



GTAC/ CBPEP/EU project on employment-intensive rural land reform in South Africa:
policies, programmes and capacities

Summary Paper 2
A synthesis of evidence from five commodity studies

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1 Overview

This is the second of three papers which draw together and summarise the key findings from the extensive research conducted as part of a project to develop a draft policy framework for employment intensive land reform. The project has been managed by the Institute for Poverty Land and Agrarian Studies (PLAAS) in association with Phuhlisani NPC. It has been funded under the auspices of the Capacity Building Programme for Employment Promotion (CBPEP) managed by the Government Technical Advisory Centre (GTAC) with support of the delegation of the European Union to South Africa.

This paper summarises the findings from **five commodity studies** selected for their potential to promote employment intensive land reform and sustainable livelihood opportunities. The five commodities are:

- livestock;
- wool;
- fresh vegetables;
- subtropical fruit;
- sugarcane.

2 Livestock

2.1 *The social and economic importance of livestock*

Livestock farming takes place throughout South Africa and accounts for more than 40% of the total value of agricultural output. Due to livestock farming being largely natural resource based it utilises approximately 80% of the land available for agriculture, as only 12% of SA is suitable for crop farming. The livestock sector is a major employer and employment generator with approximately 425,000 direct and indirect employees and a further 2,125,000 people dependent on the livestock industry for their livelihood. Livestock production is often linked with a social and cultural way of life for many farmers in South Africa, and this includes members of rural homesteads who keep livestock but who are not seen by the policy makers as livestock farmers.

There are three overlapping livestock farming systems in different settings:

- Commercial livestock farmers on privately owned land.
- Market orientated livestock farmers in former bantustans and on land reform farms.
- Livelihood oriented owners/ producers on land in the former bantustans, or land acquired through land reform of whom 60% are estimated to have mixed herds that combine cattle, sheep goats and other small stock.

Both small and large stock have distinctive places in the overall livestock economy.

2.2 *Small stock*

2.2.1 *Goats*

Goats make a major contribution to the cultural and ceremonial economy among the Nguni people. The goats are used for almost all ceremonies from marriages, deaths, births, pregnancies, coming of age parties, etc. At least a million goats a year are slaughtered through the informal market in KwaZulu-Natal, exclusively for ceremonial purpose.

2.2.2 *Sheep*

Sheep are also used in rituals common among the Xhosa people. People in the Muslim and Hindu faiths also use sheep and goats in a variety of ceremonies that involve slaughter which creates a demand for live animals for ritual slaughter.

2.3 Cattle

Cattle have a more multifunctional role in African cultural life. Cattle ownership in rural settings are markers of household wealth and security, so a cattle kraal is placed centrally in African homes as the focus point of much of daily life. Men are expected to have a bull in their kraal and many ceremonies are linked to bulls and the milking of cows. Cattle also are the main currency for a bride wealth system that connects families. Lastly, cattle are necessary for all ceremonies e.g. Xhosa *umkhapho*, *mbuyiso* rituals and other cultural equivalents that mark a death in the household, and which maintain a spiritual connection between the living and the dead.

Despite their importance livestock ownership is uneven in many homesteads. As a result, many of these ceremonies are being monetarized and have become a financial burden on families who have to save or borrow money to buy cattle. The fact that these animals are needed alive makes them much more expensive than the same animal sold to a butcher for meat. Goats and sheep, however, can be swapped up for cattle. This means that having any of these three types of these livestock is a very useful investment for any family.

2.4 Livestock ownership and benefits from production

Livestock make an important contribution to rural livelihoods. Recent years have seen the emergence of a third category of market-oriented farmers on communal rangelands with mixed herds and flocks in varying sizes who seek to sell their stock. This category has increased partly through obtaining access to land reform farms which often have extensive grazing areas. At the same time high levels of youth unemployment has seen some young people returning to their rural homes to try and make a living from livestock owned by the family.

2.5 Gender and livestock

The breakdown of social norms around marriage and children born out of wedlock has created a class of single mothers living at home. In former KwaZulu these women are known as *amashwele* or *osomaceleni*, the 'forgiven one' or 'those who live alongside'. These new type families often don't have cattle kraals and are more likely to own small stock – particularly goats which self-herd and are relatively easy and cheap to invest in. Women livestock owners remain poorly served by current extension models.

2.6 Employment-intensity in livestock production

An estimated three million subsistence farmers own livestock. Estimates suggest that almost a million people derive part of their livelihood looking after communal livestock and receive benefits in cash and kind. There are no official employment stats for the informal livestock sector. Many of the herders in this industry are not registered as employees and are paid below the statutory minimum wage level. Alternative payment/*mafisa* systems where the herder may keep a calf or two of the herd after a season of herding are common. This can enable poor families without livestock to begin to grow a herd.

2.7 Productivity

The offtake of livestock from the communal areas is low relative to those in commercial areas at 8% for beef, 36% for sheep and 10% for goats (relative to 23, 29 & 33% for beef, sheep and goats in the commercial sector). This is partly because livestock is kept for a host of reasons as discussed above and that livestock malnutrition in many communal areas lowers conception and calving rates. Mortality rates for calves under 1 year are also high.

Currently, livestock extension draws from commercial livestock farming models. These focus on improving livestock quality and do not recognise farming systems where herd productivity and an increase in livestock numbers are the primary goals. This is the probable reason why many communal farmers do not accept conventional extension advice. Despite being perceived as 'poor

managers', many small-scale communal farmers are still achieving a good return of return on their capital which justifies the traditional use of cattle and small stock as 'savings'.

2.8 Informal markets:

2.8.1 Goats and sheep

Local cultural demand for live goats in South Africa exceeds the supply. Goats for meat are mainly marketed in the informal sector, in the Eastern Cape and KwaZulu-Natal, which is driving the goat industry. The informal live market pays higher prices than the formal mutton and goat abattoirs can offer (e.g. R1 200 vs R700 for the same size/age animal in Nov 2018).

2.9 The potential for expanding livestock production through land reform:

The potential for expanding small-scale livestock production through land reform is huge. Much of the land already transferred through land reform could be much more productive. Field research suggests that in the case of goats, a 60% increase in productivity could be achieved through farmers being supported by better extension systems which recognise their production system. Appropriate livestock extension approaches could increase the productivity of most African livestock farmers in the country. A specific policy to support this emerging class of market orientated livestock farmers in communal areas and on land reform farms would need to be added to a national extension agenda.

2.10 Livestock value chains

There are five market options available to small scale livestock producers – auctions, speculators, butcheries, abattoirs and private buyers (Musemwa et al., 2007, Ndoro et al., 2015). Localised survey research indicates that the marketing choices of small-scale livestock producers vary substantially reflecting the range of opportunities in their local contexts.

Small scale farmers often sell livestock to local private buyers, through local dip tank auctions and to bakkie trader speculators who then sell it on to individual buyers, be they feedlots, butcheries or people needing to sacrifice at home. These mobile speculators play an important role and could benefit from state support to consolidate their business. Livestock speculators link local sellers and end buyers. This can improve animal welfare as stock are less likely to be transported long distances. It also allows for niche marketing that promotes non-factory farmed animals.

Overall, value chains to service African livestock farmers remain poorly developed. Lack of investment in these value chains reflects the dominant perception that subsistence farmers add nothing to national GDP and that they do not spend any money on their livestock unless forced to do so. These perceptions are substantively challenged by this study,

2.11 Breeds

Climate change is going to have a severe impact on livestock production in hotter environments and in future the hot harsh marginal production areas may not be able to sustain effective livestock production due to the increased incidences of drought and disease. Climate smart animals will be indigenous breeds that need less medical care and imported feed. Smaller animals, like goats, have been proved to be more resistant to drought stress and make more efficient use of resources that are available. They also lend themselves to peri-urban type farming. To this end, the state needs to invest in research to better understand climate change impacts and to start promoting these farming systems and livestock types. This will need to be factored into livestock financing support and appropriate extension models that develop alternatives to current intensive feeding and farming systems.

2.12 Land reform policies focused on livestock

Much land reform land is under-utilized either by the current owner or by the community that has been settled there. Adding livestock to the current farming system could benefit the land and raise

farm productivity. Indigenous chickens, sheep and goats make use of feed resources that cannot be accessed by cattle. Despite the reputation of goats as problem animals ongoing research shows that they are actually beneficial in most arid and semi-arid environments – particularly those facing bush encroachment.

Future land distribution should select farmers who are wanting to commercialize as a prime activity and group these farmers onto land reform farms. These farms then need to have infrastructure and management systems supportive of extensive livestock farming. State investment in appropriate local livestock value chains can support increased herd productivity and encourage mobile traders/speculators linking buyers and sellers. Overall, this would enlarge job creation and distribute livelihood benefits more widely. However, evidence indicates that herders in these settings receive cash remuneration below stipulated minimum wage levels. This will require policy intervention either to develop criteria for exemption or consider feasibility of wage subsidies as part of land reform start up packages.

2.13 Recommendations

Table 1: Recommendations to grow livestock employment and livelihood opportunities

Recommendations	
Problem	Solution
<p>The Meat Safety Act and municipal regulations make it illegal to sell or slaughter livestock in urban areas other than through an approved abattoir.</p> <p>Exemptions are provided for ritual slaughter or slaughter for own consumption. These require a letter of consent from an Environmental Health Officer. However, these regulations are routinely bypassed in every city and town across the country</p>	<p>This requires further investigation to identify what can work better to bridge the gap between law, regulation and practice. Both human and animal health require protection, particularly in a context of rapid urbanisation, while simultaneously recognising the importance of cultural practices, ritual slaughter and associated informal livestock markets. These make a significant contribution to the volume and value of livestock sales in South Africa.</p>
<p>There is poor understanding of the support needs of livestock farmers on land reform farms and communal areas who seek to commercialise their livestock production.</p>	<p>Develop this class of farmer by working with a few self-selecting farmers in different farming settings who want to upscale and commercialise their herd or flock. Where necessary obtain additional land to enable expansion. Develop linkages between farmers and local livestock market opportunities.</p> <p>Develop improved productivity systems that work within the environmental limits of carrying capacity and parasite loads.</p>
<p>Government staff lack clear and appropriate extension policy to support and grow livestock production in land reform, commonage and communal settings.</p>	<p>Design a simple curriculum that acknowledges the realities and aspirations of small scale and commercialising livestock farmers and provides appropriate messaging and support.</p>
<p>Farmers can often not access stock remedies and supplementary feed individually, but cooperatives often seem to fail.</p>	<p>Pilot other models that enable cooperative buying, selling and resource use and open up access to essential inputs.</p>
<p>Veterinary support for extensive livestock production is inadequate</p>	<p>Design an improved system of veterinary support ranging from Community Animal Health Worker (CAHW) treating farmers' livestock for a small fee to expanding a network of veterinary sales points and cold chains for vaccines and remedies with oversight checks</p>

3 Wool

3.1 *Potential beneficiaries:*

Around 63 000 communal wool farmers own 1.9 million sheep and produce 2.3 million kilograms of wool per annum. This represents 4.7% of the wool production in South Africa. On average, these farmers own 30 sheep and shear an average of 1.2kg of wool per sheep. The wool is sold to traders at approximately R2/kg; this wool is not sorted.

The other 8 340 communal wool farmers sell their wool in bulk (together with neighbouring farmers as part of farming associations) directly to the market. They produce just over 2 million kilograms of wool. Shearing sheds are shared, with approximately 30 farmers per shearing shed. On average, these farmers have approximately 120 sheep. They shear approximately 2 kg of wool per sheep and sell it at five times more to the market agent than those farmers selling their wool to the traders. Overall, this group of farmers produces 4.2% of the South African wool clip.

Around 8 000 commercial farmers produce just over 91% of the South African crop, owning 81% of the wool sheep in South Africa. Their production per sheep is 1.5 kilogram higher, while their price per kilogram is double that of the communal farmers who also sell directly to the market.

3.2 *Social differentiation of wool producers:*

Market-oriented livestock producers in the E Cape are differentiated: most smallholders earn a relatively low net farm income relative to the best performing farmer. This is also evidenced by the relatively low average net farm income of R45 200 in 2016, and median net farm income of R29 600 (given the skewed distribution).

NWGA surveyed 179 farmers across 56 sheds in an attempt to understand the different levels of performance of the different shearing sheds and associated farmers, divided into three performance categories: top third (better resourced); average third (scarcely resourced); and bottom third (barely resourced). The percentage variation of female members between the three categories does not appear significant.

3.3 *Employment intensity of wool production:*

Labour preferences for maintaining flocks (and herds) have long been for the services of family members in order to avoid labour costs. This may make use of the labour of someone in the family who has been unable to complete schooling, rather than youngsters with greater educational and therefore earning potential. Elderly sheep owners often do the herding themselves. Beyond the availability of owners and family members there is a preference for herders from Lesotho. This may relate to their willingness to work for lower wages than independent local labour, given the absence of social security and pensions and high unemployment in Lesotho.

While the keeping of wool sheep does not appear to absorb much labour and certainly little paid labour, there is some additional seasonal employment created when outside shearing teams are utilised. This in turn raises the quality of the baled wool in these newly developing wool-producing areas.

3.4 *The National Wool Growers Association (NWGA) programme:*

The NWGA programme has had positive effects in terms of vastly increased wool output by gross mass and gross value. It has also enabled a significant improvement in the quality of wool as indicated by the increase in price from 55% to 71% of the national average price.

- NWGA organises small producers into producer groups or local farmer's associations to shear and market. In order to market formally, they combine their clip to fill bales which

individual small producers generally cannot do alone. Generally, about 20-40 farmers combine and together own a total of about 2 000 sheep, averaging about 75 sheep each. The figure of 2 000 sheep is roughly equivalent to one commercial farmer's holding. The groups generally work as an existing community on a village basis. NWGA has records of 1 400 such groups and if an average of 30 sheep owners are involved in each, then about 40 000 owners in total are involved.

- NGWA assists with infrastructure in the form of shearing sheds which must be of sufficient standard to allow good handling of sheep and wool.
- NGWA provides training and mentorship. There are 13 areas of training including shearing, classing, cleanliness to avoid contamination, health, nutrition, veld management, etc.
- NGWA assist with genetic improvement of communal flocks, using the services of ten white commercial farmers and two black commercial breeders.
- For access to the formal market, NWGA introduces brokers to farmers, with whom they are frequently in touch.

3.5 *Costs*

Overall costs of the NWGA scheme per annum include:

- The cost of rams at about R12m, including transport and other costs, which is not a lot for the impact it has.
- The cost of extension officers at about R10m including heavy costs for transport.
- Capital costs for shearing sheds.
- Administrative fees and professional fees amount to about 2%.

The whole scheme costs about R30 million a year. 70% of costs comes from the Wool Trust. The value of the investment is now about R30m for a return of R383m in wool sales. In earlier years, the proportion of the income from the sheep relative to the costs was much lower. The fiscus covers only about R10m of this.

3.6 *Impacts*

In 2012, the NWGA claimed some 17 000 beneficiaries, the distribution of 30 856 genetically superior rams against a target of 70 000, and an improvement in the average price of wool obtained on auction from around R6 per kg to R31.79 per kg in 2011/12. However, these average figures hide the variation where the top third of emergent producers were receiving up to 83% of the national average price while the bottom third were receiving only 44%.

3.7 *Constraints on developing the wool value chain:*

The bulk of wool processing, such as washing, combing, weaving, knitting etc, occurs in Port Elizabeth close to the major wool auction houses. Some small-scale processing does occur in the Amahlathi and former Nxuba Local Municipalities. An outbreak of foot and mouth disease (FMD) in Limpopo Province in January 2019 led to the temporary suspension of exports to China. Under such circumstances only processed wool may be exported, so that local processing would be a great advantage in such conditions. The problem is that SA cannot compete with China and India in wool processing, presumably due to their low labour costs. In addition, processing requires abundant and cheap water, large scale and modern machinery. Any local textile industry would require subsidisation to compete.

3.8 *Land reform focused on wool production:*

An NGWA survey revealed that the three most important perceived needs of emergent wool farmers are finances, infrastructure, and improved access to land. Another survey suggests that the majority (78%) of market-oriented livestock producers indicated that they felt constrained by farming in a homeland area. Of these 72% indicated they would be prepared to move of whom 45% making this

conditional on government providing the necessary post-settlement support. A smaller, but significant group (28%) indicated that they would be willing to move even if they had to pay rent for the land received.

Priority for land redistribution might be the 28% who would be prepared to move even if they had to rent land. These may well be a key group of potentially upwardly mobile commercial farmers. They may also require limited support, which remains a key criterion for success. A secondary focus might be the 72% of farmers who indicated that they would be prepared to move, including the 45% who made this conditional on the provision of post settlement support.

Emergent sheep and wool farmers should be a priority beneficiary group for land redistribution as they have been successful with the assistance of NPOs and government. Priority for financial assistance to acquire private land should be accorded to the sheep farmers who are willing to relocate their flocks, and who do not require other public support. In general, this may favour farmers in communal areas close to freehold farming areas such as in the border areas and districts of the former bantustans. Preference may also be given to farmers, even elderly farmers who have clear and demonstrable succession plans for their business, such as a younger family member who is a junior partner, understudy or even a student at an agricultural school, college or university.

4 Fresh vegetables

4.1 *Potential beneficiaries:*

There are an estimated 100, 000 existing 'market-oriented small-scale farmers' already producing on irrigation schemes and in homestead gardens. There are likely to be an additional 10,000 operating outside these contexts, in rural areas and in land reform contexts. These 'market-oriented' small-scale farmers, who are already succeeding despite receiving little or no support, are proposed as the key beneficiaries of a redistribution programme aimed at extending fresh produce production. Many of these households are located in the former 'homelands. Redistributing land and creating opportunities to resettle these producers outside of these areas, could also free up plots on existing irrigation schemes and contribute to decongesting communal areas. However, reluctance to relocate away from existing social and support networks will be a factor to consider.

4.2 *Social differentiation:*

Small-scale farmers in the 'former homelands' and land reform contexts are differentiated: *smallholders* rely mainly (but not exclusively) on household labour in their production systems, and *small-scale black commercial farmers* rely mainly on hired labour in their production systems. A useful typology to differentiate small-scale farmers, that considers the types of value-chains producers target, includes subsistence-oriented smallholders, market-oriented smallholders in loose value chains, market-oriented smallholders in tight value chains, and small-scale black capitalist farmers.

4.3 *Employment-intensity of fresh vegetable production:*

The number of potential jobs depends on how production is organised (level of mechanisation, scale of production etc) and which crops are produced e.g. tomatoes require much more labour than green maize. A general analysis of the labour-intensity of fresh produce, based on fieldwork in Greater Tzaneen Municipality in Limpopo and informed by other studies is: 1 - 5 workers per hectare, depending on the crop. Notably, even a conservative estimate of 1 job per hectare for vegetables, produces almost three times as many regular jobs as avocados and more than twice as many jobs as mangos and macadamias (also considered promising labour-intensive crops in the NDP).

4.4 *Benefits:*

There are a number of benefits to small-scale production of fresh vegetables, including: the large number of jobs created, lower costs of production, quick turnaround on investment, several harvests are possible year-round with irrigation, competitive advantage with large commercial farmers (although crop and regionally dependant), and more flexible local market conditions. There are also important gendered implications of fresh produce production, since the majority of producers are women. However, incomes do tend to be low. Creating full time fresh produce farmers is therefore unlikely to be a viable standalone strategy for most households. Mixed livelihood systems will continue to characterize the sector meaning that mixed farming systems should be encouraged to increase incomes and employment e.g. through livestock or fruit production, alongside fresh produce.

4.5 *Irrigation systems:*

The National Development Plan suggests extending the current 1.5 million hectares under irrigation by 500, 000 ha. Land redistribution will have to be more clearly aligned in the future with an equitable division of water rights and improving inter-departmental coordination and the current functioning of water user's associations. Expanding the area under irrigation has the potential to increase incomes and create more job opportunities by raising crop yields, permitting multiple cropping cycles, improving crop quality and reducing drought-related risks. A limitation is that promoting farming under irrigation by small-scale farmers involves the adoption of technologies and infrastructure which can be costly and requires government support and investment

Lower-cost, farmer-led irrigation systems holds promise as an alternative and there is potential to expand successful 'infield rainwater harvesting and conservation' techniques from food gardens into croplands, without the need for costly formal irrigation systems. Farmer-led irrigation could see more job opportunities created, e.g. suppliers of affordable pumps and small repair businesses, etc.

4.6 *Markets and value chains:*

There are no services in place to support 'small-scale farmers in informal (loose) value chains. Informal fresh produce value chains have a particularly powerful job multiplier effect, for example, hawkers, bakkie traders and local input suppliers. Small-scale farmers still face challenges in marketing their produce and several crops are subject to frequent market gluts. Preferential procurement policies for public institutions including hospitals, prisons and schools, could provide secure markets.

There are successful examples of integrating small-scale black commercial farmers into formal fresh produce value chains, which could provide an avenue to expand production of this grouping. It would be unwise to attempt to displace informal markets altogether, which clearly support a range of livelihoods for other intermediaries and local consumers. Efforts should rather be made to ensure a range of marketing options are available for the variable quality of fresh products produced by farmer including:

- More decisive use of AgriBEE provisions to ensure that rural supermarkets procure at least 30% of fresh produce from small scale producers.
- Processing companies should also be required to procure from small producers. Around 10% of all fresh produce is processed and quality standards for produce are less prohibitive than quality requirements for supermarkets or National Fresh Produce Markets. However, processing should not be seen as a panacea as small-scale farmers complain that prices received are much lower than for fresh produce.

4.7 *Availability of water:*

The expansion of irrigated land faces constraints from South Africa's limited water resources. South Africa's annual rainfall amounts to only 470 mm – 80% of which is limited to only five months of the year. 'With the added pressures of climate change, population growth and the decline in water quality, the need for improved assessments of the current water resources and land uses are critical'. Land redistribution will need to go hand in hand with an equitable division of water rights and improving the current functioning of water management on schemes and other plots. Alternatives to irrigation schemes and considering a variety of irrigation approaches, including farmer-led systems and rainwater harvesting, could provide more sustainable use of scarce water resources.

4.8 *Land reform focused on fresh vegetables:*

The proposal presented here entails redistributing 1, 287, 500 hectares of arable land to:

- 100, 000 market-oriented smallholders in loose value chains,
- 5000 market-oriented smallholders in tight value chains,
- 5000 small-scale black commercial farmers.

Sub-division is proposed to create plots ranging between 2 - 50 ha in size. This could potentially create around 3, 218, 750 employment and self-employment opportunities on farms. This assumes an average of 2,5 jobs per hectare and intensive production of vegetables (including labour-intensive varieties like tomatoes). A very conservative estimate, based on a mixed farming system (e.g. some land reserved for livestock and subtropical fruit and nuts), assumes one job per hectare and would still create 1, 287, 500 jobs. The projected benefits from this redistribution programme include an estimated 54, 000 indirect jobs in the extended value chain e.g. for bakkie traders, hawkers and in the processing sector.

5 Subtropical fruit

5.1 *Potential beneficiaries:*

The subtropical fruit and nut sub-sectors are among the fastest growing sub-sectors in the South African agricultural economy. This growth is driven by export demand and high prices, which in turn drive innovation and productivity. Together with citrus fruit, deciduous fruit and table grapes, subtropical fruit and nuts are considered 'winners' in terms of job creation and growth potential by the National Development Plan (NDP). While most of the fruit volume and monetary value are produced by large-scale white commercial farmers, significant numbers of small-scale black farmers are growing subtropical fruit and nuts for a variety of purposes and value chains, most often for household food security and local informal markets. Many small-scale black commercial farmers also sell in tight value chains. Smallholder farmers are differentiated by the focus and scale of production, assets owned, access to markets, capital and other livelihood strategies.

5.2 *Social differentiation:*

The following typology for tree crop farmers in Vhembe District, Limpopo has been suggested by Oloffson: (a) welfare dependent petty commodity producer, (b) agricultural petty commodity producer, (c) salaried small-scale capitalist and (d) agricultural small-scale capitalists.

5.3 *Scale of production and employment-intensity:*

South Africa produces a range of subtropical fruits, avocados, mangoes, bananas, litchis and pineapples, as well as a variety of nuts like macadamia, pecan, pistachio and almonds. Focusing on avocados, mangoes and macadamia nuts: only a few hundred farmers grow these tree crops on 57 000 hectares and earn an annual income of more than R5 billion. These crops are all labour-intensive, especially during harvest when hundreds of temporary workers are employed in orchards

and packhouses. Employment in avocados: 11 000 on 17 500 ha; in mangoes, 5 000 on 7 000 ha; in macadamia nuts: 7 400, on 32 500 ha.

The numbers of smallholders and small-scale black commercial farmers involved in subtropical fruit and macadamia production can be considered significant. In Vhembe District of Limpopo Province study group chairman Mr Mankhili represents “at least 1000 farmers” producing subtropical fruit (avocado, mango, litchi), citrus fruit and macadamia nuts. In terms of market participation, these farmers include the whole range of households with “a few trees in their backyard” which they harvest for household consumption to 24 farmers who have attained GlobalGAP accreditation which qualifies them to sell on national fresh produce markets and export their produce.

Oloffson provides evidence of 1 163 smallholder orchard owners in Vhembe District, but the actual number could be “substantially higher” because data collected from eight different tribal authorities show 4713 registered orchards covering 9 746 ha, or an average of 2,07 ha per orchard. LDARD says 538 mango farmers, 184 macadamia farmers and 204 avocado farmers – a total of 926 - are registered growers in Vhembe.

Oloffson found small-scale capitalist farmers on average earned a gross annual agricultural income of R420 500, though it is highly differentiated. Hired labour is their main source of labour, and they employ on average six fulltime and 20 seasonal workers and no family labour. Gross margins attained by the 60 farmers in a 2018 survey range from a couple of farmers for whom costs were higher than income to farmers with gross margins of R675 000/ha. A government official noted that even though people farm on a very small scale, employment is being created in a variety of ways e.g. fruit pickers and bakkie traders.

5.4 Land tenure:

Although there are a handful of subtropical fruit and macadamia farmers with land title, or leases on PLAS farms, most farmers registered with the LDARD have a PTO (permission to occupy) on communal land. Most of the farmers that are members of the Subtrop Growers' Associations are smallholders with 1 to 3 hectares, with an average of around 3 to 4 hectares and the biggest holding of 10 ha.

Their tenure is seen as rather insecure by farmers and commodity groups. Fruit South Africa considers the fact that communal land cannot be used as collateral finance for input and equipment “the most serious constraint preventing smallholder farmers from expanding their operations and becoming commercially viable”. Land under a PTO cannot be used as collateral.

5.5 Constraints on smallholder production:

Access to water, and lack of water rights and irrigation infrastructure are key limiting factors, especially during recent droughts. Where irrigation schemes exist, many of them are dysfunctional, or predominantly used for vegetable production. Even if small-scale farmers get macadamia trees from registered nurseries and do the right soil preparation before they plant the tree, it takes much longer for small-scale farmers' trees to start producing nuts because of a lack of water.

Farmers do not use all the land they own, due to a lack of workers, time and resource constraints, e.g. low levels of mechanization (they seldom own tractors, spraying equipment or other machinery). Because it can take up to five year to get new avocado seedlings, farmers find it difficult to expand their orchards. they have no room to pack and store their fruit. Sikhapha (2019b) says they try and encourage farmers to at least do the packing in the shade or under a tree. “That’s the other challenge, if you pick it today, it must leave today.”

Farmers often do not have their own transport, although the renting of transport to take fruit to the market can be seen as a form of job creation. Even if the farmers can arrange transport, there is often no access road to the orchards.

5.6 Support services for smallholder subtropical fruit producers:

Compared to smallholder farmers in the rest of the country, subtropical fruit and macadamia farmers in Vhembe District of Limpopo appear to be served well by public extension services with support from the respective industry bodies.

Study groups for avocado, mango, macadamia and citrus farmers in Vhembe District were initiated in 2007 after LDARD signed a memorandum of understanding with Subtrop, the Agricultural Research Council (ARC) and the Citrus Growers Association (CGA). The purpose of the commodity groups is to empower emerging fruit growers and improve extension services with technical advisory services, skills development and capacity building, mentorship and project feasibility. Study group activities are aimed at creating marketing opportunities, developing packing facilities, industry information sharing, research and development. Subtrop does not offer extension services to smallholder farmers but have been training government extension officers for the past ten years.

From 2008 to 2012 the national Department of Agriculture, Forestry and Fisheries subsidised the donation of 282 292 fruit tree seedlings to 181 beneficiaries. Support services are good for training, but financial support is quite constrained.

In one study, most of farmers said that while they appreciated technical support, they were not receiving support to help them overcome their challenges. A farmer said:

With this technical support, there is no problem. The main problem is with infrastructure, equipment, irrigation, because that one is stalling progress. ... once we have (an) irrigation system it will be easier for us to harvest quickly and to have income so we can come up with other infrastructures in the field like pack houses and a place where we can put a de-husker and de-husk macadamia nuts from the field. Because they need to be de-husked as soon as possible before they can be sent to the processing company.

5.7 Subtropical fruit value chains:

Subtropical fruit and macadamia nut value chains are relatively long. Value can be extracted at every node, from tree nurseries and companies that install irrigation and earthmoving companies, production, packing, processing and selling at local markets and exporting, but in none of the value chains are the growers the leaders. These sub-sectors all have a fresh and processed component, which utilises a considerable proportion of mango production and less of avocado and macadamia production. Several integrated businesses operate in the avocado sub-sector.

Of 60 small-scale *avocado* farmers surveyed in in Vhembe, 42 (71%) participated in informal markets and eight (8) were exporting avocado. The rest sell to shops and processing companies. The South African *macadamia* industry is export driven, and more than 95% of the annual production is exported "in shell" or as macadamia kernels. No legal informal market value chain seems to operate for macadamias, but at least 2000 tonnes of macadamia nuts, valued at R146 million, are stolen every year. Most *mangoes* produced in South Africa can be sold more profitably in local markets than in export markets. Mangoes are versatile and can be picked green/unripe to make achar, while ripe mangoes can be sold to local or international fresh produce markets, dried or processed into juice. In loose value chains, mango farmers play a leading role in terms of price setting and even get buyers to collect the fruit from them, but when farmers sell in tight value chains, the supermarkets and processors play the leading role.

5.8 Land reform focused on subtropical fruit production:

5.8.1 Opportunities

There are definite opportunities to expand subtropical fruit and macadamia production by smallholder farmers, especially in parts of Vhembe District and other parts of Limpopo where residents have been farming these crops for years. Mangoes are versatile fruit with a sizeable local

market and many opportunities for processing, while avocados and macadamia nuts are both high value crops. A benchmark survey of 19 commercial avocado farmers in Limpopo shows that incomes can range from R75 000 to R300 000 per hectare. Macadamia prices are R224,72 per kilogram for kernel and R75,58 per kilogram for nut in shell. This roughly translates into an income of R375 000 per hectare. Production costs are in the region of R25 000 per hectare. Fears about a decline in prices, demand and markets for these fruit and nuts have not yet materialized.

The kinds of jobs that may be created in this way are unlikely to be full-time or highly paid. They will be seasonal jobs picking fruit and nuts, working in packhouses or transporting fruit, and if land that is utilised productively at present, is bought, it may just mean a change of employer for workers.

5.8.2 Constraints

There are numerous constraints to realising the potential for successful expansion of the number of smallholder and small-scale farmers producing subtropical fruit through redistributive land reform. Most of them are associated with water and climate challenges, a lack of capital, skills and market access. In fact, a lack of capital for agricultural development already make smallholder farmers unable to use all the land they have access to as PTO holders. It is quite expensive to establish subtropical fruit and macadamia orchards, and income from other sources or bridging finance is needed for the time that it takes for the trees to start bearing fruit and nuts.

While farmers do not need GlobalGAP and other certifications (e.g. Rainforest Alliance) to sell in loose value chains and at fresh produce markets, certification is a prerequisite for selling in tight value chains like supermarkets and to international buyers. While the best prices are often realised in export markets, payment in those markets take a long time after the produce was shipped, leaving black commercial farmers with a considerable time to bridge with other sources of income. Taking part in export markets can leave small-scale farmers vulnerable. Furthermore, the quality standards for the avocado sector set by overseas retailers and consumers are a significant brake on small-scale farmer access to these markets.

5.8.3 Water and climate change

Constrained access to water may prove to be the biggest hindrance to the expansion of smallholder and small-scale commercial farming unless more efficient use and management and redistribution of this resource takes place. The fast-growing macadamia sub-sector is concerned about its water footprint, but preliminary research in the Nelspruit area of Mpumalanga has found that water efficiency can be improved without compromising yields.

The question is whether the knowledge and technology exist to improve water-use efficiency beyond the levels of efficiency that citrus farmers have already achieved, or the 20 to 30% that they managed to save during the recent drought. It is also not clear whether it is known how far such water-saving efforts can be implemented before production and the future productivity and quality of subtropical fruit and nut trees and fruit are jeopardized.

One can expect an increased demand for water for irrigation in response to heat and higher rates of evapotranspiration due to climate change. Research shows that Limpopo is “perhaps the most vulnerable province to climate change in South Africa ... expecting a high increase in temperatures, strong variations in rainfall patterns and greater frequency of extreme events”.

5.8.4 Support for new producers:

It would be short-sighted to put too much trust in the public sector to deliver all the necessary services to any of the categories of smallholder farmers or small-scale black commercial farmers, or to ignore the contribution that the private sector and non-governmental sector can make. In the case of the production of subtropical fruit and macadamia nuts, the technical knowledge of every aspect of these sub-sectors is vested with large-scale commercial farmers and other actors in the

value chains. It is therefore not such a far-fetched idea to suggest that the latter should take the lead in providing technical training to certain categories of black farmers.

Market-oriented smallholders in loose value chains can be supported in the same way as subsistence-oriented farmers in order to make their farms more productive and sustainable, but with minimal expenses. They will also benefit from learning about producing and preserving product quality, how they offer products, e.g. single fruits, packaged, cut up, etc. and improved marketing and negotiation skills. Self-organised groups of these smallholders may come together to offer to sell their products to school feeding schemes, etc.

Avocados, mangoes and macadamia nuts in orchards need to be planted on high potential and well-drained soil, using young trees propagated by registered nurseries. Producers need in-depth mentoring by experts in the fields of avocado, mango and macadamia production, as well as support to buy other inputs, e.g. fertiliser and pest control products. This means initial involvement of large-scale commercial farmers and commodity associations, e.g. the different growers' associations under the Subtrop umbrella. The public extension service does not have the expertise to do this.

It may make sense to buy land from prospective mentors for settlement of black small-scale commercial farmers. Commercial growers of subtropical fruit and macadamia nuts often divide their farm into blocks and manage the different blocks, and by buying one or more of these blocks the conveyancing process could be speeded up. It may also make sense to buy an orchard that the farmer was about to replace and give an adequate grant to help new farmers to prepare the land and establish the latest cultivars.

Unfortunately, there are no low-cost, low input options for this category of farmers. Large-scale commercial farmers consider land size ranging from 10 ha to 50 hectares as the lower limit for making a profit. In the case of avocados and macadamia nuts, the area could even be smaller. A second option is buying large-scale commercial farms and water rights from farmers who cannot afford to take the next step to modernise their operations. By subdividing such farms and leasing them to a number of different small-scale black commercial farmers ought to make provision of irrigation infrastructure and soil preparation works more cost-effective while ensuring a critical mass to bulk order trees from nurseries and access to pack-houses and markets.

However, in both these cases it may just mean replacing white commercial farmers with black commercial farmers, without any gains in net employment. Job creation will only take place with more hectares in production and bigger volumes to harvest, pack and transport. This will only be possible if more water for irrigation and adequate water infrastructure are available.

6 Sugar cane

6.1 *The sugar sector and small-scale producers*

The South African sugar industry has long been one of South Africa's most substantial agro-industries. The South African Sugar Association (SASA) estimates that around R16bn in value is annually created by 85 000 directly employed and 350 000 indirectly employed persons, and ultimately with approximately one million rural lives dependent on these jobs. Every 1 000 hectares (ha) in sugarcane land, the industry estimates, provide an average of 133 permanent and 210 seasonal jobs.

In addition to its sheer magnitude, the sugar industry is distinct from other agro-industries by the inclusion in the 1970s of substantial numbers of black small-scale sugarcane growers (SSGs), farming predominately under 'communal' or 'customary' tenure, as distinct from large-scale commercial growers (LSGs). The inclusion of small-scale black growers in a 'formal' value chain has been variously attributed to:

- systems of rotating credit,

- the command of land resources by traditional authorities and of production processes by miller sugar producers,
- opportunities for SSGs to accumulate by making use of ‘contractors’ who provide planting, harvest and haulage services.

However, SSG numbers largely peaked in the late 1990s/ early 2000s, and thereafter have a steadily declined; to nearly half their numbers by 2013/14 – a trend significantly tied to regulatory reforms in the late 1990s/early 2000s. Since the peak of SSG production, the sugar industry retains a number of important support structures and mechanisms. It has sought to manage restitution land claims on wide swathes of cane-land largely through Joint Venture (JV) arrangements while gradually shifted in focus towards supporting land transfers to large-scale black commercial farmers.

6.2 The current crisis in the sugar sector:

At the same time, the sugar industry is currently in a state of general crisis rooted in its diminishing share of a shrinking, tariff-protected domestic market, with approximately half of domestic production currently being exported to a chronically low-priced international market (SASA 2019). Numerous factors have driven the crisis, including

- the growth of duty-free imports from Eswatini – a South African Customs Union (SACU) partner that is expanding production and diverting existing exports from the European Union (EU) to South Africa;
- unexplained suspensions of tariff protection (enabling huge amounts of sugar to enter the domestic market at little to no duty);
- accelerated reductions in industrial demand with the introduction of the Health Promotion Levy (HPL), the ‘Sugar Tax’;
- diminishing retail sales alongside compensatory tariff increases.

Currently, the industry is involved in discussions with government about formulating a ‘master plan’ to chart its future path. Current hopes are focused on ‘diversifying’ cane away from sugar-processing to the production of ethanol-for-fuel and industrial chemicals. and on the expansion of the continental protected market – both of which would need to overcome significant obstacles to have any impact.

6.3 The central role of regulatory structure:

In more than a decade of simmering debate about reforming its regulatory structure questions of the industry’s ‘transformation’ have been central. So far, new transformation commitments have included investing R1bn over five years and the recognition of a new farmers’ organization, SAFDA, centred on black growers. The capacity of the industry for ‘transformation’ rest in no small part on demonstrating that tariff protection enables the sugar industry to make substantial national socio-economic contributions. The crisis facing the sugar industry is also a socio-economic crisis, one which includes SSGs but extends to employment in rural and mill-area towns where livelihoods are deeply tied to sugar. In many ways, the crisis involves a question of ‘jobs preservation’ rather than ‘jobs expansion’.

However, even amidst this crisis (and in some ways because of it), the sugar industry’s protected status and peculiar regulatory structure provide opportunities to greatly enhance the livelihoods of SSGs in ways unavailable to other agro-commodities. Most of the mechanisms proposed here are based on historical precedent but could be repurposed to build on the industry’s existing transformation efforts. These must include imperatives to land reform, while at the same time incentivising progress therein as a competitively rewarded imperative with pro-poor implications – and at scales arguably greater than any other single agricultural commodity. Even if contraction occurs more broadly, such measures will secure and expand sugarcane’s livelihood potential for

South Africa's poorest and vulnerable citizens. Whether these opportunities can be seized, however, depends on political commitments by both industry and government.

6.4 Policy recommendations for the sugar sector:

6.4.1 Intra-industry price supports

The most fundamental set of policy interventions hinge on intra-industry price-supports based on domestic market realizations and potential retail market realizations, differentially augmented by consumer premiums. These would:

- Substantially increase SSG price-support;
- Reduce the 'capture' of industry-supporting tariff protection measures by retailers;
- Augment LSG prices, even given a bias towards SSGs;
- Reduce competitive undercutting by the Eswatini sugar industry;
- Insulate SSGs from the risks of the world market;
- Remove SSGs' effective dependence on LSGs for finance support;
- Reduce imperatives for government to subsidise SSG production;
- Eliminate disincentives by the current price-support model to expanded production;
- Differentially reward 'transformation', as millers would receive domestic market premiums according to their share of SSG supply

These interventions would incentivise millers to maintain and/or expand their share of SSG supply and pro-poor land reform projects.

6.4.2 Paying SSG administration and support costs from industry gross proceeds

SSG production systems are best enhanced by re-introducing payments for those costs associated with SSG administration (training, extension and logistical oversight by miller and grower agencies) as a 'first charge' from industry gross proceeds. This would vary according to SSG areas serviced, and at cost rates established and annually audited by SASA and disseminated to local grower structures. This would:

- Promote cane and sugar production for the domestic market, to the benefit of both growers and millers;
- Promote investment in personnel and equipment in order to improve efficiencies in logistics and services, which often act as scale-related constraints on SSG production;
- Discourage contractors from undertaking services detrimental to SSG returns;
- Promote the provision of services to SSGs by multiple agencies, including miller and grower-based organizations;
- Enhance SSG information and bargaining power in selecting contractual service providers.

These measures would promote local contractors' ability to operate at service and cost-competitive levels; reduce tensions between efficient project management and SSG returns; and limit the capacity of millers to use SSGs as a means of 'cost manipulation'.

6.4.3 Rationalising SSG logistics and production

The above mechanisms would provide a basis to 'rationalize' SSG logistics and production in a flexible manner, adaptable to a wide range of livelihood 'portfolios' and grower capabilities, at little to no risk of debt. With enhanced premiums and improving logistics local growers' organizations and co-operatives would be responsible for co-ordinating planting periods. SSGs would select contractual agencies to undertake planting at their own expense, including a limited rent to the SSGs themselves, in return for proceeds from the first cutting, less a slight share of net premium to the registered SSG. Subsequently, SSGs could select contractors to undertake tasks of clearing, weeding, top-dressing and chemical application. This would:

- Regularize and formalize models of expansion evident in the period of rapid SSG growth in the 1990s, which resemble models of re-entry into cane by growers who had dropped out;
- Provide a predictable basis of establishing cane without debt, hence reducing risk to expanding SSG production and SSGs own risk in undertaking cane production;
- Incentivise contractors to have a direct stake in SSG's cane quality, and hence planting and transport performance;
- Reduce imperatives for SSGs to enter into group arrangements outside of commensalities of interest and trust;
- Allow SSGs without substantial labour, capital and training endowments to undertake sugarcane cultivation;

6.4.4 *Green harvesting of cane*

'Green harvesting' of cane instead of cane-burning should be investigated as an option. While potentially complemented by returns to animal feed/co-generation, funds from the HPL (or 'Sugar Tax') might be utilized to subsidize 'green' cane at a per ton rate for both SSGs and LSGs, and paid either directly to growers undertaking their own harvesting, or to harvesting contractors. Benefits could include:

- Health benefits to cane workers no longer contending with health risks from fire hazards and smoke inhalation;
- Environmental benefits from the reduction of CO² emissions;
- Incentives for higher quality employment on LSG and SSG farms;
- Reduction in risk of 'runaway' cane fires among SSGs that interfere with logistics;
- Potential synergies with SSG livestock production, and a reduction in tensions faced by SSGs generated by choices between 'cane or cattle';
- Augmenting soil health with residues from leaves and tops.

6.5 *Land reform and SSGs*

These reforms would immediately benefit not only those within the existing boundaries of the communal areas, but also beneficiaries of large redistribution land and restitution projects, which are already considered 'SSGs'. Government could utilize its land redistribution programme to acquire areas adjacent to SSG supply areas to reduce land hunger; directly and indirectly enable SSGs and 'accumulating' contractors to flexibly expand their area under cane according to their own capacities; while enhancing security of tenure outside traditional authority jurisdictions. New cropping areas could be allocated to land-poor homesteads (along with access to communal grazing lands) by standards of median land-size, while allowing those with large tracts of land to expand their land portfolios under condition of surrender of existing land to neighbours (e.g. 1.5 new hectares in return for each hectare surrendered). This would:

- Reduce competition for land between grazing and sugarcane cultivation;
- Reduce perceptions of prejudice and elite capture by privileging the relatively needy;
- Allow 'accumulators' to access new land through land reform in a manner that also augments the holdings of their neighbours;
- Allow expansions of SSG land holdings to occur according to their existing capacity for marginal expansion;
- De-linking security of tenure from traditional authority, and allow vernacular land markets to emerge on a 'willing-buyer/willing seller' basis, not on debt-based forms of alienation.

6.6 *Implications for employment generation:*

The employment benefits of an SSG-centred strategy for the sugar industry are potentially large. The estimate of these benefits is based on an analysis of changes to the current Division of Proceeds arrangements. It then divides estimated net proceeds from SSG cane, under the assumption of full household labour commitments, by the minimum wage. This provides an indication of the value potentially created in SSG production, whatever its distribution between homestead and hired labour. Across rain fed and irrigated SSGs, this estimate suggests that, depending on yield, current SSG production could be elevated to the level of between 13 000 and 31 000 minimum wage equivalents. Should SSG production expand to its historic level, this could result in a near doubling of employment within some of the poorest and most employment-deprived areas in the country.