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Nigerian Agro-fuels Policy and Land Grab: "Monkey See Monkey Do"

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CODESRIA

08 - 12 June / Juin 2015

Dakar, Senegal



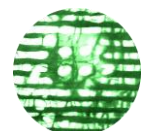
Agro-fuel has been identified as one of the major drivers of the emergent global land grabbing. Powerful transnational and wealthy national governments are angling for land often in distant countries, particularly in Africa, which can serve as sites for fuel and food production for their needs back at home. The governments of advanced economies are keen on the potential of agro-fuels as alternative source of energy in order to mitigate the challenges of climate change and reduce dependence on foreign oil due to the cost of capital inputs in an age of peaking oil prices. Similarly, agro-fuels represent a new profitability frontier for agribusiness and energy sectors. Expansion of agro-fuels investment has however been supported by the government of Nigeria because of the perceived potential benefits such as wealth creation, clean energy, job creation, rural development and poverty reduction by linking agriculture to the energy sector. This study interrogates the rationale of acquiring land for agro-fuels production by the Nigerian government against the background of ranking among food import dependent countries in the world and one of the leading producers of fossil oil. This has therefore led to the assumption that Nigeria’s government policy on agro-fuels amounts to the situation of ‘monkey see monkey do’. Using political economy analysis, this paper examines recent developments in large-scale land acquisitions for agro-fuels, Nigerian national policy on agro-fuels and how land acquisitions undermine indigenous rights to the common resources that have been the main source of livelihood for the rural poor.

Introduction

Changing of land use from agricultural lands and forestlands into other utilization such as development is a regular phenomenon that occurs following industrialization. In those countries, led by authoritarian regimes, be it civilian or military, land transfer processes have nearly always been by coercive actions. Local residents have been forced out of their land under the guise of development and their rights over the land usurped. Consequently, such land is declared as state-owned and if there is any compensation, the value is usually a non-fair issue. Today, such dispossession is called primitive accumulation by dispossession or possession by dispossession (Harvey, 2003; Amin, 2011).

Increase in investment in land and dispossessions spawned the concentration of land ownership in the hands of corporations at the expense of the indigenous occupiers. It goes on to multiply the number of small peasants who have become near-landless and absolute-landless and sometimes excluded from agricultural activity. In Nigeria, large scale land grabbing in the name of development is not new. The state has some occasions forcefully ejected people from their land and converted it to development purposes as exemplified in the Bakolori Dam project (Yahaya, 2002). The Land Use Act of 1978 vests control of land in the state government and the powers of this Act has provided the platform for seizure of large expanse of land from the local communities as it is the case now with the agro-fuels project (Mustapha, 2011).

The debate on landholding and agro-fuels in Nigeria occupies a unique and strategic position in the agro-fuel experiment, as the country has always served as arena for cheap raw materials



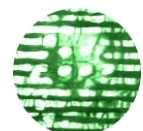
and resources for the exploitation of foreign firms. The fact that Nigeria is not only a major oil producer, but also a great agricultural potential and yet food import dependent, makes it to fit into the study and debate on agro-fuels and land grab. It is argued that while it is understandable that some African countries like Mozambique have embraced agro-fuels production as a way of reducing dependence on fuel import, it is paradoxical for Nigeria, a leading oil producing country to appropriate land for agro-fuel production. This has therefore led to the assumption that Nigeria’s government policy on agro-fuels amounts to adopting a global trend that does not translate to development benefits for the people, especially, the dispossessed.

Developments in Land Grabs

‘Land grab’ is the catch-all phrase regularly used, particularly by the media and radical scholars to describe and analyse the current of large scale (Trans) national land acquisitions. Though land appropriation is not a new phenomenon, what is new is the dimension and size of acquisitions characterized by different motivations such as for food, fuel and finance. This is beside the trend of considerable lack of transparency and public consultation in the current land deals backed by state power.

The International Law Commission (ILC) has identified the wave of large-scale land acquisitions as a phenomenon backed by both foreign and national governments where foreign firms play major role. The ILC pointed out that the term “land grabbing” is misleading because it implies illegitimate acquisition of land by investors, when it is the domestic policies that have often failed to recognise customary use rights. However, the character of the land deals remains illegitimate as long as the rights and interest of the owners/users are not respected. While some view land grab as a major threat to the lives and livelihoods of the rural poor, particularly the agrarian peasants, and so oppose such land deals, others see it as a window of economic opportunity for the rural poor despite the unintended negative consequences Borras (2010).

The current wave of global land grabbing began towards the end of 2007 when the global food crisis, which began side by side with the world-wide financial crisis in 2007, generated concerns over supplies in countries that consume more food than they produced. Due to the global food crisis, food import-dependent rich countries including China, Saudi Arabia and South Korea began to acquire hectares of farmland from poor countries, especially in Africa in order to bolster their food security. The trend of the new land grabbing is thus liken to the 19th century scramble for Africa (Odoemene, 2012). In Nigeria, contrary to general assumptions, most of the land deals do not involve payment as the governments at the various levels used the powers of the 1978 Land Use Act to acquire land on behalf of foreign investors without compensation under the guise of encouraging development that has always ended with unintended effects.



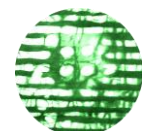
Whilst food and agro-fuels production may be the primary reason for large scale land acquisition by foreign investors and governments, the phenomenon also has a less obvious motivation, namely financial returns. Although land was not a conventional lucrative asset, global investors, food and financial crises have turned it into a strategic commodity for foreign investors with the motive to hedge funds. GRAIN published a report in 2008 showing that food, agro-fuels and financial security are the prime drivers of land deals, despite the rhetoric of investors and governments that promote it as development opportunities for the host countries.

While major areas are being targeted for commodity and fuel crops, in South America, Central America, Southeast Asia, and the former USSR, Sub-Saharan Africa remains the most lucrative site for major land deals (Zoomers, 2010; Visser and Spoor, 2011; Cotula et al, 2009). Most of the investors and buyers of land are a mix of private investors, US private equity houses such as Sanlam Private Equity, the Saudi Kingdom Zephyr fund, the UK's CDC and sovereign wealth funds. The extent of these land deals has been rapid and widespread (GRAIN 2008). It was estimated by the International Food Policy Research Institute (IFPRI) that between 2006 and 2009, roughly 20 million hectares of land were leased out in the form of land grabs mainly in Africa (von Braun and Meinzen-Dick 2009). Similarly, by September, 2010, the World Bank reported that 45 million hectares of land accounted for land grabs globally (Deininger et al. 2011).

Rich countries desperate to secure their food supplies are rushing to gobble up land for food production, especially in poverty stricken Africa. For example, Saudi Arabian investors paid \$100m for an Ethiopian farm to produce wheat and barley in 2009, apart from the millions of acres of land they already owned in the war-ravaged country, as well as in Sudan. The Saudis have equally invested on land in Indonesia and Thailand for the production of rice. Chinese investors own vast tracts of overseas land, mainly in Algeria and Zimbabwe. The race for land is not peculiar to Africa as vulnerable countries such as Pakistan have been targeted by other Gulf States to buy land. One million acres of land was bought by the Gulf States from Pakistan for food production. Part of the land deal included the services of a private army to protect the food being exported after production because of the fear of protest.

The quest for land across the globe for food production by wealthy nations and firms was accelerated by the export control introduced by some big food-exporting nations as a result of the ominous global food crisis. Gulf States have been most hit by the global food scares because they are particularly vulnerable to food insecurity as efforts to grow crops in the desert have proved costly and inefficient. It is this situation that has made Saudi Arabia to become one of the most aggressive buyers of farmland globally, thanks to the judicious use of her oil wealth. Saudi Arabian government is now actively encouraging its private investors and companies to buy farmland abroad after abandoning its attempt to be self-sufficient in food due to unabated worries over water scarcity.

Agro-fuel has been identified as one of the major drivers of the emergent global land grabbing. The conditions for rapid expansion of agro-fuels as alternative energy source



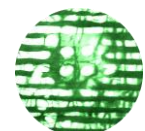
seemed to be available in the global south. For example, suitable agro-fuels crops such as oil palm, cassava, sugarcane, maize, jatropha, etc are found in African countries. Similarly, millions of hectares of ‘unused’ land suitable for agro-fuels production are believed to be available in many African countries. It is projected that up to one-fifth of the world’s agricultural land would be planted in agro-fuels by 2050. Presently, only about 14 million hectares of global arable land are devoted to agro-fuels and it is expected to increase as the project gathers momentum across the globe (Liversage, 2010).

Agribusiness from Germany, Brazil, Israel, India, China and the United States have acquired large tracts of land and signed investment agreements with some African countries for the purpose of agro-fuels projects. For example, more than 30 companies have been registered in Ethiopia to produce agro-fuels and five have already become operational (Wolde-Georgis and Glantz, 2010). Brazil, the leading agro-fuels giant has planned to establish “Biofuel towns” in Africa in order to spread the agro-fuels revolution in the continent. Already Brazil has links with Mozambique, Senegal, Nigeria, Angola, and the African Union for this purpose (Wolde-Georgis and Glantz, 2010). The implication of this phenomenon is that land and farm labour are being diverted to the production of agro-fuels crops with the attendant consequences on food security.

Pension funds managers are also part of the players looking to profit from global land grab. The biggest pension funds in the world are those held by governments, such as Japan, Norway, the Netherlands, Korea and the United States (Marant, 2011). Pension funds are estimated to be in the region of US\$23 trillion in assets, out of which some US\$100 billion are believed to be invested in commodities. Between US\$5 and US\$15 billion of this money are reportedly invested in farmlands across the globe with the target that the investments on farmlands would double in 2015 (Vidal, 2011). Pension managers began to rebuild long-term holdings for their clients through investment in farmlands when pension funds were adversely affected by the 2008 financial crisis, particularly in the Western World.

The investment of some pension funds on farmland can be regarded as a good "fundamentals" of clear economic pattern of supply and demand, which in this case depends on a rising world population in need of food. Pension funds managers see long-term pay-offs from the rising value of farmland and the cash flow that comes from sales of crops, dairy herds or meat production. Brazil, Uruguay, Russia and Africa are some of the places that pension funds have been invested on farmlands. Pension funds have become one of the biggest institutional investors in both commodities in general and farmland in particular and offer annual returns of 10–20% (Cochet and Merlet, 2011). However, there are no reported cases of pension funds-land deals in Nigeria yet.

There are concerns over the large scale acquisition of land for food, fuel or finance. For example, the International Institute for Environment and Development (IIED) pointed out that there are worries about the impact on local communities and the threat to their livelihoods since majority eke their livings from the use of land for agriculture. Most subsistence farmers



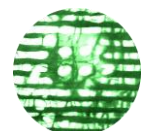
are easily exploited by their own governments by selling land to foreign investors because they do not have titles to their land. The livelihoods of millions of African farmers are already at risk because they do not have titles to their own land. This situation couple with the Land Use Act has put indigenous landholdings in Nigeria under threat.

Developments in Agro-fuels Regime

Agro-fuels also known as bio-fuels are non-petroleum-based liquid fuels, derived largely from plants and plant oils. Agro-fuels are divided into three categories, namely, ‘first-generation’, ‘second-generation’ and ‘third-generation’ (Dauvergne and Neville, 2010:635). ‘First-generation’ agro-fuels are produced from food crops, some of which are palm oil, corn, rapeseed, and sugarcane. In contrast, the sources of ‘second-generation’ fuels are non-food crops, like switch grass and *Jatropha curcas*, or the residual inedible parts of food crops, such as the husks and stems of corn. ‘Third-generation’ agro-fuels are derived from algae (Dauvergne and Neville, 2010:636). While first-generation agro-fuels are in full-scale production, second and third-generation ones are yet to be commercially viable to penetrate the global market. Based on the categories of sources, or ‘feedstock’, from which agro-fuels are derived, they have differing impacts on food crops, carbon emissions, and the environment. Sources use of agro-fuels depends on geographical diversity largely based on existing agricultural production in those regions. Corn-based agro-fuels are dominant in the United States, while sugarcane is used in Brazil, and rapeseed in the European Union (EU). Oil palm is the energy source in Indonesia and Malaysia (McCarthy 2010). In Nigeria, maize, sorghum, cassava, oil palm and sugar cane are the dominant agro-fuels based crops.

Agro-fuels as an alternative energy source surged in the late 1990s, especially in the United States of America and Europe. However, agro-fuels research and development had begun in the twentieth century, especially in Brazil – the global leader in the search for alternative energy by investing considerably in it, particularly through the Brazilian Alcohol Program in the 1970s (Moreira, Nogueira and Parente, 2005). Proponents of agro-fuels cut across industrial and environmental groups, with many climate change activists expressing support. Those that supported agro-fuels in the early 2000s were mainly EU officials, national and municipal government representatives of the developed world, Friends of the Earth, and Greenpeace. Similarly, multinational companies such as Archer Daniels Midland, ADM, Bunge and Cargill supported agro-fuels project because of the possibility of new and vast markets (Accenture 2008; Kurdusiewicz and Wandesforde-Smith 2008).

Agro-fuels represent a new profitability frontier for agribusiness and energy sectors fraught with declining productivity and/or rising costs (Magdoff 2008; McMichael 2009; Houtart 2010; McMichael 2010). Many governments of the developed countries are also keen on the potential of agro-fuels as alternative source of energy in order to mitigate the challenges of climate change. Agro-fuels are thus presented as a route to reducing energy-use patterns in ways that can ameliorate environmental concerns, particularly in the developed world. This is



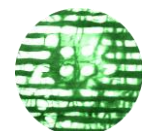
reflected in diverse policy debates in Europe and the United States and has dominated debates on agro-fuels globally (Franco *et al.* 2010; Hollander 2010; Gillon 2010).

Agro-fuels project is also designed by the countries of the developed world to reduce dependence on foreign oil, particularly that of the Middle East (Dauvergne and Neville, 2010:638). The recent expansion of industrial agro-fuels is therefore a response to an assumed ‘energy crisis’, due to the cost of capital inputs (production, processing, transport) in an age of peaking oil prices. It was on these bases that the Bush administration in 2007 set the production targets of 35 billion gallons of corn ethanol by 2017 with huge subsidies to agribusiness giants, namely, ADM, Bunge, and Cargill. Similarly, the European Union targeted 10 per cent agro-fuels mix in transport fuels by 2020. At present, Brazil plans to replace 10 per cent of the world’s fossil fuels by 2025 with sugar ethanol, Malaysia and Indonesia are expanding oil palm plantations to supply 20 per cent of EU biodiesel needs; India plans 14m hectares of land for *Jatropha* plantations (Holt-Gime´nez 2007, Vidal 2007: 3; Altieri 2009). Ironically, Nigeria, a leading fossil fuel producer in Africa has also targeted 10 per cent use of agro-fuels by 2017 (NNPC).

Given the challenges of agro-fuels targets and the enabling Kyoto protocols, foreign capital are investing massively in agro-fuels production in the global South. It is these combined processes that are creating an emergent agro-fuels complex in Africa. Some estimates show that European firms have acquired about five million hectares of land for agro-fuels development across the global South. It is also reported that European, American and Asian firms are angling for about 400m hectares of land in Africa for agro-fuels crops production (Dauvergne and Neville, 2010:639). With this scramble for land, availability of land for rural livelihoods and food production is already generating concerns under agro-fuels regime.

A new oil, food, and biotech industrial alliances are beginning to emerge and, investing in Southern land through new private-public partnerships. One such new alliance is between Cargill and Monsanto, incorporated as Renessen, which uses genetically modified maize, soy and rapeseed to produce agro-fuels. Similarly, in Indonesian, the palm oil trade is dominated by a combination of Cargill (the world’s largest private company), an ADM-Kuck-Wilmar alliance (the world’s largest agro-fuels manufacturer), and Synergy Drive, and the Malaysian government firm ‘soon to become the world’s biggest palm oil conglomerate’ (Greenpeace, 2007:3). Also, there is the ‘ethanol alliance’ (US, Brazil, the Central American corridor, together with multinational companies); Brazil’s ethanol alliances with India, China, Mozambique and South Africa; and the Southern Cone transgenic soy complex (Argentina, and Paraguay, with Bunge, and Dreyfus).

Oil giant, Royal Dutch Shell is also exploring a joint venture with Brazil’s bio-ethanol producer, Cosan. This move would stimulate growth for Shell’s investments, and for Cosan. The alliance would double ethanol production, and consolidate Brazil’s position as ‘the world’s alternative energy superpower with the potential to ship huge quantities of fuel to the US and Europe’ (Mathiason, 2010:43). The emerging agro-fuels regime thus reproduces a



‘global ecology’ whereby planetary resources are managed through market paradigm to the environment, (Sachs 1993; McMichael 2010).

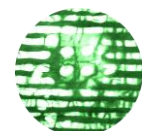
The consequences are increasing North/South synergy, converting crops to fuel as export at the expense of encouraging local agro-fuel developments for local ‘energy sovereignty (Rosset 2009; Fernandes *et al.* 2010). The ‘energy transition’, through agro-fuels represents short-term responses to energy consumption, in the name of arresting climate change. By constructing the agro-fuels project, alternative food-energy pathways are excluded and more sustainable and equitable food security systems are ignored. Agro-fuels project is accelerating deforestation as exemplified in Indonesian where 80 per cent of the rainforest (covering 77 per cent of Indonesia in the mid-1960s) has already disappeared, largely to massive expansion of oil palm for agro-fuels (Gouverneur, 2009:5). In the light of this, dispossessed indigenous peoples in the Amazon refer to agro-fuels plantations as the ‘devil’s orchards’, which accelerate displacement of food crops with fuel crops (Holt-Giménez 2007).

Nigerian Agro-fuel Policy

Government policy has been the key driver for the revolution in production and expanding market for agro-fuels around the globe. Similarly, government policies have provided financial incentives to the private sector to ensure participation and sustenance of agro-fuels programmes. Legislation on agro-fuels is thus becoming very popular and seems to be the standard practice in search of alternative energy source. The Nigerian National Petroleum Corporation (NNPC) in pursuant to the government’s directive in August, 2005, on an Automotive Biomass Programme for Nigeria began to create the environment for the production of agro-fuels (Federal Government of Nigeria, 2007). The agro-fuel regime was meant to gradually reduce the nation’s dependence on imported gasoline, reduce environmental pollution and create a commercially viable industry that will guarantee employment.

As expected, the government has been able to articulate the benefits of the agro-fuel project in the official government gazette. For example, the government pointed out that it will make significant contribution to the quality of petroleum products in view of the increasing demand for environmentally friendly fuel. Similarly, other benefits outlined are additional tax revenue from the economic activities of the agro-fuel; job creation; development and empowerment of rural communities; improved farming techniques; increased demand for fuel-based crops; reduction in tailpipe emissions and ozone pollution; reduction in particulate emission, and replacement of toxic octane enhancers in gasoline (FGN, 2007). As will be discussed, the challenges that agro-fuel project poses to land use and food security was not articulated in the policy. Without being pessimistic, the Nigerian government has failed to deliver the same benefits since the past four decades of oil exploration in Nigeria (Attah, 2002).

The agro-fuels industry program in Nigeria is guided and directed by a three step strategy, based on timing, namely, planning, building foundation and growing of the industry (NNPC

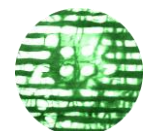


2008). The Planning stage involves the development and execution of economic, social, environmental and regulatory assessment within the agro-fuels industry. These steps also take into consideration the development of a financial approach for the purpose of partnership, strategy and partner options. The building foundation stage involves establishing a growth model with partners in order to convert existing acreage and building infrastructure for the development and production of agro-fuels. This stage also creates the infrastructure that will guarantee supply of ethanol as well as developing customer acceptance for agro-fuels. The growing stage, which is the final step, involves replicating the model and ensuring continuous improvement of the industry.

The Nigerian agro-fuel industry program is structured into two phases, namely, the seeding phase and the agro-fuels production phase, both of which will run concurrently. Seeding the market involves blending of up to 10% of fuel ethanol with gasoline so as to achieve a blend to be known as E-10. This will begin with the initial importation of fuel ethanol until such a time that the country would have been capable of a large scale production of agro-fuel and the establishment of agro-fuel plants. This stage of the project implies that Nigeria is expected to embark upon large-scale importation of agro-fuel, a situation that is not too different from the current practice whereby NNPC exports crude oil and still depends on imports of refined petroleum to meet domestic needs (Bassey, 2012). Starting off with massive agro-fuels import would therefore amount to surrendering Nigerian farm land for agro-fuel feedstock production while the refining takes place in metropolitan countries.

The second phase is the integration of core agricultural production into the agro-fuel programme, which will run concurrently with the seeding programme. This phase is characterised by the establishment of plantations and construction of agro-fuel distilleries and refineries that have been planned across the country. It is estimated by the NNPC (2007) that 1.3 billion litres of agro-fuel, accounting for 10% blend ratio with fuel ethanol will be required for the project to take off. It is expected to increase to about 2 billion litres by 2020 when market demand for agro-fuel would have risen to about 900 million litres compared to the current market possibility of about 480m litres for a 20% blend for agro-fuel (Terungwa, 2009). In accordance with the agro-fuel policy, domestic production and consumption of agro-fuel is expected to reach 100% by 2020 (FGN, 2007). Presently, efforts are geared towards large scale acquisition of land by NNPC for the production of agro-fuel feedstock such as cassava, maize and sugar cane that are exported for distilling.

The agro-fuel programme drives to establish a thriving fuel ethanol industry that is dependent on agricultural products. The policy is thus linked to the agricultural and the energy sector, with the underlying aim of acquiring large expanse of land for this purpose. The policy specifically empowers the Minister of Petroleum Resources under the Petroleum Act to make appropriate regulation that would ensure the availability of agro-fuel for sale and use within Nigeria (FGN, 2007). However, while Nigeria is vigorously pursuing agro-fuels regime, it does not produce, nor have the technology that use agro-fuels. It is therefore paradoxical



within the framework of the agro-fuels policy to develop rural agriculture, albeit not for food security, but for fuel production. The policy has therefore led to frenzy acquisition of arable land. For the purpose of agro-fuel programme, investment in the industry is treated as an agro-allied activity, benefiting from incentives such as land put in place to foster the development of feedstock.

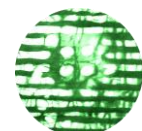
The production of agro-fuels is anchored on partnership between the federal government, the state and local governments and foreign investors. The federal government is in charge of the provision of infrastructure and amenities in communities where agro-fuels firms are located. The state governments are responsible for the acquisition of land for agro-fuels companies and ensured the host/local communities do not resist the acquisition of land or obstruct operations of the companies. The local governments have the responsibility of organizing out grower schemes between the agro-fuels companies and host communities (NBPI 2007). The joint ventures between foreign investors, NNPC and state/local communities, allowed the foreign partners majority shares while NNPC and the state/local communities hold minority shares (FGN, 2007).

Agro-fuels Investments and Indigenous Land Rights

The backdrop of Nigeria’s new prioritization of large-scale land grabbing is hinged on the global drive for agro-fuels and food production. Some states governments have already signed Memoranda of Understanding (MOU) with some agri-business giants for agro-fuels production meant for export. In the last half decade of global financial recession, there have been highly publicised large-scale land deals for agro-fuels production in Nigeria as in other African countries already known for agro-fuels regime (NNPC, 2008). Agro-fuels projects are raising prospects for macro-level benefits for investing bodies and recipient countries, but also carry the threat of dispossession of land and natural resources from the poor people who depend directly on these assets for their livelihoods.

The provision of the 1978 Act concedes the customary ownership of land to the State governments, a situation that has given legal backing to the dispossession of land from the traditional occupiers as exemplified in the several hectares of land that have been appropriated from the vulnerable rural people for agro-fuels production. Beside land acquired by the Nigerian State for agro-fuels production, some lands under food crop production have been converted to jatropha production. Some farmers have been motivated by the government through incentives such as hybrid seeds and guaranteed market to produce agro-fuels based crops (Attah, 2013).

Commercially produced liquid agro-fuels for transport are mostly manufactured from carbohydrate-rich crops such as maize, sugarcane, sweet sorghum and cassava for bio-ethanol. On the other hand, oil-rich crops such as oil palm and Jatropha are being produced for bio-diesel (Dufey, et al. 2007). Nigeria with a history of agro-fuels crops mentioned above thus becomes one of the attractive countries for land grabbing for the purpose of agro-fuels production.



Recognising the high agricultural potential and opportunities for agro-fuels production, the Nigerian state through the NNPC is attracting both foreign and domestic investors into large-scale land deals for the production of agro-fuels feedstock in Nigeria as shown in the table below:

Table 1

Examples of Land Acquired for Agro-fuels Investments in Nigeria

Project	Cost	Location	Owners	Feed Stock	Feed Stock/ Tonnes	Project Summary Production	Land Hectares
Automotive Biofuel Project	\$306 million	Agasha Guma, Benue State	NNPC/Private Sector	Sugarcane	1.8 million	75 million L(ethanol), 116,810 metric tons (Sugar), 59MW (electricity)	20,000
Automotive Biofuel Project	\$306 million	Bukuru, Benue State	NNPC/Private Sector	Sugarcane	1.8 million	75 million L(ethanol), 116,810 metric tons (Sugar), 59MW (electricity)	20,000
Automotive Biofuel Project	\$306 million	Kupto, Gombe State	NNPC/Private Sector	Sugarcane	1.8 million	75 million L(ethanol), 116,810 metric tons (Sugar), 59MW (electricity)	20,000
Automotive Biofuel Project (Kwali Sugar Cane ethanol Project)	\$80-100 million	Kwali (Federal Capital Territory)	NNPC/Private Sector	Sugarcane	1.8 million	120 million litres (ethanol), 10-15MW (electricity)	26,374
Automotive	\$125	Ebenebe	NNPC/Private	Cassava	3-4	40-60	15,000

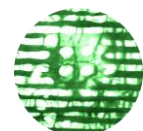


Biofuel Project	million	, Anambra State	Sector		million	million L(ethanol)	
Automotive Biofuel Project	\$125 million	Okeluse, Ondo State	NNPC/Private Sector	Cassava	3-4 million	40-60 million L(ethanol)	15,000
Biodiesel 1	N/A	N/A	NNPC/Private Sector	Oil Palm	N/A	40 million L(biodiesel)	10,000
Biodiesel 2	N/A	N/A	NNPC/Private Sector	Oil Palm	N/A	40 million L(biodiesel)	10,000
Biodiesel 3	N/A	N/A	NNPC/Private Sector	Oil Palm	N/A	40 million L(biodiesel)	10,000

Source: Ohimain E. I, (2013), “The Challenge of Liquid Transportation Fuels in Nigeria and the Emergence of the Nigerian Automotive Biofuel Programme” ...p.4062

The Nigerian agro-fuels programme has designated sugarcane, cassava and oil palm as the main fuel crops/energy feed stocks. Contiguous locations for the projects have been secured from local and state authorities and detailed feasibility studies initiated with international experts and public institutions. The feasibility studies at the targeted lands were supported with a grant of €70 000 from the Germany’s Renewable Energy and Energy Efficiency Partnership (NNPC, 2007). Presently, there are ongoing projects on sugar cane, cassava and oil palm plantations for agro-fuels development in the country. Four of the agro-fuels based sugar cane plantations are located in Kupto (Gombe State), Buruku and Agasha (both in Benue state) and Kwali. Cultivation is on a scale of land greater than 15,000-20,000 hectares to produce 1.8million tons of cane to yield 75million litres of ethanol per year (NNPC n.d., IREC, 2007). In the case of Kupto, many rice and maize farmers were forced off their land. Besides, the project in Kupto has raised concerns over pesticide use and the impact on surrounding farmlands (Abdullahi, 2008).

The Federal Government through the NNPC and its partners also acquired 15,000 hectares of land for integrated cassava plantations and Ethanol Plants at Ebenebe and Ugbenu communities in Awka North Local Government Area of Anambra state at the cost of over \$300 million. It is expected that the plants would produce about 200,000 litres of ethanol fuel through cassava annually (Odogwu, 2012). The fuel Ethanol Biomass renewable energy project, according to a government spokesperson, is an attempt by NNPC and its foreign partners to reduce the rate of greenhouse gases and carbon monoxide on the environment. The 15,000 hectares of land was acquired from the two communities with the explanation that the project would lead to development as well as create jobs. The implication of the land acquisition in these communities is that the displaced peasant farmers were relocated to

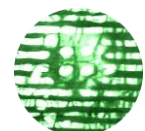


untested land for cultivation with the attendant food security risk while the promised development is yet to be seen.

The NNPC also signed a Memorandum of Understanding (MOU) with the Ondo state government to establish cassava ethanol project for agro-fuels on a 15000 hectare of land. However, 5 hectares of the land have been planted with hybrid cassava on a demonstration and seedling farm that would be transferred to a 500 hectare land (Ebenezer, 2008). The land for this project was originally a forest reserve in Okeluse in Ose Local Government Area of Ondo State. According to the State Commissioner for Agriculture, Fisheries and Forest Resources, Jibayo Oyebade, the agro-fuel project is an attempt to copy the modern trend in order to break away from dependency on crude oil (Ebenezer, 2008). Though the land was not under cultivation because it was a forest reserve, the project had its implication on cassava production for food in the area. Despite the fear that the project could trigger food crisis, Oyebade said that the State had the capacity to produce more cassava than it could consume (Ebenezer, 2008). However, the prices of cassava and its related products have been increasing.

Kogi State government under the administration of former governor Ibrahim Idris also signed a Memorandum of Understanding (MOU) with CSECC International division from China for the establishment of an agro-fuels refinery in Itobe, Kogi State (Maritz, 2008). The total cost of the project is in the region of US\$12m with production target of 1,876,000 litres of biodiesel for the first year (Maritz, 2008). The deal involved 450 hectares of land, which the Itobe farmers have been cultivating for years (Attah, 2011a). This is beside the land committed to the production of fuels crops through, out-grower scheme by about 400 farmers. Indigenous cultivators with customary land tenure were coerced into surrendering their customary holdings for agro-fuels production without compensation. The people were made to accept that the project will bring development to them (Ochala, 2012; Okpanachi, 2012). The dispossession of vulnerable farmers of 450 hectares of cultivable land with the explanation that its conversion to agro-fuels represents development for them is a remarkable construction to justify the process of expropriation. Expropriation of land for agro-fuels as cited here portends difficulty for the peasant farmers in accessing arable land necessary for food security. Schemes (or scams) of this type are often planned on a massive scale and without regards to the welfare of the people.

Similarly, 31,000 hectares of land was acquired in Odogwu, Kogi State for the construction of an ultra-modern sugar factory. The sugar factory worth US\$510 million is a partnership deal between the Kogi State Government and International Trans Oil Corporation of USA, expected to produce about 87million litres of ethanol for agro-fuels annually (Aruwa, 2011). The agreement did not provide for compensation to the peasant farmers that were dispossessed of their land, neither did it provide alternative land for the people to eke their livings. However, Kogi State Government promised that the project will generate about 400



jobs, but the promise is yet to be fulfilled (Aruwa, 2011). Kwara State is also noted for land grabs for agro-fuels as exemplified in the table below:

Table 2

Land Acquired for Agro-fuels in Kwara State

Firms	Projects	Land Acquired (Ha)	Location
Coga Farms Limited	Cassava, Maize and Jatropha Plantation	6,000	Fallah, Moro LGA
Jatropha Farmers Development Foundation	Jatropha for Bio-diesel Production	5,000	Iwo, Isin LGA
Casplex Ltd	Cassava production for ethanol and biogas	15,000	Okuta, Baruten LGA
Future Energy Ltd	Jatropha Plantation for bio-desel	5,000	Shao, Moro LGA
EnviroFriendly Energy Ltd	Jatropha production and refinery complex	9,369	Duru/Laslwa, Moro LGA

Source: Kwara State Ministry of Agriculture and Natural Resources, (2011)

While there is a perception that land is abundant, the claim needs to be treated with caution. In many cases, land is already under use – yet existing land uses and claims go unrecognised because land users are marginalised from formal land rights. The dispossessed communities had no legal say in the massive land acquisition because land is officially held by the government. Ownership of land can be a complex and contentious issue sometimes, especially in countries where there is no formal means of land registration. In countries where land is owned by the state, it can only be leased by foreign investors and in most cases negotiations with government agencies are required before any land deal is sealed. In other cases, community leaders are consulted on land acquisitions and may agree to the land transfer in exchange for promises of job opportunities, improved facilities and compensations. In Nigeria, reports have suggested that NNPC did not make formal consultation with the communities whose lands have been acquired for sugar plantations in Kupto (Abdullahi, 2008).



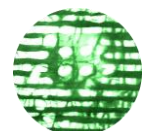
The key issue is that the rights of individuals who depend on the land are often overlooked. This has been eloquently exemplified in the cases of land that have been acquired, courtesy of the Land Use Act that has always been applied to the disadvantage of the peasants. Land acquisitions on the scale for agro-fuels production have resulted in loss of land for large number of people. As much of the rural population in Nigeria depend on land for their livelihoods and food security, loss of land has negative impacts on local people and Nigerian food security that largely depend on peasant production.

Fuel versus Food

The cultivation of agro-fuel crops competes with food production for land. The choice of cassava, oil palm and sugar cane as the main fuel feed stocks creates competition between fuel and food, as these crops make up a key component of the food sector of Nigeria, especially cassava and its associated products, which serves as a major staple food crop for a greater proportion of the population. Cassava and oil palm production have been on the increase from 1979-2003, yet the prices have equally increased due to their industrial rather than dietary usage. Cassava rose from 11,500,000 to 32,913,000 tonnes, while oil palm rose from 579,000 to 992,000 tonnes and sugar cane declined from 900,000 tonnes to 744,000 tonnes (Terungwa, 2009).

Domestic consumption of cassava, palm oil and sugar has equally been on the increase within this period, especially palm oil, which rose from 493,000 tonnes in 1979 to 769,000 in 2003 and sugar from 728,000 tonnes to 1,358,000). The production of cassava and oil palm has been meeting domestic consumption demand; however industrial demand for oil palm has been met by import supplements while industrial demand for cassava has not been met. Domestic production of sugar cane has not matched both domestic consumption and industrial demand. Imports have been the only means of meeting Nigeria’s requirements of sugar.

The anticipated production targets of agro-fuels production currently exceed domestic production capacity, especially in the case of oil palm and sugar cane. The creation of agro-fuels industry has created a huge demand for these food crops as fuel and food compete. Using demand and supply laws, the demand for these crops for both fuel and food exceeds supply. The result will be increase in the prices of food and fuel crops as demand exceeds supply. The Nigerian agro-fuels project has the potential for unintended consequences. For example, the choice of cassava and palm oil for agro-fuels production was not made in the best interest of Nigeria’s food security, taking into consideration the role of these crops in the daily food diet of majority of Nigerians. Already, the shift in the use of corn from human consumption to agro-fuels consumption in the United States and the subsequent agro-inflation at a global level are lessons to be learned on the impact of agro-fuels on food security (Wolde-Georgis and Glantz, 2010). However, the concerns over the use of corn for agro-fuels have led the United States to ban corn as feedstock.

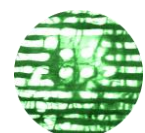


Contrary to the Nigerian situation, in Mozambique, the government encouraged Mozambican farmers to produce *Jatropha* on unused and marginal land for their agro-fuels project. Major Mozambicans staple foods are also not listed as agro-fuels feedstock. Besides, the Mozambique agro-fuels policy did not displace Mozambican farmers from their lands as it is in Nigeria. The Mozambican government also promised that the project would avoid using lands allocated for food production, and would refine its own raw materials for agro-fuels (Schut, Slingerland and Locke, 2010). It was for the fear of food security that the South African government banned corn, (which is one the foods consumed in the country) as a feedstock for ethanol (Nieuwoudt, 2007). Lamentably, Nigerian government is not learning from the United States, South African and Mozambican experiences. A major unanticipated consequence of agro-fuels regime is the potential rises in food prices, which have started affecting access to food and dietary food intake in Nigeria. For example, the use of cassava for the production of agro-fuels in Nigeria is already causing concerns, as it has led to cassava-based food shortages. If Nigeria must use any crop for agro-fuels, it should not be any of Nigerian staple foods such as cassava that even the poorest of the society depend on.

While the agro-fuels projects in Mozambique are meant to replace imported fuel and make Mozambique to become an oil exporting country instead of wholly dependent on oil imports, Nigeria is a leading oil producer that do not have immediate need of turning her land and its foods to agro-fuels that would be exported and not used domestically (Schut, Slingerland and Locke, 2010). The Nigerian government had, over the years, been exporting over 85% of her crude oil, while the rest is left for domestic refining, which has fallen far below the domestic demand. Out of the 11.07 billion Litres of petroleum product distributed in Nigeria in 2008, gasoline accounted for 69.3%, diesel accounted for 11.07% while aviation turbine kerosene (ATK) accounted for 7.66% (NNPC, 2008). Automotive fuel therefore accounted for over 88% of the total refined product consumed in Nigeria. It has also been observed that on the average, petroleum products accounted for over 83% of the commercial primary energy consumed in Nigeria between 2002 and 2007 (Sambo, 2009).

Although, Nigeria made much wealth from oil exportation, this has not translated to significant social benefits. Oil accounted for 29% of Nigeria’s GDP in 1980 and rose to 52% in 2005. By contrast, Agriculture fell from a GDP of 48% in 1970 to 20.6% in 1980 and 23.3% in 2005. In the past one decade, the trend is that petroleum constitute the bulk of Nigeria’s export, accounting for about 99% of Nigeria’s export and about 85% of government’s earnings, on the other hand, agricultural exports constitute about 0.2% of the country exports (Ohimain, 2013). Nigeria now wishes to use the petroleum sector to boost the agriculture sector by investing in biofuels.

Due to government policy and ineptitude, over 70% of transportation fuel used in Nigeria is imported. Nigeria therefore depends on imported fuels for her domestic needs despite been a leading producer of crude oil. Due to the policy of importing the bulk of automotive fuel used in Nigeria, the petroleum industry is thus, affected by the price volatility of crude oil at the



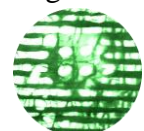
international market and the concomitant high prices. The country therefore spends a huge part of her foreign earnings on the importation of automotive fuel, but now decided to use agro-fuels production to reverse the trend. Following the quest for agro-fuels as alternative source of energy by non-oil producing countries, Nigeria is also copying this trend instead of solving the problems associated with her petroleum industry.

Nigeria is investing in agro-fuels in order to reduce her dependence on foreign nations for refined petroleum products, thereby increasing her energy security. The government had also argued that the introduction of agro-fuels into Nigerian automotive fuel mix will increase the renewable share of Nigeria’s energy (NNPC, 2007). However, it should be noted that the situation Nigeria had found itself under petroleum regime is not too different from the agro-fuels regime as both productions depend on foreign firms thereby externalising most of the benefits. The situation is even more precarious as Nigerian staple food crops have been targeted as agro-fuels feedstock. It should also be noted that unlike Nigeria, most of the countries in the forefront of agro-fuels regime are those that do not produce large fossil oil.

One of the challenges of the agro-fuels programme is the land take. Presently, the Nigerian agro-fuels projects have been projected to require 146,374 hectares of land, accounting for about 28.5% of arable land (Ohimain, 2013). This is against the background that 10 million hectares of land would be required for the entire world to implement E5 (Escobar *et al.* 2009). It is therefore considered dangerous for food security in Nigeria for about 1/100th of the total global land requirement for agro-fuels to be used for the projects in Nigeria (Ohimain, 2013). Besides, the land is projected to produce 465 million litres of ethanol and 120 million litres of biodiesel per year, which accounted for 35.8 and 25% of bio-ethanol and biodiesel demand of the country (Ohimain, 2013).

More land is therefore required to completely meet the 1.3 billion bio-ethanol and 480 million litres of biodiesel demand under the automotive biofuel programme. In order to get the large expanse of land required for the cultivation of feedstock, farmers may be displaced from their farm land as it has already begun. Similarly, the automotive agro-fuels projects would require 6-8 million tonnes of cassava feedstock and 7.2 million tonnes of sugarcane, besides other feedstock annually (Ogaboh, *et.al*, 2010). The production and processing of such huge amounts of feedstock places high demands on large inputs such as labour, water, fertilizer, pesticides, energy etc.

The large labour input is an opportunity for limited employments, but it is doubtful if this can effectively mitigate the loss of traditional farm lands. For uninterrupted agro-fuels feedstock cropping, large volume of water is required through irrigations. Large volume of water is also essential in ethanol fermentation and distillation processes thereby putting a lot of pressure on water demand and supplies. Besides, as part of the project design, effluents are to be used as farm irrigation water. Pesticides and fertilizer used in the farm have been found to contaminate surface and ground water sources. Similarly, large volumes of liquid wastes (effluents), solid wastes and gaseous emissions are released in the process of converting



feedstock to agro-fuels. It has been estimated that about 12 litres of stillage is generated for each litre of ethanol produced, a situation that is causing environmental challenges as in fossil fuel production (Moreira and Serra, 1990).

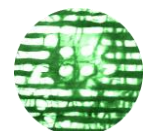
One of the objectives of the Nigerian agro-fuels policy is to enhance energy self-sufficiency and reducing dependence on imported fuel, however, the problem of Nigeria is not insufficient petroleum, but that of inadequate domestic refining capacity, which has been due to bad governance. Nigeria is the world’s 7th largest exporter of crude oil. Besides crude oil, the country has vast deposits of unexploited natural gas that is flared daily, while other energy sources include coal and tar sand. Current estimates of Nigerian crude oil reserves and daily production capacity was 37.2 billion barrels as at January, 2013 (Rachovich, 2013). Nigeria also produced about 2.46 million barrels of crude oil per day as at July, 2012 (CIA, 2012).

These figures in oil production and reserves in Nigeria do not call for panicking measures for alternative fuel/energy sources that is now putting food security in danger. However, coal and lignite reserves are estimated at 2.75 billion tonnes while natural gas is estimated at 185 trillion cubic feet. It is estimated that Nigerian oil reserve would be exhausted in the next 30-36 years (IREC 2007:10). However, more oil sites are being discovered in places that were not known to be oil producing areas in Nigeria. This goes to say that the above projected timeline for the Nigerian crude oil notwithstanding, large deposit of crude oil reserves are being discovered thereby putting into question the accuracy of the depletion timeline.

There exists cultivatable arable land in Nigeria, it is however not reasonable to convert the existing arable land for agro-fuels production in the short or medium term due to the fact that Nigeria is a net importer of food to feed her growing population. This is against the background that Nigeria has not adequately utilized and benefited from her current fossil oil reserves. In fact, the policy of converting existing farm acreage for agro-fuels feed stock cultivation meant that land available for food production would decline and that food crops and fuel crops would compete for existing land. The agro-fuels program is an attempt to boost agricultural production by linking agriculture with the energy sector. However, the designated fuel crops are food crops of great significance for the nation’s population and domestic food industry. The production of the designated crops has been unable to meet the overall domestic demand for both food and industrial raw material and hence Nigeria is not currently secured in the production of these crops.

Conclusion

The Nigerian agro-fuels project seeks to create wealth for Nigerians, attain clean energy, create jobs, develop rural areas and reduce poverty by linking agriculture and the energy sector (NNPC, 2007). These claims, if novel, are bound to produce unintended consequences as agro-fuels project and people demand for fuel, raw materials and food. The decision by the government to embark on agro-fuels project shows that it has not made detailed study about the cost and benefits of agro-fuels to the nation. Thus, it appears the government’s knowledge



about the impacts of agro-fuels is incomprehensive. The government has not only failed to weigh the balance between its intentions and the expected outcomes, but has also failed to anticipate any unintended outcomes.

The first phase of the agro-fuels project is to be met by the importation of ethanol, which will not only double dependence on foreign energy, but also undermine foreign exchange earnings. This has led to the view that agro-fuels project is conspiracy by the government and its foreign partners to acquire land for fuel crops that are exported for refining and for the use of wealthy countries at the expense of Nigerians. Presently, Nigeria should not be desperate about alternative energy, but the mechanism to properly harness the benefits of her fossil oil that has been left to the control and management of foreign oil multinational companies (Attah, 2002). This is imperative in view of the consequences of agro-fuels industry on access to land and the nutritional requirements of the population.

The key issues addressed here are the land acquisition by the state and how it rubs on food security and the livelihoods of rural people. It is in this sense that the acquisition of land for agro-fuels is seen as politically driven and not development driven. This is in agreement with the assertions of Brian Tokar, Peterman and Henandez (2007), Randazzo and Sassi (2007), in which they argued that agro-fuels are backed by governments and had political values. As articulated in the Nigerian agro-fuels program the government is the architect and director of agro-fuels programme with its implication on landholding. Evidence from the Nigerian agro-fuels program shows that, the initial production will be in the hands of agro-fuels companies, most of which are foreign owned (since foreign companies have the capital and technology). The implication is that agro-fuels will bring about foreign investments, but the end result is that there will be capital flight as most of the foreign companies will repatriate their profits. Similarly, agro-fuels production will have a profound impact on access to land and environmental crisis through deforestation and heavy use of chemical contrary to popular opinions. Thus the benefits of the rural folks from agro-fuels will not be as tremendous as anticipated. Income gained from agro-fuels production could be eroded by increased food prices as fuel and food compete and with fewer farmers having access to land.

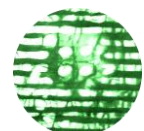
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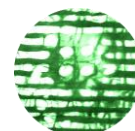
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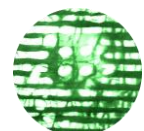
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