha) clearing of such a vast area of land has an ecological impact especially on biodiversity and carbon sequestration. Literature reiterates the fact that the loss of tropical forests has a devastating effects on both biodiversity and forest dependent communities. Furthermore, it is emphasized that the release of heat trapping Carbon Dioxide (CO_2) in the atmosphere either by burning or degradation of organic matter poses even more threat to the environment. Carbon dioxide is one of the most potent greenhouse gases and the primary component of human activities emissions. The conversion of forests to other land uses is responsible for around 10% of the net global carbon emissions. This suggests continued expansion of land clearing for biofuels investment requires critical analysis. Otherwise, the objective of clean energy as a driver of biofuel investment may not be realized.

Furthermore, replacement of the indigenous tree communities (forestry) that had an ecological role or niche to play, by pure stands of alien tree communities of jatopha is a typical form of monoculture system that may lead to a number of ecological consequences, seen or unseen. The literature shows that jatropha is a potential host of pests/ diseases that can invade cassava. Cassava being both a staple and cash crop in Kisarawe and Kilwa Districts may threaten both food security and livelihoods. In addition, the increased application of agrochemicals (pesticides) on jatropha plantations may result into serious ecological impacts on the land and hence the environment. Huge quantities of pesticides find their way on the land affecting the unique fauna and flora, contaminating both surface and underground water sources, polluting the soil, the rivers and coastal ecosystems, which subsequently may affect human being especially communities adjacent to these resources. Although it was difficult to establish the extent or magnitude of the impact during data collection because the companies had halted their operations but based on the practice that open spraying was performed by using knapsack

and boom sprayers directly indicated a enormous risk potential to both the biodiversity and the environment.

Looking at the identified incentives provided by the government to investors they are not helping the government to form strong base for economic growth or even meeting the objectives of promoting biofuels investments in the country. Amongst objectives of the government to promote biofuels investments are to save foreign currency reserve equivalent to import substitute, ensure clean energy, and foster economic growth. These objectives are not likely to be attained for several reasons; first, the government is not receiving tax for imported capital goods, export and VAT taxes for export of biofuels products, to be able to build the economy. Secondly, the government has no blending target to create local consumptions that could eventually develop local markets and be able to save equivalent amount of import substitute and address the challenge of environmental pollution. Thirdly, the freedom of investors to transfer unlimited amount of profit generated from investment threaten the objective of the government to increase foreign currency reserve. In order for the government to be able to attain its objectives of promoting biofuels investments there is an urgent need to revise the package of incentives provided to investors.

Lessons learned

This study draws the following lessons:

- Despite existing large potential of biofuels production in Tanzania; the country lacks an enabling environment to support co-existence between smallholder farmers and large scale farmers to create a win – win situation that foster mutual benefits.

- To date, there have been a range of problems associated with the process of land acquisition; especially when investors are directly involved in the process of negotiation of land deals with the local communities.

- The regulatory environment governing land tenure in Tanzania is weak and does not protect smallholder farmers' land rights. This might have been attributed by lack of biofuels policy to guide investment decision.

- While one of the objectives to promote biofuel investments in Tanzania is to ensure energy security; Tanzania has no blending targets for biofuels to create local demands that will trigger local markets for the biofuel products and substitute export of fossil fuels. In the absence of local demands the biofuels are likely to be for export which may not account for energy security as expected.

- The formal system available for resolving land disputes between smallholder farmers and investors is apparently seemingly not quite effective for timely justice.

- The incentives granted to investors create attractive environment for investors to export biofuel products rather than selling the products for local consumption. Furthermore, it jeopadises the government opportunities to obtain revenue through tax.

- Fiscal policy that allows transfer of unlimited amount of divided through banks is not in favor of the government's objective to increase foreign currency reserve.

Recommendations

The following are the recommendations drawn from this study:

- This study acknowledges the efforts of the government to promote large scale investment in biofuel sub sector. However, it has been established that the government has not created an enabling environment to support co-existence between smallholder farmers and large scale farmers to enhance a win – win situation that fosters mutual benefits. This study recommends that the government should create an enabling environment to empower small holder farmers before opening up for large scale investors to minimize chances of the smallholder farmers being exploited by large corporations.

- With the understanding that direct involvement of investors to negotiate land has caused several disputes with the community, this study recommends that investors should only secure land through TIC land bank that grant derivative right to avoid land disputes.

- The government should improve regulatory environment governing land tenure in Tanzania to safeguard smallholder farmers' land rights. In this view, foreign investors should be restricted to "derivative right" and not right of occupancy as it happened to SunBiofuel and Bioshape Companies in Kisarawe and Kilwa, respectively.

- While one of the objectives to promote biofuels investment in Tanzania is to ensure energy security; Tanzania has no blending targets for biofuels to create local demands that will trigger local markets for the biofuel products and substitute export of fossil fuels. Based on this, the study recommends the government to create mandatory local blending targets to create local demand.

- The regulation requires land owners who give land to investors to receive compensation from investors before land is transferred from village land to general land, which subsequently qualify for an investor to be offered with a "derivative right". In view of the violation of this regulation by some investors the government should be keen in the process of granting derivative rights before investors fulfill the requirements of land acquisition process.

- With the understanding that investors used promises to lure community when in the process of land acquisition without legal contracts which may hold them accountable. This study recommends that whenever necessary when communities are to be engaged in negotiations of any kind that requires legal attention the government through local authority should provide the much needed legal support.

- The government needs to review the procedure through which the Environmental Impact Assessment (EIA) is carried out by assigning own consultant instead of relying on investors reports that may be biased and may not warrant objective judgment.

- The government also should revise the investment incentives to promote local consumptions of biofuel products and meet its objective of increasing foreign currency reserve. This should go along with the review of Fiscal Policy to limit investors to transfer unlimited amount of proceeds generated from investment to foreign countries, and reduce tax waiver granted on capital goods.

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1.1 Background Information

For the past decade biofuel investments have created an outstanding debate on the benefits and constraints of biofuel production. The proponents of biofuel production pushed the agenda with the argument of ensuring energy security, interest on economic development, creation and sustaining jobs in agricultural sector, the need to mitigate climate change and reduce greenhouse gas emissions (Zeller and Grass, 2007). These drivers, throughout the world including Tanzania pushed policy makers and other stakeholders to look for alternative sources of land in developing country to venture in biofuel investments.

Tanzania was not immune to this wave as several multinational corporations applied and acquired land for the same purpose. Multinational corporations competed for the prime land, which is suitable for food crops. Some of the targeted areas in Tanzania with respective companies in brackets were Kisarawe (Sun Biofuel), Kilwa (BioShape Tanzania LTD), Bagamoyo and Rufiji (SEKAB Tanzania LTD), Rukwa (FELISA), Kilwa (BioShape), and Arusha (DILIGENT Tanzania Ltd) to mention a few. The Government of Tanzania through Tanzania Investment Center (TIC) promoted investments of large firms on the same drivers proclaimed by the proponents and the benefits of smallholder farmers were assumed through a contract farming model where large famers were expected to create sustainable market for smallholder farmers. The opponents of the agenda argued that the new initiative will create pressure on land and labor resources and compete with food crops, disrupt local food production and livelihood systems, eviction of local producers on arable land, threats to biodiversity in ecological fragile areas that subsequently threaten survival of the smallholder farmers whose economic muscles are not strong enough to withstand pressure of the multinational companies.

However, since the beginning of the biofuel investments there has been no feedback to show who gained and or lost in the game to justify the benefits resulting from biofuel investments. It was from this context that MVIWATA being a smallholder farmer's organization developed an interest to take stock of the impact of biofuel investments in selected areas, which hosted biofuel projects in Tanzania. Although in Tanzania several areas were targeted for biofuel production, this study focuses mainly in three districts namely Kisarawe, Bagamoyo (both from

Coast Region), and Kilwa in Lindi Region. The choice of the three districts is based on the fact that these were among areas which were highly targeted for biofuel investments and some developments in the investments have taken their course. In this view, the selected study areas were considered appropriate to draw lessons from the implication of biofuel investments.

The outcome of the study will contribute to the realization of benefits and constraints of the biofuel investments of which through MVIWATA's objectives will account to strengthen the ability of smallholder farmers to air their voices in the process of defending their social and economic rights.

1.2 Objectives of the study

The main objective of the study was to assess the impacts of biofuel investments in local livelihood systems and local economy in Tanzania with the special focus in Kisarawe, Kilwa, and Bagamoyo Districts.

1.2.1 Specific objectives

Specifically this study intended to

1. Assess the procedures used by investors to acquire land and determine whether they adhered to regulations governing biofuels investment.
2. Describe the practices of biofuel investments in the study area
3. Assess the socio-economic and environmental impact of biofuels investments in the study areas.
4. Assess delivery of promises by investors for local development
5. Assess perceptions of smallholder farmers on biofuel investments in the study area
6. Develop recommendations based on whether the local population have benefited from the biofuel investments in their locality

1.2.2 Structure of the report

This report is structured in four sections; the first section is the introduction which highlights the background of biofuel investment indicating the push factors that led to the growing interest on the energy subsector. The second section presents research methodology applied to collect and manage data. The third section of the research report present results and gives the implications of the results. The report ends by giving conclusion and recommendations on the way forward.

2.0 APPROACH AND METHODOLOGY

This study was carried out in three districts namely Kisarawe, Bagamoyo and Kilwa. In Kisarawe District, this study covered 9 villages representing 11 project villages under the SunBiofuel project. The involved villages in Kisarawe District were Mtamba, Mhaga, Marumbo, Palaka, Mtakayo, Mitengwe, Chakenge, Kidugalo, and Vilabwa. The Bagamoyo District covered 3 villages namely Matipwili, Kiwanga and Makurange, which were targeted by the SEKAB Tanzania, for contract farming to supplement biofuel feedstock requirement due to inadequate land secured by the company. In Kilwa District, two out of four villages namely Mavuji, and Migeregere under BioShape (T) Co. Ltd were both covered. The Nainokwe Village from Kilwa District was not covered because it had similar characteristics with the Migeregere Village that the village offered land to investors but up to the time of data collection there were no development although the community was restricted to access the land for any use.

2.1 Data Collection

The study used both secondary and primary data. A combination of method was used during data collection; review of relevant documents for secondary data was adopted to generate information that was relevant to the study area.

Field work in selected villages involved triangulation approach to validate information collected from different sources. For the sake of triangulation, Focus Group Discussions (FGDs) of between 8 – 10 people were carried out in each village and the key informant interviews guided

by a checklist was used for the District officials, local ward and village leaders such as Ward and Village Executive Officers (WEO & VEO), Sub Village Chairmen, SunBiofuel Company's Managers and officials. However, for SEKAB and BioShape Company's Management representatives were not available for the key informant interview. Personal interviews were also carried out to farmers, Company workers in events where they were available, small business owners' and other community members in general. The essence of key informant and personal interviews were to establish social, economic and environmental losses and or gains resulted from biofuel investment in the study area.

2.2 Activities

The activities required to accomplish the study involved desk review to collect relevant secondary data, preparation of the measurement tools (questionnaires and checklist), personal interviews / focus group discussions / key informants interviews, data analysis, report writing and presentation of the draft report to the client.

2.2.1 Desk review

Desk review encompassed review of relevant documents, Land Policy of 1995, Land Act No. 4 of general Land and Village land Acts No. 5 both of 1999. Tanzania Investment Act of 1997, National Guidelines for Sustainable Liquid Biofuels, Agriculture and Livestock Policy, and other relevant documents identified in the course of the assignment as they appear in the list of references. The essence of reviewing these documents was to learn from the past experience and to verify if the procedure for land acquisition was adhered to and whether there was an accountability of the companies to the communities as per the national regulatory requirements.

2.2.2 Field research and data collection

The field research involved data collection from district officials (DED, District Land Officer, Community Development Officer, District Agricultural and Livestock Development Officer), and Company's' Management of SunBiofuel. In villages key informant interviews were also done to

village leaders such as Ward and Village Executive Officers, Village chairmen. The focus group discussion covered farmers both females and males, people whose land was offered for biofuel investment and those who did not offer land to the investment companies, also included farmers who worked for the companies regardless of whether they offered or not offered land to investors. The objective was to obtain a balanced opinion of the population of interest.

2.2.3 Data analysis and interpretation

Data analysis and interpretation followed right after data collection. Descriptive statistics such as frequencies were used to indicate the distribution of characteristics of interest. Figures and charts were used whenever it was appropriate to presents the results. The analysis always was guided by the study objectives as indicated on section 1.2.1.

2.3 Reports

A draft report was prepared and presented to the Management of MVIWATA before submission of the final report. Upon incorporating comments from the Management of MVIWATA, the client arranged a forum through which the report was presented to a wider audience. Comments from the stakeholders contributed to develop a final report of which after submission concluded the assignment.

3.0 RESEARCH CONTEXT

This section presents an overview of literature on research context. Specifically it presents the location, climatic condition and types of crops grown in the respective areas, status of agriculture in Tanzania, land availability and suitability for agriculture, status of food security, regulatory framework for biofuel production, and push factors for biofuel investments in Tanzania.

3.1 Study Area

The study covered three districts as indicated in the background section (i.e. Kisarawe, Kilwa and Bagamoyo). The subsequent sections present specific climatic conditions for each district, types of crops grown and the likelihood of these crops to compete with the biofuels feedstock in terms of production resources.

3.1.1 Kisarawe District

Kisarawe District is one of the 6 districts of the Coast Region with its headquarter located at Kisarawe Township. Kisarawe is located at latitude 7° 10'S 0° S and longitude 38° 49' 60 E and about 20 kilometers from Dar es salaam a gateway for export to overseas market. The climatic condition of the district is characterized by mean annual temperature of 26°C and bimodal rainfall pattern. Short rainfalls begin in October to mid-December and the long rainfalls from late March to the beginning of June for each year. The climatic conditions in Kisarawe have huge potential for both commercial and food crops. The major types of food crops grown in the district include maize, cassava, beans, millet, rice, cashew nuts, and palm, which are also potential biofuels feedstock (Sulle, 2009; Harstaad *et al*., 2009; Mwanga 2012). This may suggest that inviting investors in biofuels investments; investors might be attempted to grow the same crops for biofuel feedstock and attract smallholder farmers to sale the same to investors through contract farming a situation that may create competition to food crops thereby threatening food security.

3.1.2 Bagamoyo District

Bagamoyo District is located in Coastal Region of Tanzania with area coverage of 9,850,000km2 (985,000 ha). The district centre Bagamoyo town lies (6° 26'S 38° 54’ E) 75 kilometers North of Dar as salaam on the coast of Indian Ocean close to the island of Zanzibar. The main economic activities for Bagamoyo include agriculture, fishing, mariculture, trade commerce and tourism. These economic activities have been evolving slowly but still remain largely small and subsistence. The district being located along the Indian Ocean is near to the Dar es Salaam port, which is a gateway for export of agricultural products to the rest of the World. Given its conducive climatic environment to support diverse agricultural crops and its proximity to port, may explain a choice of investors on biofuels subsector to invest to the area.

3.1.3 Kilwa District

Kilwa Masoko Township is the head-quarter of Kilwa District Council. The district is one of the six administrative districts in Lindi Region along the Southern Coast of Mainland Tanzania. The district lies at Longitude $39^0$33' East and Latitude $8^0$55' South, supported with a small port that is linked to Mtwara port which is serving the Southern economic corridor of Tanzania. The total district area is 13, 347.50 km2 (1,334,750 ha) of which 12, 125.9 km2 is land surface and 1,221.52 km2 is ocean. The district has an abundance of coastal and marine resources. The vast majority of its people are reliant on these resources to meet their livelihoods. At the same time, most people are subsistence farmers and traditional livestock keepers, mostly for small animals (UNDP, 2011). In this case, any investment on land needs to consider the position and interest of these groups. In view of this background, convention of 34,000ha of land by Bioshape for biofuel investment in the absence of land use plan raise questions on whether the interests of these communities were considered beforehand.

3.2 Status of Agriculture in Tanzania

Tanzania’s agriculture remains a traditional smallholder production system even though the modernization of Agriculture has been on the political agenda of the Government of Tanzania (GoT) for many years the sector contribute 24% of GDP and employ over 75% of population.

The main food crops in Tanzania are maize, rice, wheat, sorghum, cassava and beans. Tanzania could be a major food exporting country but so far Tanzania's agricultural potential is largely undeveloped. Only 11 percent of the total land area suitable for agriculture is under cultivation, mostly by small holder farmers with an average land holding of between 0.2 to 2.0 hectares. Traditional foods crops occupy only 50 percent of total planted areas, while non traditional export crops such as oilseeds, pulses, vegetables, roots and tubers have increased their shares. To sustain and expand production diversification at the farm level, yields of food crops need to increase at the same time to meet rising domestic and regional demand. However, food crops are still mainly produced at subsistence and the incentives to produce them for the market are not in place due to several constrains including difficulties in market accessibility.

In view of the above, most of the investors use this weakness as an entry strategy by giving several promises on how they can support smallholder farmers by providing stable markets, and technology transfer to transform agricultural production in the country and ensure food security. While these promises are impressive, there are no strategies in place to foster technology transfer and stable market that ensure win-win situation between smallholder farmers and large scale farmers. In absence of appropriate strategy smallholder farmers are on the weaker position to negotiate and strike beneficial deals on contract farming and they end up being exploited by the large farmers who are motivated by profits.

3.2.1 Status of Food Security in the Country

While Tanzania is mainly food self-sufficient with some areas experiencing surplus there are still localized food deficits at regional, district, and household level. Among the districts with food deficits includes Kisarawe and Bagamoyo (Coast Region), and Kilwa (Lindi Region) in which biofuel investments are targeting (Kiratu, Marker and Mwakalobo, 2011).

Moreover, Tanzania is among the African countries with the highest levels of malnutrition. Some 42 percent of children less than five years of age are stunted, eight out of 10 children under one year are anemic, and about 33% of children aged 6–59 months are Vitamin A deficient and 22% are underweight. Poor nutrition is also a serious problem among women of

reproductive age, with more than half of pregnant women anaemic and one in 10 women undernourished (Leach and Kilama, 2009).

In view of the above, this suggests that any investment which may have impact on food security like biofuel investment need to be associated with a package of strategies to ensure food security to the surrounding community. This is especially important in areas that are already food insecure like in the study areas (Kisarawe, Bagamoyo and Kilwa Districts).

3.2.2 Land availability for agriculture in Tanzania

Tanzania is among few countries in Sub Saharan Africa (SSA) with the land of huge potential for Agriculture. According to the Ministry of Agriculture (2009) Tanzania has about 94.5 million ha. of land, out of which 44 million ha are classified as suitable for agriculture (Land Policy, URT, 2009). According to the Ministry of Agriculture, Food Security and Cooperatives (2009) about 2.3 million hectares have high development potential and 4.8 million hectares is of medium potential. It is often said that there is a large amount of land available for future agriculture in Tanzania. But this is not always true because most of the high potential areas have been developed or on different use by the communities. With the understanding that land use planning has not been done in most part of the country may explain why people tend to believe there is plenty of idle land without accounting informal uses which are essential for the livelihood of the community.

The local community has several use of land even from land that is claimed to be idle. For example, Monela *et al.,* (1999) and UNEP (1988) pointed that wood energy accounts for over 90% of total energy consumption in Tanzania. This source of energy mostly relies from natural forestry which is part of what is claimed to be an idle land. The local community also uses the land to obtain different types of common pool resources such as source of water, herbals, honey, and building poles. Taking such land for huge investment without proper land use plan may jeopardize the livelihood of the people, especially the smallholder farmers of which their livelihood depends. As much as the government would like to promote investment that

involves huge tracks of land as it is the case for biofuel investment, the interest of smallholder farmers should first be considered.

3.3 Regulatory Environment on Investment Land in Tanzania

Examining the regulatory environment for biofuel investment was crucial in order to be able to ascertain the existence of an enabling environment to support biofuel investment for sustainable production. In the course of review, it was evident that to date there is no policy to guide investment decision in the biofuel sub sector. However, in the absence of policy this study identified several institutions engaged in supporting the biofuel investment in Tanzania. Some of these institutions are Tanzania Biofuel Guidelines for Sustainable Liquid Biofuel Investment, Tanzania Investment Center (TIC), Ministry of Land, Housing and Human Settlements (MLHS), Village Land Act No. 4 and Land Act No. 5, and the National Environment Management Council (NEMC). In View of the importance of these institutions in the process of land acquisition for investors in biofuel subsector the subsequent sections present review of each institution and the role they play.

3.3.1 Guidelines for Sustainable Liquid Biofuels

The need to have guidelines for biofuels investment came after the government experienced several challenges in the energy subsector. Among challenges were the ongoing debate among the proponents and opponents on whether the biofuel investments will have or not have benefits for the country. Following this debate the government saw a need to re-examine the process of land distribution for the biofuels investment and came up with the decision to prepare the guidelines for sustainable liquid biofuels. The guidelines provide minimum requirements to ensure that biofuels development does not compromise with the sustainability criteria such as biodiversity conservation, greenhouse gasses reduction, food security, land use rights and social wellbeing of the community. While this is a positive move towards developing a policy with legal power to foster investment decision in the energy subsector, the guidelines lack legal power and are not specific on how these goals will be achieved.

While the biofuel guidelines acknowledges the risks associated with the biofuel investments and indicate that it will be necessary to take into consideration the issues of sustainability along with the principles of sustainable development. There are no strategies outlined to show how to achieve these goals and some of suggestions are contrary to the stated goal of sustainable development such as the impacts on environmental and biodiversity. For example the guidelines give mandate investors / developers to conduct both environmental impact assessment (EIA) and social impact assessment (SIA) as pre-condition for project approval by the Biofuels One Stop Center at TIC. Although the EIA and SIA reports are subject to satisfaction by the National Environment Management Council (NEMC), this study considers the procedure to be subjective and lack objectivity, because it is almost impossible for investors who are interested in investing to submit a fair report with negative implication on the environment and social consequences that may lead to denial of the privilege of acquiring land for investment.

Reviewing further, the guidelines, present potential benefits that could be realized as a result of promoting biofuels investment that include technology transfer through new bioenergy industries, employment and income generation in industry and agriculture sectors, improved energy security, foreign currency reserve through exports of biofuels and reduced emissions of green house gasses. To attain these objectives, strategically the government position was to provide marginal land for biofuel investors and leave arable land for crop production to avoid competition of land between food crops and biofuel feed stock to sustain food security. This could imply that investors were supposed to choose biofuels feedstock such as jatropha that perform better on marginal land. However, the practice so far contradicts the expectations, for example SunBiofuel (T) LTD (Kisarawe District), BioShape (T) LTD (Kilwa District), and SEKAB (Bagamoyo District) acquired prime land suitable for food crops production and the first two companies (SunBiofuel and BioShape), which started some operations observed to have cleared huge land of high ecological value which is not only a threat to the environment but also to the biodiversity.

In view of the above, this study argues that investors in biofuels targeted prime land suitable for food crop production and proximity to the harbor for convenience of shipping agro energy

products. Targeting prime land by biofuels investors who acquired huge land coupled with the weak land regulations to protect smallholders land rights it is threatening the accessibility and ownership of land among smallholder farmers and the food security in the country. With the understanding that agriculture in Tanzania employs over 75% of Tanzanians whose majority are smallholder farmers residing in rural areas. This may suggest further that any investment involved on land need to be well thought of not to compromise the land rights of smallholder farmers.

3.3.2 National Land Policy

Biofuels investments are posing huge challenge on land resource because they require a huge land for investment in order to maximize profit. In this view it was necessary to review the land policy in order to understand the government stand on issues of land and the position of smallholder farmers. The land policy promotes equitable distribution and access to land by all citizens and recognizes the customary land rights by smallholder farmers and emphasizes to protect land from degradation for sustainable development. While this is a good starting point to protection smallholder land right, the policy has main weakness that it does not treat land as a valued asset. For this reason large portions of land are taken from farmers for free of charge except when there are some developments or investment. This was evident during the survey in Kisarawe and Lindi Districts for people who offered land for investment; the land that received compensation was only developed land and underdeveloped land was not compensated.

This study considers that this might be a shortfall of the policy because even if the land is not developed so long it is owned by someone might be used for accessing common pool resources. By granting such land to investors it implies that the communities are barred from accessing such resources which are essential to sustain their livelihoods. In lieu of the community selling land to investors this study considers it could be logical for the community to hold a stake of share in investing company to compensate for the lost benefits.

3.3.3 Land Act and Village Land Act of 1999

The laws represent a substantial reform on the prior tenure framework that had been in existence since the colonial era. The Acts retains the ownership in the hands of the president as a trustee for all Tanzanians, making a right of each citizen 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 protect smallholder farmers' land rights in the era of open market economy. Despite the good intention of the government to protect land rights of smallholder farmers still they are not knowledgeable about the government intention. Consequently they have been easily manipulated to offer /give out their land without weighing the pros and cons of the decisions they make. While the demand for large scale investment in agricultural sector in Tanzania is undisputable to revitalize economic growth, care need to be taken not to jeopardize the smallholders' land rights. What should be clear is that, agriculture in Tanzania employs over 75% of the population of over 45million with the majority being smallholder farmers whose economic muscles are weak to compete with the large scale farmers. In view of this background it becomes necessary for the government to curb loopholes which may threaten the land rights of smallholder farmers while opening up for large scale/multinational corporations to invest in the sector.

3.3.4 Agriculture and Livestock Policy 1997

The agriculture and livestock policy of 1997 Promote 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 biofuels or specific reference made to liquid biofuels. The bioenergy feedstock analysis looks at the potential of cassava, sugar cane, palm oil, jatropha, sweet sorghum, and sun flower for biofuels production. On the other hand, except jatropha they are the most important food crops in Tanzania. In view of this, SEKAB in Bagamoyo targeted sugarcane as one of bioethanol feedstock which may compete with the food requirement of sugar as food crop. Given the fact that there are no legal

binding commitments for investors to choose the type of feedstock it is difficult to believe that food security could be observed should the benefit from selling biofuel feedstocks outweigh other uses including food.

The review of regulatory framework present gaps for almost all policies since these policies were meant for other purposes other than biofuels of which by its nature is complex and overlaps with several other sectors such as land, water , energy and other natural resources. With the understanding that the reviewed sector policies came before biofuels were introduced in Tanzania may not be adequate to address all the challenges associated with the biofuels investments. This justifies further a need to have biofuel policy which is still missing to guide investment decision in the sector. The biofuel policy should fill most of gaps observed from existing policies but also come with new innovations to suit the sector including blending targets to create local demands which will set a stage for local markets. With the current environment and in the absence of blending targets the local market is merely nonexistent, thereby encouraging investors to export the products.

3.4 Land Acquisition for Biofuel Investors in Tanzania

There are two types of land in Tanzania that are available for the biofuel investment namely: Village land and General land. However, the Village land is under the administration of the village and village land cannot be titled for investors. For an investor to get access to village land, the village land needs to be converted from village land to general land. If this is the case, it is essential that the investor engages on negotiation with the local communities on the land and come to a mutual agreement on the way to proceed with the project. For instance, relocation should be agreed upon and be implemented according to international existing laws. Furthermore, the affected people should be the first to benefit from jobs that will be provided by investors. However, this was not the practice in all surveyed villages in Kilwa and Kisarawe it was clear that most people who were employed were from other parts of the country and not from the affected communities. For example in Kisarawe it was reported that the majority who were employed on permanent terms were from Dar es Salaam and the local community were

recruited as casual labors that never enjoyed benefits of permanent employees such as pension, health care, annual leaves and maternity leave.

Another avenue for land acquisition is through land bank under the custody of TIC which an investor introduce investment idea through one stop center, identify potential land, land is gazetted for 90 days. After 90 days if there is no petition, the land is allocated to TIC and TIC grant derivative right to investor. General land is under administration of the National Government, more specifically the Ministry of Lands. The acquisition of general land for investment is possible through the Commissioner of Land under the Ministry of Land, Human Settlements and Development with assistance from TIC.

3.5 Tanzania's Government Motivation to Promote Biofuel Investment

This study also considered important to examine the motivation behind the government to promote biofuel production in Tanzania. The objective of the review was to identify key drivers of biofuel production and later examine if expected benefits can be shared by the majority of community members in the project areas and Tanzania in general. The literature shows that the motivation for Tanzania to promote biofuels production is externally driven; In the early 2000s, when the European Union began discussing and eventually in 2009 adopted-a policy to meet up to 20 percent of their energy usage from renewable sources by 2020, multinational companies responded by acquiring large tracks of land to grow jatropha, sugarcane, palm oil and other crops to manufacture biofuels, such as ethanol and biodiesel. Companies were further motivated in 2009 when United States President Barrack Obama called for doubling renewable energy within three years. Africa has attracted considerable attention, and Tanzania, a large country with a low population density, and political stability in the region has been a popular destination of biofuel companies seeking to establish large plantations.

Tanzania is a poor country, and the government is actively seeking foreign investors to acquire foreign exchange, promote economic growth and support development. The companies have promised money and jobs in exchange for access to large tracts of land for their biofuel projects. In 2009 alone, over 4 million hectares of land in Tanzania were requested by investors

for biofuel production. Investors were allocated 640,000 hectares and granted formal rights of occupancy to about 100,000 ha of this land. Out of this land include 8,200ha and 34,000ha of land for SunBiofuel and BioShape in Kisarawe and Kilwa, respectively. The land secured by Bioshape is far beyond the amount allowed by the National Guidelines for Liquid Biofuels Development, which limit at 20,000ha. Possibly this show a need to have biofuels policy coupled with the Biofuel Act with legal power to operationalize the policy.

According to the biofuel guidelines, the government of Tanzania was motivated to promote biofuel feedstock to ensure energy security and green energy, increase foreign currency reserve, create and sustain employment in the agricultural sector, and ensure economic growth. It is from this context this study considered crucial to examine if really these benefits were to be realized in case if at all biofuels investments were to succeed. The subsequent sections briefly presents a review of each driver and how it motivated investment in the energy subsector.

3.5.1 Energy Security

Since the beginning of the new Millennium, one of the World's challenges is continuing to meet rising energy demand in a sustainable way, and energy security has become a constant global agenda. In 2007, 53 per cent of liquid fuel supplied was consumed by the transport sector, and this proportion is predicted to rise to 61 per cent by 2035 (Sulle and Nelson, 2009). It has been emphasized before that it is vital to reduce significantly the consumption of transport fuels over the next few decades. However, it is unrealistic to expect that the demand for liquid transport fuels will reduce significantly due to the fact that petroleum products are very convenient fuels owing mainly to their relatively high energy density.

A growing global consumption of petroleum raised concerns on sustainability of resource base. Tanzania is not unique on a pattern of fossil fuel consumption. According to Sulle and Nelson (2009) Tanzania recorded an increase of fossil fuel demand by 30% for the last decade and currently is one of the major consumer and importer of fossil fuels in East Africa; fossil fuels being a finite source, the government considered renewable fuels, such as biofuels (i.e.

Biodiesel and ethanol) could help to ensure energy security in the country. Given the advantage of available land resource to grow biofuels feedstock, political stability and favorable climate to support diverse crops, Tanzania has become a target of most countries interested to invest in the energy crops.

The argument of energy security in Tanzania was similar to what other countries claimed for investment in biofuels. For example, in the 2000 Green Paper, the European Commission (EC) considered energy security as uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers. This implies that threats to energy security come in many forms. Some can disrupt the supplies of energy to consumers through limited availability of fuel, while others can raise the price of energy to unaffordable rates as a result of geopolitical tensions and war. Threats can be immediate or longer term, and can originate from inside or outside the country affected. Furthermore, the impacts of energy insecurity can be uneven. For example, energy-intensive businesses and fuel-poor households are particularly vulnerable to the effects of high energy prices.

While this was a concern for most developed countries they did not have enough land to expand their farm for energy crops as a result they had to find areas with high potential for biofuels production. In this view, Tanzania is among countries in the Sub Saharan Africa with this potential coupled with the political stability in the region the country was one of the choices among investors. While the argument in favor of energy security is compelling, this study finds no strategy in place that will create local demand and utility of biofuel products to create local market of the product. Consequently, the biofuel products are likely to be there to meet blending targets of foreign countries like UK, USA, and others. During data collection researchers tried to investigate the market targets of biofuels developers although it was only possible to meet SunBiofuels Management representatives in Kisarawe and it was not possible for SEKAB and BioShape. It was clear that Jatropha was intended for export of raw seeds. The worse story of exporting raw seeds is the loss of revenue on the added value products and employment along the production chain. This is detriment to the effort of the government of creating youth employments and the fight against poverty.

3.5.2 Green Energy

Growing concern on environmental pollution as a result of greenhouse gas emissions resulted in most countries to consider option of green energy. For example, the UK has a binding target under the European Commission's Renewable Energy Directive to source 15% of overall energy from renewable sources by 2020. To achieve this target bioenergy was identified as an appropriate source to provide 30% of 2020 target. These ambitious targets require significant expansion of biofuels production. The current aggressive policy decisions and strategies with regard to the expansion of biofuels, using first generation feedstock such as cereals, sugars and oil seeds requires large tracks of land that is not available in developed countries. Consequently, most developed countries with biofuel technologies rushed to acquire land in countries like Tanzania with large land to cater for their biofuel needs.

The green energy is the energy that has relatively low carbon emissions of greenhouse gases. On the other hand, RED+ and carbon sequestration requires carbon sink which is associated with the forestry resources. By massive forestry clearance associated with the biofuels investment as observed in Kilwa and Kisarawe it is against REDD+ objectives currently promoted by the government. The literature shows that, the forestry when destroyed emits carbon dioxide into the atmosphere, either by burning or degradation of organic matter. Carbon dioxide is one of the most potent greenhouse gases. The conversion of tropical forests into other land uses is responsible for about 10% of the net global carbon emission (IPCC, 2013; Parker, Mitchel, Trivedi, Mardas, and Isosis, 2009). This implies that, despite replacement of cleared tropical forestry by jatropha plantations does not avoid emissions which have already been disposed to the environment through decomposition and burning of the cleared forestry trees.

3.5.3 Economic growth and environmental sustainability

Supporting economic development is an important goal of most countries in order to improve the wealth and well-being of their citizens. Much of the World's economic growth over the last century has been facilitated by reliable and affordable sources of energy. It is of particular

concern in developing and emerging nations, which generally experience greater levels of poverty and lower standards of living. This argument applies to Tanzania that aspires to be semi industrialized country by 2025 of which the patterns of industrialization has to date been energy intensive. With the current trend that emerging and less developed economies are following the established technological and economic paths of development, a global energy and environmental crisis are inevitable.

Developing countries, are cited to be more vulnerable to climate change than the developed world, concerns about environmental security are especially relevant when further economic development is considered. In this case, where energy consumption is expected to rise; the consumption of green energy is crucial for clean environment that will sustain economic growth. This is reflected in the Millennium Development Goals (MDGs) that link environment and sustainable development. The emphasis is to enable development without further jeopardizing the climate and environment. One possibility to attain this objective was to invest in alternative energies including biofuels that appeared to be an attractive option.

However, looking at the Tanzania context where biofuels investments have initiated their operations the investments have involved massive clearance of natural forestry. This raises concerns on the environmental sustainability of the biofuel investments. Good example is Kisarawe and Kilwa Districts where SunBiofuels and BioShape intended to clear about 8200ha and 34,000ha, respectively of tropical woodland forestry and replace with jatropha plantation, which may not necessarily be efficient carbon sink as the natural woodland forestry existed in the study area. Allowing extensive expansion of biofuel investment without thorough analysis of nature of biofuel feedstock can be a threat to both the environment and biodiversity.

3.5.4 Increase foreign currency reserve

Increasing on demand of fossil fuels is associated with an increase in spending of foreign currency. According to Mshandete (2011) at a time when the government embarked on promoting biofuels investment in mid-2000s, it was spending between US$ 1.3 - 1.6 billion per year equivalence of 25% of total foreign currency earnings. This situation pushed the

government to consider a substitute of the fossil fuels which is more sustainable. In view of the fact that biofuels have potential as transport fuels which consumes relatively large amount of energy compared to other uses it was much more compelling to adopt biofuels as a complement of the fossil fuels as a strategy to reduce cost implied on imports of the biofuels. Since import of the fossil fuels involves foreign currency adopting biofuel would imply saving foreign currency that subsequently increases foreign currency reserves.

However, with the absence of binding blending targets it is likely that the biofuels may not benefit Tanzania to save foreign currency reserve because will not be able to substitute fossil fuels from biofuels in order to be able to save equivalent amount of import substitute. This is evidenced by the investment policy, which is not creating enabling environment for the local consumption of the biofuels. For example, the TIC through investment policy is mandated to give waiver to investors in agricultural sectors of free tariffs on imports of capital goods and free tariffs for export of agricultural products including biofuels. At the same time potential market of biofuels such as USA and UK provides free import tax for importing renewable energy including biofuels to promote green energy use and set blending targets in their nations. The implication of this strategy is that for investors it becomes more attractive to export than selling biofuel production for local consumption. According to TRA, biofuels are classified as vegetables oil which implies that if sold for local consumption they are subjected to VAT and other taxes but when set for export they are exempted all taxes.

Based on this observation, it is likely that the biofuel will end up being sold abroad and in no way the government will have any meaningful saving of foreign currency equivalence of import substitute of the fossil fuels. Another limitation of increasing foreign currency reserve is on the fiscal policy that allows investors to transfer through banks unlimited amount of proceeds generated from the investment. This policy again is not promoting saving of foreign currency since most of investors will prefer to keep generated profit to their home countries rather than in the investment countries.

3.5.5 Create and sustain employment in the agricultural sector

The agriculture in Tanzania for many years is dominated by smallholder farmers who produce at subsistence levels. They operate average farm sizes of between 0.2 and 2.0 ha and traditional agro-pastoralists keep an average of 50 heads of cattle (Cleaver, Schram and Wanga, 2010). Hand hoes are used to cultivate about 70 percent of Tanzania's crop area, ox ploughs are used for 20 percent, and tractors for 10 percent. Hand hoe cultivation is seen as both a cause and symptom of rural poverty (GoT, 2007). This implies that any investment brought in agriculture should consider the nature of farmers existing in the country and create sustainable co-existing strategies that support growth of local smallholder farmers.

With the understanding that investors in agricultural sector will bring modern agro technologies, the government was convinced that by promoting investment in biofuel is likely to promote growth in the sector that could create and sustain employment in the rural economy. The agricultural growth driven by modern technology could stimulate small holder farmers to adopt improved technology that subsequently could increase average farm sizes, raise productivity, income and improve food security among small holder farmers. While this vision sounds good as it reads, in reality the implementation is not that much simple, what should be clear the multinational corporations investing in biofuels are profit driven that may not necessarily consider the interest of smallholder farmers. In the absence of regulatory framework that serves the interest of smallholder farmers, the smallholder farmers are likely to be on loosing side.

4.0 RESULTS AND DISCUSSION

This section presents findings of the study and discusses the implication in the light of local livelihood systems and local economy of the community in the study area. Specifically, this study examined the procedure used by investors to acquire land, practices of biofuel investment companies in the study area, socio-economic and environmental impact of biofuel investment, delivery of companies' promises for local development, perception of small holder farmers on the biofuel investment, and finally draws conclusion and recommendations on the way forward.

4.1 Procedure of Land Acquisition for Investment

During the study it was imperative to examine the process through which investors gone through to acquire land for investment. The intension was to identify the entry strategies of investors in the study areas, ascertain the compliance of investors in biofuels investment on legal and regulatory framework such as conducting Environmental Impact Assessment (EIA), and social impact assessment (SIA) involvement of local community,sections present thorough analysis of the study area on the mentioned issues.

4.1.1 Land acquisition process adopted by investors

According to the Tanzania land law, the investment land can be obtained through three sources i.e. Tanzania Investment Center (TIC), Village Council, and Commissioner of Land under the Ministry of Land, Housing and Human Settlements Development (Figure 1). According to the Land Act No. 5 Foreign investors can only hold land rights on General Land administered by the Commissioner of Lands, or through Tanzania Investment Center (TIC) by derivative right. However, the amount of General Land in Tanzania is limited to carter for the needs of investment. According to the Ministry of Land, Housing and Human Settlement Development the land distribution in Tanzania mainland shows that only 2% of land is General Land, 70% of the land is Village, and 28% is Reserved Land that is not available for agricultural investment.

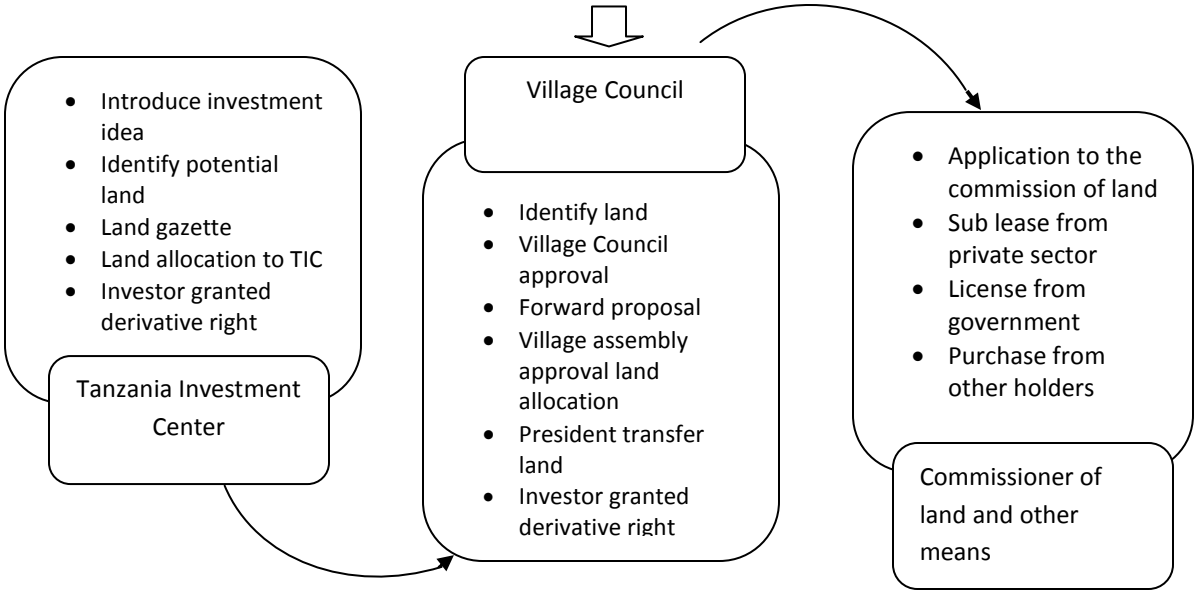

Figure 1: Procedure for Land Acquisition for investment

With little available General Land, the law gives access to foreign investors to identify village land through Village Council. However, this option requires investors to identify village land, contact the Village Council, the Village Council forward the proposal to the Village Assembly for approval after which the respective Local Government Authority is informed in consultation with the Commissioner of land the President of the United Republic of Tanzania is advised to transfer village land to general land. In view of this background, it was from the same reason of limited availability of general land SunBiofuels (T) LTD and BioShape (T) LTD in Kisarawe and Kilwa, respectively identified village land and had direct contacts with the community through Village Councils to negotiate land deals for their investments. On the other hand, SEKAB acquired its land from Prison's farm in Bagamoyo District and the Razaba Ranch, which was under the Zanzibar revolution Government.

However, this study observed some inconsistence in the regulation. While the legal procedure allows village council / assembly to offer land for investment it restrict to 50hectares and beyond 50hectares up to 500hactares is mandated to the Local Government Authority and beyond 500hectares it is under the mandate of the Commissioner of Land in the Ministry of Land, Housing and Human Settlements Development. This may imply that although the land in

Kisarawe (8,200ha) and Kilwa Districts (34,000ha) claimed to be offered by Village Councils in consultation with the village assembly looking at the size of land offered to investor was far beyond 50ha which falls beyond the mandate of the village council. This may imply that in reality the Village Councils were used as a rubber stamp to grant land to investor bearing in mind that they were not given any legal support during the negotiations. Also while investors are restricted to the award of a "derivative rights" but during the survey it was learned that Sunbiofuels Co. (T) LTD and Bioshape (T) LTD secured "right of occupancy" of land lease for 99 years.

4.1.2 Involvement of the community in the process of land acquisition

This study also examined the extent to which the community was involved to arrive at a decision to release land to investors. According to the regulation the transfer of village land to general land the community must be involved to give consent. The findings revealed that 78% and 82% percent in Kilwa and Kisarawe Districts respectively were not involved in the process (Table1). However, the records indicate that villagers participated in village general assembly and signed the proceedings. Responding to why did they sign the proceedings of the general assembly's meeting; villagers pointed out that it is a common practice to sign attendance sheets when attending village general assembly; for the time they attended the meeting they were not aware if signatures on the meeting minute sheets were meant to be taken as a consent of villagers to offer land to investors.

Table 1: Involvement of communities to arrive at decision to offer land for investment

Company	Level of agreement		
	Involved	Not sure	Not involved
SunBiofuels (T) LTD	14%	4%	82%
BioShape (T) LTD	15%	7%	78%
SEKAB (T) LTD*			

Note *SEKAB acquired land through Prison's department and Zanzibar Revolution Government

The SEKAB in Bagamoyo District used a different approach to secure land. The company negotiated the land deal with the Tanzania mainland Prison's department and the Zanzibar Revolution Government to acquire 500 ha and 20,000 ha of RAZABA ranch respectively. This land did not fall direct on the hands of the villagers. Although RAZABA ranch was not within the mandate of the village government but community used to benefit from the ranch to access common pool resources such as weaving materials, firewood, charcoal, and the ranch is a home of a wide range of biodiversity. For example, the RAZABA area is known to the East African Coastal Forest Zone whose dominant vegetation types include marine forests, thickets, woodlands, bush lands, grasslands and forests, which are of particular importance to the ecosystem. For instance, the mangroves which occur along the Indian Ocean, Wami and Ruvu Rivers trap terrestrial sediments, litter and nutrients and serves as important breeding sites for marine organisms (Bengesi *et al.,* 2009). The coastal forests are also known to be rich in endemic species. In this view, the community used to make their livelihood based on the resources available on this land. Since the land is sold out to the company the community has lost the access to these resources. Although no development has been done in RAZABA ranch the biodiversity remain undisturbed. It is anticipated that in a near future when the company advances to clear the land for sugar plantation it may threaten the livelihood of the community whose life depends on the natural resources available in the RAZABA ranch.

4.1.3 Compliance to EIA and SIA requirement

This study considered necessary to investigate if the biofuels investors fulfilled the requirement of conducting the Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) before the investment projects are approved by the Biofuel One Stop Center, at the Tanzania Investment Center. The findings revealed that all investors followed regulation to fulfill both requirements but this study considered the procedure laid down by the government is inadequate to obtain fair recommendations from the EAI and SIA reports. The reason behind this argument is that the regulation give mandate investors / developers to conduct both environmental impact assessment (EIA) and social impact assessment (SIA) as pre-condition for project approval by the Biofuels One Stop Center at TIC. Although the EIA and SIA reports are

subject to satisfaction by the National Environment Management Council (NEMC), this study considers the procedure to be subjective and lack objectivity, because it is almost impossible for investors who are interested in investing to submit a fair report with negative implication on the environment and social consequences that may lead to denial of the privilege of acquiring land for investment.

4.1.4 Company's entry strategy

Examining company's entry strategies to villages offered land for investment, it was revealed that SunBiofuel and BioShape companies were engaged direct with the community in negotiating land deals and advanced several promises to entice villagers to release land to investors. Most promises made mainly targeted to address the most burning problems in the specific villages. Table 2 present a summary of list of promises made by different companies. The community was enticed by promises because the company representatives promised to address the most outstanding problems existed in the respective areas. While there were several promises made by all companies one of the big shortfall, there were no legal binding agreement or written contract between the company and community that could hold the company accountable to fulfill their promises. This may have happened because the community was not given any legal support from the LGA or any other sources during the process of land acquisition.

This study also asked communities in the study area if they were aware of any consequences of offering land to investors. In their response they indicated that they were not aware of any consequences because investors emphasized only on the positive side of investment and no one from investors representative or the government side who told the community in advance regarding the consequences that may result from the biofuels investment. In this view, the experienced consequences resulting from failure of SunBiofuel and BioShape in Kisarawe and Kilwa, respectively, send strong signals to the Tanzania policy makers to curb loopholes in the regulations governing biofuels investment. Looking at the entire procedure of land acquisition followed by the investors to acquire land, this study get a general impression that direct

involvement of the company officials to negotiate land deals influenced the community decisions.

4.1.5 Company's fulfillment of promises

After the study it was realized that the entry strategy of biofuels companies was anchored on promises advanced to the community. It was considered necessary to examine the extent in which the promises were fulfilled. Table 2 present findings of fulfillment of company's promises for each study village.

Table 2: Promises made by companies and those fulfilled to communities

District	Village	Company	Advance Promises	Fulfilled Promises
Kisarawe	Mtamba	SunBiofuel	Boreholes, employment, contruction of roads, classrooms, solar power, provide, provide tractors, supply improved seeds, market of jatropha seeds, and introduce contract farming, construction of dispensary.	Constructed 3 Shallow wells, temporary earth road, which was not passable during the survey.
	Mhaga			
	Marumbo			
	Palaka			
	Mtakayo			
	Mitengwe			
	Chakenge			
	Kidugalo			
	Virabwa			
Kilwa	Mavuji	BioShape	Employment opportunities,', Market, school dormitory, office building	Dormitory for girls secondary school, Market building, office building
	Migeregere		Employment, electricity, bore holes,	None
Bagamoyo	Matipwili	SEKAB	Employment	None
	Makuruge		Employment	None
	Kiwango		Employment	None

The results show that only a few promises made by companies were fulfilled. For example, in Kisarawe District at Mtamba Village although the company advanced several promises to the community but managed to construct only 3 shallow wells in Mtamba Village and did not fulfill any other promises in other 8 villages. There were also some reports of constructing a temporary earth road which was used by both the company's vehicles and the communities. However during the survey / data collection the road was not passable. Similarly in Kilwa District the BioShape company advanced several promises presented on Table 2 but few promises were fulfilled i.e. construction of Dormitory for Girls secondary school, supported funds to build Mavuji Village office and, market building at the village, and the company also was providing afternoon porridge to pupils at Mavuji Primary School where most of parents during the afternoon were working at the company's farm.

While Mavuji Village received this support other villages never received any support from the company. Despite the fact that their land was taken by the company, this may suggest that Mavuji was initially targeted because it was the village where the jatropha demonstration farm of about 200ha was developed. This may imply that there were all the reasons to provide support to the community so that they can settle to work for the company. For example, provision of market building at the village was meant to ensure supply of utilities close to the village for workers when they came back late from work. Also provision of afternoon porridge for school children was meant to ensure availability of food for children in the afternoon when parents were working in the company's farm. Possibly the company could have expanded the support to the rest of villages as the farm operations could have expanded, given the short life time of the company survived the rest of the villages never received any support.

Basically, what can be learned from the study the companies had no legal obligations to fulfill the promises made during the land acquisition because there were no legal binding contracts between the community and investors. This might have been contributed by inadequate experience among community to negotiate legal contracts with well experienced companies on the other side. Consequently, the community was on the disadvantage side that led to close weak contracts. Also it is clear that company provided support to villages when they knew there

were beneficial returns on whatever investment they were making on social services. This may explain why fulfillment of promises initially started from villages which were close to the farm and no promises were addressed in villages which were far away from the farm.

4.1.6 Compensation of land taken for investment

With the understanding that, once village land is converted to general land, it is most likely that the land will not be converted back into village land, implying that the villages have "lost" control over the land. The villages do not receive compensation for the change of village land to general land, which is rested in the power of the President of the United Republic of Tanzania. The compensation of villagers for the land that they were using is done according to the regulations established under the laws of Tanzania which covers only developed land and does not consider the underdeveloped land that was used by the community to access common pool resources. This study considers not appropriate and suggests the community could hold ascribed stake of share of investment to continue realizing benefits and access of their land even after investors have defaulted as it happened in Kisarawe and Kilwa Districts.

Examining the compensation of village and individual land offered to investors, this study observed several flaws: The major one was the individuals who received their compensation to date were not informed of the basis for their compensation. They ought to know the compensation was for what items because there were no records to show the size of the land compensated for each individual and the value of properties which were on the land itself. They were just given a lump sum amount of cash without giving details of payments. Secondly, up to the time of this study, the land that belonged to the village (village land) taken by the companies was yet to be compensated. In Kisarawe District the nine (9) villages had formed a Task Force or Committee to make a follow up and they had opened up a case in the court for which the outcome was yet to be known because the ruling had not been done.

4.2 Practices of Biofuel Investment in the Study Area

This study examined the practice of biofuel investment in Kisarawe (Sun Biofuel), Kilwa (BioShape) and Bagamoyo (SEKAB). The analysis was based on the production models adopted

by the companies, market strategies by corporates, and the implication of the production models to the local livelihood and sustainability of agriculture in the study area. The next sections present the details of the biofuels practices in the study area and indicate what could be the best practices of biofuel investment in Tanzania for win-win situation between smallholder farmers and investors.

4.2.1 Biofuels Production Models

In the course of this study, three production models were identified namely estate farm, out growers scheme, and hybrid mode of production that combine estate and out growers scheme. Table 3 presents a summary of production models for each visited company and findings indicate that Kisarawe and Bagamoyo in which Sun Biofuel and SEKAB Companies, respectively adopted hybrid mode of production namely estate and out growers schemes. Despite the plan for the out grower schemes it ended up on plan it never implemented in the study area because companies closed operations at early stages of investments. For this reason it was not easier to examine how beneficial the mode of production was to smallholder farmers because it had never been practiced in the study area. However, looking at the institutional set up where smallholder farmers operate in isolation it is likely smallholder farmers could only benefit if were organized in strong farmers organization.

Table 3: Production models adopted by companies

Company	Country of Origin	Location of investment	Mode of production	Feedstock	Size of land Applied (ha)	Land Concession (ha)
SunBiofuel	UK	Kisarawe	Outgrowers and Estate	Jatropha	18,000	8,200
SEKAB / Eco Energy	Sweden	Bagamoyo / Rufiji	Outgrowers / Estate	Sugar cane	20,000 / 200,000	20,000
BioShape	Netherlands	Kilwa	Estate	Jatropha	81,000	34,000

On the other hands, BioShape in Kilwa District, adopted estate mode of production in which the companies planned to produce biofuel feedstock through estates. Farmers were promised to be supported with the company tractors to cultivate their farms and provision of loan for improved seeds to ensure food security but this promise was not fulfilled up to the time the company closed its operations. Moreover, people who worked for the company indicated that it could not be possible to farm their own farm because they normally worked long hour in the company's farm and came back home very late. Giving specific example, villagers indicated that normally the company's vehicle picked workers from the village at 6:00 AM and return them back at 7:30 PM, which was already late to work in their farms.

In view of these results this study considered worth examining the pattern of food security before and after the company started its operations to be able to show if there was a shift on the trend of food security. The findings in Figure 2 indicate that before the company's started its operations about 46%, 16%, 44% consumed maize, cassava and vegetables from their own farms. However, during the company operations, the consumption behaviors shifted where only 13%, 4% and 35% were still consuming maize, cassava and vegetables grown from their own farms respectively. In other words investment of biofuel in rural areas, shifted the consumption behavior of rural communities which depends on the wage with little pay of about Tsh. 100,000/= per month. This amount could hardly cope with the new consumption behavior.

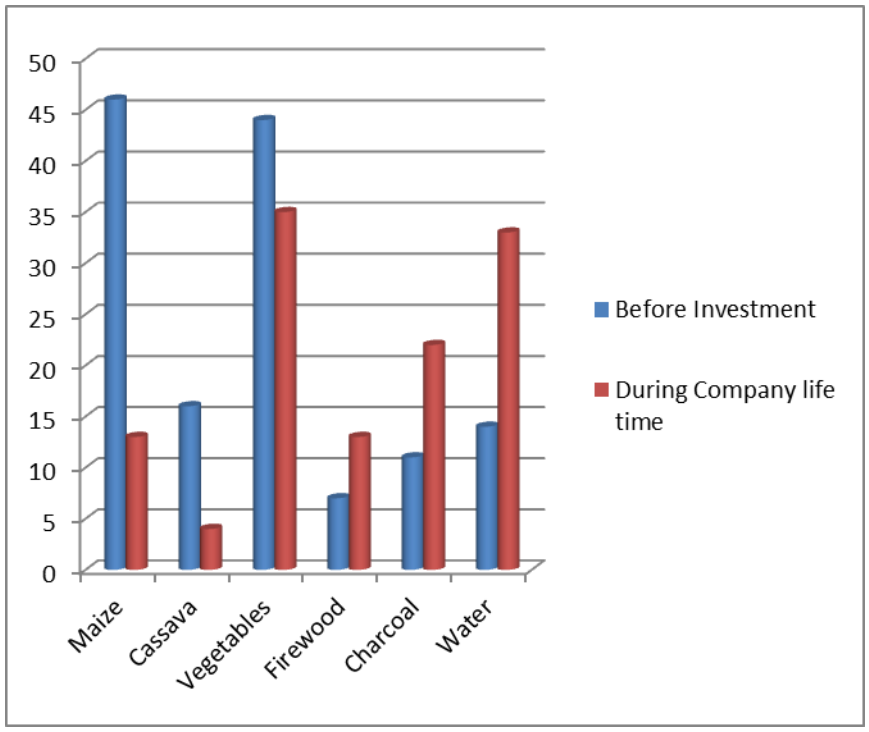

Figure 2: Consumption behavior

Similarly, Figure 2 shows that there was a shift on the source of charcoal, firewood and water. Before the start of company's operations 13%, 26% and 33% of villagers used charcoal, firewood and water from their own source, respectively. But during the company's life time only 4%, 11% and 14% of villagers were able to collect charcoal, firewood and water from own sources, respectively. This implies that the majority will only be able to buy from the wage received from the company. Given the fact that the majority were not employed on permanent terms and received relatively low wage, this suggest that existence of the biofuels companies created much more pressure on rural livelihood by changing the consumption pattern.

4.2.2 Market strategy of biofuels companies

Examining the market strategy of biofuels companies was crucial to be able to identify other benefits that could result in the production chain. The findings indicated that BioShape in Kilwa and SunBiofuels in Kisarawe planned to grow jatropha for export of raw seeds. This again is

another shortfall observed which implies that by exporting raw seeds a lot is also lost in terms of opportunities related to product value addition and employment in the production chain.

4.3 Impacts of Biofuel Investment in the Study Area

4.3.1 Social Impact of biofuel Investment

The closure of SunBiofuels in Kisarawe and BioShape companies in Kiwa Districts respectively has denied access of villagers to common pool resources due to restrictions to access land that is under the hands of investors although the companies have ceased their operations. This also left about 700 and over 1000 villagers jobless and in despair for the future. The elders in the Villages feel this is like the return of colonialism - "Colonialism in the form of investment". This argument coincides with the one in a study by Madoffe *et al*, (2009), "Biofuels and neo-colonialism" in which the authors also considered the proposals for biofuels similar to a new form of neo-colonialism and coined new term i.e. "climate colonialism". A quarter of the village's land in Kisarawe District was acquired by a British Biofuels Company in 2008, with the promises of financial compensation, 700 jobs, water wells, improved schools, health clinics and roads. However, the company has gone bankrupt leaving villagers not just jobless but also restricted them to access common pool resources on land they owned before. Similar report repeats in Kilwa Rufiji and Bagamoyo Districts. The foreign investors bought up land in these districts but left some of the poorest people in the villages worse off when their plans failed to meet ends. The situation in Kisarawe and Kilwa is heartening, but the real tragedy is that there is little possibility that the land can be reversed to the village authorities and be able to enjoy the lost benefits such as building poles, hunting, firewood, fruits, honey and charcoal making which subsequently were able to sell and get money.

It is worth noting that, large part of land which was acquired by Sunbiofuels was under village forestry reserved lands. This land supported a number of forest dependent livelihood activities including crop production, water collection points, firewood collection, charcoal production, timber production, harvesting of construction poles, wild animal hunting, collection of wild fruit, mushroom and herbs for traditional medicines. The jatropha plantations have resulted

into a dramatic loss of common pool resources. The results revealed that 92% of the respondents indicated lack of access to common pool resources (Figure 3). As a result of land acquisition, communities have lost ownership and access to land for different multiple uses. Due to that, families whose livelihoods depended on extraction of natural resources lost their income base.

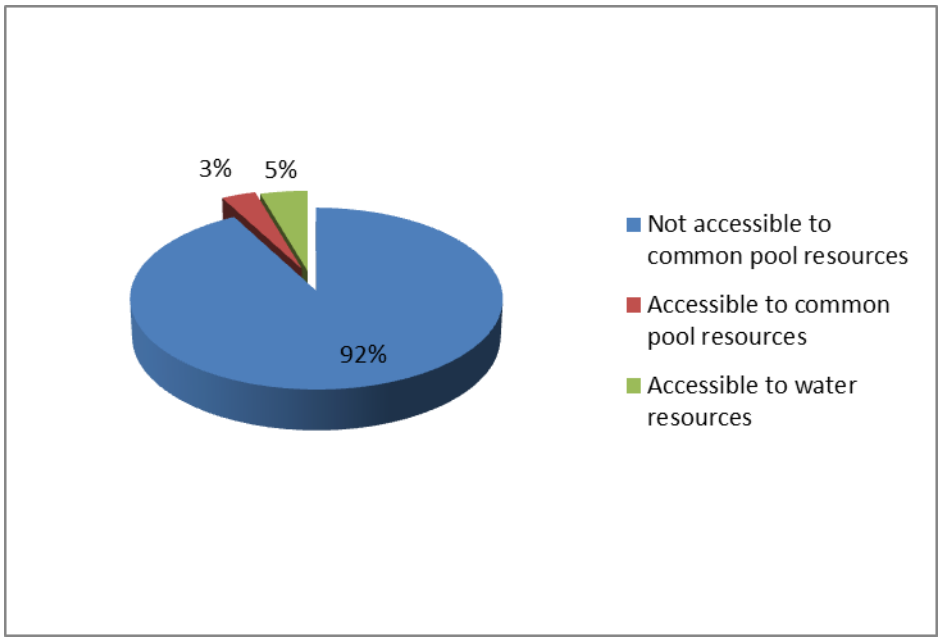

Figure 3: Accessibility to common pool resources

The above information serves to inform in brief how the entire process of land acquisition by the companies and the aftermath of their activities. It can be noted clearly that local people were entirely new to contract negotiations. They were not even backed up by any forms of legal support during negotiation for their land/ compensations. Neither the village nor the individual villagers gave their land to the company had a formal written contract for the deal. The findings show that, there was a direct involvement of the company during land acquisition process as the company had a direct contact with the communities. This direct involvement of the company in identifying and negotiating for the land by making captivating promises influenced the community's decisions in favor of the company.

4.3.2 Impact on ecological systems/Environment

The SunBiofuel and BioShape companies acquired about 8,200ha of land and 34,000ha of land in Kisarawe and Kilwa Districts, respectively. Of these, 2000ha and 400ha in Kisarawe and Kilwa respectively were cleared and planted with jatropha as of the year 2013 when this study was being undertaken. Clearing of such large area of land has an ecological impact especially on biodiversity and carbon sequestration. According to the literature, aside from the devastating effects tropical forest loss has on biodiversity and forest-dependent communities a major consequence of deforestation and forest degradation is the release of heat-trapping carbon dioxide (Co_2) into the atmosphere, either by burning or degradation of organic matter. (Mountinho *et al*, 2005). Carbon dioxide is one of the most potent greenhouse gases and the primary component of human activities emissions. The conversion of forests to other land uses is responsible for around 10% of the net global carbon emissions (IPCC, 2013). This may suggest continued expansion of biofuels investment requires critical analysis on the choice of biofuel feedstock which can substitute the tropical forest that is known to be a potential carbon sink. Otherwise, the objective of clean energy as a driver of biofuel investment may not be realized.

Furthermore, replacement of the indigenous tree communities (forestry) that had an ecological role or niche to play, by pure stand of alien tree community of jatopha is a typical form of monoculture system that may have resulted into a number of ecological consequences, seen or unseen. The literature shows that jatropha is a potential host of pests/ diseases that can invade cassava. Casava being both a staple and cash crop in Kisarawe and Kilwa Districts may threaten both food security and livelihood. In addition, the increased application of agrochemicals (pesticides) on jatropha plantations may result into serious ecological impacts on the land and hence the environment. Huge quantities of pesticides find their way on the land affecting the unique fauna and flora, contaminating both surface and underground water sources, polluting the soil, the rivers and coastal ecosystems, which subsequently may affect human being especially communities residing within the surrounding of these resources. Although it was difficult to establish the extent or magnitude of the impact during data collection because the companies had halted their operations but based on the practice that open spraying was

performed by using knapsack and boom sprayers directly indicated a huge potential risk to both the biodiversity and the environment.

4.3.3 Impact on food security

Agriculture is the main stay for majority of people in Kisarawe, Kilwa and Bagamoyo Districts. Cassava is the main food crop in the study areas. As far as household food security is concerned, people are considered food secure when they have all-time access to sufficient, safe, nutritious food to maintain healthy and active life**.** According to crop production data for Kisarawe, average crop yield of cassava in the district is 6tons/ha. However, results from this study shows that current production of cassava in the study villages is able to provide energy requirement of household with average household size of 5 members for 6.5 months only. This implies other food sources from the study areas are crucial to meet household food demand. Therefore, food security at household level is achieved through combinations of household farm production and purchase of food commodities from the local market. In order to balance household food demands, these food commodities are almost purchased throughout the year. In such a situation, introducing biofuel crop may exacerbate the problem by creating labour competition between food crop production and jatropha as a biofuel crop.

With regard to the study area specifically Kisarawe and Kilwa Districts in which SunBiofuel and BioShape companies employed about 700 and 1000 people respectively, to work in jatropha plantations whose majority abandoned farming activities. If this trend was left to continue without proper strategies to ensure alternative source of food, it could pose a great threat of food insecurity in the study areas bearing the fact that the wages received of Tsh.100,000/= was inadequate to hire labor force to till their farms.

Investment in Jatropha plantation by Sun Biofuels and Bioshape has affected household labour dynamics among the villagers in the study areas. For instance, the study shows that family labor force in agriculture dropped from 72% before 2007 to 38% during the company life time (Figure 4). Since most labor force drawn to work for the company constituted men, the household farm work pattern shifted and threw more burdens to women (Figure 4). It was also found that,

company's employees used part of their wages to hire labor for their own farms. About 4% of the respondents indicated to use their wages to pay for other people whom they engaged to work on their own farms. Despite slight increase of paid workers on own farms, still women shouldered relatively more work load since the hired labor force was relatively low to substitute the one drawn by the companies. This is due to the fact that the wages received could not suffice the household needs to be able to hire labor in the household farms. Thus, employment in both companies (Sun Biofuel and BioShape) jatropha plantations had critical implication on household food security because employees are basically the core household members who play important roles in food crop production and hence have a stake in household food security status.

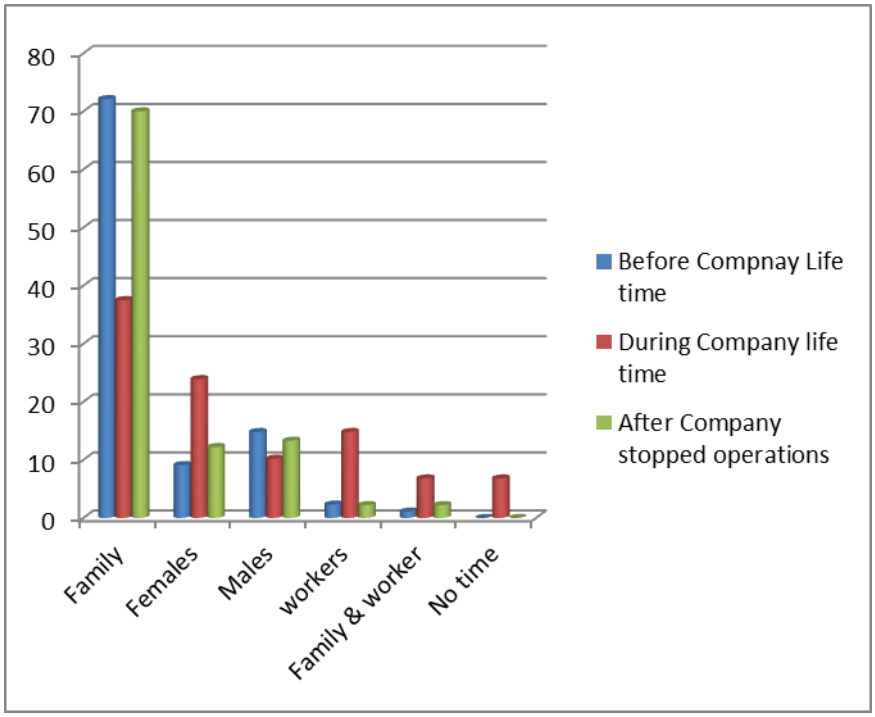

Figure 4: House hold labor dynamic as influenced by Company operations

As a form of adaptation/copping strategy to this phenomenon, the results show that from 2007 to 2012 there has been a growing tendency of community members to purchase basic commodities such as maize, vegetables firewood, charcoal and water to meet the growing household food demands (Figure 2). Therefore, food security at household level is achieved

through combinations of household farm production and purchase of food commodities from the local market.

4.3.4 Emergency of lethal crop diseases on cassava

Cassava being a major cash and food crop in the area is likely to be threatened by establishment of jatropha plantations. Jatropha is reported to be a potential host of pests and or diseases that can invade cassava. The research team witnessed the unknown lethal diseases on cassava farms in the study area with devastating effect on cassava growth and yield. The disease is apparently a new one with no cure and affects the cassava tubers which are the harvestable parts (i.e. food) followed by a subsequent leaf curling, mosaic and wilting of the entire cassava plant. The disease reported to emerge in 2012, has so far been widely spread in all the villages surrounding the jatropha plantations in Kisarawe District. Since it is a new disease, the famers have nicknamed it "*makirikiri*" due to its swelling on the cassava tubers which appears like a series of beads as it is the case with the traditional garget that is worn on legs by the Botswana's traditional dance group famously known as "Makirikiri". The symptomatic signs render the affected roots being condemned as they are unfit for consumption and even for sale. Thus, the observed declining trends in acreage and production of cassava crop since 2007/2008 to 2012/2013 crop seasons is also attributable to the occurrence and or existence of this disease. Although there is no hard evidence on the advent of the disease, the community members were strongly associating it with the existence of jatropha plantations. However, further pathological and ecological research is sought to ascertain this claim.

4.3.5 Economic impact

This study also examined the investment incentives provided by the government to attract investors in agricultural sector including biofuels and their implication in the economy. According to TIC, investors receive both fiscal and non-fiscal incentives (Figure 5). On fiscal incentives investors receive tax waiver on both import and VAT of capital goods, and import duty draw back for inputs used to produce export goods. For non-fiscal incentives; investors receive guarantee of transfer unlimited amount of net proceeds or dividends generated from an investment to

foreign country provided they use bank transfer; special incentives on request can be provided to an investor with big project worth USD20 Million and the annual land rent charged to an investors per Acre is Tsh 200. Finally, due to environmental concern foreign market like USA and Europe provide tax waiver to import of biofuel as a strategy to encourage import of clean energy to meet their blending targets.

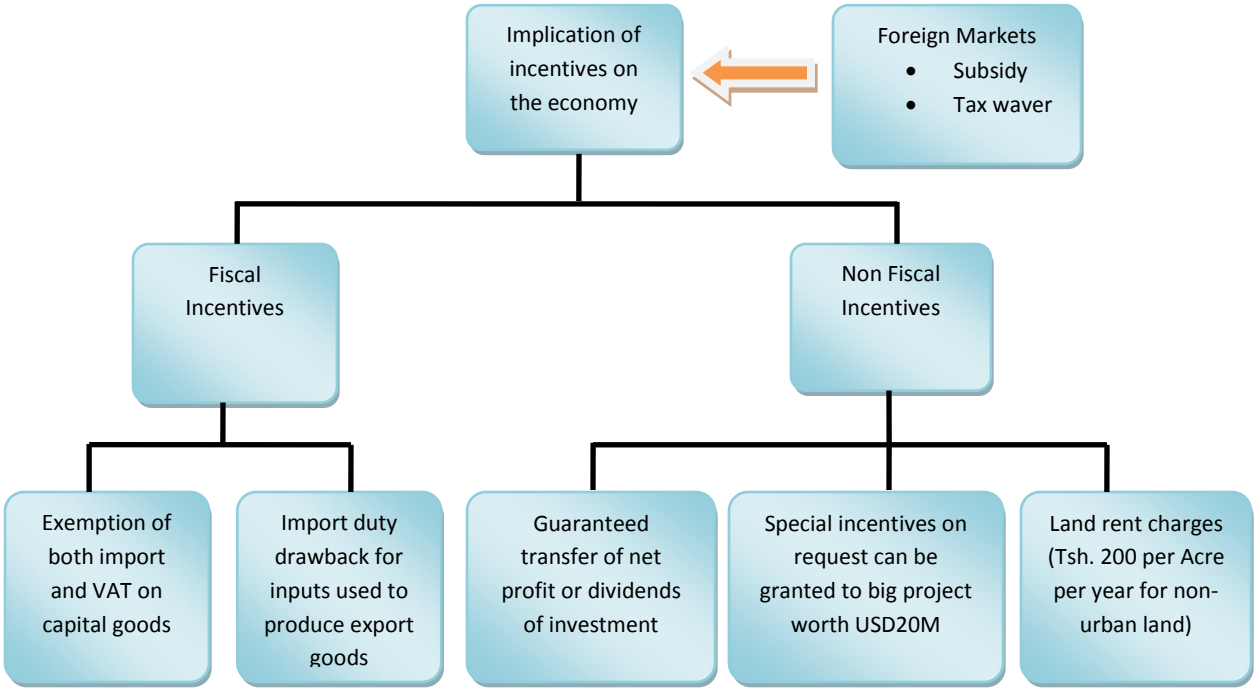

Figure 5: Incentives granted by the government to investors

Looking at the identified incentives provided by the government to investors they are not helping the government to form strong base for economic growth even meeting the objectives of promoting biofuel investment. While among others the government is promoting biofuels investment to serve foreign currency reserve equivalent to import substitute, ensure clean energy, and foster economic growth. These objectives are not likely to be mate for several reasons. First, the government is not receiving tax for imported capital goods, export and VAT taxes for export of biofuels products, to be able to build the economy. Second, the government has no blending target to create local consumption that could eventually develop local market and be able to serve equivalent amount of import substitute and address the challenge of environmental pollution. Third, the freedom of investors to transfer unlimited amount of profit

generated from investment threaten the objective of the government to increase foreign currency reserve. This all together makes more attractive for investors to export biofuels products for the sake of continuing enjoying tax waiver granted by the government for export of agricultural products. In order for the government to be able to attain its objectives of promoting biofuels investment it needs to revise the packages of incentives provided to investors.

4.4 Perception of Smallholder Farmers on Biofuel Investments

In the course of the study, small holder farmers were asked to give their opinion with regard to the biofuel investments. Smallholder farmers in Kisarawe and Kilwa indicated that they are very disappointed with the way companies failed to fulfill promises they made during the process of land acquisition. They indicated that to their surprise the employment was not sustained, and social services such as construction of school buildings, water services, roads, dispensaries and village government office buildings were not provided at all. Although, in Kilwa BioShape constructed village market building and constructed maternity ward in Mavuji Village this was not extended to other villages, which offered land for biofuel investment. Failure of company to fulfill promises provides lessons to the government and other institutions which are responsible to provide these facilities.

4.5 Lessons Learned

In the course of the study the following lessons were drawn:

- Despite existing large potential of biofuel production in Tanzania; the country lacks an enabling environment to support co-existence between smallholder farmers and large scale farmers to create win – win situation that foster mutual benefits.

- To date, there have been a range of problems associated with the process of land acquisition; especially when investors are directly involved in the process of negotiation of land deals with the local community. This might have been attributed by lack of biofuels policy to guide investment decision.

- The regulatory environment governing land tenure in Tanzania is weak and does not protect smallholder farmers' land rights.

- While one of the objectives to promote biofuels investment in Tanzania is to ensure energy security; Tanzania has no blending targets of biofuels to create local demands that will trigger local market for the biofuel products and substitute export of fossil fuels. In the absence of local demands the biofuels are likely to be for export which may not account for energy security as expected.

- The formal system available for resolving land disputes between smallholder farmers and investors is apparently seen not to be effective enough to give justice on time.

- The incentives granted to investors create attractive environment for investors to export biofuel products rather than selling the products for local consumption.

- Fiscal policy that allows transfer of unlimited amount of proceeds through banks does not favor the government's objective to increase foreign currency reserve.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study examined the impact of biofuels investment on local livelihood in three districts of Tanzania namely Kisarawe, Kilwa and Bagamoyo. Specifically, focused on assessing the procedures used by investors to acquire land, socio-economic and environmental impact of biofuels investment in the study area, delivery of promises by investors for local development, and perceptions of small holder farmers on biofuel investments in their localities, and develop recommendations on the way forward.

The findings revealed that the land acquisition process followed formal procedure in the study area. However, there were imbalances in the negotiations of land deals between local community and investors. In the process the communities were exposed to investors who are highly experienced to carryout international negotiations without legal assistance.

Understanding the weak position of local community, investors used catchy but empty promises as a trap to win consent of the local community that subsequently were submitted to higher authority to obtain right of occupancy contrary to regulations that requires foreign investors to be granted with a derivative rights. Also the study observed flaws on the land evaluation and compensation procedures that some individuals and village land has not received compensation. Moreover, those received compensation were not informed of the land size and the value of properties deserved compensation.

Examining the socio-economic impact, the study observed that closure of investment resulted into a state of despair and loss of hopes among the community members. The costs that community pays for the failed biofuel projects have not been adequately addressed. In villages where the community relied on the natural resources and agriculture to support more than 95% of their livelihood, the losses of land and jobs cause significant impact on their livelihood. The foregone livelihood opportunities for not accessing the common pool resources are particularly disturbing given the fact that the loss of jobs that substituted income from loss of common pool resources has no other immediate alternatives.

The biofuel projects have also resulted in significant environmental degradation, especially from the clearing of natural forests to make way for plantations. Both the BioShape and Sun Biofuels estates included critical ecosystems such as coastal forests, wetlands, and *Miombo* woodlands. These areas harbored unique biodiversity and provided important ecosystem services for local villagers, including fuel woods, medicinal plants, weaving materials, clay soil for pottery and pasture for livestock. BioShape and Sun Biofuels did not clear all of their concession areas before pulling out, but the land that was cleared degraded the local environment and the community is no longer accessible to common pool resources.

6.2 Recommendations

The following were the recommendation drawn from this study:

- Much as this study acknowledges the efforts of the government to promote large scale investment in biofuel sub sector this study is in the opinion that the government has not

created an enabling environment to support co-existence between smallholder farmers and large scale farmers to enhance a win – win situation that fosters mutual benefits. This study recommends that the government should create an enabling environment to empower small holder farmers before opening up for large scale investors to minimize chances of the smallholder farmers being exploited by large corporation.

- With the understanding that direct involvement of investors to negotiate land has caused several disputes with the community, this study recommends that investors should only secure land through TIC land bank that grant derivative right to avoid land disputes.

- The government should improve regulatory environment governing land tenure in Tanzania to safeguard smallholder farmers' land rights. In this view, foreign investors should be restricted to "derivative right" and not right of occupancy as it happened to SunBiofuel and Bioshape Companies in Kisarawe and Kilwa, respectively.

- While one of the objectives to promote biofuels investment in Tanzania is to ensure energy security; Tanzania has no blending targets for biofuels to create local demands that will trigger local market for the biofuel products and substitute export of fossil fuels. Based on this, the study recommends the government to create mandatory local blending targets to create local demand.

- The regulation requires land owners who give land to investors to receive compensation from investors before land is transferred from village land to general land that subsequently qualify for an investor to be offered with a "derivative right". In view of the violation of this regulation by some investors the government should be keen in the process of granting derivative rights before investors fulfill the requirements of land acquisition.

- With the understanding that investors used promises to lure community when in the process of land acquisition without legal contracts which may hold them accountable. This study recommends that whenever necessary when communities are to be engaged in

negotiations of any kind that requires legal attention the government through local authority should provide legal support.

- The government needs to review the procedure through which the Environmental Impact Assessment (EIA) is carried out by assigning own consultant instead of relying on investors reports that may be biased and may not warrant objective judgment.

  The government also should revise the investment incentives to promote local consumptions of biofuel products and meet its objective of increasing foreign currency reserve. This should go along with the review of Fiscal Policy to limit investors to transfer unlimited amount of proceeds generated from investment to foreign countries, and reduce tax waiver granted on capital goods.

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