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Land acquisition for and local livelihood implications of biofuel development in Zimbabwe

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ABSTRACT

Proponents of "green and clean" fuel argue that land acquisitions for biofuel development could result in significant economic benefits, such as job creation, local development, fuel and energy security, and minimal negative impacts on the environment. With a dominant focus on these purported benefits, comparatively little attention has been given to the processes and impacts of land acquisitions on the local people whose livelihoods depend on land-based activities. Using a case study of bio-ethanol development in Chisumbanje, Zimbabwe, this paper assesses the processes and local livelihood implications of land acquisitions for biofuel development and considers who is likely to bear the costs. Our findings show that local communities felt they were not consulted in the land acquisition process and despite the promises of local livelihood enhancement from biofuel development, displaced households (farmers) perceived that the costs incurred from biofuel development were more than the benefits received.

1. Introduction

Literature on the positive aspects of biofuel development, particularly in non-oil producing developing countries, has been steadily increasing in the past decade (Cotula et al., 2008; Hall, 2011). In the Global South, the so-called "green fuel" development is expected to have a number of benefits to national governments and local people, including: less reliance on fossil fuel; helping to reduce fuel import bills; generating electricity as a by-product; and raising much-needed foreign currency through exports into regional and international markets (see Borras et al., 2010; Richardson, 2010; Hall, 2011). Biofuel development is also touted as a job-creation opportunity and vehicle for transforming impoverished rural settlements into vast and growing agro-industrial centers (Richardson, 2010; Skutsch et al., 2011). It is also argued that biofuels are clean, as they minimize greenhouse gas emissions and are therefore a perfect substitute for fossil fuels (Borras et al., 2010).[1]

National governments consider these potential positive impacts to be economically advantageous, but they are often only measured and evaluated at the *national* level, while the *local* impacts – in communities most affected by biofuel production – have, comparatively, received less focus (De Schutter, 2011). This is likely a result of the exclusive attention that is paid to the positive impacts of investing in clean and renewable fuels, given the fears over frequent increases in oil prices and security concerns in the main source markets (Hall, 2011).

Despite the ostensible benefits of clean fuel, critics have started asking questions about the authenticity of such benefits and the potential impacts on livelihoods at local levels (White and Dasgupta, 2010; Hall, 2011; Hultman et al., 2012). For instance, more recent findings reveal that calculations of greenhouse gas emissions from biofuel production lines may be omitting significant sources (e.g., emissions of CO_2 from vehicles and N_2O from nitrogen fertilizer use) that may lead to an overestimation of their benefits compared to fossil fuels (Fargione et al., 2008; White and Dasgupta, 2010; Smith and Searchinger, 2012). In terms of other benefits, some recent studies suggest that the much-bandied potential for greater tax revenue, lowered fuel costs, job creation, and wealth distribution from biofuel production is misleading since there is fairly low benefits compared to the costs incurred by local communities (Richardson, 2010; Wilkinson and Herrera, 2010).

In some cases, biofuel development activities have acquired communal land, despite the fact that such land is integrated into rural communities' livelihood practices, which depend on agriculture and natural resources (Cotula and Vermeulen, 2009; German et al., 2011; Matondi, 2011). According to Borras et al. (2011) growing empirical evidence demonstrates that most land that is

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[1] The US Energy Information Administration's (EIA's) 2011 world carbon dioxide emissions by country data shows that Zimbabwe ranks 101 of 217 countries, emitting about 8.875 million metric tons of carbon dioxide annually (EIA, 2013).

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being transferred to private investors for biofuel development in African countries, such as Zimbabwe, Mozambique, and Tanzania is, in fact, already inhabited and used by local people. In countries like Zimbabwe and South Africa, this trajectory of land acquisition is in sharp contrast with the new wave of twenty-first century global land reform, which aims to redress insecurities from colonial policies that arose in the twentieth century (Hall, 2011). This reallocation of land has subsequently resulted in disputes between local communities and government entities, as the governments often ignore the economic and social values of their communal land (De Schutter, 2011; Sjaastad and Cousins 2008; Vermeulen and Cotula, 2010). For example, in Tanzania (Hultman et al., 2012) and Mozambique (Schut et al., 2010) conflicts arose as national plans to scale up biofuel production clashed with local preferences.

1.1. Communal land acquisitions

Despite these critiques communal land acquisitions for biofuel production have received much state and international backing in recent years. The promotion of biofuel in the Global South, and particularly in many developing African countries, is predicated upon the concept of "marginal communal land" (Nalepa and Bauer, 2012). The definition of marginal land is fluid, opaque, and sometimes contested, but generally refers to "land that is arable yet degraded and difficult to farm as determined by a combination of biophysical factors including soil profile, temperature, rainfall, and topography" (Nalepa and Bauer, 2012: 409). Communal land is defined as territory occupied by a cultural group of people or communities subject to rules or customs of that community (Pienaar, 2008), rather than an individual or a private company. Often, the group subdivides and distributes the land to members under a formal authority such as a Chief. In many cases, communal territories have no legal owner, which means they effectively become state property (Hall, 2011). The characterization of communal farming in Sub-Saharan Africa as unproductive and economically inefficient is, in part, due to the challenges involved in defining marginal lands within the context of agriculture (Nalepa and Bauer, 2012). This perception is viewed in the literature as part of a broader, dominant discourse on biofuel, agricultural development and cleaner energy shared by an influential network of actors that include private investors, governments, politicians, and related service providers. In simple terms, a core dimension of the purported advantages of biofuel production is that these supposedly marginal lands are underused and could be put to more productive use.

In Zimbabwe, biofuel (bioethanol) development is not a new phenomenon but communal land acquisitions for biofuel development represents a new dynamic in the biofuel complex. The potential for biofuel development to create jobs, foster rural development, and enable energy sufficiency and security is touted as the main justification for re-allocating communal land for biofuel production purposes. While there is an increasing body of knowledge on the positive and negative impacts of biofuel development globally, Zimbabwe still has limited systematic analysis of biofuel development impacts on rural households from the perspective of affected communities. Available and conflicting aggregate estimates of the local livelihood impacts of land acquisition for biofuel production are based on grey literature, such as media and unpublished reports (e.g., Mutambara, 2012; Zindi and Farawo, 2012; Zenenga, 2013; Chiweshe and Mutopo, 2014). Efforts to address the negative impacts of biofuel development need to be informed by empirical evidence based on displaced farmers' perspectives. Therefore, systematic and detailed studies are required to permit meaningful dialogue among policy makers, private operators, local communities, and other stakeholders, with a special focus on understanding the process of communal land acquisitions for and the local livelihood impacts of biofuel development. Such an analysis is important given that the country looks set to consolidate biofuel development given the energy insecurities faced in the past and efforts toward clean energy.

To this end, this paper examines the processes of land acquisition and impacts of biofuel development from the perspective of local communities in Chisumbanje communal lands, Zimbabwe, where the development of one of the biggest bio-ethanol plants in Africa resulted in the dispossession of local people from their farming land. While it is likely that the overall positive benefits of biofuel development at national level may outweigh the negative effects, a more fulsome understanding of the local impacts will contribute to a more systematic consideration of these in local and regional discourses and strategies on biofuel development.

2. Description of the study site and the biofuel project

2.1. The study site

Chisumbanje is located in Chipinge District, in the Manicaland Province of Zimbabwe (Fig. 1), about 260 km from the City of Mutare. Zimbabwe is divided into different agro-climatic regions according to differences in effective rainfall (Vincent and Thomas, cited in Gambiza and Nyama, 2006). Chisumbanje area is located on the margin between agro-ecological region four and five, a largely semi-arid area, characterised by low and erratic rainfall, high temperatures and high evaporation rates (Nyamuedza, 1994). Chisumbanje is made up of seven different sub-villages namely Muyondodzi, Kaguvi, Miyondosi, Manyanga A, Manyanga B, Guva Rekipi, and Mutumburi. Located close to Chisumbanje are other relatively smaller villages including Garahwa, Matikwa and Chinyamukwakwa. Each village has a head man who reports to one Chief—Chief Garahwa.

With a mean annual rainfall of about 400 mm and prolonged dry spells, most of this area is generally considered by the national government as a "marginal landscape" (using a biophysical lens of marginality) and unsuitable for crop production without irrigation (Gambiza and Nyama, 2006). In practice, however, these drylands provide land for the production of maize and other drought-tolerant small grains, such as millet and sorghum, which are all important food sources, as well as economic opportunities for locals (Nyamuedza, 1994). Moreover, most communal farmers practice cotton production, a lucrative cash crop in Zimbabwe. Livestock farming is also an important livelihood source in the region, used as a source of draught power, and providing meat, milk and manure, and cash income (Zimbabwe Vulnerability Assessment Committee, 2012). Most people in the area use fuelwood as their primary source of energy, as their houses are not connected to the electricity supply grid. In sum, although the area is drought-prone, its nationally deemed "unsuitable" land remains an important source of livelihood for many local people. During the study period, the national unemployment rate was between 75% and 85% (Nyanga, 2013), with up to 70% of Zimbabweans living on less than US $2 per day (The World Bank, 2013), with these figures being higher in rural communities.

2.2. The biofuel project

The Chisumbanje bio-ethanol plant development started in 2009 and was completed in 2011. It is claimed to be one of the largest biofuel development projects in Africa (Matimaire, 2013; Chiweshe and Mutopo, 2014). Around 40,000 ha of land were acquired from local households to grow sugar cane for bio-ethanol production. Just 5112 ha were acquired under contract with the agricultural development parastatal organization, the Agricultural Rural Development Authority (ARDA), and the rest came from com-