From Global Land Grabbing for Bio-fuels Expansion to Access Acquisitions of African Water for Commercial Agriculture

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Abstract

The expansion of bio-fuel investments has been supported by indebted African governments because of the perceived potential development benefits including sustainable energy development, support to poor farmers, developing rural economies and reducing greenhouse gas emissions. However, the intensity of bio-fuels political economy in poor countries would worsen inequality of the vulnerable poor. This is evidenced in Large-scale land acquisitions in Africa for bio-fuels and crops production primarily for home consumption – food, animal feeds and energy crops. The search for distance land in African countries has been triggered by growing concerns for food and energy security in developed countries since the global food crisis of 2008. Moreover, these recent developments in large scale acquisitions of land in Africa is not a new phenomenon but it is the renewal on the old practice in commercial agriculture in Africa, which are either conducted through purchases or long term leases for commercial agricultural production.

In addition to bio-fuels expansion, this study also notes that the current land acquisitions in Sub Saharan Africa have further been driven by demands to access water resources for commercial agriculture and industrialization. Land purchases or leases automatically guarantee access to African water. This demand for water for agriculture is a respond to climatic change where most industrialists believe that acquiring land near main water reservoir could guarantee the future of their industrial potentials. There have been few analyses done in this area of water acquisition. This study therefore looks at these recent developments in large-scale land acquisitions in Africa to mean acquisition of water as a security for commercial agriculture as climatic changes could bit the big producers who depend on nature for crop production. It focuses on analyzing the national policy available for these acquisitions, rights accorded to these foreign investors and how these acquisitions undermine the indigenous rights access to common resources which have been the source of their livelihoods. This is done by employing the political economy approach to analyze these recent developments in Sub Saharan Africa.

Keywords: land acquisition, water, sustainability, common resources and bundle of rights

Introduction:

The current global 'land grab' is causing radical changes in land use and ownership. The main process driving the 'land grab' as reported by the media and emerging literature is the production of food for export by finance-rich, resource-poor countries and biofuels for export after the 2007-08 food and energy crises. The term 'land grab' generally referred to large-scale, cross-border land deals or transactions by transnational corporations or initiated by foreign governments (Zoomers 2010:429). Much of the 'land grab' is the result of increasing demand for cheap food crops. The food supply problems have resulted from production bottlenecks in storage and distribution, and expansion of biofuels that competes for land use. Host governments also generally welcome foreign investments; even though their own populations lack food (like Madagascar and Sudan).

Therefore, 'food-insecure' governments that used to rely on imports to feed their populations, like the Gulf States are now seeking to outsource domestic production by buying and/ or leasing vast areas of farm abroad for food production. This explains why state owned firms in Qatar, UAE and other Gulf States are reportedly involved in land acquisitions in Egypt, Sudan, Ethiopia and other Africa countries (ibid. p. 434-5).

The 2007-08 booms in food prices and the subsequent period of relatively high and volatile prices reminded many import-dependent countries of their vulnerability to food insecurity and prompted them to seek opportunities to secure food overseas. However, with little empirical data about the magnitude of this phenomenon, options about the implications are divided. Some commentators see as an opportunity to reverse the long-standing underinvestment in agriculture that could allow land-abundant countries gain access to better technology and more jobs for poor farmers and other rural citizens. If managed well, it could create preconditions needed for sustaining broad-based development (Deininger et al. 2011).

The recipients of these investments are poor developing countries actively trying to attract investors because they value land deals as an opportunity to get funds for the development of agriculture or infrastructure (Friss & Reenberg 2010:7). The global 'land grab' is to a large extent the result of the liberalization of land markets, a policy adopted in the early 1990s has contributed to the commoditization of land and other natural resources (cf Brenner & Theodore 2007 in Zoomers 2010:431). The international institutions have rhetorically facilitating the process of extensive land purchases in developing countries believing such deals could be 'win-win' situations for both investors and 'host' countries. The principal actor among these institutions is the International Finance Corporations, the private sector arm of the World Bank Group, financing private investments in developing countries through advice to governments to create "business enabling environments" (Daniel & Mittal 2009:6). Those legitimizing land grabs as a 'win-win' situation for both investors and host economies include players such as donor governments, research institutions, international governmental agencies, including FOA and other UN agencies. They based their arguments on promoting economic development in poor countries by providing jobs in agriculture and other linkage industries, boost export, and new technology to improve on farm efficiency (ibid. 2009:9). The IFPRI believes that transparency in negotiations, respect for existing and rights, and sharing benefits between local communities and foreign investors, foreign investment can provide key resources for agriculture, including the development of needed infrastructure and creating alternative livelihood options. However, the concept of 'food sovereignty' can only be secured by promoting small farming as a key to enhancing food production (McMichael 2010: 613). But, this perspective has been neglected by the international development agencies; instead support individualization to large scale farming for export frontier.

There has been much written literature on the expansion of biofuels and associated 'land grab' across the world (e.g. GRAINS 2008, Cotula et al. 2009, von Braun & Meinzen-Dick 2009). Few studies have been conducted explicitly on the political economy of biofuels development (e.g. Borras et al. 2010; McMichael 2010, Dauvergne & Neville 2009 cited in White & Dasqupta 2010). Limited information exists on water analysis of land acquisition (Smaller & Man 2009). Therefore, political economy approaches explicitly ask at least these four fundamental questions: Who owns what? Who does what? Who gets what? And what do they do with the agrarian surplus? (Borras et al. 2010) There is scarcity of information on linking land acquisitions to hydro-security. This is the gap being explored by the study and since it a preliminary study, it can be used to guide future studies.

This study is based on the review of existing information from GRAIN, IIED, FAO, ILC and documentation from government agencies and other international organizations, and analyses of biofuel projects. It also used secondary literature in the analysis and any other information related to biofuels. The geographical scope of the study was on Sub Saharan Africa. This is due to the fact that it has abundant natural resources including fertile tropical land, lot of rivers and lakes, and coastal areas with humid temperatures. All these conditions could be good for biofuels production and water potentials. This study believes land in these areas exists under the dualism in which statutory and customary ownerships exist. However, land acquisitions are mostly done without respect to security, livelihood and access to common resources by indigenous people.

The drivers of Land Grabbing in Africa:

The large-scale land acquisitions broadly means acquisitions (purchases or leases) of land areas ranging from over 1,000 ha or to 500,000 ha (Cotulal et al. 2009:3), by wealthier food-insecure nations and private investors to produce export crops (Daniel & Mittal 2009:2). The immediate short term factors for land acquisitions were driven by high level of global food prices in 2008, and high oil prices in 2007 and 2008 which triggered private investors, and banks to search for new sources of investment in property sector (Smaller & Mann (2009:4). In general, earlier scholars on 'land grab' identified three main driving factors in agricultural land investments as: food security; demand for biofuels; and alternative source of energy amidst climatic change (Daniel & Mittal 2009:2; Brittaine & Lutaladio 2010:4).

Food security of food-insecure nations has been threatened by skyrocketing food prices in 2008 resulting from increased import bills and inflation rates, harsh climatic conditions and poor soils and scarce land and water in many areas, combined with economic and demographic growth. (Daniel & Mittal 2009:2). Also, food security of investor countries has been the key driver of government-backed investment. Food supply problems and uncertainties were created by constraints in agricultural production due to limited availability of water and arable land; bottlenecks in storage and distribution; and by the expansion of biofuels production. Increasing urbanization rates and changing diets are also pushing up global food demand (Cotula et al. 2009:4). Biofuel production also has affected the production of traditional crops leading to monocultures (Matondi 2011)

With regard to biofuels, government consumption targets (in the European Union, for instance) and financial incentives have been the key driving force (Cotula et al. 2008:1). Furthermore, there is rising rates of return in agriculture; particularly the rising commodity prices making the acquisition of land for agricultural production looks like an increasingly attractive option. There has also been improved attractiveness of investment climate in several countries through a growing number of investment treaties and codes, as well as sectoral legislation on land (cotula et al. 2009:5).

However, recent literature has now broadened the debate on driving forces to a numbers of factors from food security; biofuel and alternative energy to rural development and export development; rising need to need for non-food agricultural commodities; expectations of returns - the role of private sector; the emerging carbon markets – especially biofuel projects, and the long term REDD scheme under the Kyoto climatic change regime; and host country incentives (Cotula et al. 2009:52-58). This is because biofuel produces fewer particulates, hydrocarbons, nitrogen oxides and sulphur dioxide than mineral diesels. Energy security is driven by the volatility in crude oil prices and the perceived threat to national security of over-dependence on foreign supplies. In developing countries, biofuel production can contribute to rural development in three main areas: employment creation, income generation and replacing the traditional biomass (Brittaine & Lutaladio 2010:6).

In addition to the three main driving forces: food, biofuel and energy crisis, Zoomers (2010) identifies other processes driving the land rush in Africa. (a) the creation of free economic zones and its associated large-scale infrastructure works, normally created on peri-urban zones; (b) large scale tourist complexes being encouraged in developing countries; (c) the rapid increase in 'retirement' (residential) migration, a response to high cost of living in the North. Many people above 55 or over average are seeking comfortable existence in cheap sunny environment that has a friendly and caring population; (d) land purchases by migrants in their countries of origin (Zoomers 2010:437-440). Smaller and Mann (2009) also notice the growing need for land as the drive to secure water security in Africa.

Also, the unprecedented economic growth in transition countries has increased the demands for energy. Consumers in these countries have increased their standards of living and biofuels production can contribute to damping down the rise in oil process and therefore improve on national energy security (Coyle 2007, in Matoni et al. 2011:9).

Where, How Much and for What of these Land Acquisitions:

Whereas agricultural investments in the past were mainly for global markets through plantations agriculture by western governments and companies, the current land deals are increasingly driven by the desire to secure land rights and fresh water for domestic food and energy need of home countries (Smaller & Mann 2009). The new investors are mostly from the oil-rich but insecure Gulf States like Saudi Arabia, Qatar, and UAE and the emerging giant countries in Asia like China, South Korea and India (Cotula et al. 2009; Von Braun and Meinzen-Dick 2009; Smaller & Mann 2009). The scale of foreign investments has increased dramatically in the recent years and has generated debates on the benefits and challenges to livelihoods of the local rural poor. Literature reports on 'land grab' as being conducted either through leasing or selling of the land (Cotula et al. 2009; Smaller & Mann 2009; von Braun & Mwinzen-Dick 2009; Friss & Reenberg 2010).

They directly compete with local users of land in developing thus threatening their sources of livelihood. These actors include: governments from developing countries initiating investments as they are also concerned with the food crisis that awaked the world since 2007-08; financial entities that have been attracted in land based investments; and the greater concentration in agro-processing and technical advances that favor large operations (Deininger et al. 2011:2). They are driven by the demand for food and other industrial raw materials due to growth of population and income. The demand for biofuel-feedstocks as a reflection of policies and mandates in key consuming countries; shifts of production of bulk of commodity to land land-adundant regions where land may be cheaper and the scope of productivity growth higher than in traditional producing regions already operating at the productivity frontier (Deininger et al. 2011:11). Sub Saharan Africa (SSA) has a comparative advantage in fertile rain-fed soil that is good for biofuls production as illustrated in the table 1below:

Table 1: Availability of agricultural land across regions of the world

Region	Total area (1,000 ha)
Sub Saharan Africa	201, 546
Latin America and the Caribbean	123,342
Eastern European and Central Asia	52, 387
Middle East and North Africa	3,043
Rest of the world	50,971

Source: Fisher & Shah 2010: in Deininger et al 2011. p. 79

SSA has the largest potential amount of land suitable for rain-fed agriculture, followed by Latin and America and Caribbean. In these regions, the ratio of land currently cultivated is large, highlighting the possibly far-reaching social impacts of agricultural investments.

As a new field of study, there is no information inventory on how much of the land acquisitions in Africa. Information is normally at disaggregated level. However, some literature and organizations have conducted aggregation on the land deals, but the data vary from source to source. Table 2 illustrates the number of land acquisitions in selected African countries.

Table 2: Large-scale land acquisitions in selected African countries

Country	Projects	Area (1,000 ha)	Median size (ha)	Domestic share (proportion of transfers to domestic investors
Ethiopia	406	1,190	700	49
Liberia	17	1,602	59,374	7
Mozambique	405	2,670	2,225	53
Nigeria	115	793	1,500	97
Sudan	132	3,965	7,980	78

Source: Deininger et al 2011. Xxxiii

The statistics provided by Friss and Reenberg (2010), after screening and triangulating the scattered quantitative information on the magnitude of land grab reveal that between 51 and 63 million ha are currently assigned in land deals or under negotiation in the twenty seven African countries. The report also points that Madagascar leads in attracting biofuel projects (16), follweed by Ethiopia (15 projects while sudan leads in projects related to food production, most from the food insecure Gulf States (11 projects), followed by Ethiopia with 8 projects (Friss and Reenberg 2010:11).

Empirical Findings on farmland investments in Africa:

Numerous studies have placed biofuel projects high on development agenda for poor countries. Biofuels has been praised because it produces 'green fuels' which is environmentally friendly (McMichaiel 2010:609). It reduces environmental degradation without affecting economic growth (Borras et al 2010:577), a win-win approach. However, biofuels increases pressure on environment and indigenous people and people with insecure land rights (Borras et al. 2010: 581). This is because biofuel production promotes monoculture thus adding vulnerability of the poor (Dauvergne & Neville 2009: in White & Dasqupta 2010: 596). The 'first generation' bio-fuel would cost poor people a lot in developing countries (e.g. palm oil and sugar cane production).

The study conducted by Cotula et al. (2008) found that biofuels can be very instrumental in revitalizing agricultural land use and livelihoods in rural areas. Price signal to small-scale farmers could significantly increase both yields and incomes, necessary for poverty reduction. Large-scale biofuels could also provide employment, skills development and secondary industry. However, these developments are determined by the nature of land tenure regimes, where competing resource claims exist among local resource users, governments and incoming biofuel producers, and where appropriate conditions are not in place, the rapid spread of commercial biofuels production may result – and is resulting – poorer groups losing access to the land they depend on.

Evidence from Tanzania and Mozambique suggests that biofuels production may offer income-generation opportunities in rural areas and may help improve prospects for food security- that is, by enabling farmers to purchase food on the market. It is a new opportunity for farmers apart from growing the traditional crops. However, biofuel production may compete with food crops and have significant negative impacts on food security – the so-called "food versus fuel debate" (Cotula et al. 2008:13).

The study by FAO (2010) also found that biofuel offers numerous opportunities to poor countries including: increased energy; creating new markets for producers, employment, poverty reduction and economic growth; and contributing to environmental objectives – through reduction of green house gas emissions. However, FAO's study handled these opportunities with great concerns, especially their actual social, economic and environmental viability (FAO 2010:3). Brittain and Lutaladio (2009) however noted that biofuel production effects on water resources and biodiversity. It normally leads to declining availability of water for irrigation. Biodiversity is also threatened by large scale monocroping of exotic species (ibid 2010:9).

According to UNIDO (2010), biofuels does not represent an environmental panacea whether 'green' or offering carbon savings, but depends on how they are produced. It also affects the right to food to millions of people in the medium and long term, especially to groups that need access to fertile soil and clean water to grow their food (ibid: 10). Although biofuels can play an important role in poverty reduction, it negatively affects the vulnerable groups, violating their rights and forced evictions especially the indigenous peoples, smallholders, and forest dwellers, as well as women as land concentration deepens in rural economy (ibid 2010:11).

Nhantumbo and Salomao study puts Mozambique as the most biofuels production potential in Africa, in which it intends to, meet the energy demand, and also a way of reducing poverty. The study reveals that 'claim often made that feedstock for biofuels can be commercially grown on marginal land is misleading' (Nhantumbo & Salomao 2010). ProCana project in Masingir district, Gaza province competes with smallholders for irrigation water from Limpopo River, leaving little for local farmers (cotula et al. 2008: 35). The biofuels production has the potential to compete with the production of food crops and might reduce access to land for small holder farmers. (Nhantumbo & Salomao 2010:18). Biofuels boom has been associated with tensions between investors and local communities. It involves acquisition of local land rights and affects water access for local farmers.

In Tanzania, biofuel projects target wetlands (GRAIN 2007; ABN 2007, in Cotula et al. 2008: 23), and cause displacement of rural people from their customary land as seen in Kisarawe district (African Press Agency 2007, in Cotula et al. 2008:37).

Institutional Perspectives on Large-Scale Land Acquisition: the policy space

The European Union, USA, Brazil and Japan have well developed biofuel policies with specific targets (Sieflhorst et al. 2008: 12). The extent to which a country benefits from biofuel projects depends on policy and institutional environment (Deininger et al. 2011: 95). For land deals to create opportunities, mainly depend on the contractual arrangements between investors and local groups, respecting rights of the existing users and increasing productivity and welfare in line with the existing strategy for economic development. Recipient governments are faced with fundamental dilemma: should they create an enabling and friendly environment for foreign investors, or secure the rights of their local populations? And how they should deal with new and foreign investors? (Zoomers 2010:443)

African governments can therefore develop national policies on biofuel investments based on three sources: *domestic, international investment contracts, and international investment agreements*. Under domestic agreement, it includes policy on foreign investors such as on admissions, incentives, taxation, land and water rights, and environment among a few. International investment contracts explicitly address price, quantity and duration for the purchase or lease of land, taxation and incentives for investors and other operational matters. International investment agreements include bilateral investment treaties, free trade agreements, and regional investment treaties, using MFNs and NTs principles (Smaller & Mann 2009: 9& 11-12).

Similarly, Smaller and Mann (2009) address three important questions which have been problematic to many governments in developing countries such as whether foreign investors have rights to buy land and water rights. What rights do foreign investors acquire if they do invest and what happens to the rights of the previous users of land and water? On the question of whether foreign investors have rights to buy land and water in a host country, the answer is *No*. International law generally does not give investors rights to invest in land and water in another state. However, acquisition of land by foreign investors in another country is fundamentally a matter of domestic law within each state to open its economic sector, or not, as it sees fit. What rights do foreign investors acquire if they do invest? In the absent of any international contracts or treaties, foreign investors would be treated the same as a domestic investor under the applicable domestic law. However, when a contract between the state and investor exists, the investor may acquire, depending on the terms of contract, additional rights not to sell out in domestic law relating to water use, and land tenure rights. What happens to the rights of previous users of land or water? The rights of prior user of purchased or leased and land or water is a critical issue in the debate over "land grabs." Under the domestic law, where the rights are clear and vested in the local owners or users, they will be entitled to be vendor of the property or water rights, and thus to participate in the contracting process. If government determined that an investment should take place despite the opposition of a land or land holder, expropriation might be possible, subject to the relevant compensation requirements (ibid:14).

Scholars on 'land grab' have been frequently pushing for the development of codes of conduct to recent land acquisitions in Africa. Emphasis has been to ensure adherence by investors to respect existing land and resource rights, guarantee food security and promoting transparency, sharing benefits, environment and adherence to national trade policies (Von Braun & Meizen-Dick 2009; Cotula 2009; Zoomers 2010).

Of recently, the World Bank has now recognized that large scale investment poses significant challenges that need to be addressed. The World Bank, together with FAO, IFAD, and UNCTAD, and other development partner have formulated seven principles that all the party involved in land deals should adhere to for investment to do no harm, be sustainable, and contribute to development. These principles must be utilized by investors and countries involved in large-scale acquisition. These seven "responsible Agro-investment" principles include:

1. Respecting land and resource rights;
2. Ensuring food security. Investments do not jeopardize food security, but strengthened it;

3. Ensuring transparency, good governance, and proper enabling environment. Processes for acquiring land must be transparent and monitored, ensuring the accountability of all stakeholders within the proper legal, regulatory, and business environment;
4. Consultation and participation. All those materially affected must be consulted, and the agreements from the consultations are recorded and enforced;
5. Responsible agro-investing. Investors ensure that projects respect the rule of the law, reflect industry best practice, are economically viable, and result in durable shared value
6. Social sustainability. Investments generate desirable social and distributional impacts and do increase vulnerability
7. Environmental sustainability. Environmental impacts of a project are quantified and measures are taken to encourage sustainable resource use while minimizing and mitigating the risk and magnitude of negative impacts (Deininger et al 2011: xxvii).

The situations on the ground however differ from these policy prescriptions. Biofuels attracting countries tend to favor foreign investors at the expense of local rights and existing regulations are rarely followed when sealing land deals with foreign investors.

Strategic Choice in Land Acquisitions: Water Access for Commercial Agriculture:

The rapid increase in land acquisitions in Africa could be explained by the new hydro hegemony in which the emerging and developed economies compete for acquisitions of farmlands in Africa. The perspective is that water issues are closely related agriculture, climatic change, economics and politics. They believe that water resources are the potential success of the any proposed investment and give significant attention to water when negotiating investment projects[1].

The land-water access acquisition argument suggests that the recent large-scale land acquisitions in SSA are driven water security for commercial agriculture as climatic change bits. Investments in farmlands in African are seen as water insurance policy for prosperity against the increasing food shortages, declining water supplies, climatic changes coupled with huge population increases. Moreover, African agricultural lands do not exclude water charges when negotiating leases or purchases. Buying land by investors in Africa will automatically guarantee access to water.

According to the new ranking by Maplecroft (2011), out of 186 countries studied, the Gulf States are rated as the world's most stressed countries, with the least available water per capita. The study was done by calculating the ratio of domestic, industrial and agricultural water consumption against the renewable supplies of water for industrial and agricultural water consumption from precipitation, rivers and groundwater. The rating in terms of water stress ranges from extreme risk, high risk, and medium risk and to low risk. The Gulf States are topping in the ranking of water stress index among the MENA countries as illustrated in table 3 below:

Table 3: Water Stress Index for selected MENA countries and Emerging Economies

Ranking	MENA	Rating	Ranking	Emerging Economies	Rating
1	Bahrain	Extreme risk	30	India	High risk
2	Qatar	Extreme risk	36	South Korea	High risk
3	Kuwait	Extreme risk	56	China	Medium risk
4	Saudi Arabia	Extreme risk		SSA	
5	Libya	Extreme risk	68	Ethiopia	Medium risk
6	Western Sahara	Extreme risk	91	Kenya	Low risk
7	Yemen	Extreme risk	93	Sudan	
8.	Israel	Extreme risk	169	DRC	
9.	Djibouti	Extreme risk			
10	Jordan	Extreme risk			
20	UAE	Extreme risk			

Source: Adopted from Maplecroft Water Stress Index 2011

This study states that the dual drivers of climate change and population growth will combine to squeeze water resources and affect the food security of governments across the world, regardless of

how water secure they may be today. It further points that water shortages in these countries will be the potential constrain to economic development and could create social unrest if dwindling resources result in higher prices and limited access for their populations. As Maplecroft analyst T. styles notes:

> *"As a means of offsetting shortfalls, India, South Korea and China, along with the oil rich Gulf states, are acquiring water rich land for agricultural purposes in developing countries to ensure the security of food supplies and decouple themselves from volatility in global food prices." "This recent phenomenon, dubbed 'land grab,' is taking place on a huge scale across many countries in Africa, especially those involved in post conflict reconstruction with poor development."*

For examples, China alone has a contract to grow 2.8m hectares of palm oil in the Democratic Republic of Congo. In Sudan a South Korea company has purchased 700,000 hectares and the UAE 750,000 hectares. This is because both DRC and Sudan are rated 'low risk' for water stress in the index. Sudd region in Sudan has the world's largest swamps but Sudan also has scarcity of water. Qatar in 2008 also provided funds for construction of a Kenyan deep-water port in exchange for 40,000 hectares of prime agricultural land on which to grow food for the Qatari market[2]. While Saudi Arabia has concluded a 42,000ha deal in the Nile province. A Danish group is also in negotiations with Government of Southern Sudan to acquire land near the Nile. Jarch Capital based in New York, has been leased 800,000ha in southern Sudan, near Darfur[3]. Ethiopia alone has approved 815 foreign-financed agricultural projects since 2007. Land to investors is normally leased approximately $ 1 per year per hectare. Ethiopia has 74m hectares of fertile land, of which only 15% is currently in use – mainly by subsistence farmers. In Oromia province of Ethiopia, where there is availability of water, cheap land and labor and the climate is good, Saudis, Turks, Chinese and Egyptians are looking for land in this region[4]. The government of Mali has granted 100,000 ha of land in the Macina region to Malibya Company for 50 years to grow hybrid rice for export to Libya without the knowledge of the people. The company was also granted priority access to water during the dry season. As a result, the local producers' access to water for irrigation from River Niger was reduced significantly (Horing 2010:3).

Biofuel Projects and African Water:

This study further notes that biofuel projects target African water resources as opposed to ideas of bioful crops are grown on African marginal lands. African most common biofuel crops include: sugar cane, maize, sweet sorghum, and cassava as bioethanol crops while palm oil and Jatropha are common biodiesel (Sieflhorst et al. 2008:19). Most of the biofuel crops require lot water for their survival, and this could explain why most projects are concentrated in water-rich areas like swamps and forest reserves as illustrated in table 4 below:

Table 4: Biofuel crops and their level of need for water resources

Biofuel crop	Wetland conservation	Irrigation	Fertilizers and pesticide use
Ethanol			
Sugarcane	High	High	High
Maize	low	Medium to high	High
Sweet sorghum	low	Medium	High
cassava	low	low	Medium
Biodiesel			
Palm oil	High	low	low
Jatropha	low	Medium	medium

Source: Sieflhorst et al. 2008, p.30

Based on table 2 above, both sugarcane and palm oil plantation need a lot of water for their good yield and they also produced better energy yields than Jatropha plant. Their production has negatively reduced wetland areas and their functions, declining water quantity and quality. Sugar cane yields well in tropical wetland areas. It also requires large amount of water throughout the years as well as big land for its production. This could explain why most bio-ethanol projects in Africa are being acquired in areas with abundant water. Unfortunately, in most cases the land tenure systems in

these areas are informal, owned by the community where they derive their sources of livelihood from. Cases from Tanzania, Kenya, Mozambique and Uganda showed intensive extension of sugar plantations into wetlands.

In Uganda, BIDCO project is a greenfield palm oil plantion in Kalangala district. It is located in one of the islands of lakes victoria. The area allocated was part of the forest reserve. The Government of Uganda in 2004 approved this project and BIDCO Company was allocated 26,500 ha of tropical rain forest around Lake Victoria. As a result, the company invested USD 150m into the project whereas the government offered 25 years of corporate tax holiday and VAT deferral for the plantation projects as part of the corporate alliances. This project was highly opposed by the environmentalists and Members of Parliament because of ecological consequences and government's payments of import, exercise duties on behalf of BIDCO Company (Olanya 2007). In Northern Uganda, the Madhvani group of company is negotiating for communal land in Amuru district for sugar cane plantation since 2006. They first target was to get 40,000 ha of land in this area, a long stretch on the river Nile that is used communal property and a source of livelihoods such farming, wild food, hunting, firewood, and many clans in Acholi claim ownership of the land.

Most of the biofuel projects in Mozambique have been allocated in areas of high water potentials. ProCana Project has been given 30.000 ha of land in Masingir district, Gaza province to grow sugar cane. The project is supposed to use water from a dam, fed by a tributary of Limpopo River, which also supports irrigated smallholder agriculture. Farmers downstream have expressed concerns that the project will absorb the available water, leaving little for local farmers (Cotula et al 2008: 35).

In addition, a study in Mozambique also reveals that 'claim often made that feedstock for biofuels can be commercially grown on marginal land is misleading. A company has switched from Jatropha to a forestry project due to poor soils. Fertile lands and water availability are necessary for commercially grown biofuels' (Nhantumbo and Salomao 2010: 4). Biofuels crops like sugar cane, sweet sorghum, and even jatropha do require soils with a reasonable level of fertility and access to water. Most of the existing and planned sugarcane projects are in the areas with easy and abundant access to water.

In Tanzania, 400,000 ha of land in Wami Basin are targeted by a Swedish investor for sugar cane production (GRAIN 2007; ABN 2007, in Cotula et al 2008). Currently, Jatropha farming has been in Mbamba Bay on Lake Nyasa, coast region, Lake Victoria regions[5].

Large-Scale Land Acquisitions: Soft Landing on Indigenous Rights to Common Resources:

Common resources in Sub Saharan Africa (SSA) constitute 1.78 billion ha out of the total 8.54 billion ha. However, these common resources have overlapping and contradictory rights and the national land laws are vested in the state, or even defined as the private property of government. Whatever the case, government is the lawful authority over these lands and may dispose of them at will. Tanzania (1999), Uganda (1998), Ghana (1986, 1994) and Mozambique (1997) legally recognized customary regimes in their national land laws, but still regard them as state property by default (Alden Willy 2011:44). Customary ownership is recognized as a legal source of property and does require formalization in registered entitlements for either administrative or court purposes. Individuals, families and communities are recognized as natural legal persons fully owning properties with no restriction placed on collective ownership of forests, woodlands and pastures unless the lands are withdrawn for protection reasons (ibid. 46). Benin (2007), Ivory Coast (1998), Burkina Faso (2009), Niger (1993, 2000), Zambia (1995), Nigeria (1978), Lesotho (1979), and Senegal (1964, 1996) national land laws recognize customary interests beyond occupation and use rights. However, none of these laws recognize customary rights with the same legal force of as statutory entitlements. Common resources are vested in state power (ibid. 48).

The Land Act of Botswana (1968), Namibia (2002), and Madagascar (2005) also legally respect customary regimes as real and voluntary registration of property is important. But, they restrict customary registration to house and farm plots, leaving the valuable local common property significantly open for non-customary lease, without consent of those communities to whom they

historically fall. Namibia's Communal Land Reform Act (2002) excludes valuable commons from being recognized as the registrable property of villages and enables commons land to be leased for leased for 99 years. The National Law of Madagascar (2005) recognizes customary land interests, but also limits recognition only to settled and farm areas. The vast grassland and forested areas although use by the rural communities, their ownership remains vested in the state (ibid. 47)

Countries such as Ethiopia (1975, 1997, 2005), Eritrea (1994, 1997), Somalia (1975), Rwanda (2005), Burundi (1986) and Mauritania (2004) have done away with the customary or community-derived rights and replacing them with state-granted rights. It the responsible of state to grant people customary rights. Ownership remains in the hands of state. In Northern Sudan, the 1970 law formally vested untitled in the state and the government has proceeded to willfully reallocate community land areas at scale for investors (ibid. 47).

Therefore, the level of vulnerability of commons is high in countries like Northern Sudan and DRC where domestic legislation offers no protection to communal rights and treats customary rights in general as permissive occupation and use of land belonging to the state. In fact, common resources in SSA have become soft target for commercial agriculture due to: *a)* their nature of being usually uncultivated resources therefore being generally defined as unutilized and even 'wastelands'; *b)*even compensation for loss of such land tend to be minor or not paid at all, especially where compensation is based on the value of land improvements; *c)* most lessor host country policy favors allocating 'unutilized' and 'vacant' lands to investors in order to limit evictions, conflicts, time and costs; *d)* host objectives to add area of land under food production and biofuels production; only commons providing the scale of intact land areas sought by large-scale investors; investors are reluctant to be bound to negotiate access, rights, and benefits with local populations, which it is a must where there is a small holdings and settlements (Alden-Willy 2011: ix).

In country where legal status of customary land is least recognized only to occupancy and use rights on state public land and unfarmed common land like DRC and Northern Sudan there is high possibility of large-scale leasing. Ethiopia and Madagascar protect cultivated lands more substantially, but not land that is owned communally and used by customs. Mozambique also leases customary rights while acknowledging customary rights as real property interests. However, Tanzania legislation of 1999 has made it very easy for government to willfully expropriate individual, family and/or common properties without reasonable cause (ibid).

In Mozambique, a forestry project of 26,000 ha damaged nonrenewable natural resources (water) without compensation, and disadvantaging women who are responsible for gathering it. The 30,000 ha for sugar cane also created insufficient job lower than expected, low pay insufficient to compensate for the lost of livelihood. Also, 20,000 ha for sugar cane production lacks the agreed boundaries of concessions resulting into displacement from agricultural and grazing lands. Consultations did not include vulnerable groups, who were negatively affected by the transfers (Deininger et al 2011: 65). Yet the National Constitution and Land Act (1999) of Mozambique upheld customary land rights. Investors seeking land must consult with the local communities. However, the procedure is ill-structured and undemocratic. It does not require the organized participation and consent of the majority, and only handful of the potentially self-selected representatives (Alden Willy 2011: 44).

Tanzania has 61 million ha of total land area as customary land owned by 10,400 discrete village communities. Customary tenure falls under Village Land allowing for individual, family and collective ownership. But the tenure becomes vulnerable because all land is referred to as public land with vested interest in the state (Alden-Willy 2011:13). It is reported that over 4 million hectares of land have requested for biofuels investments, especially for jatropha, sugarcane and oil palm, but only 640,000 ha have been allocated, and only around 100,000 ha been granted formal rights of occupancy (Sulle and Nelson 2009:3). They also reported that some of land acquisitions for biofuels are targeting land that is used for forest based economic activities that villagers depend heavily on (ibid: 4). In the eastern coastline of Kisarawe district, Sun Biofuels has acquired close to 9,000ha of prime arable land after paying over 10,000 residents from 11 villages in compensation. Sun Biofuels

has been accused of outright payment of allowances to village leaders to meetings to approve leasing agreements to meet the requirements of the Village Land Act of 1999[6].

Tanzania supports biofuel investments on the coastal areas and these investments are also encroaching on pastoral lands. Also, the country approves projects without social impact assessment. The impacts of the projects on vulnerable groups are normally overlooked in the planning process (Deininger et al 2011:160). In addition, a livestock and jatropha investment in 4,455 ha of out 18,211 ha allocated circumvented legal and administrative procedures, by soliciting land directly from the villages. Also, rice project (5, 818 ha) negatively affects the pastoral community's access to grazing land, firewood, and water (ibid. p. 66).

Cotula (2011) investigates the exact terms of the deals on biofuels expansion in Africa. He found that negotiations are usually done closed doors. The local people rarely have a say and very few contracts are publicly available. In addition, most land deals in Africa are silent on water rights (for example in Liberia, Mali and Sudan). Mali grants investors the right "to use the quantity of water necessary for the project without restrictions" (ibid. p. 36).

Even in a purely cash based transaction with land owners; the compensation does not cover dependents on the land, putting them at significant risk of impoverishment. Women in traditional communities do not have informal land title instead men own land customarily. Secondary rights to grow food, gather fuels and water are always ignored. According to the international standards as set by the IFC PS 5 and the World Bank OP4.12, it is only - those with formal legal rights to the land; customary rights; and squatters or encroachers are entitled to compensation (RSB 2011: 5).

Conclusions

While foreign large-scale land acquisitions in Africa may be driven by the need for "green fuels," the Gulf States are driven by the need for food production a dual factors of climatic change and population growth squeeze water resources in the region. The Gulf States and emerging economies like India, South Korea and China are mostly targeting water-rich countries such as Sudan, Ethiopia and Democratic among a few. They are increasing concerned about the availability of freshwater, which is becoming a scarce commodity in their home countries, especially in the Gulf States and in populace states of the emerging economies. Sub-Saharan Africa therefore has become an insurance target for water security due to the perception that it has big water potentials, favorable climate, plentiful of land available and still relatively cheap and local labor is inexpensive.

The perception that land is abundant in Africa is misleading. The nature of land tenure and property rights in Africa is complicated. In most countries statutory and customary systems prevail and the boundary between these two is blurred. In most cases, land is already used or claimed under customary regimes; only that people do not have formal land rights. Foreign investors are interested in land with greater irrigation potential, which are more likely to be already in use by indigenous people. Indigenous 'moral property' rights have been preserved under customary laws for common resources such as access to forests, rangelands, hunting, and water resources. Individualization in these areas is not sanctioned. Because customary tenure has not been recognized explicitly in most countries' land law, and in some cases not recognized at all, it is at the mercy of the state, which has vested interest on behalf of the people. In fact, the large-scale land acquisitions in Africa are communal land acquisitions in which states that should have been the trustee custodian on behalf of the community give these lands to foreign investors. These acquisitions have led to displacement of people without adequate consultation and compensation, with broken promises and opportunities in violating of indigenous rights to land, and food sovereignty and water. Moreover, the large-scale land acquisitions have been not supported by investment commitments in the deals; enforceability of commitments by recipient counties remains weak. Moreover in countries that have just emerged out of conflicts.

Notes

[1] Achieving water security world-wide published 10th May 2010 found at http://www.lwrg.org/workshops.html accessed on 03/04/2011

[2] http://www.maplecroft.com/about/news/water_stress_index.html accessed on 20/06/ 2011

[3] http://www.guardian.co.uk/environment/2010/mar/07/food-water-africa-land-grab accessed 20th March 2011

[4] ibid [3]

[5] http://www.ngonewsafrica.org/?p=1136 accessed 20th March 2011

[6] Tanzania: Government's Serious Leadership Needed in Regulating Biofuels http://www.ngonewsafrica.org/?p=1136 accessed 20th March 2011

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