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Agro-processing, wage employment and export revenue: Opportunities for strategic intervention

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About this research

Two consultants were commissioned by TIPS to deliver this report to the Department of Trade and Industry (the dti). One consultant was contracted to work for 18 days in September 2015, the other for 12 days in the same month. The requirement was to deliver a report that described the insights that were discovered through an interviewing and background research process. The scope of the interviewing process may be assessed by examining the List of Interviews; the breadth of background research is evident in the References.

A second requirement was to provide "recommendations for areas for the dti to intervene to enhance the identified industries in the agro-processing sector as well as details of the nature of the interventions".

These recommendations focus on tapping the potential of agro-industries to generate both wage employment and export revenues. They are provided in Chapter 6 of this report.

Acknowledgements and list of interviews

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de Kock, Henk	Onderberg, Suppliers of Fruit Juice Concentrate and Canned Products, General Manager
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Duncan, Allen	Golden Macadamias, CEO
Erasmus, Etienne	Netafim, Managing Director, South Africa
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Louis Vorster	Managing Director Westafalia SA, Hans Merensky
Whyte, Jill	Green Farms Nut Co., CEO, Chairman
Wolff, Andrew	SAB, Director Business Optimisation

Abbreviations

APAP	Agricultural Policy Action Plan
ARC	Agricultural Research Council
BEE	Black Economic Empowerment
BFAP	Bureau for Food and Agricultural Policy
BLNS	Botswana, Lesotho, Namibia and Swaziland
BOP	Balance of Payments
CBS	Citrus Black Spot
CEO	Chief Executive Officer
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DBSA	Development Bank of Southern Africa
DFI	Development Finance Institution
dti (the)	Department of Trade and Industry
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FAWU	Food and Allied Workers Union
FTE	Full Time Equivalent
GDP	Gross Domestic Product
GERD	Gross Expenditure on Research and Development
GFCF	Gross Fixed Capital Formation)
IDC	Industrial Development Corporation
IDZ	Industrial Development Zone
IFC	International Finance Corporation
IPAP	Industrial Policy Action Plan
ICT	Information and Communications Technology
IT	Information Technology
ILO	International Labour Organization
MCEP	Manufacturing Competitiveness Enhancement Programme
NPC	National Planning Commission
NTBs	Non-Tariff Barriers
OECD	Organisation for Economic Co-operation and Development
PPECB	Perishable Products Exports Control Board
R&D	Research and Development
SACU	Southern African Customs Union
SAMAC	Southern African Macadamia Growers' Association
SARS	South African Revenue Services
SMEs	Small and Medium Enterprises
UNTAD	United Nations Conference on Trade and Development
US	United States

1. Executive summary

Research carried out for this report suggests that there is scope for a number of strategic interventions in support of agro-industrial production by the South African government. These interventions could make a significant difference to the country's foreign trade and its domestic employment record. The report outlines the severity of the balance of payments constraint on growth and transformation and of unemployment, particularly in rural areas. It makes a case for agriculture's central role in growth, transformation and empowerment, advancing an argument that the distinction between agriculture and industry, and between processed and unprocessed primary commodities, is misleading. This is no mere academic nicety: it is a point of considerable policy relevance, for it suggests a need to adjust and sharpen criteria for policy interventions. Against this background, the report describes the major constraints on agricultural exports in South Africa, drawing on interviews conducted for this study and on secondary data and literature. Having identified a series of stifling constraints, the report ends by making a number of connected policy recommendations.

Two of the most serious challenges the South African economy faces are the balance of payments constraint on growth and the high level of unemployment, much of which is concentrated among extremely poor people in rural areas. As economies grow, there is a strong and often rising propensity to import, for consumer goods and for capital goods and inputs to new businesses and processes. But these require foreign exchange to cover the import bill. Without a strong export performance, governments risk exposure to the whims of short-term foreign financial flows and the vagaries of concessional lenders. South Africa's trade balance trends strongly suggest a structural balance of payments problem. At the same time the record on employment and unemployment in South Africa is unimpressive. Declines in jobs available in agriculture have been larger than in other sectors and the growth elasticity of manufacturing remains low; overall the employment to population ratio in South Africa is much lower than in comparable economies and has been declining for years. In the past, policies for agriculture and agro-industry have exacerbated employment and balance of payments problems; but policies may instead make a significant positive contribution to overcoming these challenges.

Agriculture has been central to all successful experiences of sustained economic growth, structural change, and poverty reduction. This is very obvious in middle-income countries such as Brazil and Chile, it is obvious in the record of East Asian economies including South Korea, and it is even obvious in advanced industrial economies such as the United States (US) and the European Union (EU). While the development process is one in which people shift increasingly out of low productivity activities and into higher productivity activities, it is misleading to over-simplify this as a shift out of agriculture and towards manufacturing and urban services. In fact, there is plenty of scope for rising productivity within agriculture. This is even more the case nowadays than it was in the past, given the ways in which global agriculture has been transformed. Capital and sophisticated technology have migrated into agriculture, transforming

global competition and the structure of production, chiefly through large-scale agribusiness supported by public sector spending on infrastructure and research and development.

The boundaries between manufactured and agricultural/primary products are fuzzy and are now harder to define with any degree of analytical rigour. Food systems are increasingly detached from agriculture: food is industrial nowadays and produced mainly by large-scale firms benefitting from economies of scale. One of the implications of this is that it is increasingly difficult to distinguish between processed and unprocessed primary commodities. The technological sophistication, research and development (R&D), sophisticated packaging, temperature and disease control, and computerised logistics that go into producing a fresh orange ready for consumption in a foreign market outstrip the technology and manufacturing transformation required, say, to produce a carton of orange juice. There are three implications. First, because agriculture is imbricated with manufacturing and industrial organisation and scale requirements, it is and ought to be a site of industrial policy. Incentive systems, such as the Manufacturing Competitiveness Enhancement Programme (MCEP), need to be designed with this in mind and government departments need to be pushed to coordinate, also with this in mind. Second, the criterion used to decide which rural activities to promote should not be whether or not a given commodity is processed or unprocessed but which commodity has the highest value and fastest growth rate of demand in international markets. Third, there is a need to reassess the level of resources devoted to small-scale enterprises that are unlikely, on the basis of the South African and international evidence, to generate decent wage employment or a fast rate of growth of high-value agricultural exports.

If the potential for capturing high value in international markets is one key criterion for resource allocation, another is the labour intensity of particular commodities. Agriculture overall is more labour intensive than other sectors; in itself, given the employment crisis in South Africa, this is food for policy thought. But there are hugely important differences *within* agriculture in the amount of labour required per hectare. Within deciduous fruit production, for example, plums require 20 percent more permanent labour equivalent workers than do apricots, yet apricots need some seven times more labour inputs per hectare than does sugarcane. In fact, deciduous fruit production on average requires some 300 times more permanent labour per hectare than maize production. Similarly, crops like barley or canola, and production of beef or poultry, are very limited in their employment creation effects, while other crops like grapes, avocados, carrots and blueberries are hugely more labour intensive. In short, there is enormous employment generation potential – literally in the hundreds of thousands – from expanding the area under cultivation of those crops with the highest labour input requirements. Producing such crops, especially for export, then generates many more decent jobs in associated economic activities such as transport infrastructure and logistics, packaging, irrigation equipment maintenance, and other linked manufacturing and services.

But promoting rapid growth of production and employment in these kinds of crops involves a range of very substantial investments by the state. The evidence, however, suggests a serious underinvestment by the South African state in areas fundamental to any modern competitive agricultural sector: water and irrigation, and the institutions to manage water rights and maintenance of existing irrigation facilities; energy and transport infrastructure, including port handling facilities; agricultural research and development; phyto-sanitary monitoring capabilities; and the diplomatic wherewithal to improve access to large and growing markets. The available published evidence is complemented by, and reflected in, the views of the agribusiness managers we interviewed (as well as those of government officials and South African academics interviewed). These interviewees returned again and again to the same set of complaints about underinvestment: in R&D (the decimation of the Agricultural Research Council (ARC), for example, and the staggering shortage of tertiary trained experts compared with organisations such as Embrapa in Brazil); in irrigation and water availability (compared, for example, with the scale of Peruvian public investment in dams and irrigation to service agricultural exports); in the transport and freight handling infrastructure (imposing additional costs for firms of having to employ people to ensure proper treatment of consignments waiting to be shipped from ports, for example); in energy (raising the private cost of providing alternative electricity sources to make up for the losses incurred from power outages); in phyto-sanitary monitoring (so that understaffing and lack of policy clarity leads to overextended quarantine periods for imported genetic stock, slowing down trials and undermining competitiveness, or leading to calamities like the infamous cadmium excess in canned pineapple exports from the Eastern Cape); and in market access support (leading to situations in which South African exports are blocked from markets that are effectively unlocked by competitor countries).

Interviewees also consistently remarked on the constraints on employment generation imposed by a slow moving and apparently hostile bureaucracy and by the uncertainties and consequences of land reform policy. Applications for funding through government incentive schemes like MCEP or for long-term finance from the Industrial Development Corporation (IDC) or the Land Bank frequently snag because of the high turnover (and lack of strategic direction) of staff in state agencies such as the dti and the complexity of changes in the approval criteria applied. Interviewees described engaging with agencies such as the dti as a “nightmare” (even though they had had relevant experience – there were senior managers of very large South African agribusinesses who said they had never met anyone from the dti). They also resented that they had to hire consultants to navigate application processes. The outcome is that there has been a huge backlog of incentive scheme applications (as well as a raft of legal cases); meanwhile, some enterprise expansion projects are shelved while others must be pursued through more rapid (and more expensive) routes like the private banking industry.

The other set of constraints raised repeatedly in the interviews – and supported by a lot of other evidence – involves access to land, the debilitating uncertainty surrounding land policy,

and the contorted outcomes of the vast majority of land restitution and reform schemes. Given the length of time for newly planted avocado trees, to take one example, to reach full fruiting maturity, or the high cost of establishing a macadamia plantation (some US$20 000 per hectare), many agribusinesses are extremely wary of any decision to invest in a rural economic environment dominated by uncertainty. In that context it is not surprising that a number of agribusinesses are uprooting and moving to invest in Mozambique as well as elsewhere. (Other examples include a major dried mango exporter planning to set up production, with International Finance Corporation (IFC) support, in Burkina Faso rather than expanding within South Africa.)

Most agribusinesses will have to develop one among a range of types of joint venture, partnership, or leaseback arrangements with community trust beneficiaries of land restitution claims, or of willing partner-willing seller land reform transactions. Agribusinesses do this instrumentally — in order to secure some access to the resources of the state – though they are often open-minded or even progressive in their acknowledgement of the need for transformation. But the partnerships entail very high costs. The most successful examples include: the largest operating farm restitution project — covering thousands of hectares in avocado, litchi and nut production — involving HL Hall in leasing back land from the Mdluli clan and local community, collectively the Matsafeni Trust, or TSB's role in sugar growing in Mpumalanga (James and Woodhouse, 2015). The benefits of such arrangements are clearest, and the impact on empowerment strongest, when they generate or sustain substantial employment benefits. The Afrifresh Group, for example, has created more than 600 jobs on a 500 ha greenfield investment on the Orange River, at the Berekisanang Empowerment Farm. (Even in this case, despite a strong black economic empowerment (BEE) pedigree and the creation of hundreds of jobs, set to rise to more than 1 000, from nothing, and despite a partnership with a local community trust and with the IDC, the firm was rebuffed when it applied for support through the Jobs Fund.)

However, most such schemes, and other land transfer arrangements, have failed. Typically, poor governance and protracted conflict over claims means that there are very limited benefits and that the benefits are captured by a tiny minority of individuals. The "wider membership of claimant communities" has received precious little benefit.

Thus agricultural development policies designed to pursue the overarching objective of transformation and empowerment of formally disadvantaged South Africans have had high costs and have led to unacceptable levels of waste. They involve direct transaction and transition costs. They yield few real gains for black South Africans. And they entail massive opportunity costs in foregone foreign exchange earnings and in foregone employment opportunities.

It is on the foundation of the evidence collected and the analysis carried out for this study that we arrive at some policy recommendations. Reallocating resources to promote a rapid rate of

growth of high-value agriculture-derived exports would make a substantial contribution to addressing both the critical challenges introduced at the start of the report: the foreign exchange constraint and the employment crisis.

The first set of policy recommendations involves treating export agribusiness as the priority target of industrial policy. This means, among other things, amending the scope of industrial policy incentive schemes like MCEP effectively to include the full range of activities undertaken in integrated production systems. But it also means reversing decades of public underinvestment in the infrastructure, technical capabilities, institutions, and research and development that in all competitor countries underpins the expansion and competitiveness of agro-industry. This in turn is possible only with a better-coordinated set of government departments and a far sharper commitment to *rural* priorities than has been the case.

Shopping lists produced by endless consultative processes do not make for efficient resource allocation; they are easy prey for the particular interests of the lobbying group du jour. In order to set in place mechanisms to resist such interests and such a persistence of seemingly random policy choices, what is required is a set of simple, clear criteria for government policy and access to incentives. This report suggests that policies are designed and implemented to build on these criteria: those activities should be encouraged that can make a demonstrable and substantial contribution to both foreign exchange earnings and wage employment.

Finally, although there are many ways that current land policy might be clarified and improved, this report proposes that the government should experiment with the idea that there can be two paths to transformation. One will involve the evolution of current transformation and empowerment policies, improving governance rules for joint ventures in farming and the leasing of more secure land and water rights and so on.

The other involves *Enhancing Empowerment through Employment* and has the potential for more rapid transformation. The focus of this second transformation track is not direct ownership – of shares in enterprises or of usufruct or other titles to land; rather, it is the capacity of investments to generate more permanent employment opportunities in rural areas (especially where employees are represented by trade unions such as the Food and Allied Workers Union (FAWU). This would require two forms of policy. First, a new subset of rules for receiving state support could be drawn up in which the priority is whether or not a firm can credibly expand decent employment and foreign exchange earnings within, say, five years. If it can, its access to government finance and related incentive schemes should be fast-tracked though ministerial intervention. Second, clearer assurances on the stability of land use rights should be made to those agribusinesses and commercial farmers who can demonstrate a track record of growth in foreign exchange earnings and in the number of people offered decent employment opportunities.

2. The twin challenges of the balance of payments constraint and rural poverty/employment

2.1 The balance of payments constraint

Middle-income countries face a particularly acute version of the balance of payments constraint on their growth. As an economy grows, so there tends to be a rapid increase in the rate of growth of imports: the very process of growth, structural change and catching up with the most advanced economies involves a thirst for imports – imports of machinery, manufactured and raw material inputs and capital goods, as well as imports of consumer goods for which there was less or no demand at lower average levels of income. This propensity to import as incomes rise and economies grow varies across countries but is a striking feature of all experiences of growth and transformation.

There are different ways to address the need for foreign exchange that follows. Some countries rely on foreign aid and risk exposure to restricted "policy space", the volatility of aid flows, and the fashions of donor organisations. Some countries resort to courting foreign financial flows, and this too has its risks: short-term capital flows may exhibit sudden rushes into a currency or sudden outflows, for example, if interest rates internationally rise and signal better returns elsewhere; and an over-dependence on foreign financial flows may have powerful effects on the overall balance of economic activity and of interest groups. Relying too heavily on such flows makes an economy and its policymakers vulnerable. A fall in private capital flows or in concessionary finance therefore may constrain the ability both to import and also, therefore, to sustain growth and employment.

The only effective long-term way to manage the balance of payments constraint on growth is to do what is possible to promote a rapid rate of growth of export earnings. A notable example is South Korea in the late 1970s. As is well known, in the late 1970s many developing countries had accumulated large debts and when oil prices rose and US interest rates were hiked up, many countries slid into a prolonged debt crisis. The management of the debt crisis had lasting implications for growth and development and for the very independence of many of the countries involved. However, a few countries such as South Korea that had also accumulated massive external debt levels did not experience debt crisis. The only difference was that the South Korean government at the time pushed with ferocious commitment for a surge in export volumes and earnings.

Targeting exports has the additional benefit that it taps "autonomous" sources of demand, i.e. global demand distinct from the limitations of domestic demand. This in itself becomes a powerful mechanism for spurring further growth, among other things, by creating scope for economies of scale where, without such external demand, they might take longer to emerge.

The balance of payments is one of the fundamental sources of economic anxiety in South Africa. The trade deficit in 2014 was R94.3-billion, a gap that had widened from R71.4-billion in 2013. The World Bank argues that during 2014 the current account deficit was largely funded by volatile capital flows, as net foreign direct investment inflows remain very low. The Bank has also shown that "the first quarter of 2015 saw a fall in merchandise-exports receipts...The value of merchandise imports, on the other hand, increased as higher import volumes countered the subdued international oil prices" (World Bank, 2015: 26). The adverse and increasingly unsustainable trends in the growth of imports relative to exports since 2003 are shown in Figure A.1.

Projections that the trade deficit might be reduced modestly in 2015 have been based mainly on slow growth. As one comment put it recently: "Unfortunately, the extent of the improvement is likely to be relatively modest given the still high propensity to import, which means South Africa remains highly dependent on foreign capital inflows to stop the Rand weakening further" (Stanlib, 2015). South African Revenue Services (SARS) reported that in August 2015, however, South Africa's trade deficit (including BLNS – Botswana, Lesotho, Namibia and Swaziland – countries) had reached a record R9.95-billion – excluding BLNS the deficit was R19.07-billion.[1] We show below that South Africa has enormous untapped potential to generate foreign exchange earnings from agriculture and agro-industry.

2.2 The Unemployment crisis and its concentration in rural South Africa

Labour market data and unemployment statistics are notoriously unreliable. This makes it difficult to estimate accurately trends over time, partly because of radical shifts in official survey and sampling methods (Kerr and Wittenberg, 2015). Whether the more sensible broad definition or the narrow definition is used (Posel et al, 2014), the severity of the employment problem in South Africa in 2015 is widely acknowledged, especially the bleak prospects more poorly educated and younger labour market entrants now face.

Labour absorption, or the Employment to Population Ratio, is relatively low in South Africa (compared to all other Upper-Middle-Income economies) and has fallen rather rapidly in recent years, from 45.3 percent in 2006 to only 43.5 percent in the third quarter of 2015. Labour absorption is low for women compared to men (less than 28 percent), especially for women who have not completed a matric. More than 6.5-million South Africans, or one third of the labour force, are now either unemployed or discouraged from seeking work, and unemployment by this broad definition has recently risen quite rapidly – from less than 30 percent in 2009 (Statistics South Africa, 2015 and ILOSTAT Database).

Women have suffered disproportionately from the increase in broadly defined unemployment since 2009; about 36 percent of working age women are currently unemployed, with a high

[1] www.polity.org.za September 30, 2015.

proportion of all poorly educated and unemployed women concentrated in rural areas. Apart from their gender, the ethnic and other demographic characteristics of those South Africans who face the greatest difficulties in finding employment are evident in the available statistics:

- Between 2009 and 2010, the number of Africans in employment fell much more dramatically than the number of employees in other population groups, and African employment has not yet recovered (Finn, 2015: Figure 7)
- Young people between the ages of 18 and 30 years continue to face much greater difficulties in securing employment than older people (Ranchhod and Finn, 2015: Figure 1). A high and rising proportion of the unemployed have never worked (Festus et al, 2015: Figure 5);
- The majority of the unemployed have not completed secondary education and the proportion of the adult population with incomplete secondary education is very much higher in the rural areas of the former homelands than in any other area of South Africa (Noble and Wright, 2012)
- Since 2003, the percentage decline in the number of jobs available in the Agricultural Sector has been greater than in any other sector of the economy (Figure A.2), continuing the negative trend in agricultural employment that has been evident since 1974 (Figure A.3.) Households dependent on employment in the Agricultural Sector have suffered from a large decline (188 000 jobs) in the demand for their labour between 2003 and 2013.

To summarise, the agricultural sector and rural non-farm enterprises have not been making an adequate contribution to alleviating the employment crisis of the poorest and most vulnerable South Africans. Rural women who have not completed secondary school (and their children, many of whom will also fail to achieve a Matric qualification) are likely to depend on low-wage, manual and elementary employment within rural areas and on farms. In fact, a slow or negative rate of growth of such wage employment will have a major impact on their standard of living and survival prospects.

These twin challenges – the balance of payments constraint on growth and transformation and the (especially rural) employment/unemployment crisis – are fundamental to the economic prospects, the human welfare, and the political stability of South Africa. This report goes on to show how policies towards agriculture and agro-industry have contributed to the balance of payments and employment problems and how such policies may instead make a significant positive contribution to overcoming the challenges.

3. Structural transformation and the fuzzy boundaries between manufacturing and agricultural production

3.1 Agriculture and economic transformation

In classical models of economic growth, the process of growth begins and then accelerates because labour migrates from employment in low productivity sectors to employment in sectors and enterprises where labour productivity is higher, often much higher. As a result, both labour productivity in the low-productivity sector and average levels of labour productivity throughout the economy increase. "No country has been able to sustain a rapid transition out of poverty without raising productivity in its agricultural sector..." (Timmer and Akkus, 2008: 3). The critical point, too often ignored in discussion of these models,[2] is that the higher labour productivity sectors may well include agribusiness, i.e. that migration can be rural-rural and does not necessarily refer to urbanisation.[3]

If the migrants from employment in low productivity rural enterprises (such as small-scale maize or livestock production in the Transkei) cannot, even after extended periods of job search, find higher productivity jobs in mining or manufacturing, then the growth process stalls. As is well known, the South African mining sector is shedding jobs at an alarming rate and the growth elasticity of manufacturing employment, especially for unskilled workers, continues to be low (Strauss, 2013). There are, however, good opportunities to create higher productivity jobs for migrants out of low productivity self-employment in places like the Transkei; these jobs can more readily be created in large-scale agribusiness enterprises located in the rural Western (and Eastern) Cape than in manufacturing. There are similar opportunities for dynamic agricultural expansion and higher productivity employment opportunities elsewhere, including in Limpopo and Mpumalanga.[4]

3.2 Defining the boundaries of the manufacturing sector

One important theoretical and empirical account of how developing economies can achieve faster rates of growth and higher standards of living emphasises the role of the Manufacturing Sector. Learning by doing, innovation, economies of scale, and inter-sectoral linkages mean that overall productivity growth is endogenous to growth in dynamic manufacturing sectors. This means that expanding the manufacturing sector increases both manufacturing (and non-manufacturing) productivity. There is convincing empirical evidence that "Manufacturing remains critically important for growth in South Africa. In particular, as a source of demand for other sectors, which is important for pulling along growth in the rest of the economy"

[2] Although not by Arthur Lewis himself, who inspired these models, nor by Michal Kalecki.

[3] There is typically a migration of capital, manufacturing, and higher productivity *into* rural areas, neglected in much of the academic literature and either constrained or supported by government policies.

[4] These jobs, in turn, could be a source of demand for the goods produced by South African manufacturing.

(Tregenna, 2007: 92). It is also sometimes argued that the rate of growth of global demand for manufactured or processed exports will be faster than the rate of growth of demand for primary products, unprocessed products or agricultural products (because income elasticities of demand are so much higher for the former). The policy conclusion often derived from these arguments is that developing economies should concentrate their efforts on expanding both the output and exports of Manufactured or Processed goods.

The arguments in favour of policies to support manufacturing are valid. But both the arguments and the policy ideas flowing from them are often misleading. There are important problems with simplistic interpretations of a policy conclusion to privilege the Manufacturing Sector or beneficiation. First, when primary commodity prices rise, as they did between 2002 and 2008, low levels of investment in primary commodity production will lead to huge losses in foreign exchange earnings, the capacity to import and growth (World Bank, 2014: 18). Second, the boundaries between Manufactured and Agricultural/Primary products are fuzzy and increasingly hard to define with any degree of analytical rigour.[5] Modern food systems are to a large extent distinct from agriculture; the industrialisation of agricultural production means that consumer prices are significantly decoupled from the domestic or international prices of agricultural commodities.[6] Food is now essentially an industrial product, based only loosely on agricultural commodities. Most of it is produced on large-scale units owned by a few farming corporations ("landless farmers" as some interviewees for this report described themselves) and distributed by a similarly concentrated group of supermarket retailers.[7] Delivering these industrial products — processed and prepared foods — to consumers involves scale economies and an industrial mode of production, while it continues to depend on low-skill wage labour in pack houses, post-harvest fruit-management procedures and retailing. The share of total wage employment generated by food and beverage processing, as well as by the retailing of processed agricultural products and by the food service sector (restaurants etc.), is very much higher in the more developed than in developing countries.

It is, therefore, not clear how to define a processed agricultural commodity for policy purposes. Superficially, a carton of orange juice is much more processed, or much more like a manufactured good, than a fresh orange. But to export canned orange juice requires much less technological sophistication, R&D, sophisticated packaging, temperature and disease control and computerised logistics than to deliver a fresh orange (which has to be of much higher quality than an orange sent for juicing) to EU supermarket shelves — and the returns are very

[5] A similar argument about fuzzy boundaries has been made about the official demarcations of the Mining and Manufacturing sectors in South Africa (Fine and Rustomjee, 1996).

[6] The farm value share of consumer food expenditure in the US (and elsewhere) has declined rapidly over the last 50 years, now amounting to about 15 percent (Gollin and Probst, 2015:15)

[7] Indeed, the word "industrial" was originally used to denote the distinction between cultivated and naturally growing fruits (Melvyn Bragg, *The Adventure of English*).

much lower. This point was graphically illustrated when the Managing Director of Eurafruit claimed to be working in the Pharmaceutical Industry. Holding a single, chilled fresh blueberry, he described the complex industrial processes involved in acquiring the intellectual property rights to the planting material, producing and airfreighting top quality fresh berries to the EU, saying that the berry should not be thought of as an agricultural product, but rather as a pill destined for a vitamin supplement market created through expensive branding and advertising campaigns. A similarly paradoxical contrast could be drawn between a low-value and technologically unsophisticated "processed" product like avocado oil and a fresh export quality avocado, specifically bred, pre-cooled, chilled, packaged and processed to ripen exactly three days after shipment to the Waitrose and Tesco supermarkets. "Just in time" industrial organisation, famously developed in Japanese manufacturing, is now fundamental to the competitive success of international agriculture. International agreements such as the Global Gap voluntary standards, widely used in international trade and in contracts with the major retail groups, exacerbate these trends, imposing requirements for barcoding, traceability, and spraying.

There is a case for regarding multinationals such as Westfalia Fruit or HL Hall and Sons, two of the largest vertically integrated exporters of fresh avocados in South Africa, as Industrial rather than Agricultural enterprises. There is also a policy case for concentrating state support on products that have successfully been exported into the fastest-growing international markets, rather than on products bureaucratically defined as "processed" or "manufactured". From this perspective promotion of "fresh" fruit and vegetables (plump blueberries, ready-to-eat avocados, rainbow carrot packs) is as important as subsidising the production of sugar or cars. If there is a good argument for defining sugar as an industrial commodity to be placed under the umbrella of the dti rather than Department of Agriculture, Forestry and Fisheries (DAFF) – "because sugarcane farming is inseparable from sugarcane milling"[8] – then a similar argument could be applied to a large number of more labour intensive high-value industrialised crops.

A direct example of how the false distinction between agriculture and manufacturing leads to policies that frustrate South African competitiveness is that the MCEP excludes agriculture.[9] What this does is effectively to break the chain of integration in a modern agribusiness. Such a firm cannot add value efficiently without proper information flows, which require high-tech IT infrastructure investments. But because of MCEP rules, the investment incentives have not been available to agribusinesses, only a part of whose activities are deemed eligible.

[8] See Visser and Ferrer, 2015: 121

[9] MCEP is announced with the tagline "Need a little help raising your competitive bar?" http://www.investmentincentives.co.za/mcep

3.3 Relative labour intensity: Crop choice and the small and medium enterprise sector

The agricultural sector is more labour intensive than other sectors: in contrast to mining or manufacturing, it makes a much larger contribution to total employment in South Africa than to total output. Within the sector, different farming systems and different crop choices make a huge difference to rural employment generation – to the labour input requirement per cultivated hectare. Some of these differences are illustrated in Figure A.4. Although all production of deciduous fruit is relatively labour intensive, plums appear to require the input of almost 20 percent more permanent labour equivalents than apricots. But apricots themselves need far more (almost seven times more) labour per hectare than sugarcane cultivation, which requires only about 0.18 full time equivalent (FTE) labour inputs per hectare, and can make no contribution to export revenues without tariff protection from lower priced imports (BFAP, 2015: 67).

Of course, sugarcane is not the least labour intensive crop in South Africa: maize requires only about 0.004 FTE labour inputs per hectare, i.e. on average, deciduous fruit production will employ 300 times more permanent workers per hectare than maize (Visser and Ferrer, 2015: 131-3). Apart from maize, the other enterprises employing relatively tiny amounts of labour per hectare in South Africa include those producing: wheat; barley; soybeans; sunflower; canola; livestock sheep and beef); poultry; and dairy (Meyer et al, 2011). Some other crops appear to be particularly labour intensive, including: flowers; tomatoes; carrots; pumpkins; berries; avocado; and grapes. An expansion of the area cultivated with these latter types of crop could directly create several hundred thousand jobs, as well as some tens of thousands of additional jobs in enterprises supplying inputs to, and packaging/processing, the output from expanded cultivation.[10] These jobs in exporting agribusinesses may be regarded as more attractive than other rural jobs, because employees are more likely to benefit from union protection — over 60 percent of FAWU members are employed in export enterprises — and because exporting agribusinesses tend to offer higher wages (Visser and Ferrer, 2015: 161).

In the context of an unemployment crisis and a widening balance of trade gap, these comparisons of labour intensity could provide a clear pointer towards the agricultural subsectors and the types of enterprise that should (and should not) be the focus of state support. Perversely, when the activities and expenditure patterns of State Owned Enterprises, Government Departments, the Development Finance Institutions (DFIs), the ARC, the Council for Scientific and Industrial Research (CSIR), and Provincial Development Agencies are examined, there is little evidence that the most obvious pointers toward rural employment generation (or a record of success in generating foreign exchange) have been followed. Instead,

[10] Precise estimates of the direct employment consequences of acreage expansion, as well as estimates of the less impressive volume of additional employment arising from forward and backward linkages, have been tabulated (Meyer et al, 2011), but the basis for these estimates has not been published.

there are several examples of livestock and veterinary projects, of sugar and biofuel projects, as well as of pet projects that are difficult to justify on the basis of a track record of export revenue or employment generation — such the agro-processing Park for Halaal foods recently prioritised in the Western Cape.

If the overriding aim is to improve the employment prospects of new and vulnerable labour market entrants, it is also difficult to justify the almost obsessive concentration of government efforts on support for Small and Medium Enterprises (SMEs).[11] South Africa's Quarterly Employment Statistics survey contains employment information on a nationally representative sample of enterprises from 2005 to 2011. An analysis of panel data from this survey shows that larger firms are much *better* net creators of jobs than small firms. As in other economies, small firms have higher job creation and destruction rates than larger firms, reflecting the large number of small firms that fail and the churning at the bottom end of the size-distribution of enterprises (Kerr et al, 2014).

There is also evidence that SMEs are much less likely than large enterprises to make a significant and sustainable contribution to export revenues. A small number of very large firms (about 38 firms) account for the majority of South Africa's exports — the top one percent of firms earns about 78 percent of the cumulative total value of exports. The list of the bottom 80 percent of exporters contains smaller firms paying much lower wages; these smaller firms may be considered marginal exporters, accounting for a very small amount of exports. Like SMEs in the labour market, these small firms also experience a lot of churning into and out of the export market; they are much more likely than larger firms to *exit* from export markets (Matthee et al, 2015). There is no reason to suppose that a more disaggregated analysis of trends in the relative contribution of large and small agribusiness to the value of high-value agricultural export revenues would reach a different conclusion about the marginality of SMEs.[12]

To summarize, paying insufficient attention to the relative labour intensity of different crops and concentrating resources on small new entrants is risky. The outcome of such interventions may be disappointing in terms of employment and export revenue growth. Small and medium sized enterprises may be more likely to survive and to be able to generate some lasting employment opportunities, where they are effectively servicing strongly supported larger enterprises. “In fact, the most successful countries to grapple with poverty…have ‘scaled up’, not down; Big, not Small, is Beautiful” (Amsden, 2012: 115).

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[11] The South African National Planning Commission’s National Plan states that the job creation required to make a substantive dent in the unemployment rate will come mainly from SMEs (NPC, 2011: 93)

[12] One firm, Pioneer Foods, accounts for about two thirds of South Africa's dried fruit crop and a larger proportion of its exports. On the dominance of marketed agricultural output by a few large agribusinesses, see Statistics South Africa, 2007.

4. The dismal performance of agricultural exports and processed agricultural exports

4.1 The historical record

The value of world trade in agricultural commodities has been growing extremely rapidly over recent decades, especially the trade in high-value agricultural commodities such as horticultural products. Some countries have invested to take advantage of these remarkably high rates of growth of global demand and to increase their share of these rapidly expanding agricultural markets. For example, between 2003 and 2013 the annual average rate of growth of India's agricultural exports (at more than 21 percent) was the fastest in the world, exceeding the growth rates achieved by such well-established agricultural exporters as the US, EU, and Canada (Figure A.5). Unfortunately, South Africa was not able to match the high rates of growth in the value of agricultural exports achieved by the star performers listed in Figure A.5 or by many other Upper-Middle-Income economies (Figure A.6).

A selection of additional Figures (A.7 to A.15) focusing on some of the specific high-value commodities of most interest to this Report - fruit and vegetables, citrus, table grapes, raisins, avocados, mangos, apples, pears – all illustrate the same rather depressing trend: South African export growth rates have been very much slower than the export growth rates achieved in recent years by similar and competitor economies. As a consequence, South Africa's share of world agricultural trade has been small and stagnant since 1992, well below the share it achieved in the 1970s and 1980s, and several good opportunities to tackle the BOP crisis and the crisis of unemployment have been lost.

It has been argued that world trade in Processed Agricultural Products (that require more value added before final consumption) has been growing faster than global trade in Agricultural Products and that the high-income Organisation of Economic Co-operation and Development (OECD) economies have been investing to expand production of this type of export, continuing to be the suppliers of the vast majority of Processed Agricultural exports in the world (Liapis, 2011: 16)[13]. High-income economies, above all the members of the EU, are also by far the most important market for these products, accounting for almost 75 percent of global imports of Processed Agricultural Products. Again, South Africa does not appear to have taken full advantage of opportunities to shift towards exporting Processed Agricultural Products to the important EU market: Figure A.16 shows a fall in the share of Processed Exports in South Africa's total Agricultural Exports to the EU since 2006.

[13] It might be a useful exercise to move away from the conventional definition of "processed" agricultural exports used here and to identify a new category of agricultural exports. The new category would include only those exports that have achieved a fast rate of growth in terms of value, or value per unit. The conclusions about the dominance of OECD economies in pattern of growth in world trade would probably be reinforced.

4.2 Is the growth of exports to Africa evidence of success?

There does appear to have been a sudden surge in the value of South African agricultural exports to Sub-Saharan Africa in 2007 (A.17). Various explanations for this recent surge in exports to Africa have been suggested. For example, that it can be explained by the sudden inclusion of the Southern African Customs Union (SACU) in the statistics on exports to Sub-Saharan Africa; that the expansion into Sub-Saharan Africa of South African retail conglomerates has encouraged new exports (and re-exports) from South Africa to fill their supermarket shelves; that lower quality and fewer Non-Tariff Barriers (NTBs) to trade made it an easier option for the least efficient South African exporters to enter these markets, rather than to supply the larger EU, US, Chinese and other East Asian markets (World Bank, 2014: 29).

There has not been time to analyse disaggregated trade statistics to assess the validity of these different explanations, but it should be noted that two of the largest single items of processed agricultural commodity exports to Sub-Saharan Africa in 2013 were Refined Sugar and Tobacco and Tobacco Products. Sugar remains the only agricultural commodity subsidised by the South African state, while the area of tobacco harvested in South Africa has collapsed since 2004 (FAOSTAT), suggesting that re-exports or imported inputs have underpinned the fourfold growth in the value of Tobacco exports to Sub-Saharan Africa since 2008.

If trends in the export of high-value rather than processed agricultural commodities are examined (DAFF, 2014), then the Sub-Saharan African market can be seen to be very small, accounting in many cases for less than one percent of South Africa's exports – citrus (0.6 percent); apricots (0.2 percent); nectarines (0.9 percent); peaches (0.3 percent); plums/prunes (0.6 percent); avocados (0 percent); berries (0.4 percent); canned fruit (0.9 percent); frozen fruit (0.03 percent); bulk wine (0.26 percent); frozen vegetables (0.01 percent); canned fruit (2.5 percent). This record is partly because average incomes per capita are still not at levels where demand for high-value agricultural products kicks in. It is also because of the lack of appropriate infrastructure for trade in such goods. One agribusiness manager put it succinctly (but echoed the views of a number of other interviewees): high value means having cold storage chains; most African countries do not have proper cold storage capabilities. A strategy that focuses efforts on trade within the regional market and is based on the assumption that Africa is now taking "centre stage as the next growth frontier" may not be very effective in promoting rural employment or a rapid growth of high-value agribusiness exports.

4.3 Explanations for failure: The costs of underinvestment

It is not at all difficult to account for the lacklustre performance of most agri-business in South Africa. It is useful to make a detailed analysis of some the most important causes of slow growth as a guide to the areas where new forms of intervention and new thinking are most urgently required. The research carried out for this report suggests two major types of explanation: first, a striking level of underinvestment in agricultural production systems in

South Africa; second, to be discussed in the following chapter, a stifling and self-contradicting set of policies supposed to serve the broad objective of transformation.

Interviews with agri-business owners and managers confirm conclusions derived from the available statistics on the inadequate level of domestic investment in: irrigation; modern inputs; improving transport infrastructure; R&D; tertiary-level training of agriculturalists; phyto-sanitary monitoring; and negotiation of access to key markets. Some of these yawning investment gaps will now be examined, although a quick overview of the scale of the decline in investment is illustrated in Figure A.18, by the steepness of the fall in Gross Fixed Capital Formation (CFCF) since the 1980s.

There is no doubt that an increasingly unreliable electricity supply and an inadequate ICT infrastructure are part of the explanation for the relatively slow rate of growth of South Africa's agricultural exports. These infrastructural problems are so well known that they will not be discussed further in this report. The willingness of agribusiness to invest has been constrained not only by inadequate levels of public sector investment, but also by uncertainties over land tenure security. Some of the remedies that have been adopted and proposed to resolve land issues (and the issue of black ownership of agribusiness) will be discussed in the following chapter.

Irrigation and the use of modern inputs

The proportion of farmland under irrigation has a profound influence on the level of employment (labour use per hectare), as well on the intensity with which other inputs, such as agrochemicals and machinery, are used. Irrigation and water control therefore are regarded as the leading input in historical accounts of technical change, output and productivity growth in the most dynamic Asian economies. In those economies, much of the required investment in irrigation schemes – plus ancillary investments in transportation, storage and fertilizer production – was undertaken by the public sector (Bramall 2004: 134; Pincus 2006: 208).

In contrast, for the past two decades the South African state has not invested to increase the total area equipped for irrigation. Estimates of the cultivated area under irrigation in South Africa show a huge decline, from 1.67-million hectares in 1981 to about 1-million hectares in 2011 (Liebenberg et al, 2010, Figure 4.10). Measured by the percentage of the area of arable and permanent crop land that is irrigated, South Africa (eight percent) falls way below the achievements of economies such as Chile (139 percent), Mexico (23 percent) or the Asian average (39 percent).[14] Peru has recently begun to overtake South Africa as an avocado exporter (Figure A.12) and has eclipsed South Africa as a mango exporter and as an exporter of such high-value horticultural products as asparagus. South Africa's ability to compete with Peru is undermined by its failure rapidly to expand the area equipped for irrigation (see Figure A.19).

[14] http://www.icid.org/database.html

Several interviewees for this report were painfully aware of the huge Peruvian commitment to expanding hydro-dam construction and irrigation to support export-oriented agriculture.

There has also been insufficient investment to reduce the substantial loss of potential crop area and production arising from inefficient irrigation practices and maintenance backlogs (BFAP 2012: 15; DBSA 2012: 84–5). One example of inefficient water use is that only about 15 percent of the irrigated area in South Africa benefits from investment in drip and micro irrigation. In the Eastern Cape, for example, with more appropriate water management policies it would be possible to increase the acreage under citrus in Sundays River Valley by about 30 percent, with a huge impact on wage-earning opportunities (F. Olivier, personal communication, 2013).[15] Elsewhere, farmers near Hoedspruit have been forced to pay for most of the high costs of rehabilitating irrigation systems themselves. In competitor economies, the state has been increasing its expenditure not only to subsidise water control, but also many other farm inputs; South Africa's level of farm subsidies is far lower than the average for Upper-Middle-Income economies and miniscule compared to the OECD average. The United States Department of Agriculture argues that the recent surge in Indian agricultural exports (Figure A.5) was driven by state subsidies: Fertilizer subsidies increased from US$11.2-billion per annum in 2009/10 to US$14.6-billion in 2013/14, while total state spending on Agriculture in India over the same period rose from US$67.63-billion to US$84.7-billion (Mustard, 2014).

In this context, it is not surprising that the pattern of rural under-investment shown in the data on GFCF and the area irrigated is repeated in the data on fertilizer use and farm machinery, matching the steady decline in the total farmed area since 1960 (Liebenberg et al, 2010). In 1981, for example, South Africa applied a total of 872 000 metric tonnes of fertilizer, but by 2010 total fertilizer use had declined to 557 000 metric tonnes.[16] In the Upper-Middle-Income economies, fertilizer consumption per hectare of arable land increased substantially between 2002 and 2009 – from about 133 kilograms to over 160 kilograms. Over the same period, fertilizer consumption in South Africa was much lower and it declined – from about 57 kilograms to 49 kilograms per hectare. South African fertilizer consumption per hectare now amounts to less than 15 percent of the current level of fertilizer consumption per hectare in the East Asian developing economies (World Bank, 2013). At the same time, important backward linkages and employment in fertilizer production have been lost: In 1990, less than 20 percent of fertilizer needs were imported; by 2008, over 65 percent of South Africa's nutritional fertilizer needs were imported (DAFF, 2014: 20).[17]

[15] Macadamia producers near Nelspruit have been waiting for about seven years for a DAFF official to provide a signature validating a transfer of water rights.

[16] http://www.fssa.org.za.

[17] Increased investment in smart drip and micro irrigation could also encourage important backward linkages (and the elimination of imported inputs), if Sasol could be persuaded by the dti to supply medium-density polyethylene

Rail, port and airfreight facilities

For about 20 years before 2005, there was hardly any investment in rail infrastructure (CSIR, 2014: 43). Partly because of this backlog in rail investment, but also because of unreliable levels of customer service, rail traffic has declined and been captured by road. Rural rail branch lines have increasingly been abandoned, for example Westfalia Fruit no longer uses "the avocado train" for refrigerated transport to the port, although a shift from road to branch line freight could create huge potential cost savings, whether measured in terms of financial or social costs (Simpson and Havenga, 2010).[18] While the National roads are in good condition, the condition of Provincial rural roads appears to have deteriorated between 2009 and 2013 in the Eastern, Western and Northern Cape, as well as in the Free State and Limpopo (CSIR, 2014: 51). Some large-scale agribusinesses are allocating their own resources to the maintenance of rural roads, because they cannot rely on local state agencies to perform the maintenance required.

Agribusiness managers complained about breaks in the cold chain at ports and the high risks they face when their containers are delayed. They pay to avoid these risks by permanently stationing their own employees within the ports and by incurring higher trucking costs to avoid the more severe risk of delays at Durban. It has been argued that there is too high a prevalence of unsuccessful cold treatment shipments and fruit wastage. Breaks in the cold chain for exports arise following delays at the port gate, and because containers are not plugged in while waiting at the port before loading onto the vessel (Haasbroek, 2013; interviews). The secondary literature refers to high levels of waterside and port congestion, the low productivity of ports for the number of containers lifted per hour compared to international norms, the old and poorly maintained equipment used in most of the container terminals, and high port charges.[19] One estimate is that South African ports have productivity levels for containers and higher value cargo that are about 50 to 70 percent of the levels achieved by comparable ports elsewhere (Thompson, 2009: 10). A benchmark study by Maersk, using a vessel that called at three South African ports and 12 foreign ports, revealed average foreign port costs that were less than half South African port charges (Gumede and Chasomeris, 2013: 11). More generally, the evidence suggests that logistics costs as a percentage of transportable gross domestic product (GDP) have grown significantly over the past four years, adversely affecting the global competiveness of all South African industries (CSIR, 2014: 13). This is an especially important

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to those manufacturing irrigation equipment for the South African and regional market. Similarly, all the tin plate for South Africa's largest exporter of canned fruit is imported, although domestic production is feasible.

[18] One industry representative said that the shift from road to rail freighting of citrus entailed a change in costs per ton from R5 000 to R30 000.

[19] In addition, rail freight tariffs discriminate against agricultural exports and smaller exporters (World Bank, 2014: 34)

constraint on agricultural-based exports in the light of the just-in-time efficiencies required of modern fruit and vegetable trade.

Unlike other economies, South Africa has not used its national air carrier effectively to subsidise and promote the airfreight costs of high value agricultural exports. Some specialised fruit and vegetable exporters based in the Western Cape have had to switch from airfreight to trucking and shipping since South African Airways (SAA) stopped direct Cape Town to London flights. A company shipping chilled fresh cut fruit and guacamole from Johannesburg to Marks and Spencer in the UK prefers to use Virgin rather than SAA, and complains that there is insufficient daily airfreight capacity out of Cape Town. The difference with the Ethiopian government's use of the state owned (and highly profitable) Ethiopian Airlines to invest in facilities to support horticulture and floriculture exports is striking (Oqubay, 2015; interview with Ethiopian Airlines CEO, 2015).

Research for agricultural development

The developing country share of global spending on all scientific R&D grew from five percent to 15 percent between 1980 and 2006, with China, India and Brazil accounting for by far the largest (and growing) share of that (up to 83 percent of total developing country spending by 2006). Given the spillovers between food and agriculture specific R&D and broader science spending, this is of some significance. Meanwhile, between 1981 and 2000 global public spending on agricultural R&D grew by 35 percent in real terms, with the fastest growth in developing countries, which now account for roughly half of global public agricultural R&D spending. But that developing country spending has been highly uneven, with the Asia and Pacific region growing faster and catching up with Latin American levels. China has the largest public agricultural R&D staff in the world, with the greatest number of staff per million dollars of agricultural GDP. South Africa's compound growth of public spending on agricultural R&D in 2001-2008 compared to 1991-2000 was basically stagnant, while growth rates of expenditure on agricultural research in the Asia and Pacific region surged ahead (Alston and Pardey, 2014: 140).

The technical changes that agricultural R&D brings about are critical for the pursuit and maintenance of international competitiveness (Liebenberg et al, 2010). But the payoff for agricultural R&D, although large, is well-known to be quite slow (Alston, 2010); these lags between research spending and returns in higher productivity, better quality, and more competitive products mean policymakers concerned with a sector critical to the country's macroeconomic security need a long-term approach. But from 1993 to 2006 real agricultural R&D spending in South Africa declined by 0.83 percent a year, by contrast with an overall gross expenditure on research and development (GERD) increase of 7.2 percent per year over the same period. By 2007, direct public investment in agricultural R&D was 70 percent of the corresponding level in 1971. The number of full time equivalent scientists working for the ARC

peaked in 1996 at 761 and then fell drastically to 443 researchers by 2004.[20] Currently the ARC only funds about 170 researchers with PhDs – compared to Embrapa, the ARC's Brazilian equivalent, which employs more than 1 500 researchers with PhDs (Correa and Schmidt, 2014: 7).

In interviews, leading agribusiness figures in South Africa consistently brought this up as a serious constraint on their ability to compete in international markets. Some were more aware than others of the comparative experience in Brazil, China and elsewhere but they all spoke of a disturbing decline in the capabilities of the ARC and of the costs this imposed on agricultural exports. Agricultural research – because of the lags to returns – is rather like long-term development finance, which tends to be provided by development finance institutions. The published research literature suggests that there were political tussles that led the ARC to fall from grace. But another view we heard repeatedly was that no recent Ministers have supported agricultural R&D precisely because it is a long-term activity that conflicts with electoral cycles: it is not an activity that lends itself easily to "cutting ribbons" and opportunities for press photography when tractors are distributed or Agri Parks are opened.

In South Africa private businesses and their associations are having to invest themselves in the research (and extension) work for which they used to, or that competing businesses in other countries still do, rely on state institutions such as the ARC. Markets evolve quite fast and in high-value agricultural markets there is a great deal of product differentiation: competitors develop new cultivated species and improved crop varieties constantly. Businesses have to try to compete now and at the same time to cast forward to likely market trends in 20 years; this requires heavy investments in R&D. A few interviewees acknowledged that some useful work still is done in the ARC but were adamant that there was simply very little research capability there anymore. One person with considerable parastatal and private business experience said that the ARC had effectively collapsed, that its contribution to R&D on fruit in particular was now zero.

There is one story that the ARC effectively gave up South African proprietary rights to seedless lemons that had been developed in the country. Similarly, it has been argued that South Africa's natural advantage in *fynbos* flower exporting has been eroded by the export growth achieved by Australia, Israel, New Zealand and the US. Those competitors took advantage of the fact that the Agricultural Research Council had to sell off cultivars from its commercial nursery because it was not allocated sufficient resources to protect and develop them (Kaiser Associates, 2000). The manager of a major agribusiness said that in the past his firm used to provide sophisticated irrigation equipment to the ARC for it to test, partly to encourage a shared research approach, but that in the past five years the ARC has simply gone quiet on them. Another interviewee claimed that ARC staff were unable to find their own research sites

[20] Liebenberg et al, (2010).

in Limpopo Province. Related complaints mentioned the CSIR for having been a useful partner in the past (in research, for example, on aromatic synthetic chemicals for pharmaceutical, catering and cosmetic industries) but having deteriorated in recent years. It is not only at the level of doctoral researchers that staffing is inadequate. Several agribusiness managers complained about the deteriorating quality of the more junior personnel they were able to recruit with BSc and Diploma-level qualifications in agriculture, especially in soil science agronomy and horticulture. Further evidence of deterioration is available in the World Bank's publication of country rankings according to a Knowledge Economy Index: between 2000 and 2012 South Africa's ranking declined more dramatically than almost any other country (by 15 places) to reach 67th in the world.[21]

If state institutions in South Africa are unable to provide the research, tertiary education and training support required by internationally competitive agribusiness, these businesses will clearly be at a disadvantage compared to agribusiness in other economies that do receive strong state support. Efforts to substitute for inadequate state support by establishing levy-funded associations – such as the Citrus Growers Association, the Subtropical Growers Association or Hortgro – have achieved some success in promoting applied research and training. The largest agribusinesses also use their own funds to collect industry statistics in an effort to compensate for the failure of Statistics South Africa to provide reliable time series data on farm ownership, the area cultivated, yields and detailed input use patterns (including the use of seasonal wage labour inputs) for several high-value crops. The absence of adequate state support for the collection and processing of up-to-date statistical data on all types of farm production makes it difficult for both the private sector and state institutions to plan interventions to promote exports and employment. One example is that there has still not been a survey in South Africa of the number of farms or the number of hectares cultivated with flowers, berries, macadamia or pecans, despite these all being growing high-value markets globally with huge potential in South Africa (and with substantial employment creation benefits).

Phyto-sanitary monitoring

Related to R&D capacity, successful agro-exporting also requires a growing capacity to certify, monitor and do research on phyto-sanitary issues. One explanation for poor export performance in recent years, at a general level, is that many countries have replaced some of the older forms of barriers to imports from developing countries (such as tariffs) with a new generation of technical NTBs, including sanitary and phyto-sanitary conditions. The view that this is a major reason why agricultural exports from South Africa have under-performed is still quite widespread. An example of the form it takes is a comment from the former Finance

[21] http://go.worldbank.org/JGAO5XE940

Minister, Trevor Manuel, that "non-tariff barriers, such as arbitrarily imposed phyto-sanitary rules, further limit goods" exported to OECD countries (Mutume, 2006).

Certainly, there has been a proliferation of NTBs in international trade in recent years and especially in the wake of formal trade liberalisation (the reduction in tariffs and quotas) (UNCTAD, 2013). And there are very real instances of phyto-sanitary regulations constraining South African agricultural exports to some important markets. However, our interviews suggest that phyto-sanitary regulations and related NTBs provide only a partial and generally a false explanation for South African export performance. It is an explanation that conveniently diverts attention from the inadequacies of South African government policy. For example, there is a real danger that rogue exporters of defective macadamia nuts are causing reputational damage to one of South Africa's most successful high-value exports, but it has taken as long as two years to draw up a code as the basis for macadamia certification by the Perishable Products Exports Control Board (PPECB); and the largest processors are not confidant that the PPECB has adequate capacity to certify efficiently. It is also an extremely slow process to import genetic blueberry stock as part of on-going efforts to develop a globally competitive blueberry industry in South Africa. While it is sensible to impose quarantine restrictions, it is argued by some that the process in South Africa is unnecessarily long, meaning that altogether it takes researchers up to four years to get such plant stock into a trial plot, whereas it would be perfectly possible, and safe, to achieve this in a year. Worse, cumbersome and over-long quarantine regulations raise the risk that some businesses will try to smuggle genetic material into the country. Another firm, specialising in horticultural exports, made exactly the same point about the institutional slowness ("parastatal cock-up" was the phrase used) limiting what a firm can bring into South Africa to develop South African agro-export production and employment. A new variety of blueberry plant stock sourced from a US genetics company must – entirely reasonably – be held in quarantine before it can enter South African trials and production; but the same plant stock could be flown from the US to Spain "in a cool bag" as one interviewee put it, and be used to increase exports immediately.[22]

If institutional blockages are in some cases stifling the efficient import of key genetic inputs to export-oriented South African agriculture, in other cases lax regulation of inputs can prove ruinous to agro-exports. Interviewees fretted about the poor oversight of agricultural and some chemical inputs. The most notorious case is the devastating impact on South African canned pineapple exports of the sale of imported fertilizer from China with an excessive concentration of the heavy metal toxin Cadmium in the mid-2000s. This case ended up in a legal tussle; it had enormous costs in terms of financial losses for pineapple farmers, lost foreign exchange from cancelled export orders, shredded credibility of the South African product in international markets, and 500 people laid off at the pineapple processing plant in the Eastern Cape. Overall,

[22] There is no nefarious reason for this other than that Spain already has the bugs that South Africa still needs to check for and protect against.

the episode put at risk an estimated 2 700 jobs and threatened the welfare of 35 000 people who depended to some degree on the industry. The episode revealed that there was no legal limit in South Africa to the amount of heavy metal toxins in agricultural products (Hill and Fraser, 2010).

Others pointed out that a phyto-sanitary gate has been locked tight blocking access to the Chinese market for apples for eight years, chiefly because of a failure to reach agreement about acceptable fungicides, residues and so on, and that the South African government (DAFF) simply did not sign the required Apple Export Protocol before 2014, for no good reason. Not only that, but the Chinese Minister of Agriculture visited South Africa, in a trip that might have helped unlock the gate, but there was no appropriately senior South African official to attend the meetings. “Despite strong demand for fruit in China, the Chinese authorities are still waiting for the South African government to provide information on pesticides that are being used in local apple orchards... Similarly, South Africa’s fruit exporters have been denied access to Thailand since 2008 because the South African government has failed to update the phyto-sanitary rules applicable to the sector, thus hindering the certification process” (Viviers et al, 2014). There are still no exports of South African pears to China.

Citrus black spot (CBS) has been a sticking point for years, threatening access to the EU and preventing access for some South African citrus exports to the US. Although the different agro-climatic conditions mean there is no citrus blackspot in the Western Cape, nothing effective has been done to enable a rapid expansion of Western Cape exports to the US market: the huge citrus market in the US absorbs only about six percent of South Africa's exports (DAFF, 2014: 1-07). The EU has been auditing South Africa’s CBS control procedures since 1998. These audits have revealed a number of genuine shortcomings and the EU complained that the South African authorities have provided insufficient feedback/follow-up on audit recommendations (Van de Geer, 2013). The most recent audit to evaluate the quality of South Africa’s system of official plant health controls and the certification of citrus fruit for export to the European Union raises questions about the level of resources that have been allocated in South Africa to carry out the checks required by the EU (Directorate-General for Health and Food Safety, EU, 2015).

Part of the problem lies in underinvestment in technical capacity – for example, in the veterinary and scientific expertise required to manage disease monitoring and control, to maintain public sector pesticide residue testing laboratories, to reverse the haemorrhaging of toxicologists from the DAFF, and to upgrade systems sufficiently to enable, for example, the South African beef industry to export to the EU again after three years on a blacklist because of an outbreak of foot and mouth disease. But the problem is also one of inflexible regulatory systems. Some argue that the working methods of the PPECB are ill suited to high-value agricultural exports that may be sold in relatively small batches, to a range of markets, and in mixed consignments. Such exporters believe also that the required service provided is not only

inefficient (slow to produce results that are not always good enough and are in the wrong format) but also extremely expensive. The problems of inefficiency/inflexibility and technical capacity are linked so that, in the absence of sufficient highly qualified technicians, the default setting is a bio-security "no".

Market access

Phyto-sanitary regulation policy is one important facet of the larger issue of market access. Market access is identified as a major problem again and again in interviews with industry officials and agribusiness managers. And the key is not simply one of technical capacities in toxicology and so on; it is really a policy and diplomatic issue. Or rather, the two are combined. Thus, it is misleading to moan about forbidding Chinese market access barriers when there has been insufficient attention paid to the management of false coddling moth, citrus black spot and pesticide residue issues by South African diplomats. Likewise, South Africa has not succeeded in exporting any plums to China for 10 years. This is not a function of a market door shut in the face of exporters: Chile has successfully been exporting huge quantities of plums to China during the same period. Similarly, Peru has succeeded in negotiating access for its avocados into the US and Japanese markets while South Africa has so far failed. When the difficulty noted above in efficiently controlling the import of plant material and agricultural inputs arises, this itself can become a diplomatic trade negotiation matter. There has been what some interviewees referred to as a "bio-security default setting", which is for officials to say no and to slow down the process of importing plant materials or imported inputs from trading partners. When negotiations are underway to secure or improve market access for South African exports into that partner country, the quid pro quo, or give and take, at the heart of trade negotiations can, as a result of this bio-security default setting, be interrupted and blocked.

Prising open access to markets in East Asia (China, Japan, South Korea, Thailand), where income per capita is rising or already at levels where demand for year round high-value fruit and vegetables is strong, is not easy. But it is possible. Chile invested eight years of trade negotiation effort and succeeded in getting access for agricultural exports to the region; but South African access remains very limited, even for a major exporter like Afrifresh that maintains its own office in Shanghai rather than seeking support from the Embassy. Chile, one interviewee with relevant experience said, "has an armada of people" who go to governments to press claims for market access. Some exporters acknowledge that the dti has tried to negotiate market access but that it "could do so much better", for example in negotiating the length of the period of cold quarantine required for South African fruit. Peru's success in entering US avocado markets and the web-savvy role of the Peruvian Avocado Commission in marketing could also provide lessons for South Africa's far less effective trade negotiators and facilitators.

It is not clear that South African trade negotiators are briefed to prioritise agricultural exports, or to focus efforts on access for precisely those exports that generate the most employment. One official interviewed claimed that South African negotiators "trade away" agriculture to secure access to overseas markets for the auto-industry. Evidently, there is a commitment among South African trade negotiators to secure market access for some agricultural products. But there is absolutely no evidence that there is a sharp and reasoned set of criteria for which products ought to be prioritised, as was evident when a senior trade negotiator neglected labour intensive commodities and emphasised the importance of gaining access for beef and ostrich meat to the US market. As one agribusiness leader put it, with little capacity the government makes negotiating trade-offs purely on an ad hoc basis, without any long-run idea. And in the absence of such a set of criteria the danger is that talks prioritise whatever industry or producer association has most successfully lobbied government to prioritise, ignoring the industry's relative contribution to employment and export revenue. The outcome can be the lack of access of South African pears to the Chinese market, or the difficulties of canned peach exporting to the US, where South African exporters are paying extremely high duties, or the rise in Peru's exports of avocados to Japan while South African avocados have been excluded.

5. Transformation and empowerment: Current constraints and possible opportunities

One of the most difficult issues to arise in the interviews conducted for this report, and the issue that came up most frequently across all interviews in the Agribusiness sector, was the way in which the government's approach to land reform and restitution was constraining the potential for generating wage employment and foreign exchange. Agribusiness leaders acknowledged the need for transformation to overcome the inequities of South Africa's history of apartheid. However, the way that policies have been designed and implemented has arguably undermined the overall objectives at the heart of a transformation agenda. Agribusiness faces unusually high costs and uncertainties associated with securing access to the land (and water) required to maintain or expand production and employment. In addition, many businesses are constrained in their ability to invest to expand production, exports and employment by their inability to secure financing support from the dti or the IDC or the Land Bank, i.e. subsidized support from Development Finance Institutions, that most of their competitors in other Middle Income countries would more routinely benefit from.[23]

Again and again interviewees raised the delays and difficulties they have experienced in dealing with the DTI and IDC, as well as other state agencies like the Development Bank of Southern

[23] Many other countries subsidise their agricultural exports through Public Sector Export Credit Agencies, but South African agribusiness does not have easy access to this support when entering new and/or risky markets. Agribusiness executives also believe that they are constrained in their ability to expand exports by the inadequacy of the dti's support in negotiating access to key markets, as discussed above

Africa, the Land Bank and the National Treasury's Jobs Fund. A quick glance at the list of people interviewed confirms that their views on the role of post-Apartheid state institutions should not simply be dismissed as prejudiced or reactionary. Besides, their views are confirmed in the state's own analysis of Agro-processing incentives: "Businesses view the costs of applying as sometimes higher than the benefits provided... application and approval processes are excessively bureaucratic and complex" (Jordaan, 2012: 11-12).

More than one manager of a major South African agribusiness, including an executive responsible for more than one third of all South African apple and pear exports, reported that they had never had the opportunity to meet anyone from the dti or to go on a trade mission. One manager of such a business, a business that exports and that also has a very well-known brand within South Africa, not only said that he had never seen anyone from the dti and had no real idea what types of support the dti might offer, but also stressed that the single most important policy change in government would be the promotion of a "positive interaction" with businesses. Another (one among several, in fact) pointed to the failure of coordination between government departments dealing with agriculture, rural development, infrastructure, trade and processing. The MCEP, for example, has effectively ground to a halt – because of the build-up of a large backlog of applications and the accumulation of court cases brought by frustrated firms.

- Firms typically have to hire consultants to negotiate the application process for the dti and other incentive programmes, while they know that the chances of securing incentives are very slim. A firm which built an effluent treatment plan in 2014 applied for MCEP funding. This required Level 4 BEE status or a plan for reaching Level 4. But the application snagged on the backlog. Additionally, the regulations had changed from when the firm had previously applied for support for expansion. Now the firm was told its BEE plans were no longer satisfactory. The firm has black investors and a viable plan, according to the consultants they have hired, but the application keeps getting turned away, the BEE codes are believed to be getting more complex, and things have got significantly worse, the managers argued, since 2012. Another firm manager said the same thing, that there had been a sharp deterioration in the quality of the IDC (and the Public Investment Corporation) in the past three years, that the feedback on business' proposals was utterly stifling, that these are agencies simply packed with box-tickers with inadequate strategic direction. The CEO of one of South Africa's largest and most successful high-value fruit processers described his attempts to negotiate with IDC and DBSA staff as "a nightmare", made worse by their "unhelpful personal agendas". Another case concerns the investment plans of a major multinational agribusiness: after about five years of attempting to negotiate with the IDC and other state institutions for support to establish a hazelnut project on thousands of hectares to supply Ferrero Rocher, the giant Italian multinational, the company now appears to have given up. If agribusiness faced a requirement simply to expand the number of jobs and the hours of training they created for women with low educational qualifications, they could easily understand the underlying social rationale and would

support such demands genuinely to "empower" black women. They find it much more difficult to support demands for window dressing and the need to engage with the mushrooming industry of BEE measurement practitioners.

- In addition to the complex, changing rules and apparent capacity constraints complicating access to incentive programmes such as MCEP, there is a problem of consistency in government agencies. One interviewee claimed there had been 11 Director-Generals in five years in Agriculture. Many bemoaned the high turnover of staff at the dti; if you submitted a plan to the dti and got an initial expression of interest, after some time you would be invited to revise the plan but would have to start all over again as the staff would be different, with no knowledge of the original plan, and sometimes the rules would have changed in the meantime too.
- One firm was involved in seeking state support of R10-million to invest in a new laboratory in Stellenbosch to test the authenticity and content of fruit juices, but the dti turned the application down. The manager of the firm said that the South African Fruit Juice Association would have contributed, Stellenbosch University would have contributed, and international organisations required such testing facilities, but the government balked at supporting the initiative. The same firm had earlier applied for MCEP funding when doubling production capacity and creating 60 new jobs but was turned down because this juicing firm was "not rural", somewhat odd for an integrated agribusiness supplied by a substantial number of farms. The process took more than 12 months. A consultant had to be hired to follow the application process. The rules changed half way through the process. And this firm had had a similar experience of long delays and ultimate rejection when dealing with the IDC.
- A high-value nut-processing firm had a similar experience, having had initial approval of government loans and then having had, after protracted delays and new staff in government offices, to produce entirely new and extraordinarily detailed cash flow projections. The new plan had also been approved but not signed yet, pending further delays. Another nut-processing firm expressed a strong preference for avoiding the strings attached to support from DFIs and had recently used Barclays to finance a major capacity expansion.
- An essential oils producer working with a number of outgrower groups (including small, black farmers) had faced similar difficulties in trying to get state support to expand by building a fourth factory. The lower interest rates on loans offered in principle through the dti would, the owner said, help enormously. The dti, though, was slow; it required extraordinarily high levels of detail in audited accounts. After a 14-month delay the firm had to start again, revaluing its assets and starting the whole process from scratch, with completely new staff at the dti. Other firm managers confirmed these experiences and

some said they had decided that it was simply not worth trying to apply to the dti for incentive schemes any more.

- Another firm bemoaned the lack of constructive engagement with the dti and IDC and pointed to irrational fancies: this CEO joked that "the dti would put up a fish factory in Bloemfontein". This joke points to the importance of another theme that came up repeatedly: that the dti, IDC and other government agencies have a misguided faith in investing large sums in Industrial Development Zones (IDZs) and processing facilities based on no sensible analysis of localities, real supply sources, agro-climatic conditions, or market demand. Examples that several interviewees cited were the failing tomato paste factory at Coega, the inadequate supply of nuts to the failed pistachio-processing plant at Prieska, the feedstock supply problems and long delays faced by the ill-conceived bioethanol project at Craddock (Nasterlack et al, 2014).
- A further complication in relations between agribusinesses and state agencies is in the follow through after concessional financing deals have been approved. One manager (far from alone in the point he made) claimed that the IDC staff involved in setting up an initial financing deal had been as good as any but that, once the funds were raised, monitoring and restructuring of the loan had been incredibly difficult. A bad year (because of unusual hail) meant the firm had had to go to the IDC to negotiate new repayment terms but the IDC staff were rigid and "incompetent". The refrain – that government staff administering incentive programmes have no understanding of the vagaries and risks associated with agricultural production – was a common one.

Even more fraught is the land issue. Our interviews produced a concern with several features of land access and land policy in South Africa. The most important is simply uncertainty. As with many other policy issues (whether a central bank will go to any lengths to keep a currency within an exchange rate mechanism binding it to the value of another currency, etc.), the most damaging feature of land policy in South Africa arguably is the deep uncertainty over what will happen in the future. This is something that agribusiness managers, government officials, and agricultural economists in South Africa all underlined. Long ago Keynes emphasised the importance of uncertainty as a restraint on investment and argued that in the presence of fundamental uncertainty no fully rational actor would commit to investment: therefore, some heuristic nudge such as "animal spirits" is necessary to make investors commit.[24]

In the presence of on-going high levels of uncertainty surrounding South African government policy towards land reform and restitution, many agribusinesses veer away from investing, especially in longer-term projects involving high-value tree crops or in sophisticated irrigation

[24] Tuckett (2011) adapts Keynes's insight, framing it in terms of the psychoanalytic idea of "phantasies" (the stories we tell ourselves about our relationships to people and objects), in his research on the decisions of investment bankers.

systems, even where they can see clear local opportunities.[25] Many potential investors are sufficiently swayed by their ideas about the politics of the possible or about the government's perceptions of agribusiness that they deem it impossible to find a way to expand. Some of the largest Agribusiness exporters are investing in production and processing facilities in Mozambique or in other developing economies. An example offered by some interviewees is bananas. The government acquired land under the willing seller-willing buyer land reform scheme, the sellers went to Mozambique and invested there, where they can produce bananas more cheaply and then have begun exporting to South Africa. There is, it is argued by some, a real threat to South Africa's banana production. And the most promising high value sub-tropical fruits are following suit: One estimate is that over 3 000 hectares of avocados and macadamias have recently been established in Mozambique.

Macadamia nut exports are an exception to the dismal rule illustrated in Figures A7 to A.15. Since 1996, South Africa has surged ahead of most of its major competitors in supplying the global market (Figure A.20), recently achieving particularly fast rates of growth in the Asian, East Asian, and US markets. Macadamia prices also increased dramatically between 2009 and 2015, resulting in very substantial profits for the farmers supplying Golden Macadamia (now claiming to be the biggest Macadamia Company in the world). But these farmers, anxious about land claims in Mpumalanga and the stream of announcements concerning new and revised legislation on land ownership, are investing all their profits by planting additional trees in Mozambique.

Following a rapid fall in the volume of fresh mango exports since 2002, exports of dried mangos "came to the rescue" of farmers (Figure A. 21). However, the dominant dried mango exporter in South Africa is now planning (with the support of the IFC) to source and process most dried Mango production in Burkina Faso. A major producer of essential oils increasingly sources its feedstock from Malawi, Zambia, Uganda and Rwanda because acquiring access to irrigated land there is much easier than in South Africa.

So it must be noted that there have been many attempts to square what often looks like a circle. Most of these involve a separation of ownership and management. Thus, in one model, the government buys farmland through the willing buyer-willing seller scheme and then gives the land to a "trust" or "community". After sorting out corporate governance and appointing a management team this land is then leased back to an agribusiness. At the very least, the key is that the people who run the land have to be directly involved in farming activities. The preferred approach by one fruit exporter in its projects with the IDC is to have a workers' trust backed by the IDC with loans and grants, for the firm to hold a share in the trust and then to withdraw by selling its share once the farmland is profitable. There are other examples of

[25] For example, it takes eight years after planting for avocado trees, to achieve full fruit production and the establishment cost for one hectare of macadamia amount to about US$20 000.

agribusinesses settling land restitution claims and then setting up productive joint ventures with community trusts. Important examples include: the largest operating farm restitution project – covering thousands of hectares in avocado, litchi and nut production – involving HL Hall in a lease back of land from the Mdluli clan and local community, collectively the Matsafeni Trust, or TSB's role in sugar growing in Mpumalanga (James and Woodhouse, 2015). The benefits of such arrangements are clearest, and the impact on empowerment strongest, when they generate or sustain substantial employment benefits. The Afrifresh Group, for example, has created more than 600 jobs on a 500 ha greenfield investment on the Orange River, at the Berekisanang Empowerment Farm. (Even in this case, despite a strong BEE pedigree and the creation of hundreds of jobs, set to rise to more than 1 000, from nothing, and despite a partnership with a local community trust and with the IDC, the firm was rebuffed when it applied for support through the Jobs Fund.)

However, most such schemes, and other land transfer arrangements, have failed – employment and export revenue has been lost. As one person put it, managing community schemes is "very emotional" and this firm would prefer not to do it again. In one workers' trust scheme this manager mentioned, there were no board level skills and anyway the government had been defrauded in the original purchase of the land, since it was really a distressed farm. Two years after working with this group, the firm had pulled out. In another scheme in which the same firm had been involved as a joint venture partner, the land reform beneficiaries near Nelspruit had assumed there would be easy cash and had not appreciated that the need was to spend IDC credit on tractors and farm inputs rather than on expensive land rovers. The scheme's profits had been minimal until the firm had taken over the management. Another form of community land owning scheme after land reform is royal family run land. The same firm had been involved in one of these schemes and had financed it rather than managing the land. However, factional infighting between members of the royal clan had led to the collapse of the whole scheme. When the firm announced that it would pull out, the trust asked instead that the firm lease the land from them "to protect jobs" locally.

Where land reform (mainly restitution and to a lesser extent redistribution) has been regarded as successful (mainly only in terms of meeting government targets for share of land redistributed), as in some areas in Mpumalanga, it has also involved community trusts leasing land to commercial agri-businesses and/or joint ventures. But even here, the evidence suggests (James and Woodhouse, 2015) that "flows of benefits to restitution claimants and land redistribution beneficiaries have been limited, and/or have been captured by a narrow segment of the people involved". This is the case even on the minority of farms where productivity has remained high. The poor governance of these schemes, including lack of transparency and on-going conflicting claims, have meant that the "wider membership of claimant communities" have received precious little benefit. This is the case in a study of relatively capital-intensive sugar production that barely mentions employment. It would seem, therefore, that the prospects for spreading empowerment and transformation to really impoverished people,

those depending on access to wage employment, in such areas have not been considered at all.

For many successful agribusinesses, the sad fact is that engaging in schemes to support emerging farmers becomes a form of window-dressing. The key to the sustainable success of such integrated business is to secure a reliable supply of high quality inputs – high quality citrus or avocados, apples, blueberries picked at the right time, etc. Although most of these businesses can source only a very small minority of their inputs from smaller black growers or community trust land, they still have to invest an inordinate amount of time and effort into setting up such partnerships to enhance their social responsibility credentials. For example, Westfalia Fruit negotiated for about eight years with the Makgoba tribe, the Makgoba Community Trust, the Department of Land Affairs, the Greater Tzaneen Development Agency and other institutions in an attempt to expand employment and production (through avocados and forestry) on over a thousand hectares of a now derelict Tea Estate. These protracted negotiations failed. Many other examples could be cited of lengthy negotiations and violent conflicts over land rights leading to the disappearance of investors, the collapse of output or the loss of tens of thousands of potential waged jobs (Sender, 2014: 18).

What is perhaps relatively poorly appreciated in policy debates is how ownership of land – whatever its role in political discourse – is not the main issue from the point of view of agro-industrial production, profit, and employment. Many "landless farmers" in agribusiness control the productive process mainly through their exclusive rights to genetic plant stock and their ability to integrate the full array of input sourcing and management, technology to manage the standards and traceability requirements of international marketing, as well as the packaging and logistics critical to trading. We argue that policies to address sustainable empowerment, especially labour market opportunities for poorly educated women and girls, should begin from this fact.

6. Policy recommendations

The urgency of the recommendations that follow stems from the significance of the foreign exchange constraint on growth and the challenge of generating higher rates of employment, especially among the poorest South Africans (see Section 2). These two challenges, the foreign exchange challenge and the employment challenge, are fundamental to the prospects for growth, to overall stability, and to the overarching objective of transformation.

Reallocating resources to promote a rapid rate of growth of high-value agriculture-derived exports would make a substantial contribution to addressing both these challenges. This is the conclusion that flows from the research done for this report – in-depth interviews with agribusiness managers, government officials, and agricultural economists, supported by secondary research.

The key findings of this research, which form the basis of policy recommendations, fall into two areas:

- First, we recommend *a reversal of underinvestment* in the support system for agricultural exports.
- Second, we recommend adjustments to the policy and institutional framework of the transformation agenda.

Section 3.2 showed how technology and industrial organisation have flowed into modern capitalist agriculture. One consequence is that:

- The distinctions between "processed" and "unprocessed" primary commodities and, indeed, between agriculture and manufacturing have broken down. *Consequently, export-oriented agriculture is a site of industrial policy*.

This has direct implications for the design of South African government policy, including a re-think of the relationships between the New Growth Path, the APAP and the Industrial Policy Action Plan (IPAP):

- Incentive schemes – such as MCEP – need to be redesigned to remove artificial exclusions of activities deemed non-industrial, when it is obvious that many agribusiness investments involve integrated and inter-dependent activities in farming, manufacturing, processing and distribution.
- Amending the scope of industrial policy incentive schemes in this way is one way to unblock clogs in the policy support system.

Fairly modest but very important incentive scheme amendments along these lines need to be part of a far larger sea change in strategic policy design. For at present there are discrete policy documents – such as the IPAP and APAP – that also reproduce an artificial distinction between agriculture and manufacturing. Integrating agribusiness – in particular agribusiness focused on high-value exports – into broader industrial and infrastructural policy strategy should lead to more coherent policy support and also to much sharper priorities. It may also facilitate closer cooperation and coordination among government agencies; for interviewees time and again bemoaned the fact that government departments do not communicate well with each other.

This is related to another cross-cutting problem in policymaking at different levels of government:

- The pervasive culture of seemingly endless work-shopping and consultation in a context of strategic uncertainty, which leads inexorably to the "shopping list" approach to policy and investment choice.

- There is not a clear set of criteria to guide and to accelerate the difficult process of setting and following priorities in resource allocation. This then gets reflected in trade negotiations and approaches to market access.

A consequence is that policy processes may easily be captured by immediate lobbying pressure (by the Sugar or Poultry Associations for example) or by the apparent appeal of pop-up investment fancies (a tomato paste plant in an inappropriate location, a surge of interest in meeting global demand for Halaal meat). The research carried out for this report suggests instead a very simple, clear set of criteria by which resource allocation priorities should be determined:

- *The only investments that should be made or encouraged by policy should be those that have a demonstrable potential to generate rapid rates of increase in foreign exchange earnings and a sizeable expansion in employment, especially of the poorest, typically rural women.*
- Designing a set of policies and refining existing policies and institutions to support large-scale export-oriented agribusiness has the demonstrated merit of being able to address these twin criteria at the same time.
- An investment and policy programme built on these easily understood criteria has the potential to create hundreds of thousands of jobs through direct production of export goods and through the multiple linkages associated with this – linkages to input production, packaging, and services, not to mention the boost to effective demand from expanded employment.

As Section 3.3 argued, on the basis of South African and wider international evidence, to be effective such a policy and investment priority programme must *'scale up, not down'*. Both the longer-term historical evidence on growth, structural transformation, and poverty reduction and the more recent structural changes to global production imply:

- A need to encourage (though also to discipline) large-scale businesses rather than to invest faith in the small.
- Large-scale productive enterprises are the arrowheads (or, in the Chinese formulation, the "dragon-heads") that can pull the rope of smaller-scale firms and employers in their wake.

Coordinating policy support for high value agricultural exports will involve two additional steps:

- First, South Africa's commercial diplomatic capabilities must be expanded – there are simply not enough experienced, well-trained trade negotiators and embassy staff do not appear to have appropriate training to support strategic exporting interests. Not only is there a need for more staff who understand agribusiness; but also, they need to be clear about the priorities in negotiations, rather than turning up for trade talks pitching broad shopping lists against the acumen and resources of US or Chinese or EU trade negotiators.

- Second, underpinning this strategic effort should be a significant line of subsidised export credit made available, with appropriate oversight and conditions, to exporters. This is a norm in most middle and upper income countries and is important in easing the fluency of international trade.

Section 4.3 demonstrated the neglect and diversion of resources that have led to critically low levels of investment in infrastructure, research organisations, and higher education. This section highlighted the decline in public agricultural research and contrasted this with global patterns. To take a particularly stark contrasting example, Embrapa in Brazil was set up almost entirely with public funding from BNDES, the Brazilian development bank. Researchers at Embrapa have created 350 cultivars and have secured more than 200 international patents. At the heart of this performance has been a sustained investment in higher education: Embrapa has devoted a significant slice of its budget to the education and training of its employees and currently three quarters of its 2 000 researchers have PhDs. The central role of Embrapa in the Ministry of Agriculture and its substantial budget have been important in ensuring that the cultivated area of arable land in Brazil is maximised, that yields for many crops are close to international frontiers, and that Brazil is the leading or a major global producer in a range of agricultural commodities,

South African agriculture cannot fulfil its potential without:

- Far higher levels of investment in irrigation, in agricultural inputs like fertilizer, in transport infrastructure, in agricultural R&D and in associated tertiary education and training, in phyto-sanitary monitoring capabilities, and in the ability to secure market access internationally for South African exports.

Section 4.3 laid out the record of severe underinvestment in South Africa and the disappearance of state support: this was reflected in trends of decline, in comparisons with competitor countries, and in outcomes including the under-performance of specific labour intensive high value crops.

Overcoming an entrenched pattern of under-investment requires a very decisive push from leadership. Perhaps the biggest priorities to begin with in such a programme for the revival of agro-exports are:

- First, to invest in water management, the maintenance of existing irrigation infrastructure, in new dams and expansion of efficient irrigation equipment, alongside a revamping of water rights regulations;
- Second, to reverse the decline of the Agricultural Research Centre and of agribusiness-relevant research in CSIR, as well as to commit budget resources to a sustained long-term surge in scientific tertiary education and training in agricultural field skills.

We also recommend that policymakers revisit the design of policies in pursuit of the overarching strategic objective of transformation and sustainable empowerment. To this end, we propose two paths to transformation rather than what is currently a single, rather muddy path in whose ruts some potentially progressive vehicles of transformation are getting stuck. Land reform is premised on the idea that ownership is at the heart of empowerment, transformation, and overcoming inherited inequity. However, unregulated ownership is not always the key; the transfer of ownership rights often reproduces social narrowness – a tiny minority of individuals, themselves typically not the poorest, are the beneficiaries of land reform to date, as they are of schemes to ensure ownership stakes in businesses.

While land reform and restitution claims will continue to be pursued, and while BEE regulations will certainly continue to promote the rise of "black industrialists", we recommend that:

- An additional track to transformation is opened up. This may be called *Enhancing Empowerment through Employment*.

The evidence suggests that greatly simplifying bureaucratic impositions on enterprises meeting the twin criteria of contributing to employment and foreign exchange generation has the potential radically to increase the rate of growth of employment of hundreds of thousands of poor South Africans, especially women. *A decent wage and a permanent job is the best way to empower vulnerable rural women.*

This would require three forms of policy:

- First, new and very simple rules might be drawn up showing how a firm can, on the basis of its track record, make a strong case for expanding employment and foreign exchange earnings within, say, five years. If it can, its access to government finance and related incentive schemes should *be fast-tracked*.
- Second, much clearer assurances on the stability of land use rights should be made to those commercial farmers who can, again, provide evidence of a strong track record in increasing foreign exchange earnings and decent employment opportunities.
- However, third, none of these policies will work without a disciplining element. There would need to be clear rules enabling trade unions to verify that employment targets had been met and policymakers and officials to enforce these requirements, so that if an agribusiness fails to satisfy the employment and foreign exchange requirements within a given span of time any further access to incentives and subsidies is removed.

In summary, this research has revealed a deeply serious set of constraints on agricultural exports from South Africa but it has shown that there remains a significant opportunity for such activities to make a contribution to two of the biggest challenges facing the country: overcoming an employment crisis and relieving pressure on the balance of payments. If this contribution can be maximised, then the longer-term prospects for growth and transformation

would improve dramatically. While the policies required to reverse the decline in this sector are multiple and interlinked, they are connected and underpinned by two very simple, clear criteria for allocating financial resources and for institutional and policy design:

- Substantial support should be given to those enterprises that can make the strongest claim to be able to expand foreign exchange earnings through high-value agricultural exports and to be able, in the process, to create significant new job openings.

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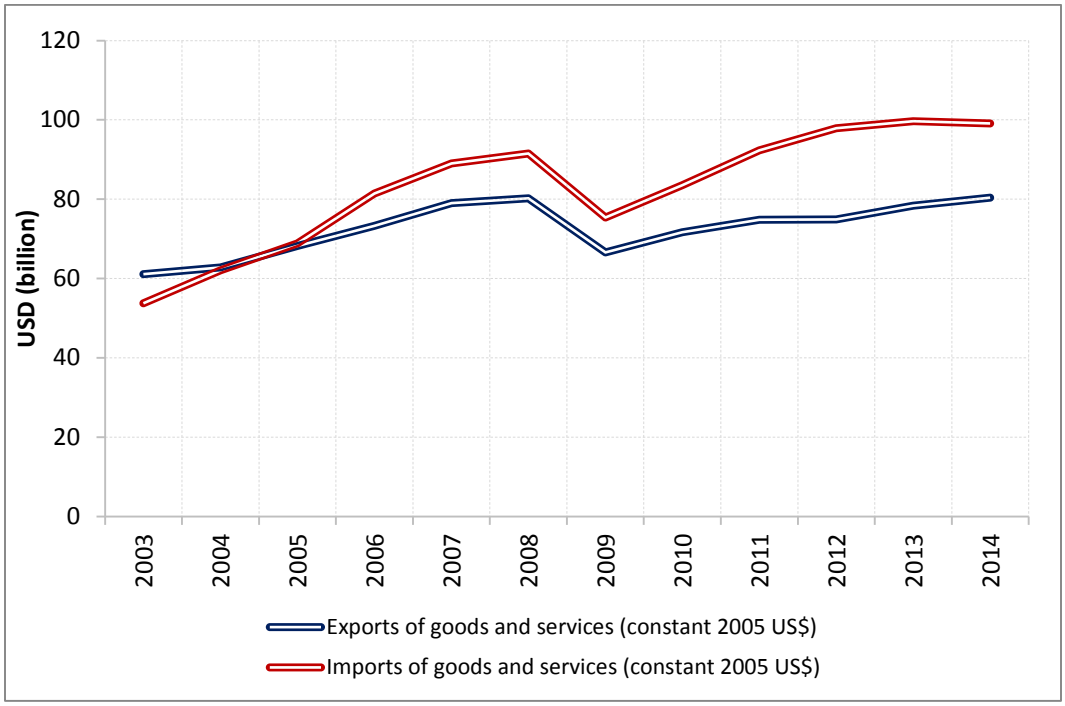
Appendix: Figures

Figure 0.1

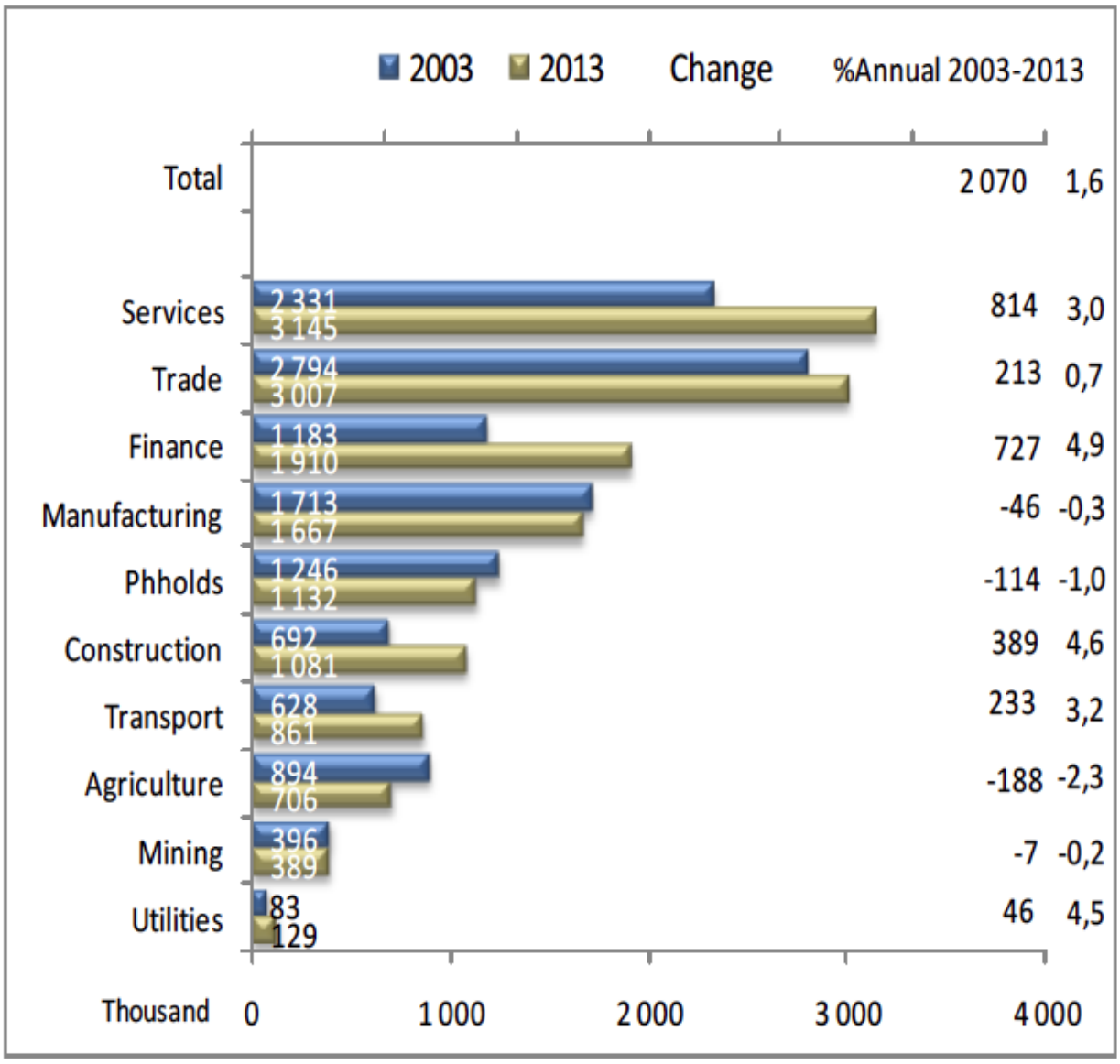
Value of South African exports and imports of goods and services, 2003 -2013 (Constant 2005 US$)



World Bank (2013)

Figure 0.2

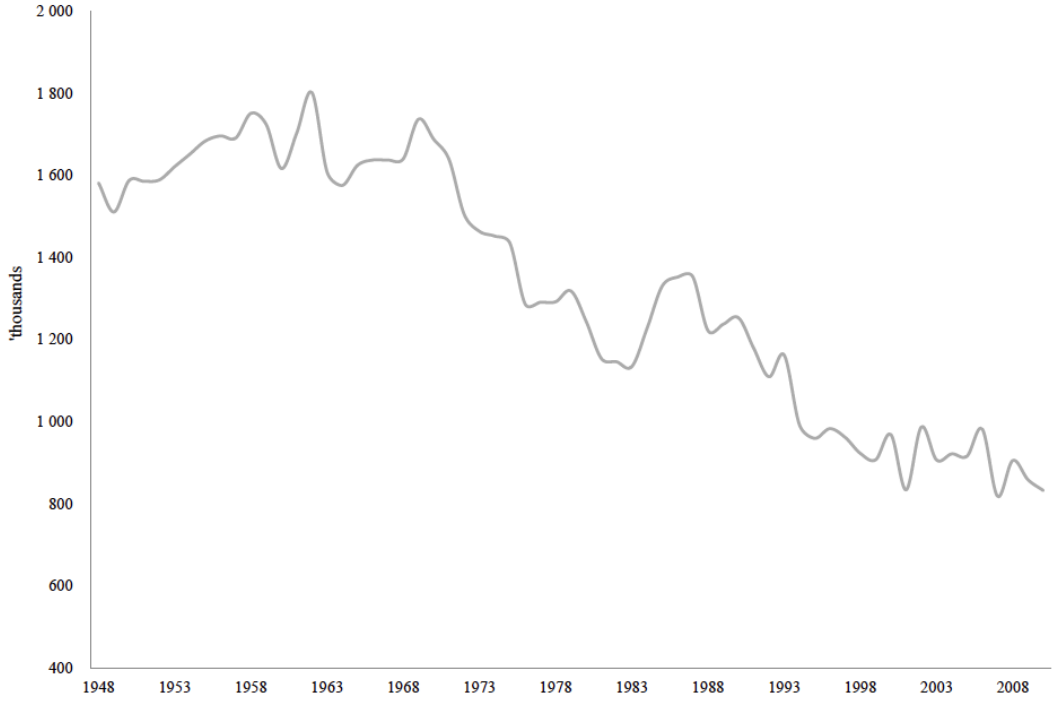
Employment by industry, 2003 and 2013



Statistics South Africa (2013: 9)

Figure 0.3

Recorded wage employment in agriculture, 1948-2010



Greyling (2012: Figure 5.1)

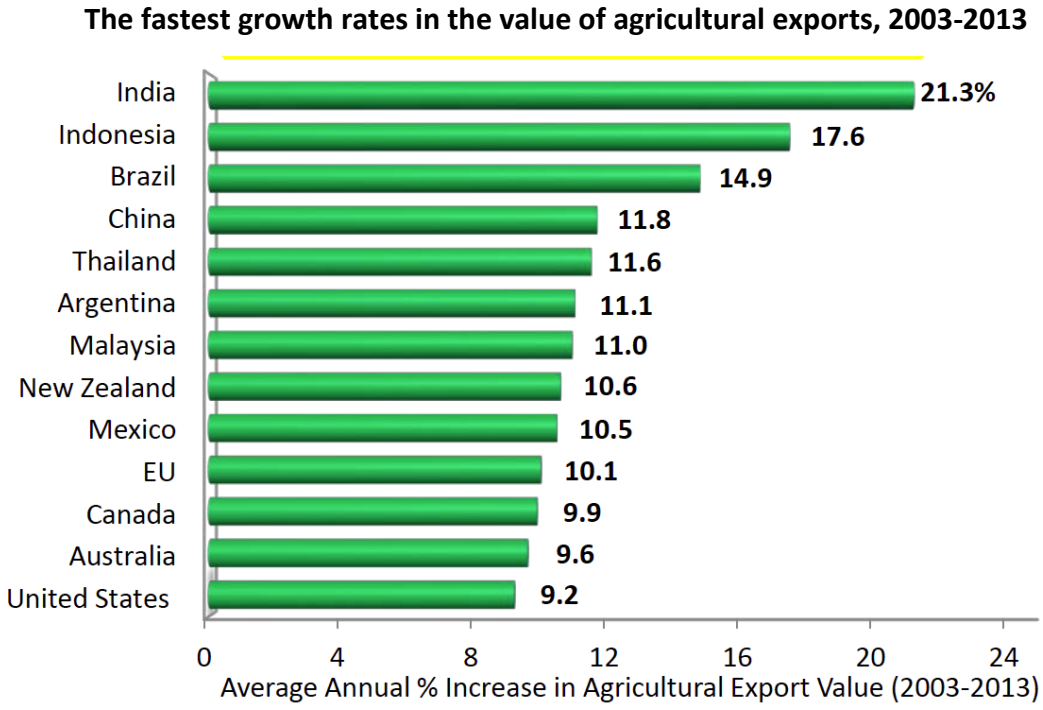
Figure 0.4

Employment per hectare (permanent worker equivalents) in deciduous fruit production, 2003-2013

Fruit	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Apples	0.80	1.25	1.37	1.25	1.12	1.25	1.25	1.25	1.25	1.25	1.25
Pears	0.79	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
Peaches	0.83	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.29
Plums	0.76	1.32	1.32	1.48	1.47	1.47	1.46	1.43	1.43	1.32	1.44
Apricots	0.91	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.20
Nectarines	0.80	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.30
TOTAL	0.81	1.24	1.29	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.28

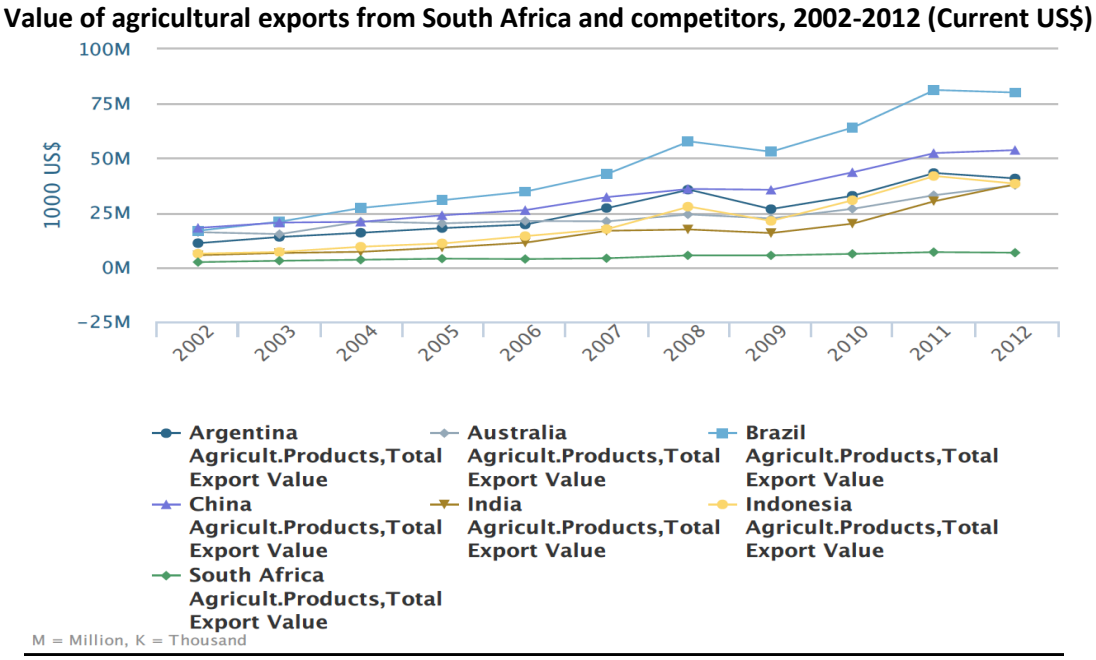
Visser and Ferrer (2015)

Figure 0.5



Flake (2014)

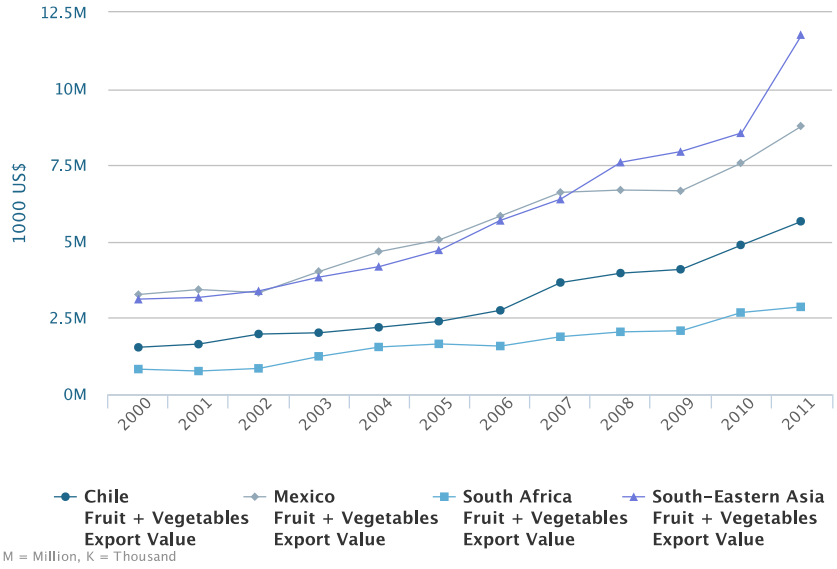
Figure 0.6



FAOSTAT

Figure 0.7

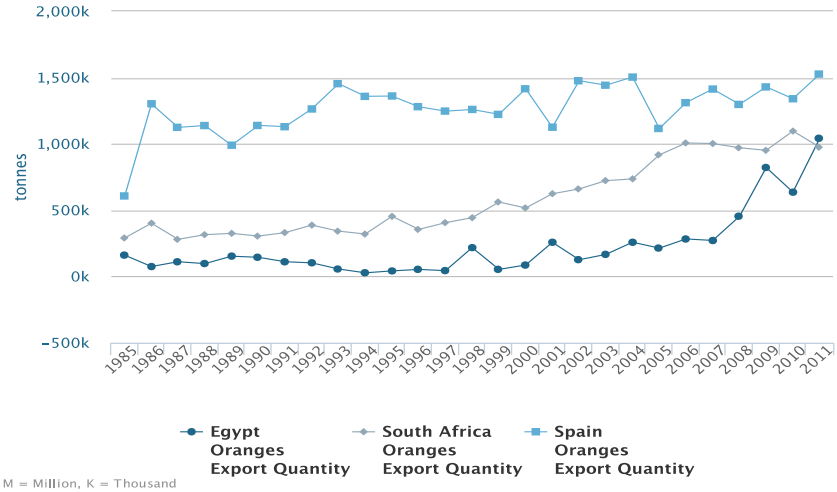
Value of exports of fruit and vegetables from South Africa and competitors, 200-2011 (US$ '000)



FAOSTAT

Figure 0.8

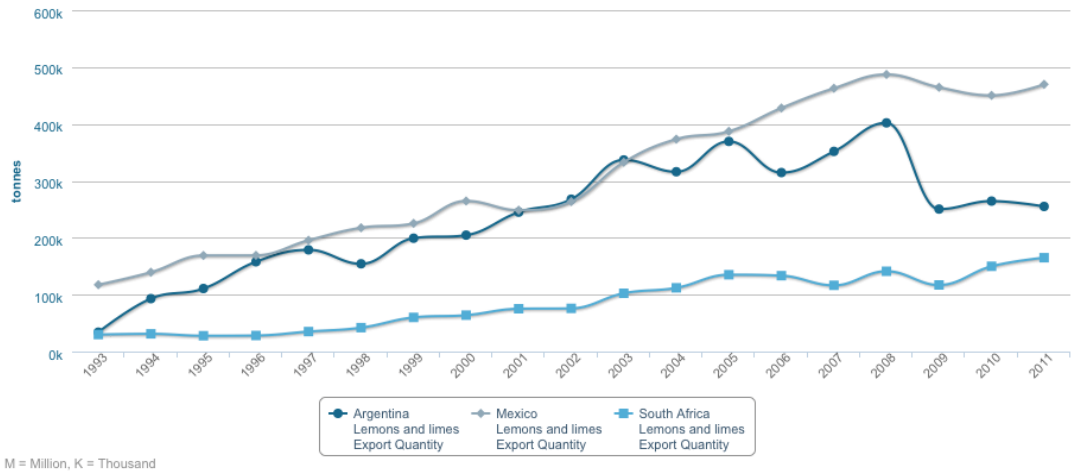
Volume of orange exports from South Africa and competitors, 1985-2011



FAOSTAT

Figure 0.9

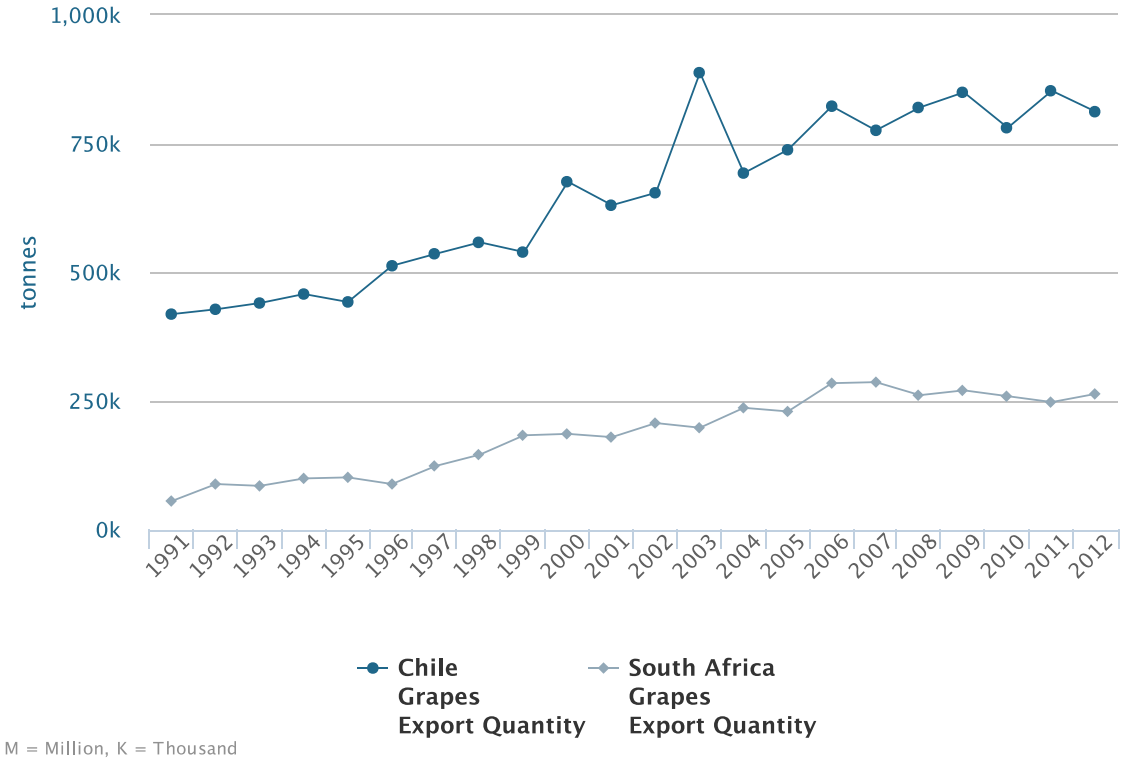
Volume of exports of lemon and lime from South Africa and competitors, 1993-2011



FAOSTAT

Figure 0.10

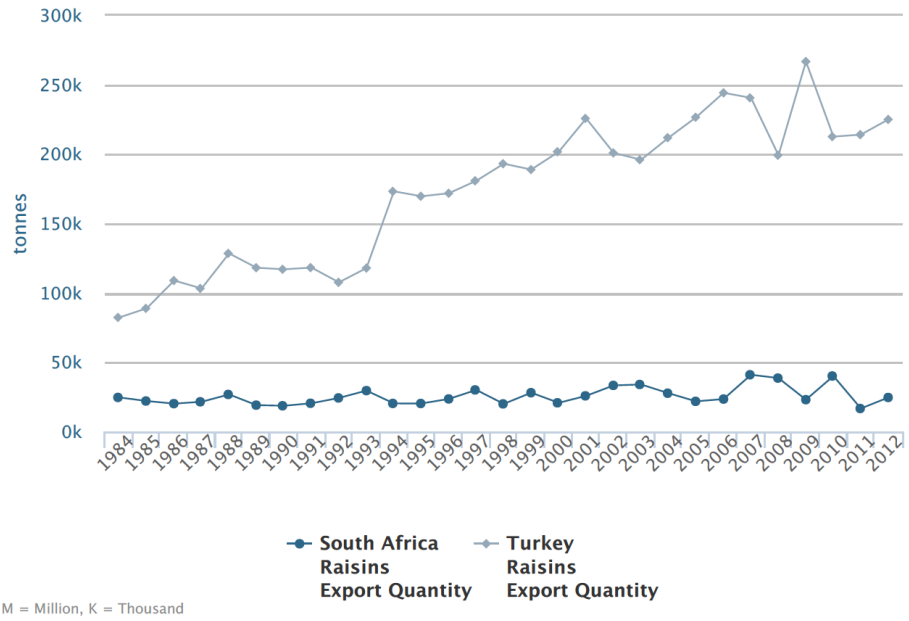
Volume of table grape exports from South Africa and Chile, 1991-2012



FAOSTAT

Figure 0.11

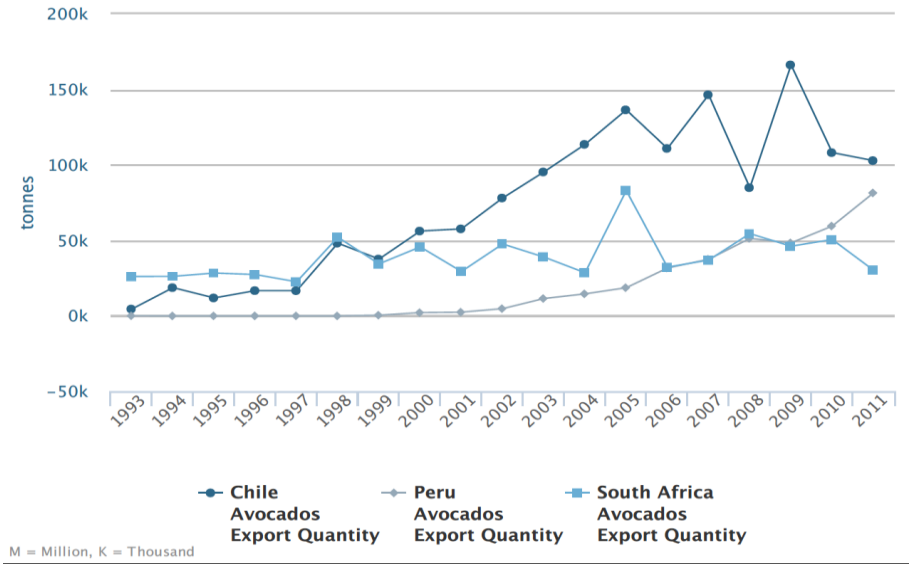
Volume of raisin exports from South Africa and Turkey, 1984-2012



FAOSTAT

Figure 0.12

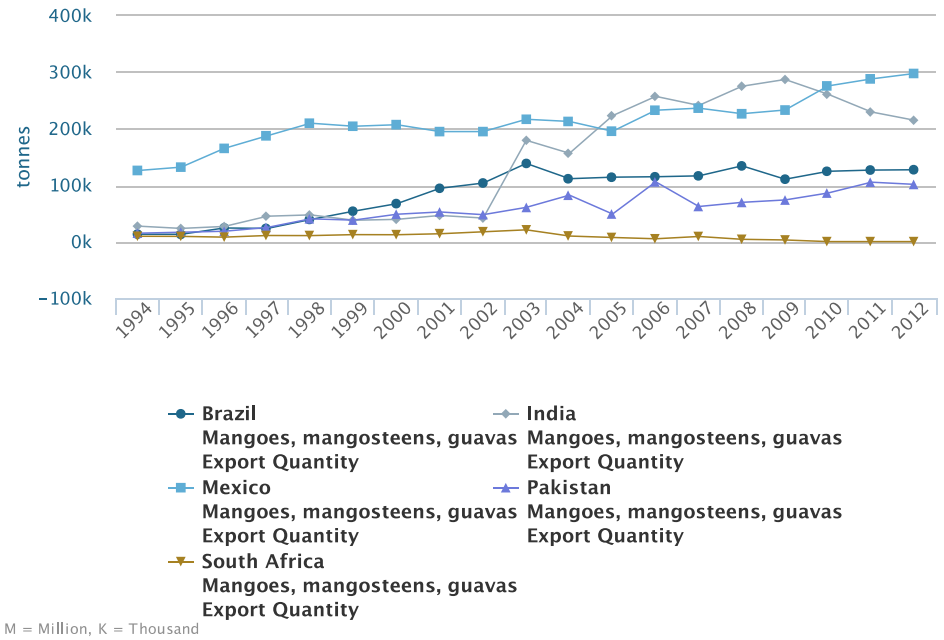
Volume of avocado exports from South Africa and competitors, 1993-2011



FAOSTAT

Figure 0.13

Volume of exports of mangoes (etc) from South Africa and competitors, 1994-2012

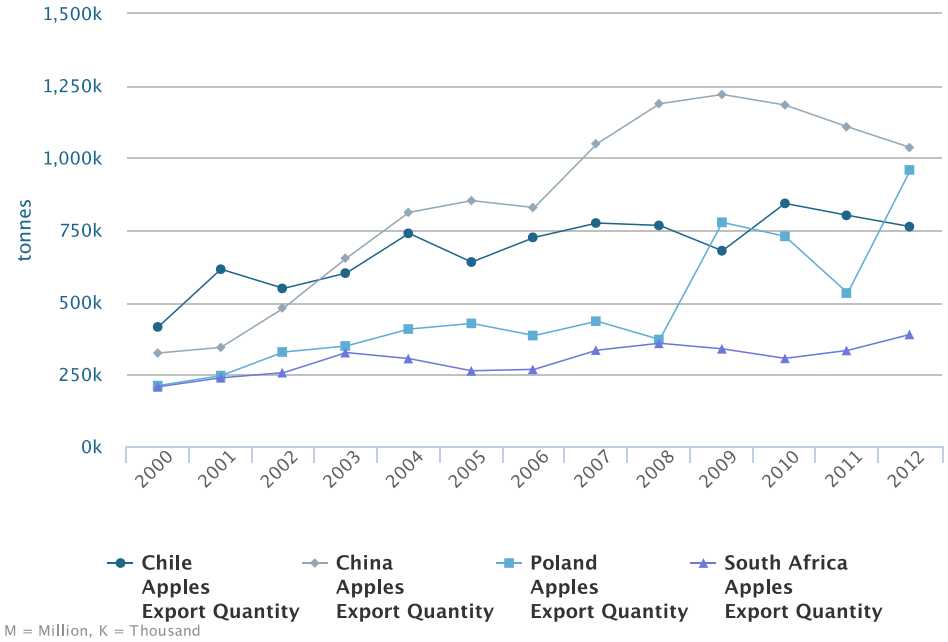


M = Million, K = Thousand

FAOSTAT

Figure 0.14

Volume of apple exports from South Africa and competitors, 2000-2012

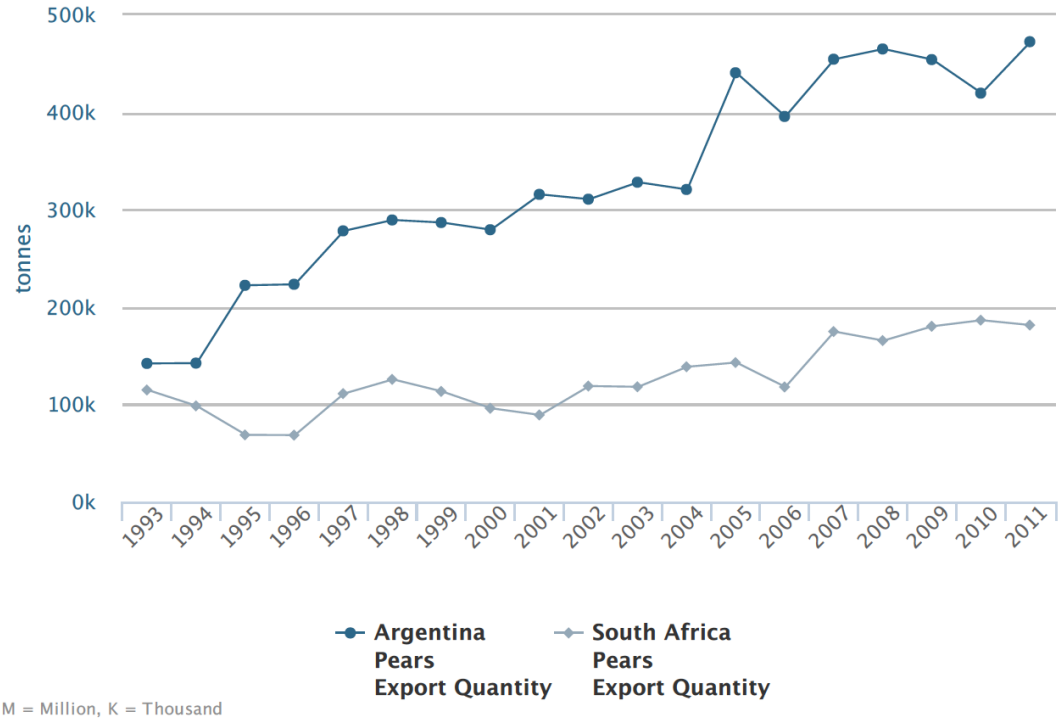


M = Million, K = Thousand

FAOSTAT

Figure 0.15

Volume of pear exports from South Africa and Argentina, 1993-2011

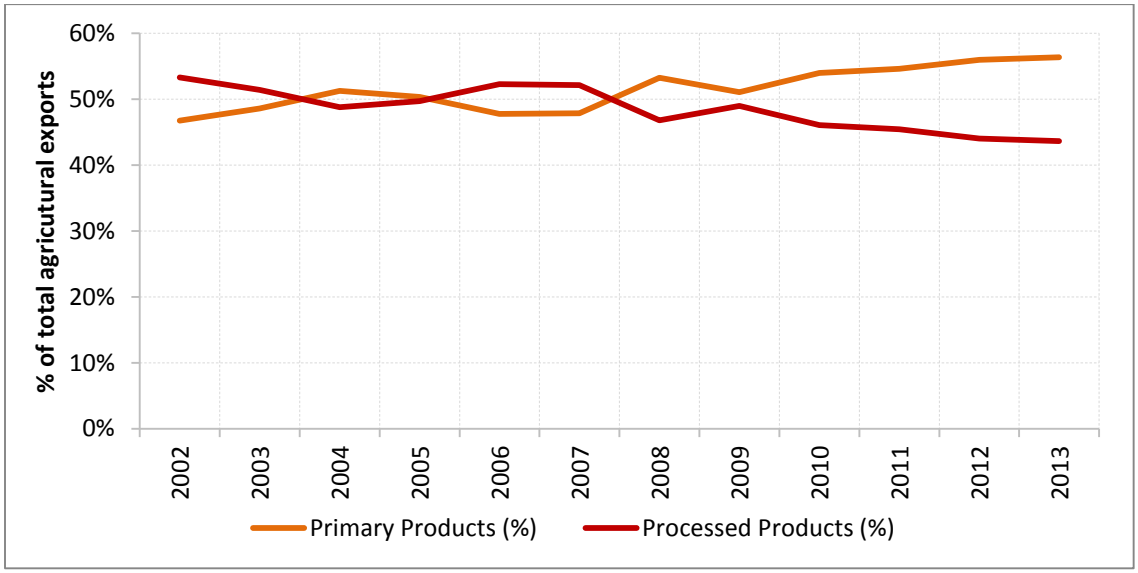


M = Million, K = Thousand

FAOSTAT

Figure 0.16

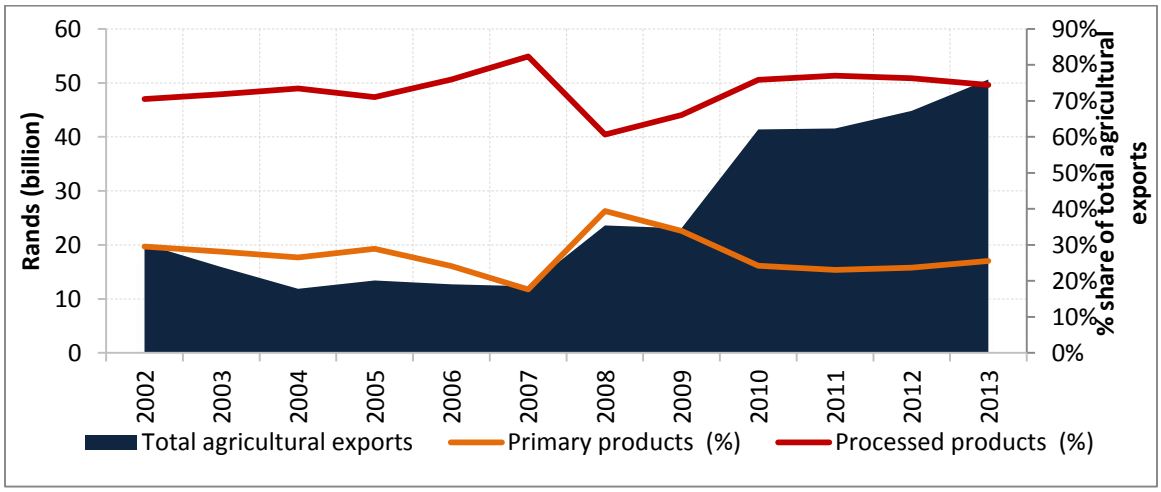
The share of processed agricultural exports in South Africa's total agricultural exports to the EU, 2002 2013



Data extracted from Partridge and Pienaar (2015)

Figure 0.17

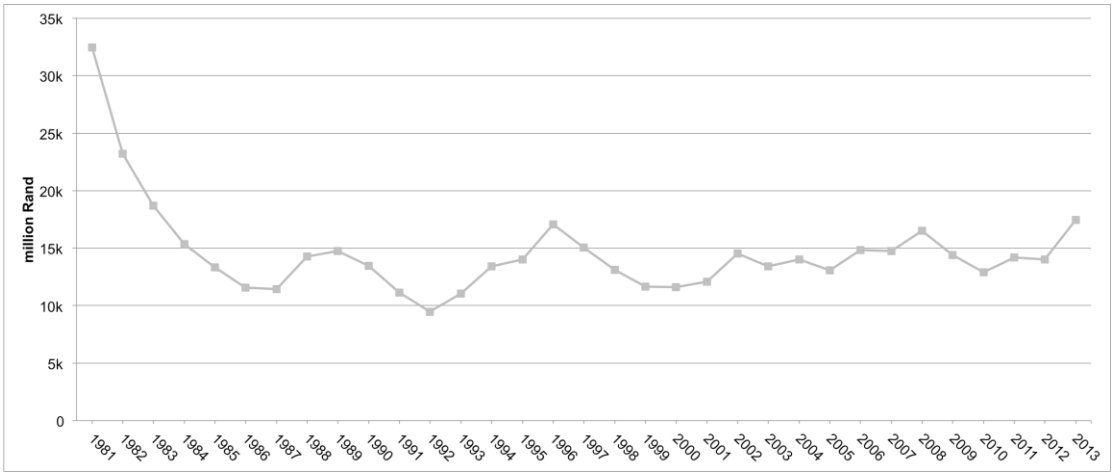
The Value of South Africa's agricultural exports to Sub-Saharan Africa (Current Rands) and the share of processed and primary exports, 2002-2013



Data extracted from: Partridge and Pienaar (2015)

Figure 0.18

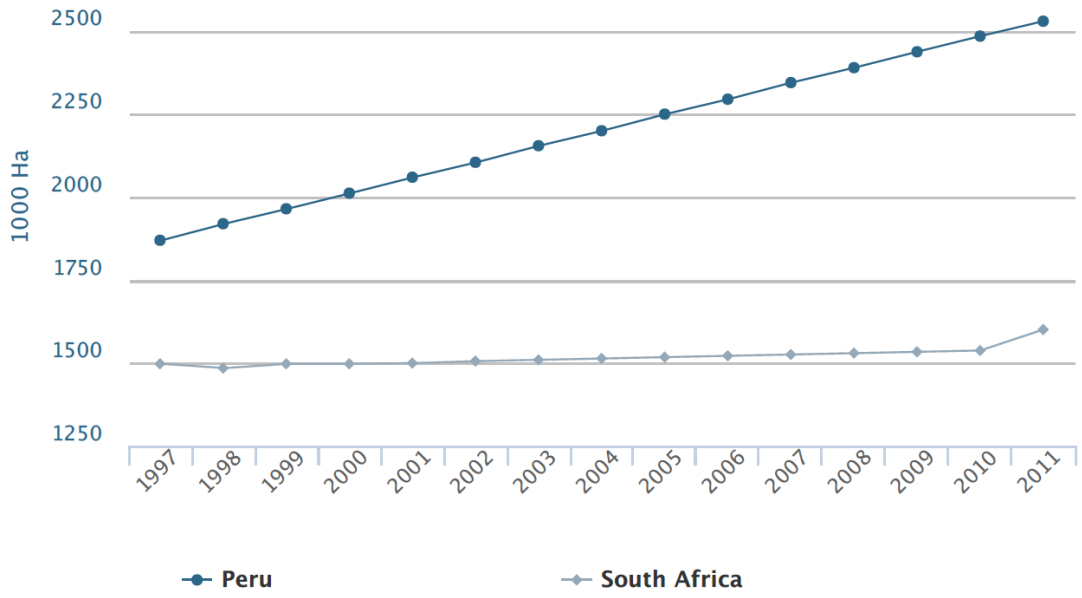
Gross fixed capital formation in agriculture forestry and fisheries (R Millions), 1981 to 2013 (Constant 2010 Rand)



SARB

Figure 0.19

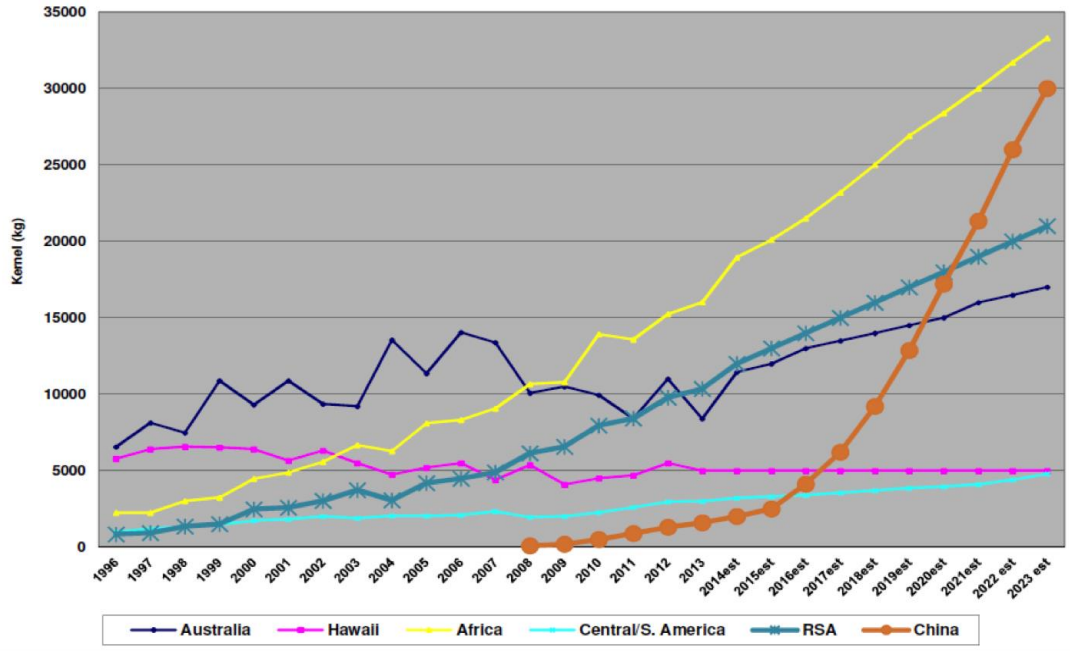
Total area equipped for irrigation in South Africa and Peru, 1997-2011



FAOSTAT

Figure 0.20

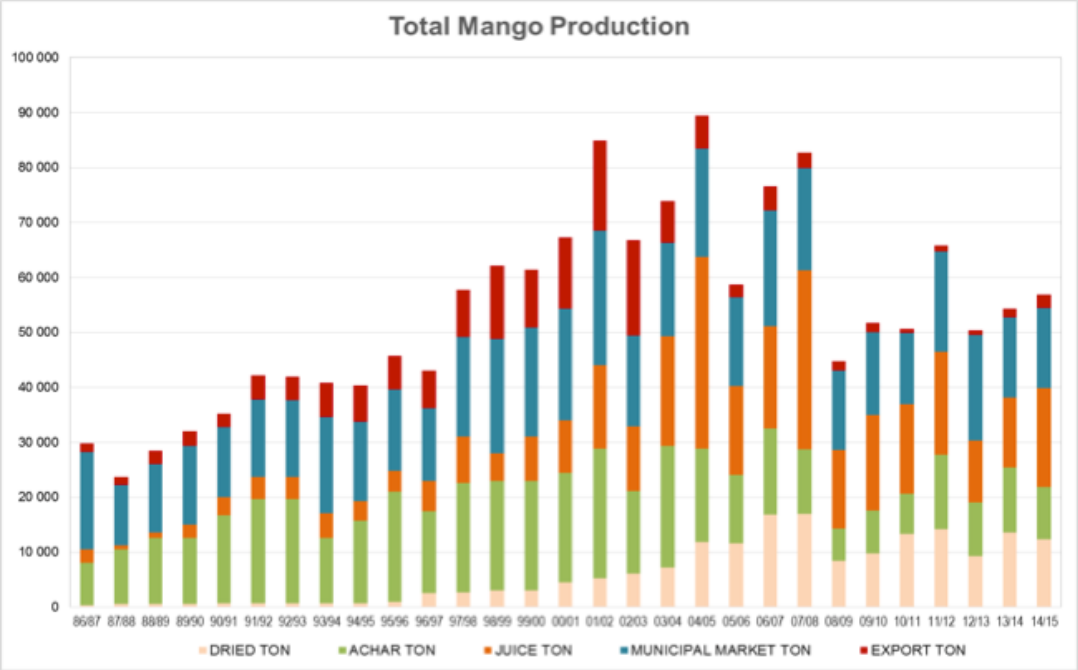
Macadamia nut production by South Africa and Competitors, 1996 -2013 and projections to 2023



SAMAC (Southern African Macadamia Nut Growers Association) cited in Golden Macadamias (2015)

Figure 0.21

Volume of South African mango production, processing and exports, 1986 -2015



Westfalia Fruit (2015)