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Big Sugar in southern Africa: rural development and the perverted potential of sugar/ethanol exports

Ben Richardson

This paper asks how investment in large-scale sugar cane production has contributed, and will contribute, to rural development in southern Africa. Taking a case study of the South African company Illovo in Zambia, the argument is made that the potential for greater tax revenue, domestic competition, access to resources and wealth distribution from sugar/ethanol production have all been perverted and with relatively little payoff in wage labour opportunities in return. If the benefits of agro-exports cannot be so easily assumed, then the prospective ‘balance sheet’ of biofuels needs to be re-examined. In this light, the paper advocates smaller-scale agrarian initiatives.

Keywords: sugar; ethanol; agro-exports; rural development; Zambia

Over the last decade around \$3bn has been earmarked for investment in the sugar cane industries of some of southern Africa’s poorest countries. These investments have originated from foreign companies looking to produce sugar and ethanol for export, giving the two markets an increasingly high profile among the international business community. *The Wall Street Journal* noted that ‘outside Brazil, southern Africa is now the hottest spot in the sugar industry’ (Miller 2007), while the Chief Executive of one UK biofuel supplier has gone as far to say that ‘southern Africa could be the Middle East of biofuels’ (Owens 2007). These investments have also been relatively large-scale for the region. Due to the high capacity of the typical mill-distillery, the need to transport the cane immediately for crushing, and the preference of owners for tight supply management, millions of dollars have been poured into the construction of vertically integrated estates incorporating thousands of hectares of commercial farmland. Coupled with their political influence, these companies are thus grouped together as ‘Big Sugar’ – evoking the economic ambition and elite connections more commonly associated with the Florida sugar cane industry (Hollander 2008).

This paper asks how investment in large-scale sugar cane production has contributed, and will contribute, to rural development in southern Africa. While many reasons for developing countries to pursue biofuel-led investment have been invoked – mitigating climate change and supporting fuel security among them – the

I thank Ian Scoones, Matthew Watson and the three anonymous reviewers for their helpful comments on earlier versions. I also thank the interviewees in Zambia for giving up their time and the organisers and participants of the *JPS* and Initiatives in Critical Agrarian Studies (ICAS) workshop on ‘Biofuels, Land and Agrarian Change’ in October 2009 for stimulating insightful and friendly debate on this topic. Any mistakes or omissions remain my own.

claim made here is that, in the case of poor countries in Africa, it is the purported link to rural development which is of most relevance. This is because African-grown biofuels would have such a small effect on total global carbon emissions as to make their contribution to temperature rises on the continent negligible, and, as we shall see later, it is also unlikely that they will begin to substitute for domestic oil demand any time soon.¹ Despite the centrality of rural development to the biofuels debate, empirical academic analysis of the sugar cane industry in Africa and its influence on the extension of economic opportunity and autonomy among agrarian communities has been thin on the ground.

To fill this gap, this paper offers a contemporary analysis of Big Sugar based on the political economy of agrarian change, understood as the dynamic social relations of power, property and production that structure the distribution of wealth in rural areas. Emphasis in this paper is placed on the change initiated by the interactions of multinational companies and the state in forging accumulation. This draws on a longer history of critical rural politics, which includes the work of McMichael (2009) on the successive world regimes created by the fusion of capitalism and geopolitics in which the purpose and possibilities of agricultural production are framed; the work of Kay (2009) on the synergies between agriculture and industry in driving national economic growth, especially germane in commodity chains such as sugar/ethanol which link farms closely to the processing factory; and the work of Bernstein (2003) on the fragmented classes of waged and non-waged labour and social differentiation accelerating under globalisation. Methodologically, it draws on interviews conducted with state officials, industry figures and non-governmental organisation (NGO) staff in Zambia in December 2009, coupled with secondary data from national press and in-depth reports on the sugar/ethanol industry.

The paper begins by outlining the basic economic rationale underpinning the recent wave of investment into southern African sugar cane (Section 1). It then details the specific ways these investments are believed to stimulate economic growth and rural development (Section 2). Next the growth of the sugar cane industry in southern Africa is put in its world-historical context in order to highlight the long-held dependence of the region on foreign capital, be it donor or private sector. Through this the major actors and networks of Big Sugar are discussed, namely, the resurgent South African firms Illovo and Tongaat Hulett, and a host of European and Brazilian market entrants (Section 3). The main body of the paper is dedicated to a study of the investment by Illovo in Zambia. In cross-referencing the potential economic benefits of agro-export investment against the Zambian experience, the case is made that, while the company has not flouted the law or any professional standards, by the same token neither have the intended benefits fully manifested themselves and nor have community costs been avoided (Section 4). The paper concludes by noting that the discourse concerning rural development that accompanies such investments over-hypes the benefits, and, furthermore, ignores the extent to which they divert resources from other users and thus exacerbate economic dislocation and dependence. For this reason it is argued that large-scale

¹The domestic market for ethanol in Africa is anticipated to be much lower in comparison to its export market. The International Energy Agency (2006) expects African demand for biofuels to be two billion litres by 2030, but this will be almost exclusively concentrated in Nigeria and South Africa, the major oil users at present.

investment should be de-prioritised in trade and industrial policy in favour of small-scale schemes that directly target the country's poor (Section 5).

Underpinning the dynamics of growth: export demand, market access and comparative advantage

The increased demand for sugar cane ethanol can be traced to the biofuel blends mandated in OECD countries. In the case of the EU, as part of the Climate Change Package adopted in 2008, each member state is required to use renewable energy for 10 percent of its transport energy by 2020. Most of this energy will come from biofuels and since the EU is unlikely to produce enough domestically, it will have to import increasing amounts of biodiesel and ethanol to meet its target (Franco *et al.* 37(4)). Since sugar cane is one of the lowest cost feedstocks for ethanol and also is capable of high greenhouse gas savings, it has been promoted as one of the best options for meeting this demand in the EU and other developed countries (OECD 2007, FAO 2009a).² Meanwhile, the demand for sugar has been underpinned by consumption growth in developing country markets and declining production in the EU. Since 2005 world prices have been buoyant and the terms of trade for sugar have greatly improved. In fact, in August 2009 prices hit a 30-year high, and, for the first time since the world food crisis in the 1970s, global economic models have predicted the possibility of long-term growth in the price of commodities like sugar (World Bank 2007).

The opportunity for southern Africa producers to meet this demand has been facilitated by a number of trade agreements offering improved market access. The most notable of these has been the EU's Everything But Arms agreement, signed in 2001, which offered duty-free and quota-free access to its market for the world's 48 Least Developed Countries (LDCs). Indeed, given that LDCs could export most products to the EU without restrictions anyway, this can be considered a piece of legislation explicitly designed to bolster imports of sugar (Richardson 2009). As Figure 1 illustrates, a significant number of these LDCs are located in southern Africa, giving the region an excellent opportunity to benefit from the higher prices offered for sugar and ethanol inside the EU's protected market.³

The reason that southern African LDCs in particular have been touted for investment lies with their (perceived) comparative advantage in sugar cane production. With plenty of sunshine and access to irrigated fresh water this group of countries have the right climatic conditions to make them globally competitive producers.⁴ Higher cane yields have been recorded in Malawi, Tanzania and Zambia than in Australia and Brazil, home to two of the lowest-cost sugar cane industries in

²The lower GHG emissions of sugar cane are partly due to its biology since cane has a high sucrose content and needs less fossil fuel fertiliser than other biofuel feedstocks such as maize. It is also partly due to the location and practices by which it is farmed, given that it is generally not planted on peat or recently deforested land, because the leftover cane leaves (bagasse) can be used to power the processing factory rather than coal, and because cane-burning in some countries, such as Brazil, is being phased out in favour of mechanised harvesting.

³It should be noted that not all countries in the region have gained from EU sugar reform. The non-LDC countries that previously had quota access to the EU market, including Mauritius and Swaziland, have lost a high-priced guaranteed market that they are not able to replace by exporting to other markets.

⁴A 12-month sugar cane crop requires 36,000 litres of water per hectare, four times as much as an annual maize crop (Wetlands International 2008, 33).

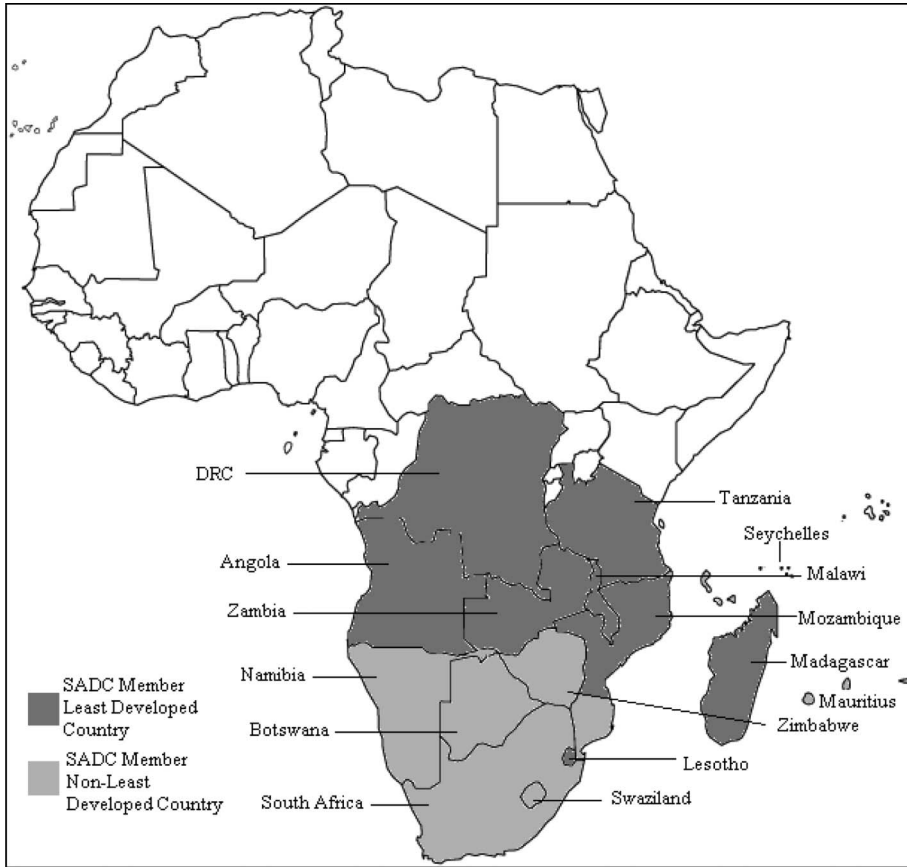


Figure 1. Status of the Southern African Development Community member states.
 Source: Author.

the world (FAOSTAT 2005). Alongside this, the five LDCs in southern Africa to have recently received foreign investment – Angola, Malawi, Mozambique, Tanzania and Zambia – are estimated to have a total agricultural area of 194m hectares of which just 11 percent is under cultivation. This is similar to Brazil and ten times that of India, suggesting to some that there is enough land to produce cash crops for energy or export without disrupting domestic food security (Johnson and Matiska 2006, 43). Leaving aside the veracity of these claims, such is the bounty of biomass detected in Africa that one group of academics was moved to label the entire continent ‘an unexploited resource for biofuels development’ (Amigun *et al.* 2008, 694).

Theorising the potential of agro-exports to deliver rural development

In attracting foreign investment into their domestic sugar cane industries, the governments of southern Africa have sought to progress their export-oriented development strategies. In doing so they are well supported by contemporary theory that has advanced increased agro-exports as a route to economic growth and poverty

reduction in the region. For instance, the World Bank (2007, 233) has argued that African and OECD governments should do more to promote the export of agricultural commodities, citing the liberalisation of cotton export markets in Zambia and coffee markets in Uganda as successful income improving policies. Similarly, Gibbon and Ponte (2005, 201–3) have suggested that to integrate into the world economy, African countries should pursue a strategy of ‘trading down’ by producing relatively undifferentiated commodities, which would allow them to achieve greater economies of scale, diversify customer bases and leapfrog intermediaries. Finally, in briefing papers specifically on sugar and biofuels, Oxfam has claimed that because of their limited domestic markets and comparative advantage in labour-intensive agricultural production, developing countries should take advantage of cash crop export markets where feasible. To enable poor countries to seize this opportunity, the organisation has thus made repeated calls for OECD countries to dismantle their agricultural production subsidies and tariff barriers (Oxfam 2004, 37; 2008, 37).

Literature on agriculture and development reveals three mechanisms by which such exports could facilitate rural development. First, it has been argued that the increased export of sugar and ethanol that results from foreign investment can lead to a virtuous circle of business growth. Macro-economic stability is enhanced as the balance of payments improves and export diversification reduces currency volatility (Dufey *et al.* 2007, Mathews 2008). The regulatory environment is made more conducive as governments become more adept at managing border controls, enforcing contracts and reducing red tape, constraints acutely felt in sub-Saharan Africa (World Bank 2009b). And, last of all, government revenue in the form of corporation tax, income tax and tariffs levied on industry imports all increase, thereby allowing further state investment in public goods such as transport infrastructure or education.

Following on from this, by bringing with them managerial and technical expertise, foreign investors can help to increase labour productivity and lower the cost of agricultural products. This is another problem with particular relevance in sub-Saharan Africa, since agronomists frequently point out that much higher yields are possible in the continent. As a result many institutions have identified private foreign capital as the means by which crop research and improved farm efficiency can be delivered (FAO 2009b, UNEP 2009). The case for private investment and agricultural modernisation has been even more forcefully stated with the onset of climate change. Drawing on Intergovernmental panel on climate change IPCC data, Collier *et al.* (2008) have estimated that over the next century southern Africa will become hotter by four degrees centigrade and drier as precipitation falls 10–20 percent. The authors suggest a number of adaptation and mitigation strategies to combat the worst affects of this, two of which – water storage through irrigation and low-carbon energy production – are practiced extensively in the sugar cane industry.

Taken together, these first two points suggest that agro-exports can make an *indirect* contribution to rural development by promoting national economic growth and resilience. In *direct* support of rural development, investment in the export of sugar and ethanol can increase on-farm and off-farm employment and revenue (Dufey *et al.* 2007, Cotula *et al.* 2008, FAO 2009a). As higher-value markets are targeted and production expands, sugar cane mills either increase their own estate land, employing more people in the process, or persuade outgrowers to provide more cane by raising the price they pay for the crop. Where smallholders are engaged as

outgrowers, the direct benefit is disbursed even further as a larger number of farmers are contracted into the supply chain. In turn, this extra money disbursed to labourers and farmers then finds its way into ancillary industry services such as cane haulage or warehousing, and, finally, into the local business community. By way of example Oxfam (2004, 4) have suggested that export-led investment just in the sugar industries of Mozambique and Zambia could create up to 30,000 permanent and seasonal jobs on the existing sugar estates. Meanwhile, researchers at the Overseas Development Institute have estimated that a smallholder producing sugar cane for biofuel production could earn roughly double the \$5 per day maximum offered in traditional markets (Leturque and Wiggins 2009, 3).

The imperative to foster rural development remains acute. In the case of Zambia, for instance, the slow growth in GDP of 0.1 percent a year has left per capita income languishing at \$1,358 and 68 percent of its 12.6m population living below the national poverty line (UNDP 2009).⁵ As such many policy-makers have argued that sub-Saharan Africa needs to integrate into the world economy if it is to attain higher economic growth and allow its poor to 'trade their way out of poverty' (SADC 1996, Lamy 2008). To this end the opportunities afforded in sugar and ethanol market could be seen as a means to diversify the economy of these countries, transfer technology across the agricultural sector and bring increased prosperity to some of their poorest people. The purpose of the next two sections is to put this vision to the test.

Historicising capital investment in the southern African sugar cane industry

Before examining our contemporary case study in Zambia, it is necessary to first historicise the emergence of the sugar cane industry in southern Africa and reveal the continued importance of foreign personnel and finance, particularly from South Africa, in the growth of the industry. By highlighting the powerful cross-national and political role played by the private sector, this section sets up our study in two crucial respects. First, it moves away from methodological nationalism and its failure to examine the dependence of southern African states on foreign capital and the past problems of indigenous, import-substitution efforts. Second, it establishes a more nuanced understanding of state-capital power relations in a regional market dominated by a handful of companies that have been able to shape their policy environment, and, in so doing, confound some of the assumptions about their developmental impact.

The British colony of Mauritius was the first site of sugar production in southern Africa. A contemporary of the plantation islands of the Caribbean it began to produce sugar in the late eighteenth century, and it was the migration of its personnel into Natal that was pivotal in the establishment of the industry in modern day South Africa. By the late nineteenth century, and again in conjunction with established planters and colonial capital, sugar milling was established in Portuguese East Africa (modern day Mozambique), and later, by 1930, in Southern Rhodesia (Zimbabwe). The next phase of sugar industry expansion began within South Africa, as the spread of irrigation into the Transvaal helped sugar production migrate inland from the rain-fed coastal plains, before taking in neighbouring and more distant

⁵The growth rate for GDP per capita, which is at Purchasing Power Parity, was calculated across 1990–2007; the national poverty line from 2000 to 2006.

British colonies. In 1951 Britain's Commonwealth Sugar Agreement, which guaranteed fixed prices to historic colonial producers, encouraged the South African sugar company Hulett and mining company Anglo-American, as well as the British sugar company Tate & Lyle, to invest in agreement signatories Southern Rhodesia and Swaziland. However, following South Africa's withdrawal from the British Commonwealth and increased isolation, as well as a sustained period of low world prices in the 1960s, further investment was shunned. Attention turned to preserving market share in South Africa and regional expansion remained muted until the 1990s (Lincoln 2006, 118–20).

Sugar production in southern Africa during the latter half of the twentieth century was instead financed by borrowings by the newly independent governments, with plant construction and technical assistance largely provided by European sugar companies – Tate & Lyle and Booker McConnell in particular (Dinham 1983, 83). In line with ideological leanings at the time, in many countries the industry was nationalised and a government monopoly established to fix domestic prices at relatively low levels for the benefit of urban consumers. Yet in the face of declining profitability, ineffective management and wider political conflict – not least the civil wars in Angola and Mozambique – the poorer countries of southern Africa never developed a significant export base in sugar. Nor did ethanol production gain much of a foothold. Only Malawi developed an established industry base when it introduced a biofuel blend in 1982, though this was later hindered by a lack of molasses from the country's sugar mills. As Figure 2 illustrates, despite their potential as low cost cane producers, by the end of the twentieth century the Least Developed Countries of southern Africa resembled not much more than a 'frustrated success story' (Tyler 2008).

It was the overturn of apartheid and the agenda of privatisation across the continent at large that combined to reinvigorate the expansion of South African capital in the regional sugar industry. Illovo Sugar emerged as a major force in the late 1990s when it was created out of the 'unbundling' of the South African group Barlow's and quickly acquired majority ownership shares of the privatised operations

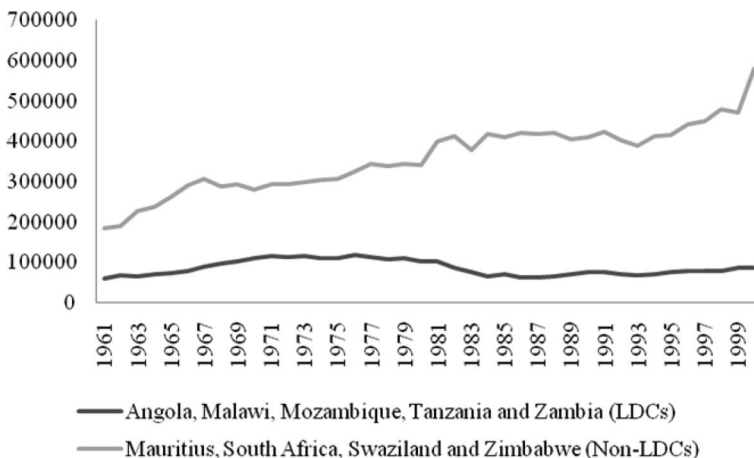


Figure 2. Hectares of sugar cane planted in southern Africa, 1961–2000. Source: FAOSTAT (2005).

in Malawi, Mauritius, Swaziland and Zambia. Alongside this investment in existing productive capacity, Illovo and two long-standing sugar firms – Tongaat Hulett of South Africa and Companhia de Sena⁶ – targeted the run-down, state-owned industries of Mozambique and Tanzania for rehabilitation. In these efforts, investors were assisted by the deregulation of prices, which meant sugar could be raised from its previously low level, and the liberalisation of import regimes, which made acquisition of machinery and spare parts easier.⁷ By 2008 these three companies accounted for two-thirds of sugar production on the southern African mainland, and, such was the scale of expansion that in the case of Illovo, its non-South African operations now contributed over 80 percent of its profits (Illovo 2009b).⁸

The latest chapter of foreign investment in southern Africa sugar has concerned the entry of Brazil. In line with what Peter Dauvergne and Kate Neville (2009) have called the ‘South-South co-operation’ in biofuels, Brazil signed bilateral co-operation agreements with the Lusophone axis of Angola and Mozambique and opened an agricultural research station on the continent (Osava 2008).⁹ The country has also received delegations from southern African countries keen to learn from its own experience in producing biofuel.¹⁰ These networks have been designed to help replicate Brazil’s cane ethanol production model in the region by transferring Brazilian plant science, plantation management and flex-fuel vehicle design into the continent, a strategy which can be seen as part of Brazil’s wider attempt to move beyond the export of commodities and into the role of a provider of technology (Wilkinson and Herrera, 2010). Illustrative of this approach is the \$210m joint investment in Angola between Brazilian engineering firm Oderbrecht, state-owned oil company Sonangol and a private Angolan firm, with the former company undertaking the valuable estate construction. For their part, many African states have been keen to use their status as a duty-free exporters as leverage to attract such capital. Based on Mozambique’s recent trade agreement with China for instance, the director of the country’s Investment Promotion Centre, Mahomed Rafik, issued a clear call for prospective sugar cane investors:

A South African company in partnership with a Mozambican company, and with the raw material being processed by a Brazilian company, may gain access to the Chinese market, because the product will be regarded as Mozambican. (AllAfrica 2009)

This is not to say that companies in the Global North have been entirely absent from the growth of the sugar industry in the region. Most notably, in response to the reform of the EU market in 2005, British Sugar bought a controlling stake in Illovo, as detailed in Figure 3. The idea was that British Sugar would harness the duty-free

⁶Companhia de Sena, which ran Mozambique’s large Marromeu mill in the Zambezia Province town of Sena, was bought by a Mauritian consortium in the 1990s, with the national government retaining a minority stake.

⁷The simultaneous threat posed by liberalisation of cheap import competition was mitigated when prohibitive tariffs on sugar were re-installed.

⁸In 2008, 4.5 million tonnes of sugar were produced in southern Africa (excluding Mauritius, which produced 0.5m tonnes) of which 2.93 million tonnes were from the three stated companies (Illovo 2009a, Tereos 2008, Tongaat-Hulett 2008).

⁹The research station is in Ghana and is an office of Brazil’s national agricultural research corporation, Embrapa. Embrapa has considerable experience in sugar cane production and actually helped decode the sugar cane genome.

¹⁰Interview with T. Chisambo, Biofuels Association of Zambia, Lusaka, 3 December 2009.

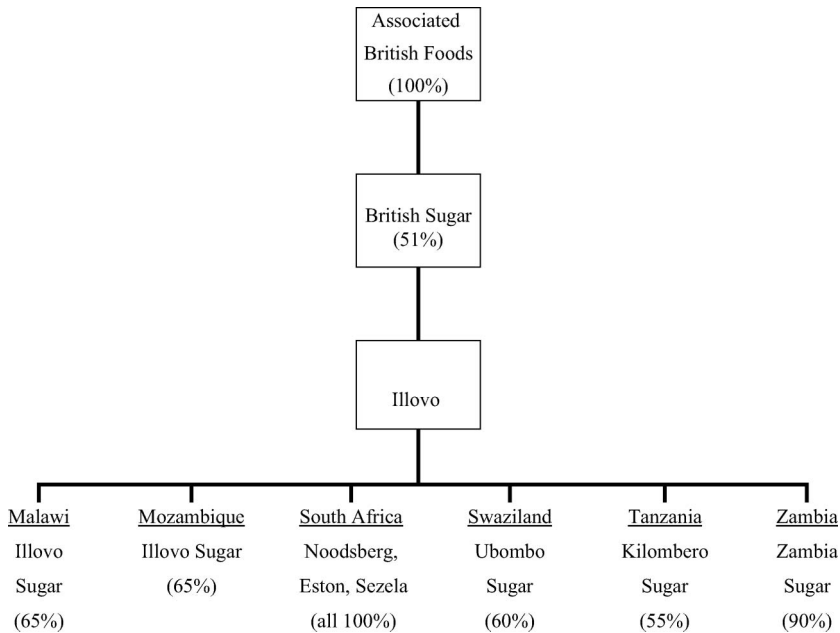


Figure 3. Ownership structure of Illovo (including share of stake).
 Source: Illovo (2009a).

trading arrangements afforded to the LDCs by importing raw sugar from Illovo and processing it in its newly acquired refinery in Spain. By 2009 Illovo already accounted for 20–30 percent of all sugar imports into the EU (European Commission 2009). Likewise in 2006 the French sugar producer Tereos acquired half of Companhia de Sena, keen to apply its experience of cane production with its Brazilian subsidiary to the company. The record of European companies in direct foreign investment, however, has been more mixed. While British-registered Principle Energy is still going ahead with its 18,000 hectare sugar plantation in Mozambique, its majority owner, Bryan Myerson, failed to encourage the board of D1 Oils, a *Jatropha* producer of which he was chairman, to exit the biodiesel industry and back cane ethanol instead (Lindsay 2010). Going further, both Swedish firm SEKAB and British mining operation CAMEC have withdrawn their proposed investments in Tanzania and Mozambique, with financial concerns in the parent company and withering government relations apparently to blame.

As Table 1 indicates, as a result of investments over the last decade, the production of sugar in the region’s poorest countries has risen rapidly, with a greater proportion of this directed to export markets for refining. This is likely to continue as those projects that are still in the construction stage come on-stream in the next few years. This rapid increase in sugar output has been in stark contrast to the performance witnessed in more established producers, such as Mauritius and South Africa, which have seen their production and export growth in sugar either stall or decline.¹¹ It also stands in contrast to the production of ethanol, which as the limited

¹¹The market factors attributable for this stagnation are higher labour costs and lower yields in the traditional sugar-producing countries compared to the ‘new’ LDC producers, as well as a reduction in the guaranteed EU price for Mauritian sugar exports.

Table 1. Sugar production in southern Africa, 2000–2009.

	Sugar production (1,000 tonnes, raw)			Sugar exports (1,000 tonnes, raw)		
	2000	2008	Percentage change	2000	2008	Percentage change
Least Developed Countries						
Angola	0	0	+0%	0	0	+0%
Malawi	219	318	+45%	59	102	+73%
Mozambique	60	355	+492%	56	305	+445%
Tanzania	167	303	+81%	8	41	+413%
Zambia	235	350	+49%	105	191	+82%
Non-Least Developed Countries						
Mauritius	684	503	-26%	615	471	-23%
South Africa	2,645	2,307	-13%	1,474	830	-44%
Swaziland	582	637	+9%	599	623	+4%
Zimbabwe	609	294	-52%	329	97	-71%

Source: F.O. Licht (2009a).

data in Table 2 reveals, has yet to develop in the region's poorer countries as it has in the rich. For all its market potential, the ethanol industry in southern African LDCs remains embryonic. In order to assess what impact this has had on rural development, and why sugar has succeeded where ethanol has so far failed, we now turn to our case study in Zambia.

Sugar cane exports and rural development: the case of Zambia

As indicated before, the majority of sugar in Zambia, about 95 percent, is produced under the auspices of Illovo, which owns and manages Zambia Sugar (Kaizen Consulting International 2006, 2). The company began life in 1960 as the Northern Rhodesia Sugar Refinery based in Ndola, processing raw sugar trucked up from its southern counterpart. In 1964 it changed its name to Zambia Sugar following the country's independence and two years later the owners, Tate & Lyle, decided to build a new mill and plantation, collectively known as the Nakambala estate, in the country's southern district of Mazabuka. Most of the land used for the development was 'state land', the fertile land formerly granted to white settlers and taken over by the Zambian government following independence, though many 'squatters' were still displaced and many more herders disrupted as they could no longer move their cattle across the district.¹² A decade later another mass displacement occurred after the Kafue River was dammed, in part to maximise hydro-electric power but also to provide water for the sugar estate. The seasonal flooding of the Kafue Flats was interrupted and around 300,000 people, who relied on the floodplain for hunting, fishing and cropping, were deprived of their livelihoods and forced to migrate (WWF 2005).¹³

¹²Interview by telephone with G. Nkombo, MP for Mazabuka District, Zambia, 9 February 2010.

¹³Local communities were also affected by effluent discharge from the sugar estate and the illegal fishing and hunting of its migrant workers. The WWF has since been working to restore 50,000 hectares to the Kafue Flats by creating a conservation area, which has cost the organisation €1m over the course of a decade (see WWF 2005).

Table 2. Ethanol production in southern Africa, 2000–2009.

	Ethanol production (million litres)			Ethanol exports (million litres)		
	2000	2008	Percentage change	2000	2008	Percentage change
Least Developed Countries						
Angola	0	0	+0%	0	0	+0%
Malawi	12	18	+50%	6	9	+50%
Mozambique	..	..	..	..	..	..
Tanzania	0	..	..	0	..	..
Zambia	0	0	+0%	0	0	+0%
Non-Least Developed Countries						
Mauritius	6	25	+316%	..	..	..
South Africa	339	385	+14%	..	..	..
Swaziland	13	31	+138%	..	..	..
Zimbabwe	..	25	..	..	..	..

Notes: ‘..’ indicates missing data.

Source: F. O. Licht (2009b, 72).

By 1973 Zambia Sugar was effectively nationalised under the guidance of the state-run Industrial Development Corporation. The vision of then President Kenneth Kaunda was for the sugar mill to be supplied exclusively by small farmers, using outgrower schemes as a way to channel resources and markets into rural areas. To this end, the Kaleya Smallholder scheme was established in the early 1980s. This was a joint initiative of the UK’s Commonwealth Development Corporation, the Development Bank of Zambia and Barclays Bank of Zambia, under which roughly 160 farmers were given seven-hectare plots to grow sugar, and a small amount of additional land on which to build a house and grow crops for direct consumption. Together these smallholders produced 125,000 tonnes of cut cane, 10 percent of the total amount crushed by the mill, and received 40 percent of the price paid by the mill, with the rest accruing to the company that managed the plots (Nakaponda 2005, 49–58).¹⁴ But, ultimately, Kaleya failed to convince the government that a smallholder scheme could be rolled out *en masse* without jeopardising the reliable, low-cost delivery of cane. According to one interviewee this was because the ‘farmers’ chosen to run the plots were mainly retired government officials or villagers connected to the local chief, meaning that a lack of commercial farming experience and community solidarity resulted in burdensome management and frequent squabbles.¹⁵

Privatised in 1995 and sold to Illovo in 2001 the estate began its second phase of transformation when the new owners announced the Nakambala expansion project. At a cost of R1.6bn (approximately \$220m) this entailed a doubling of cane-crushing capacity in the mill and an expansion in the land under cane. The expansion took place through a combination of additional planting on existing company-owned land and a ZK 156bn (\$30m) acquisition of the privately owned ‘farm block’ Nanga

¹⁴The company in question is the Kaleya Smallholders Company Limited (KASCOL), the business set up to negotiate with Zambia Sugar on the smallholders’ behalf. KASCOL provided training, irrigation, chemicals, cane cutting, haulage, re-planting, and administration services – leaving the smallholders just to water, weed and spray their plots, and then help in the harvest (Fynn 2008).

¹⁵Interview, sugar industry employee, Mazabuka, 7 December 2009.

Farms. Despite the preponderance of titled and marketised land into which Zambia Sugar grew, political conflict did still arise. One case involved the hundred residents of Kabanje village, who Zambia Sugar tried, but failed, to evict since it claimed it bought the title deeds to the land decades earlier (Mpundu 2006). The MP for Mazabuka, Gary Nkombo, saw this as repetitive of early dispossessions: as he recalls, the local people had not been contacted when these deeds were first signed, and were now reluctant to leave because they had ancestral graves on the land and could not survive on the Kafue Flats since they lacked the requisite fishing skills.¹⁶ Another source of tension emerged with the company's extension of its smallholder scheme to Magobbo village, comprising 73 would-be cane growers, and Monyonyo village, comprising 94 (Fynn 2008). In the case of Magobbo, there was differing opinion as to how many people at first wanted to incorporate their land into the scheme. One female farmer said of the community's specially formed Magobbo Cane Growers Trust, 'They forced us to go, saying if we don't go, the graders will come and destroy our houses' (Hatyoka 2010).¹⁷

All in all, some 27,500 ha are now growing cane in Mazabuka, giving Zambia Sugar the ability to produce 0.45 million tonnes of sugar a year. This has transformed Nakambala into the single biggest agricultural entity in the country and the second biggest sugar operation on the African continent. We now refer to the three development mechanisms outlined earlier to assess how this productive transformation has manifested itself in practice.

Wider economic growth through an improved investment climate

To encourage companies to invest in a particular country, especially when production can occur in different places as is the case with sugar and ethanol, having an investment climate seen to be conducive to private sector enterprise is vital. In this vein, the 'good economic governance' expressed by the investment by Illovo has been vocally promoted by Zambia's President, Rupiah Banda. Attending the opening of the Nakambala estate, Banda said:

I wish to assure South African investors, as well as those of other countries, that their investment in Zambia is secure, safeguarded by the progressive politics and robust legal framework put in place by my government. I am therefore encouraging South African investors to take advantage of available opportunities in Zambia. (Chishimba and Mulenga 2009)

In examining the 'progressive politics' of this investment climate, however, it becomes clear that many of the intended policy consequences of attracting large capital flows into the country have been perverted. First, due to the excessive economic concessions awarded to foreign companies, benefits to the public purse

¹⁶As of early 2010 the conflict with Kabanje village had not been resolved. The solution favoured by Mr Nkombo, a swap of the village's 50 ha for 250 ha of local state-owned land (only 60 ha of which is arable), had been met with indifference by the central government (interview by telephone with G. Nkombo, MP for Mazabuka District, Zambia, 9 February 2010).

¹⁷According to Fynn, who conducted the feasibility study into the smallholder extension, nine of the 100 households in the Magobbo community ultimately expressed a reluctance to take part in the smallholder project. Alternate land was meant to be found for these people (Fynn 2008, 30).

from investment have been limited and future spending plans constrained. Prior to the Nakambala expansion taking place, Illovo signed an Investor Promotion and Protection Act (IPPA) with the Zambian government which allowed it to import machinery without paying duties and to access finance at reduced prices, and obligated the government to treat sugar as a 'sensitive and priority product within government policy guidelines' (Mataka 2008). Criticised for their opacity and effective bias toward foreign investors, since only multi-million dollar projects qualify for assistance, these agreements have also tended to precipitate long-term financial asymmetry between host and investor, as the companies concerned manage to extend or deepen the provisions of the contract.¹⁸

In addition to securing an IPPA, Illovo has also been able to substantially reduce its national and local tax burden. In 2009 Zambia Sugar requested that it be reclassified as an agricultural rather than an industrial enterprise and have its level of corporation tax reduced appropriately. As detailed by a government official involved in the dispute, the company benefited from the fact that a court hearing was set within three weeks of the complaints being raised, giving the Zambian Revenue Authority little time to prepare its case.¹⁹ Drawing on its experienced financial and legal experts outside the country, Illovo won the decision and had its tax level almost halved as a result. Along with the tax relief awarded under the IPPA, Zambia Sugar accrued tax credits worth \$26m across 2008–2009 (Zambia Sugar 2009). Finally, as a result of President Banda's decision at the end of 2009 to extend the abolition of the crop levy to commercial as well as small-scale farmers, Zambia Sugar is also anticipated to avoid the ZK 2bn (\$400,000) annual cane levy it pays to Mazabuka Council (ZANIS 2010).

Second, notwithstanding the rhetoric of the available investment opportunities, there has been a striking inability in the Zambian state to promote competitive markets and structural economic change, a problem again linked to the influence of monopolies. In the case of the sugar industry, Illovo has been active in preventing the emergence of large-scale domestic rivals. According to one source, when an established coffee farmer sought to move into sugar production Illovo used its leverage as a valued customer among Zambia's dominant banks, ZANACO and Barclays, to persuade them to withhold finance for the expansion. Likewise, when the Indian company Shree Rakuna sought to establish a \$200m sugar plantation in Mazabuka, Illovo encouraged the government to obstruct the deal, citing danger to its smallholder schemes should another low-cost producer enter the industry.²⁰

All this is not to deny that the sugar industry has bolstered the macro-economic account in important ways. Zambia Sugar contributes an estimated 4 percent of the country's GDP and in 2007 earned \$30m in foreign exchange, the highest export earner outside the mining sector.²¹ But clearly the 'virtuous circle' that is meant to follow foreign investment has been significantly stunted. Indeed, it can be argued that the priority of Zambian politicians in promoting these investments has been to capitalise electorally rather than economically. In the case of the president's attendance at the Nakambala opening, by emphasising his government's role in the

¹⁸Interview with P. Chilenga, Consumer Unity And Trust Society programmes officer, Lusaka, 10 December 2009.

¹⁹Interview, Zambian Revenue Authority, Lusaka, 4 December 2009.

²⁰Interview, sugar industry employee, Mazabuka, 7 December 2009.

²¹Personal communication with H. Kumwenda, Zambia Ministry of Commerce, Trade and Industry Trade, received 16 December 2009.

industry's growth and by bringing South African President Jacob Zuma with him to commission the expansion, Rupiah Banda was able to 'give a present to the people' and raise his status as a 'big man' within the constituency.²² In another, remarkable, incident, an MP from Banda's Movement for Mass Democracy (MMD) party was alleged to have marched into the Zambia Sugar office and threatened to 'make life difficult' for the company if it did not instruct its employees to vote MMD in the forthcoming elections. As reported at the time, the MP, Michael Kaingu, said, 'When you have a problem you run to your friends and that is what we have done to come to you' (*Lusaka Times* 2008). Since Mazabuka is held by the opposition UPND party, the political significance of this state-capital relationship is easy to see.

With respect to investment in biofuels, meanwhile, industry growth has suffered because it has yet to be fully underwritten by the Zambian state, as it has in virtually every other country where it has taken off. Despite announcements from Zambia Sugar as early as 2004 that it had the capacity to produce ethanol, and the creation of the Biofuels Association of Zambia in 2006 to advise the government on industry and energy policy, by the beginning of 2010 no blend mandates, no government concessions for start-up costs and no commitments on infrastructure had been agreed. The singular achievement of the Biofuels Association during this period has been the approval of standardised bio-diesel and ethanol fuels to be legally traded, yet without the attendant policy assurances, businesses have remained reluctant to produce biofuel for either the domestic or foreign market.²³ For its part, Zambia Sugar was still in talks with the government as to whether it should turn its cane molasses, produced as a by-product in the manufacture of sugar, from animal feed into ethanol, and was seeking to enshrine supportive legislation for the biofuel in the country's energy policy.²⁴

Reviewing energy strategies in five southern African countries, Jumbe *et al.* (2009, 4985) found that this hesitant legislative process has been common across the region. While all countries had general policy statements on biofuels development only South Africa had any concrete strategies or institutional frameworks for delivering implementation. One of the reasons for this problem is the familiar tale of bureaucratic incapacity. An Oxfam (2009, 122) report noted that the tug of war between the Ministry of Commerce and Ministry of Energy over biofuels regulation, on the one hand, and the lack of interest of the Ministry of Agriculture and Cooperatives, on the other, had together sent conflicting information to the private sector. Another reason for legislative inaction can be found in the lobbying activities of the country's oil industry. In playing the 'energy security' card to government the proponents of biofuels have run up against powerful opposition. Though it proposes only a two percent bio-diesel blend and five percent ethanol blend, by claiming that Zambia could become self-sufficient in liquid fuel by using just one million ha of its 73m ha land mass for feedstock cultivation, the nascent biofuel industry has indicated to the oil companies that their import-substitution strategy is a potentially significant challenge and thus worth rebuffing.

²²Interview, sugar industry employee, Mazabuka, 7 December 2009.

²³Interview with T. Chisambo, Biofuels Association of Zambia, Lusaka, 3 December 2009.

²⁴Zambia Sugar produces between 50,000 and 80,000 tonnes of molasses per year. Converting this into ethanol at a rate of one tonne to 300 litres would yield 15–24m litres of biofuel, or roughly 6 percent of the country's petrol demand (Interview with T. Chisambo, Biofuels Association of Zambia, Lusaka, 3 December 2009).

Cheaper products through technological advance

In theory, technologically advanced investors like Illovo should also be able to help boost domestic productivity and ultimately lower consumer prices. This has clearly not been the case in the Zambian sugar market. As illustrated in Figure 4, prices have risen steadily over the last two years, even doubling for one month and leading to queues outside sugar outlets (Mataka 2008).²⁵ This widely consumed commodity comprises two percent of the cost of a ‘basic needs basket’ meaning such inflation places a small but noticeable burden on Zambia’s poorer citizens (Jesuit Centre for Theological Reflection, various months).

While the government demanded action over the brief price spike – attributed by Zambia Sugar to a ‘breakdown in communications’ which led its distributors to export sugar instead of meeting domestic demand – it has been noticeably less willing to question the company’s underlying market power (Mataka 2008). A 2009 report submitted by the Committee on Economic Affairs and Labour offered a toothless investigation into systematic over-pricing, and the Executive Director of the Zambia Competition Commission, George Lipimile, has himself pointed out the difficulties of regulating multinational companies that took over the privatised firms in Zambia. Indeed, he cited Illovo explicitly as a case in which there had been ‘simply a shift of ownership from public monopolies to private monopolies’ (CUTS International 2004). As a result, prominent economists in the country have argued that while Zambia Sugar may alleviate temporary retail price rises by releasing stocks on to the market, its effective control over the market keeps the ex-factory price of sugar inflated (Mataka 2008).

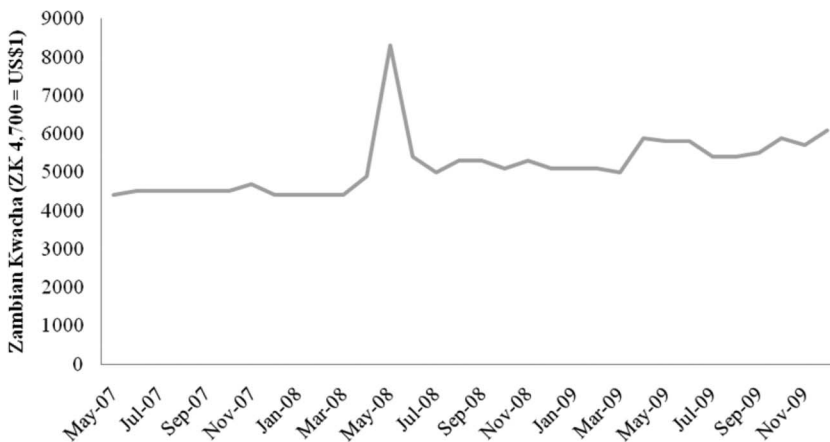


Figure 4. Price of a 1kg bag of sugar in Lusaka, 2007–2009.

Source: Jesuit Centre for Theological Reflection, various months.

²⁵Accounting for inflation, which averaged 12 percent over the period in question, the average price roughly stayed the same, although it is worth noting, with respect to purchasing power, that wages typically lag behind inflation.

Such claims are given weight by the extensive use of import barriers around the national market. Given that Zambia is one of the world's lowest cost producers, and since export subsidies are now prohibited under WTO law, one would expect Zambia to have a relatively open trade regime in sugar. Yet just as greater domestic competition has been repressed, so too have imports – an outcome which is difficult to divorce from Illovo's preferences given the company's dominance of the industry.²⁶ For example, imports of sugar face a 25 percent tariff, can be confiscated if found to be unfortified with Vitamin A, and are subject to lengthy regulatory scrutiny by state ministries. In addition, prospective liberalisation of the commodity has been forestalled in both the Southern African Development Community and Economic Partnership Agreement (EPA) trade negotiations.²⁷ In the case of the EPAs, since only a certain number of tariff lines could be given this special treatment, the success of the sugar industry in claiming protection came at the cost of support to other industries, which now face potentially increased competition from European exporters. In short, it was a zero-sum game where a concession for sugar meant costs borne elsewhere.

Another way in which agricultural productivity could be advanced through international investment is via the transfer of technology into related sectors. In this respect the doubling of irrigation capacity around the Nakambala estate, which is now the biggest user of fresh water in the country, could be seen as a significant boon for food production and water provision in the Mazabuka area. Certainly there have been some benefits. The water supply into the town has been made more stable by the improved irrigation infrastructure established by Zambia Sugar, and the company has also assisted in cleaning the area's sewerage system, the cause of previous cholera outbreaks. Yet the town's inhabitants still have to pay the market price for water – the only water subsidised by the company goes to the local golf course – and the use of water by smallholders for alternate crops is closely monitored, although most prefer to grow rain-fed maize in any case.²⁸ Moreover, while Zambia Sugar itself is to become self-sufficient in electricity generation by burning cane residues in the mill, by reducing the amount of water available to the downstream Kafue Gorge dam, the state electricity company ZESCO has been hindered in its ability to generate hydro-electric power for the national grid. In short, as the benefits of technological advances are effectively internalised and ring-fenced by corporate investors, the claim of cheaper goods and services through productivity increases is rendered somewhat empty.

Increased wealth through on-farm and off-farm employment

Undoubtedly it is the number of people employed through Zambia Sugar that is seen as Illovo's biggest contribution to the country's economy. In total some 6,000 people are now employed directly by Zambia Sugar and another 1,500 work on the commercial and smallholder outgrower farms, altogether supporting some 50,000 family members (Zambia Sugar 2009). Even discounting other jobs created through

²⁶Interview with P. Mulemba, Jesuit Centre for Theological Reflection trade analyst, Lusaka, 8 December 2009.

²⁷Interview by telephone with H. Kumwenda, Zambia Ministry of Commerce, Trade and Industry, 16 December 2009.

²⁸Interview, sugar industry service supplier, Lusaka, 11 December 2009.

the multiplier effect, this still constitutes around 10 percent of Zambia's formal, waged sector.²⁹ Neither the importance of this job creation nor the company's support for social amenities should be underestimated.³⁰ The company's average wage of ZK 1.75m (\$350) per month is far higher than the national minimum of ZK 300,000 (Zambia Sugar 2009). While the average wage clearly hides inequality between the different types of labour – for example, a male research supervisor is paid three times more than a female weeder – it cannot be denied that a job with the company remains highly prized (Oxfam 2004, 23).

What can be disputed, however, is Illovo's role in supporting wealth distribution and the extent to which society bears the costs of increased accumulation. To begin, it is worth noting that the labour intensity of the sugar industry is relatively low. For example, while 7,500 are formally employed in the sugar industry, around 200,000 people are informally engaged as outgrowers in the similarly sized cotton industry (Tschirley and Kabwe 2009). The return of 1,000 extra estate jobs and 1,000 temporary construction jobs for what amounts to a \$250m total investment thus appears relatively slight (recall also Oxfam's claim regarding the thousands of permanent jobs that would follow an increase in Zambian exports). Moreover, many of these estate jobs are seasonal, thereby reducing the gross disbursement of wages. Despite employing 6,000 workers at its peak, the average monthly employment by Zambia Sugar is in fact closer to 4,000 (Zambia Sugar 2009).

Since the majority of the workforce (88 percent) is male, this transitory workforce also leads to health and housing problems and strains on public services.³¹ Cane cutters transported from the Western Province constitute Zambia's largest labour migrant group in the formal sector and through their use of prostitutes have contributed significantly to Mazabuka's high HIV infection rate, estimated at 16–22 percent.³² While the company has taken some steps to prevent the spread of HIV/AIDS it has been helped in larger part by foreign aid donors who work in the area, the most recent example being a \$4m USAID-backed project whose clients include some of the country's biggest firms, including Zambia Sugar.³³ Finally, there have also been a number of complaints about unforeseen tax deductions from seasonal bonuses and the withholding of pension payments. Whereas pensions could previously be claimed upon contract expiration, they are now released when employees reach the retirement age of 55 – not something many people expect in a country with an average life expectancy of 46 years (World Bank 2009a).

Similar issues over employment extensivity and public subsidy also devalue the smallholder system. Again, while the Kaleya outgrowers have been able to access essential amenities and earn on average ZK 1.9m per month, much more than the

²⁹In 2005, 4.9m people of the 12.6m population of Zambia had jobs, 17 percent of which were as waged employees (Zambian Central Statistics Office 2009).

³⁰According to Nakaponda (2005), Illovo has, aside from the direct housing and health assistance accorded to its employees, helped rehabilitate two hospital wards, provided support to the four government schools and one private school located on its estate, sponsored the local football club and traditional ceremony events, and made donations to orphanages and the local radio station.

³¹Interview by telephone with G. Nkombo, MP for Mazabuka District, Zambia, 9 February 2010.

³²Interview with M. Phiri, Plan International programmes co-ordinator, Mazabuka, 7 December 2009.

³³In 2009 61 percent of the permanent workforce and 48 percent of the seasonal workforce had undergone Voluntary Counselling and Testing for HIV/AIDs (Zambia Sugar 2009, 8).

ZK 250,000 average from growing maize, relations with the KASCOL management and Zambia Sugar have been far from harmonious (Nakaponda 2005, 60). There have been long-running quarrels over the price received by smallholders for their cane, which they believe has been unduly lowered by the amount KASCOL has charged in service fees.³⁴ Further, despite the expansion of the scheme, still only 10 percent of the cane delivered to Zambia Sugar will come from the 320 smallholders; a similar rate to its sister company in Malawi. It is also notable that it has been aid donors, rather than Illovo themselves, that have funded these projects. The Magobbo smallholders received €2.7 m out of the EU's fund for countries affected by the EU sugar reform, while the irrigation required to serve the Manyonyo smallholders was funded by the African Development Bank.³⁵

Finally, many of the valuable services contracted within the sugar industry have been awarded to foreign firms. The South African company Barlow World Logistics does most of the warehousing and distribution while another South African company, Rolling Thunder, does the cane haulage. Even within the firm itself, Zambians have claimed that they have been overlooked for employment in favour of South African expatriates. In some cases this has involved university graduates or current employees being told they are under-qualified since they lack industry-specific qualifications unobtainable in Zambia (Mataka 2005). The perceived failure of Zambians to benefit from overseas investors has been of particular concern given the country's high profile Citizen Economic Empowerment initiative, launched by former President Levy Mwanawasa. Introduced to widen the scope for indigenous economic growth, the initiative has been effectively redefined as one that facilitates increased ownership rather than increased employment. To this end, perhaps the most notable Zambian involvement in the Nakambala expansion is to be the sale of shares in Nanga Farms on the Lusaka Stock Exchange; a transfer of wealth *between* rather than *beyond* the country's economic elite.

Conclusion

Facilitated by foreign investment and targeting the EU market, the rapid expansion of Zambia Sugar offers a number of lessons as to how the potential of sugar/ethanol exports to deliver rural development can be perverted. To begin, references to a 'Middle East of biofuels' emerging in Africa have clearly let rhetoric run ahead of reality. Based on the extrapolation of world trends or proposed investments, this rhetoric has overlooked the fact that crops have different end markets and that agro-industry seeks assurances when determining which will be targeted. Under these circumstances, the production of ethanol, either for domestic consumption or export, is subject to too many unknowns, whereas the (otherwise volatile) markets for sugar are already suffused with state interventions.³⁶ In respect of sugar production, meanwhile, it was noted how the economic power wielded by Illovo

³⁴Interview, sugar industry employee, Mazabuka, 7 December 2009.

³⁵Likewise, the expansion and training of smallholders for Illovo's two estates in Malawi has been supported by €2.4 m from the EU pledge and \$1.5m from the African Enterprise Challenge Fund.

³⁶The export of ethanol is especially prone to being destabilised. Taking the EU as an example, an increase in second-generation biofuels in meeting renewable targets, the liberalisation of the EU market to Brazilian imports, and the future electrification of transport could each drastically reduce the demand for African ethanol.

enabled them to limit their tax contribution, prevent further investment, and lower consumer prices by hindering competition. Moreover, the dependence of the company on skilled expatriate staff and service suppliers stands in contrast to its casualisation of unskilled workers and limited uptake of smallholder outgrowers. Where these people have been employed, it has been as much to curry political favour as support the agrarian labour force.³⁷

This situation is indicative of the bind that poor developing countries often face when attempting to attract foreign capital into their agricultural sector. Companies are reluctant to invest without certain guarantees, comparative advantage or not, and it is much easier to give them greater financial autonomy than construct a policy environment in which they can increase profits through market growth. Arguably a better use of bureaucratic resources, from a rural development perspective, would be to focus on regulating production standards, to improve the marketing of traditional products like beans, and to ensure the domestic provision of public food contracts where possible.³⁸ This would ensure a more sure-footed adjustment since it would be based on existing livelihoods and social ties, and also prevent governments having to engage in asymmetric negotiations with powerful (and corrupting?) companies.

One riposte on behalf of large-scale agro-industry would be that, while it may not deliver on all its theoretical potential, it still provides relatively high wages for those engaged as employees or contracted outgrowers, as well as benefiting the wider estate community through its donations to public infrastructure. This would be more defensible in this instance if Illovo did not simultaneously divert resources from the public purse. The donations could be seen as a *quid pro quo* for overloading sparse local amenities in the first place while the millions of dollars of aid it used to fund its smallholder scheme could have assisted indigenously owned projects instead. Examples of these would be the programme run by USAID which provides business advice to small- and medium-sized firms in Zambia producing processed exports such as tomato paste and honey, or the Zambian non-governmental organisation COMACO, which buys commodities like groundnuts from remote farmers and sells them as peanut butter to retailers under its own brand label. The issue is not about trade orientation but rather about scale. Although the economic growth fostered by these smaller enterprises may be slower, they create less inequality within rural communities and allow a more labour-intensive entry into cash crop production. By contrast, seeking to incorporate peasants in agro-industrial commodity chains, while lucrative, is severely limited by their absorptive capacity (see Kay 2009).

Finally, it must be remembered that the recent expansion of Zambia Sugar relied on the prior dispossession of land and diversion of water in the area. In this sense, the case has peculiar spatio-temporal characteristics not generalisable to greenfield projects. Such ventures would have to acquire land, problematic in areas comprised mainly of customary ownership, and also access large amounts of water. Already, an estimated 60 percent of the water supply in the greater Zambezi river basin is used

³⁷At one point Illovo attempted to introduce mechanical harvesters on the estate but was strongly rebuffed by the government who feared the repercussions of a large reduction in seasonal cane-cutting work (Interview, sugar industry employee, Mazabuka, 7 December 2009).

³⁸One example of the missed opportunities of contracting in Zambia is the import by the World Food Programme of a maize-sugar-soya blend from Germany. All these products are grown domestically but fears over safety standards mean they are imported instead.

solely for sugar cane production in Zambia, Zimbabwe and Mozambique (Wetlands International 2008, 33). The quest for land and water in less accessible areas has already ignited confrontation in the region, and such is the footprint of the Big Sugar model of production that it is hard to see how it can tread carefully in this respect (Grain 2007).

To sum up, the limited benefits accruing beyond the confines of sugar companies at present suggest that the prospective 'balance sheet' of biofuels needs to be re-examined. Certain assessments have implicitly assumed that as long as the major problems of biofuel investment such as rising food prices, deforestation and land grabbing can be mitigated, such ventures will be worthwhile. Yet is debatable how much there is for the country's poorest residents to gain from an expansion of vertically integrated production, especially in cases where ethanol would be produced from existing molasses anyway. If the aim of trade and industrial policy is to benefit the rural poor, just as if the aim of environmental policy is reduce carbon emissions, then it should target them explicitly rather than circuitously through the promotion of large-scale ethanol production. At best, the prescription for increased agro-exports risks distracting governments from this goal; at worst, it could pave the way for further dispossession and displacement.

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