**ES/I034242/1 Key findings**

**Farm Scale and Viability: an assessment of black economic empowerment in sugar production in Mpumalanga Province, South Africa**

**(ESRC-DFID Joint Programme on Poverty Alleviation).**

**Introduction**:

This research sought to inform an understanding of the relationship between poverty reduction and agriculture in an adverse context for small-holder production: South Africa. As it is still the case that some of the poorest and disadvantaged global citizens remain dependent on agriculture for their livelihoods, there is a continuing and increasingly urgent need to understand how agricultural development can address their need for improved livelihoods. In South Africa, the economy broadly favours large-scale capital-intensive farming, but a government agenda of 'pro-poor' redistribution and reform has sought to support small-scale farming for historically excluded black Africans.

This raises questions about the social and economic effects of farm scale that resonate more widely, as agriculture is being rapidly transformed by rising prices for agricultural commodities associated with major shifts in international capital investment to acquire land and water in poor countries. The location for the proposed research is one where the gap between large- and small-scale capital investment in farming is pronounced, and where the need to raise rural living standards most acute. Land reform in this sugar-growing region has resulted in a range of farm sizes, from less than 10 ha to more than 1000 ha, although most land is now owned by black people and all farms supply a single sugar processing company. At the same time the multiple consequences of long-term unemployment and under-employment in the area are also evident.

The research provides an opportunity to assess the social and economic outcomes arising from farming at different scales, with differing levels of capital investment and institutional support. The research addresses the following questions:

1. What is the productivity of land, water, labour and capital at different farm scales (i.e. within the farm production unit)?

2. What is the impact of income from different scales of farming on livelihoods and wellbeing among rural communities? More broadly, how does income from, and investment in, farming at different scales feature in livelihood strategies?

3. How are the benefits and costs of farming distributed among different social groups or classes in the South African economy?

4. How does scale of farming affect political and institutional relations within rural communities, particularly with respect to conflict and cohesion over natural resource use?

5. What lessons does this research provide for policy on foreign financial investment in farmland in sub-Saharan Africa?

**The key findings of this research in relation to each of these questions are as follows:**

1. *What is the productivity of land, water, labour and capital at different farm scales (i.e. within the farm production unit)?*

Land productivity in terms of sugarcane output is dependent upon access to irrigation. The efficient operation of irrigation on large-scale farms (>2000 hectares) provides average yields of between 105 and 125 tons of sugarcane per hectare. On small-scale farms (between 2 and 20 hectares), the financial and institutional constraints of managing shared irrigation infrastructure mean that irrigation efficiency is lower. In 2012, half of small-scale growers produced less than 60 tons of sugarcane per hectare (generally considered the minimum needed to cover costs of production), while a quarter produced over 80 tons per hectare and a quarter produced between 60 and 80 tons per hectare.

Although important technological refinements (laser-guided land levelling, soil moisture probes to improve irrigation scheduling and distribution, GPS-guided soil testing and fertilizer application) are available to improve productivity on larger farms, the basic techniques of sugarcane growing are the same across all scales of production. Many operations are undertaken by specialist contractors, including labour contractors who supply cane-cutting labour. Most cane-cutters in Nkomazi District are migrants from Mozambique and Swaziland. Some of the best sugarcane growers have sought opportunities to acquire more land and to farm at a medium scale (40 to 480 hectares).Where they have been able to do so they have shown themselves capable of higher productivity (tons of sugarcane per hectare) than neighbouring white commercial farmers.

Large-scale sugarcane farms employ fewer permanent staff per unit area (one worker for 18 hectares, mostly for irrigation) than small-scale farms (one worker for 5.4 hectares, on average). However permanent workers are, on average, 30% better paid and have better working conditions on large-scale farms. Similarly, more temporary staff (for weeding) are employed per hectare on small-scale sugarcane farms (17-28 person-days per hectare per season) compared to large-scale farms (6 to 16 person-days per hectare per season) but wage rates on small-scale farms are as little as half those on large-scale farms. As a consequence, although wage rates are lower on small-scale farms total labour costs tend to be higher per hectare than on large-scale farms.

Comparisons of profitability of large-scale and small-scale farms is not straightforward. The ‘gross margin’ (value of output less direct production costs) on large-scale farms varies between 18 and 30%, and on the more productive small-scale farms averaged 40%. However, large-scale farms have high fixed costs amounting to about 30 percent or more of the value of turnover, so earnings before tax and interest payments average 13% and profit after tax about 8%. In contrast, net earnings on more productive (>80tons of sugarcane per hectare) small-scale farms in 2012 averaged 30%, though this reflected an under- investment in irrigation repair and maintenance.

1. *What is the impact of income from different scales of farming on livelihoods and wellbeing among rural communities? More broadly, how does income from, and investment in, farming at different scales feature in livelihood strategies?*

Small-scale irrigated sugarcane farms have been an important source of income for people in Nkomazi District for the past two decades, and have enabled sugarcane growers to construct good-quality houses, purchase vehicles and educate their children, in some cases to University level. In many cases, however, sugarcane growers will not be handing on their farms to their children, as they have become less productive due mainly to deteriorating irrigation infrastructure. Small-scale farmers have been unable to finance repair and maintenance, leading to low availability of irrigation and declining income. Current levels of income average R6200 per hectare per year, or R60,259 per year on the average area farmed by existing small-scale sugarcane growers: 9.7 hectares. Many growers earn much less than this and about 15% earn nothing at all. Since three quarters of small-scale growers are over 50 years old, sugarcane income is regarded by many as a supplement to their state pension. If younger people are to be attracted to sugarcane farming, existing small-scale growers estimate that an area of about 18ha is the minimum needed to generate an income of R180,000 per year ((US$15,000).

A minority (34%) of small-scale sugarcane growers are increasing their holdings of irrigated sugarcane fields by buying plots from others willing to sell. Those making such investments include people with salaried employment in the public or private sector or with other non-agricultural businesses. Land purchases have been supported by loans from the Mpumalanga sugar industry’s Akwandze credit system.

By comparison, large-scale farms emphasise salaried employment and sub-contracting opportunities for entrepreneurs. On one farm of 3600ha there are 190 permanent salaried employees, including mostly irrigators and pump operators, but also ‘supervisors’ who may graduate to junior farm manager and then to farm manager. Contractors from the local community include two contractors for the supply of cane-cutting labour, and another for weed control, in addition to loading and transport contractors.

1. *How are the benefits and costs of farming distributed among different social groups or classes in the South African economy?*

A minority (34%) of small-scale growers have increased their land holdings and now control half of the area under small-scale irrigation. Such farmers look capable of becoming medium-scale producers (>40 hectares) and able to earn a living from sugarcane. Many of the remainder will sell their land or become partners in newly formed 'cooperatives' directly managed by the sugar company who will pay the coop members a small rent (R150 per hectare per month) for their land. The cooperatives have been formed as a condition of receiving state recapitalisation to renew irrigation infrastructure. They will be run by an industry-appointed manager primarily to recover debt owed by the small-scale growers. As a consequence cooperative members will see little income beyond their rental income for the next seven years.

A third major group of potential beneficiaries from sugarcane production are the members of communities who made restitution claims for land from which they were removed by the apartheid government in the 1950s. Some 61,000 hectares of land were transferred to seven communities in Nkomazi in settlement of those claims in 2008. About 10,000 hectares of this land is being managed as large-scale sugarcane farms, either under ‘Joint Venture’ operating companies owned 50/50 between the sugar processing company (TSB) and the trustees of local communities (Community Trusts or Common Property Associations), or as a direct lease of the land by TSB from the Community Trusts.

Productivity on these large-scale sugarcane farms is high, but high fixed costs mean that an average of 17% of turnover is paid in administration and management fees to TSB and its subsidiaries, whereas lease payments to communities amount to 8% of turnover. This nonetheless provided a total of R36.83 million (US$3.1 million) split between four community trusts in 2013. In addition to lease payments to the Community Trusts, the Joint Venture farm operating companies also give preference to employing members of the land-owning communities and to contracting from companies owned by them (see above).

In practice, while the restitution arrangements have clearly benefitted the sugar company, which has improved its assurance of sugarcane supply and has been able to operate its milling and processing plants close to full capacity (94% in 2013), the benefits to a majority of members of land-owning communities are hard to discern as administration of community trusts is not transparent and accounting for trust income is weak. As a consequence, the distribution of benefits from the 'Joint Venture' enterprises is contested and subject to litigation.

1. *How does scale of farming affect political and institutional relations within rural communities, particularly with respect to conflict and cohesion over natural resource use?*

The accumulation of land by some small-scale growers at the expense of their less productive neighbours has so far not generated major tension, particularly because such transfers are mediated through a local land market in which ‘customary rights’ (permits to occupy: PTOs) are traded as if they were title deeds. This means that those giving up their sugarcane plots are paid (in 2012 the price of sugarcane plots on small-scale irrigation projects was about R40,000 per hectare). There are those who ask whether greater viability for all existing small-scale growers could be achieved if individual irrigated holdings could all be increased to 15 or 20 hectares.

This line of argument leads to questions about the land transferred to community trusts under the restitution programme. In particular it is asked why this land could not be offered to small and medium-scale sugarcane growers, rather than being managed by large-scale corporate units (albeit part-owned by community trusts) and thus effectively blocking the expansion of production by African farmers. From this perspective, the restitution programme has created new ‘communal’ property under highly concentrated control by a small number of trustees with limited accountability to the majority of community members. A further, and related, consequence of the creation of community trusts is the removal of a large amount of irrigated farmland from the open land market in the lowveld of Mpumalanga. As a result, price inflation of land with water rights has accelerated, with farms changing hands in 2015 at prices of R200,000 per hectare, compared to prices a fifth of that when the government paid commercial farmers for their land to settle the restitution claims in 2008. In such a context of massive capital values locked into community property (land and water), the governance of the community trusts controlling these resources will become ever more critical.

1. *What lessons does this research provide for policy on foreign financial investment in farmland in sub-Saharan Africa?*

The past decade has witnessed an upsurge in interest in the relationship between corporate capital and agricultural production in Africa. This is frequently characterised by acutely polarised debates, as exemplified by the ‘land grab’ literature. At issue is the role of capital investment in large-scale agriculture, and the balance achievable between costs, such as displacement of existing land users, and benefits such as improved agricultural output and higher incomes from agricultural employment.

Sugarcane production covers more than half a million hectares – most of it irrigated - spread across seven countries in southern Africa, and total cane harvested in the region has grown 80 per cent over the past 20 years, with significant implications for land and water use in the region. Three South African companies (Illovo, Tongaat-Hewlett and TSB) now control 90 percent of this production, having acquired state-owned sugar companies across southern Africa since the end of apartheid in 1994. This has been associated with a shift northwards in sugarcane production: production within South Africa contracted by about a third from 2002 to 2012 and has been compensated by increases elsewhere in the region so that South Africa’s production dropped from 70 per cent of the region’s sugarcane output in 1992 to 57 per cent in 2012.

An important element in these developments has been the growth in irrigated ‘outgrower’ schemes for small-scale producers with contracts to sell their sugarcane to the South African companies. These outgrower programmes are usually associated with ‘core estates’ where production is directly managed by the sugar company. The Nkomazi experience examined in this research is consistent with this model and is therefore of direct relevance for a leading agricultural sector throughout southern Africa, and indirectly for corporate investment in agriculture elsewhere in sub-Saharan Africa.

One of the main lessons to emerge from this research is that the model of production has proved capable of circumventing concerns over loss of land ownership by local communities. The leasing arrangements with land-owning communities, whether on restitution land (community trusts) or on ‘communal’ (ex-bantustan) land have been managed so that the company has been able to maintain high levels of sugarcane productivity, at least in the short term. This has the potential to generate strong revenues for land-owning communities. The longer term sustainability of this arrangement will hinge on the governance of the lease income being generated from collectively-owned land and water assets. In this respect the Nkomazi experience is much less positive. Lack of transparency and accountability over the management of Community Trust income by the trustees has already generated protracted litigation and seems likely to provoke wider discontent if left unresolved, the more so as the success of the sugarcane production becomes widely perceived. This has wider relevance for processes of governance of land and water where these have an element of local community ownership rights (e.g. in Mozambique and Tanzania).

A second lesson of this research is that land rights may be secondary in importance to water rights. This is not only because water may in many instances (as in Nkomazi) be a more scarce resource than land (and sugarcane has a heavy requirement for water), but that cost-effective technologies for water management (storage, delivery and application to crops, drainage) are critical to commercial success. The reliance on irrigation for sugarcane expansion in Swaziland, Mozambique, Zimbabwe, Zambia and Malawi means that access to sufficient water and technical capacity in irrigation management will be critical to the ability of these developments to deliver benefits to local participants in those schemes.

Thirdly, the Nkomazi experience suggests the dominant role of sugarcane in current agricultural investment is due to the guaranteed market provided by the sugar processing factories. It is acknowledged by many in Nkomazi that higher incomes for producers could be generated from crops (e.g. tropical fruit, vegetables) other than sugar, but that such alternatives bring higher risks in the absence of robust marketing arrangements and assured demand. While sugarcane may therefore be regarded as a key driver for establishing an infrastructure (water delivery and roads, input supply) for irrigated agriculture, generating increasing rural incomes will need to be based on building markets that will support a more diversified crop mix.