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<p><b>FR TOMLINSON COMMEMORATIVE LECTURE</b> <b>FR TOMLINSON GEDENKLESING</b></p>
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## **PROMOTING THE COMPETITIVENESS OF SOUTH AFRICAN AGRICULTURE IN A DYNAMIC ECONOMIC AND POLITICAL ENVIRONMENT**

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### **Abstract**

*South African (SA) farmers are faced with a dynamic global economic and trade environment caused by the liberalisation of international markets and rapid advances in information and communication technologies. In addition to dealing with the deregulation of domestic agricultural markets in the 1990s, SA farmers also have to adapt to a dynamic political environment and other challenges, including land reform, AgriBEE, new labour legislation and minimum wages, property taxes, skills levies, uncertain water rights, HIV/Aids, a volatile exchange rate, and high transport and communication costs. The main factors that will help promote the competitiveness of SA farmers, and the agricultural sector in general, include good governance at all levels of government and industry, institutional innovations for commercial and small-scale farmers, improving the quality of (school) education (particularly in mathematics and science) and skills training, promoting research in agriculture, and farmers adopting new technologies. Government should focus its relatively scarce resources on providing physical infrastructure (especially improved transport and communication infrastructure) and legal infrastructure (secure property rights and contract enforcement) to reduce transaction costs, including risk, so that markets for products and resources work more efficiently; relax restrictive labour laws; reduce uncertainty regarding land claims, AgriBEE and the rural land tax; improve efficiency in disbursing LRAD grants to approved projects; reduce crime rates; and promote education, agricultural R&D and skills training.*

### **1. INTRODUCTION**

The global economic and trade environment has changed rapidly over the last few decades. The World Trade Organisation (WTO) is overseeing the liberalisation

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of international trade in agricultural and food products following the successful conclusion to the GATT (General Agreement on Tariffs and Trade) agreements in 1994. Rapid advances in information and communication technologies have also promoted the international integration of markets or globalisation.

South African (SA) farmers are in a relatively unique situation in that, in addition to dealing with globalisation and the deregulation of domestic agricultural markets in the 1990s, they also have to adapt to a rapidly changing political environment. For example, land reform, black economic empowerment in agriculture (AgriBEE), new labour legislation, minimum wages, property taxes and skills levies have been instituted during the last 10 years. The government extension service has also shifted its focus from serving commercial agriculture to advising mainly small-scale (emerging) producers, while the durability of water rights for irrigation farmers has become less certain. SA farmers, therefore, face some specific challenges to remain competitive that farmers in many other countries with more business-friendly political environments do not experience.

The World Economic Forum (2005) ranked South Africa 25th in terms of a business competitiveness index, and 41st in terms of a growth competitiveness index, out of 103 countries. Clearly, there is room to improve South Africa's competitive position globally. Porter, as cited by Bennett (2000), contends that South Africa's productive capacity is much greater than that reflected in its GDP per capita, due to the country's low productivity levels. There is also evidence that some agricultural sectors and value-adding activities are not competitive due, *inter alia*, to low productivity (leading to high unit costs), poor business strategies and "unfair" trade practices by the country's competitors (NDA, 2001). Clearly, there is a need to consider strategies and institutional innovations that will promote the competitiveness of South Africa's agricultural sector.

The objectives of the paper are (1) to define the term "competitiveness"; (2) to present the challenges faced by SA farmers that could influence their ability to compete in local and international markets; and (3) to suggest possible strategies and institutional innovations that could promote their competitiveness. The paper concludes with a summary of the main findings and some policy recommendations.

## **2. WHAT IS COMPETITIVENESS?**

The economic concept of comparative advantage predicts that trade flows occur as a result of relative cost differentials between countries or regions and

depends on their natural resource endowments. Thus, a country (region) will export goods it produces relatively efficiently and import goods that other countries (regions) can produce relatively efficiently. Some economists argue that the theory of comparative advantage does not apply where government policies distort markets (see, for example, Ahearn *et al*, 1990; Sharples, 1990) and that the concept of “competitiveness” is more appropriate. This view implies that governments’ economic, agricultural and trade policies (e.g., support programmes, research investments and export promotion) affect competitiveness (Colyer and Jolly, 2000). Thus, a country may not have a comparative advantage in wheat production but it may be competitive on world markets because wheat is subsidised by the government. However, the country will then incur a net social loss because resources have not been optimally allocated. In a more liberal trade environment (e.g., falling trade barriers, decreasing government support for agriculture and liberalisation of foreign exchange markets), the terms “competitiveness” and “comparative advantage” become increasingly synonymous if institutional arrangements allow for the efficient functioning of competitive markets. In this context, government has an important role to play in providing a competitive location (e.g., through physical and legal infrastructure to reduce transaction costs, including risk).

Porter (1990) maintains that firms, not nations, compete in international markets, and that the business environment offered by governments to firms is critical to their success. Competitive firms will then also lead to competitive regions or economic sectors (e.g., agriculture). Recent literature and experiences have also stressed the increasingly important role that competitive supply or value chains, rather than competitive individual firms, will play for particular industries or firm clusters to capture a greater share of local and/or world markets (Boehlje, 1999; Porter, 1998). Changing consumer demands regarding food quality, safety and health issues, and the drive by firms to reduce costs, particularly transaction costs, are major reasons for the formation of supply chains (Boehlje, 1999; Williamson, 1979).

Economists have defined “competitiveness” in various ways. For example, Fafchamps *et al* (1995:343) define it as “the ability of a firm or a country to produce a commodity at an average variable cost below its price”. The strategic management school defines it as “the ability to profitably create and deliver value through cost leadership and/or product differentiation” (Kennedy *et al*, 1997:386). This implies that competitiveness is related to factors that influence a firm’s cost and demand structure. This view agrees with Porter (1998:4) who states that “a firm achieves superior profitability in its

industry by attaining either higher prices or lower costs than rivals". Most definitions of firm competitiveness imply that profitable firms are competitive.

Tweeten (1992:27) sees competitiveness as a "nation's ability to maintain or gain market share by exploiting competitive advantage in world markets through increasing productivity from technological advances or other sources". Porter (1998:7) argues that competitiveness of locations "arises from the productivity with which firms in a location can use inputs to produce valuable goods and services". Spies (1999:483) concurs, stating that "competitiveness implies superior performance in productivity growth - especially in multi-factor productivity, which is best reflected in the effective rate of technological innovation in an economy...". While some definitions focus on the underlying sources of competitiveness (e.g., firms' ability to profitably create and deliver value through product differentiation and/or lower costs), others place greater emphasis on the indicators of competitiveness (e.g., the *sustained* ability to profitably gain and maintain market share). Clearly, the definitions and measures of competitiveness depend on the perspectives and objectives of the research work being undertaken (Kennedy *et al*, 1997; Kennedy, 2000).

To promote the optimum allocation of agricultural resources in South Africa, competitive advantages based on natural endowments and unsubsidised markets have become important policy issues (Van der Merwe and Otto, 1997). Reduced government support for commercial agriculture may imply lower mean, and greater fluctuating, commodity prices and thus increased pressure on producers to reduce their costs of production through adopting modern technologies, larger farm sizes (to capture economies of size advantages) and improved management. However, since the focus of the government's agricultural extension and research efforts has shifted to serving emerging (small-scale) farmers, the environment is now more difficult for commercial farmers to adopt best farming practices and new technologies.

According to Colyer and Kennedy (2000:1), the ability of the United States (US) to maintain a growing and favourable agricultural trade situation "depends on the capacity to improve productivity, on the willingness to adapt to changing forces in the demand and supply of agricultural products, and on the continued evolution of more trade-oriented policies and programs, i.e., on the elimination of trade barriers". They point out that the US agricultural sector has remained competitive despite higher input costs (especially higher labour costs) because agricultural productivity has improved continuously, due mainly to highly effective research. Gopinath and Roe (2000) also confirm that productivity growth is the dominant factor explaining agricultural output

growth in the US. Rising productivity benefits the broader economy by, for example, offsetting the negative effects of declining real agricultural commodity prices, thus keeping resources from exiting agriculture. Declining real commodity prices have also been passed on to consumers through the food-processing sector, and have allowed this sector to compete more effectively for export shares in the growing international market for processed foods. Importantly, investments in public agricultural research and development (R&D) and public infrastructure accounted for 75% of the growth in agricultural productivity in the US (Gopinath and Roe, 2000). However, declining public investments in R&D could have major implications for the future growth and competitiveness of the agricultural sector in the US.

It is evident that the economic and political environment in which firms or farms have to operate has a major impact on their ability to compete in international markets. The next section presents some of the challenges faced by SA farmers that could affect their competitiveness.

### **3. CHALLENGES FACED BY SA FARMERS**

Farmers in South Africa face some important challenges, which could increase their costs of doing business. Some of these challenges are discussed in the following subsections.

#### **3.1 Land redistribution**

SA agriculture is of a dual nature, with a well-developed commercial sector comprising about 46 000 commercial farmers occupying 86% of agricultural land (Directorate: Agricultural Statistics, 2005). Small-scale communal farmers occupy the remaining 14% of farmland. The redistribution of farmland in South Africa is high on the government's agenda, and it is generally accepted that it is necessary for political stability and hence economic growth.

The problem of a highly skewed distribution of land in South Africa still exists despite government efforts over the past 10 years to redress the imbalances in land ownership. The objective of government is to transfer ownership of 30% of commercial agricultural land to previously disadvantaged people by 2014. Lyne and Darroch (2003) describe in some detail the attempts by government to achieve this objective, including use of the Settlement and Land Acquisition Grant (SLAG) and the subsequent Land Redistribution for Agricultural Development (LRAD) programme since 2001. Limited progress has so far been achieved in the redistribution of land. For example, in KwaZulu-Natal disadvantaged owners acquired 201 856 hectares in the period 1997 to 2003

(Lyne, 2005a). The cumulative rate of land redistribution over the period 1997 to 2002 was only 3.36% (Semalulu, 2004:24). For commercial farmers, the main sources of risk at present are land claims made under the restitution programme. Land claims prevent investments in land improvements until the claims have been settled. Slow progress in settling claims, therefore, has a negative effect on farm competitiveness due to lower productivity.

Importantly, productive commercial farms that are purchased by emerging farmers may lose their competitiveness, at least in the short to medium term, if the new owners, who lack farming experience and expertise, are not effectively organised and mentored, and do not have access to capital, markets, training and effective extension services (see also Groenewald, 2004). Also, economies of size benefits may be reduced through land reform if viable commercial farms are subdivided into very small units (Mbowa and Nieuwoudt, 1998), resulting in reduced competitiveness. However, other aspects of the land reform programme, such as land tenure reform, may have positive implications for the competitiveness of farmers in communal areas if they promote rental transactions for cropland.

### **3.2 AgriBEE issues**

AgriBEE refers to black economic empowerment (BEE) in agriculture. In January 2004 the broad-based Black Economic Empowerment Act was signed into law in South Africa. The rationale for government's enactment of this law is to promote access for previously disadvantaged people to South Africa's productive resources, and thus attempt to seek stability and growth of the economy, increased employment and more equitable income distribution (Standard Bank, 2005). Various BEE charters, such as the Mining Sector Charter and the Financial Sector Charter, have already been launched.

Following President Mbeki's "State of the Nation" address early in 2004, in which he requested that a concept document for the implementation of BEE in agriculture be compiled, the Minister of Agriculture and Land Affairs, Ms Thoko Didiza, released a draft AgriBEE document in July 2004 (KWANALU, 2004a). Amongst other proposals, this document recommended that 30% of commercial agricultural land be owned by blacks by 2014, an additional 20% be leased by blacks by 2014, 10% of existing farmland be set aside for farm workers for their own production, that farm workers achieve a 10% ownership stake in all farm enterprises by 2008, and that illiteracy among farm workers be eliminated by 2010 (Hlengani, 2005).

These proposals have attracted considerable criticism, particularly from organised agriculture in South Africa, due to the lack of clarity on definitions, the perceived “impossible” targets set for transformation, and because the document was produced without consulting major stakeholders. The “Strategic Plan for South African Agriculture”, which was published by the National Department of Agriculture (NDA) in November 2001, clearly defined the vision for SA agriculture and the implementation of the strategic plan (NDA, 2001). This document was based on wide consultation among the major players in SA agriculture, namely AgriSA (representing commercial farmers), NAFU (National African Farmers Union – representing emerging farmers), and the NDA, and they all supported this document. The contents of the concept AgriBEE document, however, were widely considered as a “shifting of the goalposts” by the Minister and they created considerable confusion and uncertainty, particularly amongst commercial farmers. The lack of transparency in drafting the AgriBEE document is a major concern. More uncertainty among farmers leads to reduced investment, lower productivity and, hence, reduced farm competitiveness.

Following criticism of the AgriBEE document, the Minister formed a Steering Committee to promote consultation, and it was agreed that the consultative process would be finalised by 20 December 2004 (KWANALU, 2004a). Provincial farmers’ associations across South Africa met to discuss the draft AgriBEE proposals and have submitted their recommendations to this Committee. For example, the core message that emanated from a well-attended farmer workshop organised by the KwaZulu-Natal Agricultural Union (KWANALU) in November 2004 was that AgriBEE must be attainable with regard to goals, targets and timetables; practical; economically feasible (in terms of government funding and economies of farm size); a productive and profitable agricultural sector must be sustained; and it must apply to SA citizens only (KWANALU, 2004b). The outcomes of numerous conferences and workshops held in the country indicate that there is still considerable uncertainty among stakeholders (such as commercial farmers, organised agriculture, commercial banks, NGOs, and even the government) about what AgriBEE entails and how to achieve its goals.

It seems that commercial farmers, who will bear the brunt of the AgriBEE challenge, are willing to find constructive solutions to the proposals. However, it needs a concerted effort from all stakeholders, strong and competent leadership and management among government officials and organised agriculture, and a transparent and consultative process to find solutions that reduce uncertainty and which do not undermine the sector’s competitiveness in the long term.



### **3.3 Restrictive labour policies and minimum wages**

A number of labour laws that affect the agricultural sector have been in place since the mid-1990s. The main ones are the Labour Relations Act of 1995, the Basic Conditions of Employment Act of 1997, and the Employment Equity Act of 1998 (Ortmann and Machethe, 2003). Although these laws benefit employees, they result in higher transaction and wage costs for employers in the agricultural sector by, for example, (i) raising the cost of dismissing and/or downsizing the workforce, and (ii) increasing the cost of labour by requiring employers to pay higher rates for work performed on public holidays and Sundays. Many economists argue that labour laws increase the cost of labour which leads to an increase in unemployment. Higher labour costs may cause farmers to substitute labour with machinery, adopt new technologies (e.g., herbicides and new crop varieties, which are less labour intensive), and employ machinery or labour contractors (Goedecke and Ortmann, 1993; Newman and Ortmann, 1996). This may exacerbate the problem of high unemployment rates in South Africa, especially high rural unemployment (the official unemployment rate in September 2004 was 26.2% (Statistics SA, 2005), but some estimates put the unofficial unemployment rate at over 40%). SA agriculture has shed about 244 000 jobs (21%) since 1990 (Directorate: Agricultural Statistics, 2005). Political pressure on the SA government to alleviate unemployment is contributing to AgriBEE policy and demands for land reform.

Minimum wage laws have been used in various countries to ensure that low-paid workers receive a “decent” wage and thus reduce the level of poverty (Ehrenberg and Smith, 1991). The SA government introduced minimum wages for farm workers in 2003 to try and improve their standard of living. However, with the high unemployment rate and the high price elasticity of demand for farm labour in South Africa (Latt and Nieuwoudt, 1985), due to the availability of substitutes such as capital and contractors, the introduction of minimum wages is expected to reduce employment on farms since the legislated wage lies above the market rate. Workers who receive the minimum (higher) wage are expected to be better off, but the retrenched workers, who may not find alternative employment, will be worse off (Lianos, 1972). Gardner (1972) confirmed that minimum wages reduced agricultural employment in the US. When labour costs increase relative to their productivity, the competitiveness of farmers decreases. After the introduction of minimum wages in the SA agricultural sector in March 2003, commercial farmers faced a 10% increase in these wages in 2004 and another increase of 10% in March 2005, despite an annual inflation rate in these years of less than 5%, and decreasing real product prices due to an appreciating Rand. Inflexible labour laws make it

difficult to retrench labour, thus making farmers less competitive. It constrains them from switching to relatively less expensive substitutes for labour or to more profitable land uses (e.g., game ranching). Clearly, more flexible labour laws would promote farm competitiveness.

### **3.4 Impact of HIV/Aids**

The socio-economic impacts of HIV/Aids on the agricultural sector and the SA economy are considerable (Arndt and Lewis, 2000; Smith, 2004). Agricultural productivity, labour turnover rates, and production costs on commercial farms are adversely affected by the deaths and ill-health of workers affected by HIV/Aids. Employers also have to invest more time in recruiting and training replacement workers at considerable expense to their businesses. The capacity of small-scale farming households is reduced as HIV/Aids prevents them from utilising their land effectively. B infected members are too weak to perform farming tasks and members with farming skills become less productive or die. On the demand side, declining population growth slows growth in domestic demand for agricultural products (Ortmann and Machethe, 2003). HIV/Aids decreases the competitiveness of a business due to higher labour costs and slower market growth. Many farmers are also burdened with supporting the orphans and widows who continue to live on their farms after parents/spouses die from the disease.

### **3.5 Rural land tax**

A tax on the market value of rural land (including farms) in South Africa will be introduced in terms of the Local Government Municipal Property Rates Act. There has been considerable debate in recent years on the likely costs and benefits of such a tax, and what an appropriate tax rate should be. Commercial farmers are concerned that policy-makers do not understand their cash flow position, as the current annual returns (rents) to farmland are typically only about 5% of the market value of land. A land tax of 2%, for example, would reduce these returns by 40%, which may cripple many farmers financially. Much higher rates have been mentioned in the SA media, creating considerable uncertainty among commercial farmers. However, farmers will apparently be able to negotiate with their municipalities regarding the rate of tax to be applied. In the US, for example, property taxes on farm real estate are generally less than 1% of the real estate value. Commercial farmers in South Africa do not receive the same level of government support (e.g., subsidies for inputs or crop insurance) that is received by farmers in the developed countries that South Africa trades with. This raises the question of whether

higher land tax rates in South Africa relative to these countries are justified (Ortmann and Machethe, 2003).

A land tax will reduce the value of land and, therefore, the tax base. If farmland is taxed at a rate of more than 5% of its market value, all rents will be taxed away, which would effectively nationalise the income stream of the land (Nieuwoudt, 1995). Nieuwoudt (1995:85) also argues that “a tax on agricultural land will, in the long run, fall on new investment and as such will be a disincentive to future investment in land improvements”. Clearly, a tax on land will increase cash outflows, reduce investments in improvements (thus reducing land productivity) and decrease farmers’ competitiveness.

### **3.6 Volatile exchange rate**

The SA Rand depreciated steadily against the currencies of major trading partners until December 2001; for example, between 1988 and 2001 the Rand declined at an average rate of 14% per year (Standard Bank, 2004). It reached its weakest level in December 2001 when one US dollar bought nearly R14. A depreciating currency benefits exporters such as fruit, wine and sugar producers, and hurts importers whose goods become relatively more expensive (e.g., chemicals and machinery). However, from December 2001 to the end of 2004 the Rand appreciated by nearly 60% against major currencies on a trade-weighted basis, due to three main factors - dollar weakness, increasing world commodity prices, and South Africa’s interest rate differential with its main trading partners (Standard Bank, 2004). Although the appreciating Rand has contributed to lower inflation and interest rates (benefiting highly leveraged producers), and has benefited consumers of imported goods, it has substantially decreased the Rand earnings (profits) of exporters due to lower product prices, thus negatively affecting employment, the social environment and the competitiveness of SA producers. Imports of cheaper value-added products also increase competition for local producers (Standard Bank, 2004).

The appreciating Rand has led exporters to adjust their operations to remain financially viable and competitive (e.g., substitute more expensive inputs with relatively cheaper ones, such as labour with machinery, and sell more of their products on local markets). Also, the fluctuating Rand has made future business planning more difficult and has increased the cost of doing business in South Africa. Standard Bank (2004) expects the Rand to weaken marginally over the medium to long term as the US increases interest rates, thus reducing the attractiveness of South Africa to foreign investors. A softer and more stable Rand would not only benefit exporters in terms of improved competitiveness,

but also other businesses such as game-ranching enterprises that sell hunting and tourism packages (which are usually US dollar-based) to foreigners.

### **3.7 High transport and communication costs**

The relatively high cost of doing business in South Africa has been an obstacle to attracting more foreign direct investment in capital projects. For example, transport logistics costs, at 14% of GDP, are substantially higher than for countries such as Brazil, Korea and Malaysia, where these costs range from 6 - 8% of GDP (Paton and Singh, 2005). Farmers and other businesses are concerned with the deteriorating condition of rural roads, and the poor service delivery from the railways, ports, and electricity and telecommunication utilities. Poor rail services result in excessive road haulage, while vehicle and other machinery costs are increased by relatively high tariff protection. Fixed-line telephone costs also remain high compared to international norms and will remain so until effective competition becomes a reality. This increases business costs and reduces the competitiveness of affected businesses. The SA government is aware of some of these obstacles, and aims to reduce the cost of doing business in South Africa. For instance, it has made a commitment to invest R150 billion in infrastructure over a five-year period and to liberalise the telecommunication market in 2005 (Paton and Singh, 2005).

Another indication of the relatively high cost of doing business in South Africa is in offshore outsourcing ('offshoring'), where jobs are shifted from expensive to cheaper markets. Bhengu (2005) reports that the Economist Intelligence Unit has placed South Africa 34<sup>th</sup> out of 60 countries as a destination for offshoring, with India ranked first. Although South Africa scored well for its macro-economic stability (8.4/10) and tax regime (6.5/10) (same as India in both cases), it scored poorly on political environment and security (particularly regarding crime, labour regulations and poor skills base), and proximity (distance) to major markets (1.3/10). India and China (ranked second) both have readily available, relatively less costly skilled workers, and flexible labour regulations (Bhengu, 2005). Clearly, the SA government needs to focus on these issues and create a more business-friendly environment.

Some important challenges facing SA farmers, and which affect their competitiveness, have been discussed. Symptoms of these problems are manifesting themselves in various ways, including the increased number of bankruptcies of commercial farms and low investor confidence in agriculture (Ortmann and Machethe, 2003). The next section considers some strategies that, if implemented, could promote the competitiveness of SA farmers in domestic and international markets.

#### **4. PROMOTING THE COMPETITIVENESS OF SA AGRICULTURE**

It is clear from section 3 that SA farmers, and agriculture as a whole, face considerable challenges that affect their competitiveness, especially in international markets. Some of these challenges are unique compared to the situation in the main trading partner countries; for example, AgriBEE, land reform, HIV/Aids and inflexible labour markets in a high-unemployment environment. These relatively unique challenges cause additional uncertainties and risks for producers in South Africa and add to business costs. This section suggests ways to help promote the future competitiveness of SA commercial and emerging farmers.

##### **4.1 Good governance**

Politicians, economists, lawyers and accountants have widely debated the reasons for the poor quality of governance in many countries and firms across the world. For example, high levels of corruption and lack of respect for, or failure to uphold, the rule of law, contracts and private property rights in many African countries are blamed for their poor economic performance and high levels of poverty (e.g., see Guest, 2004). Corruption scandals in recent years involving major corporations in developed countries (e.g., Enron and World.com) have affected international financial markets and forced governments and financial institutions to scrutinize the laws governing corporate governance and to establish stricter regulations in order to promote good governance among firms and to promote investor confidence in financial markets. In South Africa, the King Report on Corporate Governance (1994 – King I, and 2002 – King II) set the rules and guidelines for good corporate governance in the country (Cliffe Dekker, 2005). The New Partnership for Africa's Development (NEPAD) is also attempting to promote good governance among its member countries in Africa through its peer-review mechanism.

What does good governance involve? According to Beghin and Fafchamps (1995:288), good governance relates to government policies and institutions that promote competitive markets and efficiency, by defining the rules of the game which allow transaction costs to be reduced and thus the effective flow of goods and services to be increased. Good institutions (i.e., rules, laws and conventions that govern economic behaviour (North, 1990)) promote exchange and the operation of market forces by securing property rights and enforcing predictable rules of law. Economic and political openness facilitate good governance. Economic openness refers to international or regional mobility of financial and human resources and the commitment to allow markets to signal

the consequences of poor policy decisions. Political openness involves “the contestability of political markets and of public service provision, participation of pressure groups and transparency in the decision-making process” (Beghin and Fafchamps, 1995:288). Openness promotes predictability, which is an essential characteristic of good governance and is supported by the rule of law, without which uncertainty and transaction costs increase (Beghin and Fafchamps, 1995). These issues also have direct relevance to agriculture and agricultural policy.

In South Africa, government policies and actions affecting agriculture during the last decade have created considerable uncertainty among farmers due to a perceived lack of consultation and transparency (e.g., with AgriBEE, labour, minimum wage and property tax legislation), and “shifting of the goal posts” (e.g., in land reform and AgriBEE). Government needs to consult more widely with all stakeholders who are involved in transformation, be transparent with its plans and recommendations, and act in a predictable way in order to reduce uncertainty and costs for those affected by policy changes.

## **4.2 Institutional change**

Institutions are arrangements among economic agents that attempt to decrease uncertainty and costs in exchange and ownership, i.e. they comprise rules, laws and conventions that govern economic behaviour (North, 1990). Private and public institutions have a major role to play in promoting the competitiveness of commercial and emerging farmers, and enhancing the productivity of communal farmers in South Africa (Ortmann, 2000). What institutional innovations may help to promote competitiveness among South Africa’s various groups of farmers?

### *4.2.1 Commercial farmers*

SA commercial farmers and agribusinesses are creating institutions (such as strategic partnerships and labour contracts), adopting existing private and public institutions (e.g., ISO 9000 and HACCP (Hazard Analysis Critical Control Points)) or restructuring their operations to add value to products and services, reduce costs and gain access to new export markets. Cooperatives have also been converted into private companies to shed free-rider problems that constrain investment in cooperatives. Commercial farmers have generally adapted well to deregulated markets, and have been very innovative in finding markets and adapting their marketing strategies to suit changing circumstances. For example, maize farmers are increasingly making use of forward contracts and futures markets to better manage price risks (Bown *et al*,

1999), while apple producers seek closer cooperation with packers and exporters to make the apple export value chain more competitive (Hardman *et al*, 2002). Many SA commercial farmers are willing to serve as mentors for emerging farmers, and are also seeking innovative solutions to the land reform challenge; e.g. establishing farm worker equity-sharing schemes, which are usually company operations in which financial equity is shared between the previous landowner and his/her farm workers (Knight and Lyne, 2002). However, more flexible labour laws; lower transport and communication costs; less uncertainty regarding land claims, AgriBEE and the rural land tax; and reduced crime rates would promote the competitiveness of SA commercial farmers.

#### 4.2.2 *Small-scale farmers in communal areas*

The small-scale emerging farm sector in South Africa is important in terms of providing employment, human welfare and political stability (Delgado, 1999). However, a major challenge in South Africa is how to develop institutional innovations that will help to promote the competitiveness of communal and emerging small-scale farmers. The role of institutions in developing small-scale farms in Africa via the efficient use of land and improving livelihoods has been well-documented (Ortmann, 2000). In the communal areas of South Africa, limited property rights do not guarantee that individuals can fully internalise benefit streams or transact land to their advantage. Although land titling is expected to increase tenure security, promote investment and allow the emergence of a land market (Barrows and Roth, 1990), attempts in Africa to replace customary tenure with title deeds have not been very successful. Several African studies have shown that titling can increase uncertainty and conflict over land rights; also, the use of formal credit, investment and productivity in agriculture did not increase when title deeds replaced customary tenure (Atwood, 1990; Migot-Adholla *et al*, 1991; Place and Hazell, 1993). Title deeds only give collateral value to land when they expedite market transfers (Fenwick and Lyne, 1999). De Soto (2000) believes that the absence of property rights in many developing countries has constrained economic growth in those countries, and that legal ownership of property will drive economic development.

Promoting land rental markets could help to improve efficiency of land use and equity in communal areas. However, many households perceive that renting is risky, as they believe they could lose their land or crop owing to uncertainty about the enforcement of rental contracts in traditional courts (Lyne *et al*, 1996). Risk increases transaction costs and, hence, constrains the land rental market. If the land market is efficient (i.e., tenure is secure and

transaction costs are low (Nieuwoudt, 1990)), then land will tend to transfer to its most efficient use. The presence of an active rental market is, therefore, a good indicator of tenure security and allocative efficiency, both of which promote agricultural productivity.

A land rental market also has equity advantages (Lyne *et al*, 1996). If transactions are voluntary, landholders who are unwilling or unable to use all their land can gain additional income by renting out their unused land, while households dependent on agriculture but short of land are able to expand their farming activities. To promote a land rental market in the communal areas of South Africa, transaction costs - including perceived risks - will have to be reduced (see Thomson, 1996, for practical proposals).

If farmers perceive that their tenure on the land they operate is secure, they have an incentive to invest in land improvements and maintain existing improvements, which increase land productivity (Thomson, 1996). Various studies confirm that access to credit, particularly institutional credit, improves with tenure security, even if land cannot be sold (Feder and Onchan, 1987; Fenwick and Lyne, 1999; Kuhn *et al*, 1997; Migot-Adholla *et al*, 1991). With better access to credit, farmers can alleviate liquidity constraints and invest in land improvements and technology that raise land productivity.

An active rental market would also improve allocative efficiency by promoting the transfer of land to those households best able to use it, i.e. those that possess greater skills, capital or family labour, leading to better resource allocation and greater productivity (Baber and Nieuwoudt, 1992; Thomson, 1996). It would also allow households to alter the scale of farming and take advantage of new technology by spreading fixed costs, including lumpy management, transaction and information costs, over more output. Empirical evidence from the communal areas of KwaZulu-Natal suggests that both adoption of farm technology and production of surpluses are positively related with farm size and the renting of land (Nieuwoudt and Vink, 1989; Thomson and Lyne, 1991). Moreover, farmers will be more inclined to adopt land-saving rather than time-saving technology once land acquires a price tag.

#### 4.2.3 *Emerging farmers on redistributed land*

Three main land reform strategies are being pursued in South Africa, namely land restitution, tenure reform and land redistribution. Lyne and Darroch (2003) provide an overview of these strategies. With regard to land redistribution, the SA government has set a target of 30% of commercial farmland to be transferred to previously disadvantaged people by 2014 under



the willing buyer – willing seller principle. Various institutions have evolved over the last few years to help finance land redistribution in South Africa. Lyne and Darroch (2003) describe these in some detail, including cash grants through the SLAG (Settlement/Land Acquisition Grant) and LRAD (Land Redistribution for Agricultural Development) programmes; diminishing, finite interest subsidies (see also Nieuwoudt and Vink, 1995; Mashatola and Darroch, 2003); and the Land Reform Empowerment Facility (LREF). The underperforming SLAG programme, which transferred only 1.2% of commercial farmland over six years, was replaced in August 2001 by the LRAD programme, which also allowed wealthier individuals to qualify for a minimum grant of R20 000 up to a maximum of R100 000, depending on the beneficiary's own contribution in terms of savings and loans. "This marks a distinct shift in the SA government's land redistribution policy away from poverty alleviation and group settlement, in favour of settling prospective farmers on their own farms" (Lyne and Darroch, 2003:69). According to Shabane (as cited by Lyne and Darroch, 2003), LRAD redistributed about one million hectares of farmland in South Africa in its first year.

Costs, delays and uncertainty associated with the formal registration and transfer of affordable subdivisions of farmland in South Africa and indivisible assets (including marketing contracts) have increased the popularity of farm worker equity-sharing (FWES) schemes in South Africa (Lyne and Darroch, 2003). These schemes, initiated by commercial farmers in the Western Cape, are usually company operations in which financial equity is shared between the previous landowner and his/her farm workers. They have promoted wealth and income redistribution while improving agricultural performance and the enterprises have successfully attracted additional finance from commercial banks and venture capitalists (Eckert *et al*, 1996; Knight and Lyne, 2002). FWES schemes are now found in all provinces in South Africa and include wine, fruit, vegetables, olives, poultry, cut flowers, dairy and eco-tourism enterprises (Knight *et al*, 2003; Lyne and Darroch, 2003). The LRAD programme and the Department of Agriculture explicitly support equity-sharing schemes (Lyne and Darroch, 2003), but some provinces remain reluctant to award land reform grants to business ventures.

Moreover, many emerging farmers are prevented from making private purchases of affordable parcels of farmland by obstacles imposed on sellers by the Subdivision of Agricultural Land Act, 70 of 1970. Lyne and Darroch (2003:83) argue that scrapping this Act "will make it easier for poor and part-time farmers who are rationed out of the LRAD programme to obtain finance for smaller and more affordable farms". This supposes that farmland is zoned

for agricultural use; however, the country does not yet have national zoning regulations.

For the long term sustainability and growth of farming in South Africa, it is crucial that land redistribution, whether by FWES schemes or direct purchases by individuals, should support the efficient use of commercial farmland and other agricultural resources so that emerging farmers can also compete successfully in local and global markets. Financing models that address the cash flow problem of emerging farmers are needed, and must be complemented with effective extension, education, information and infrastructural (physical, such as roads, and legal) support, and a secondary land market must be encouraged so that better farmers can expand, even at the expense of disadvantaged farmers who do not perform. If government or an agricultural (agribusiness) industry can reduce transaction and information costs, then small-scale farmers would be better able to compete with larger farmers as size economies become less pronounced (Lyne and Ortmann, 1996).

Certain agricultural industries have been active in facilitating land redistribution to, and mentoring of, black farmers; for example, the SA Sugar Association (SASA) recently established Inkezo, a non-profit company that facilitates commercial land redistribution in the sugar industry. The medium-scale farmer initiative of sugar millers and Ithala Development Finance Corporation (Ithala) has established more than 100 emerging sugarcane farmers on farms of roughly 100 hectares each. These deals were financed by Ithala with LREF and, more recently, LRAD support. Commercial banks are also active in developing innovative financial products for emerging farmers, also in conjunction with the LREF, which offers unsubsidised loans with deferred or graduated repayment schedules to commercial banks who finance, on similar terms, equity share projects and land purchased by emerging commercial farmers (Lyne, 2005b). The Department of Land Affairs is now also more willing to accept land reform projects that hire in the previous farmer (owner) as a transitional manager. Successful links to value (supply) chains may also enable small-scale and emerging commercial farmers to compete effectively in various markets, as discussed in the next section.

#### *4.2.4 Improving access by small-scale farmers to value chains*

How can links between emerging small-scale farmers and value chains be developed that will help to promote their competitiveness? The type of institutional innovation required to reduce transaction costs may differ by commodity. Vertical cooperation with processors, for example, may not be very useful for independent smallholders who produce commodities with

relatively low marketing transaction costs, such as coarse grains, root crops and small ruminants (which can be sold in local markets). However, products with relatively high marketing transaction costs, such as fruit, export vegetables, cotton, tobacco, coffee, tea, sugar-cane, timber, dairy and cut flowers, could be produced either through contract farming by smallholders or on large farms (Delgado, 1999).

Small-scale farmers usually do not have access to the same technology, information, services and remunerative markets as large-scale farmers because they face relatively high transaction costs, while the benefits of technology, information and market participation are severely constrained by small farm sizes (Delgado, 1999; Matungul *et al*, 2001). Delgado (1999) argues that for small-scale farmers to participate and compete in growing world markets for high-value products they need to cooperate vertically with processing and marketing firms. Since transaction costs may be commodity-specific, the type of vertical coordination required may also need to be specific.

Contract farming may help to reduce transaction costs, particularly for high value-added tradable products. However, the high unit costs of contracting with smaller farmers, who may also have greater difficulty in meeting stringent quality and safety standards, imply that contract farming favours large-scale farmers (Reardon and Barrett, 2000). Kirsten and Sartorius (2002) also highlight problems usually associated with contract farming, including difficulties in enforcing contracts; high transaction costs in dealing with many small-scale farmers; difficulties in meeting strict quality and food safety standards; high rate of product rejection by agribusiness firms; and the weak bargaining position of farmers.

However, in the US the growing importance of production contracts suggests that farmers gain economic benefits through contract farming (Paul *et al*, 2004). Some potential advantages for farmers include reduction in income risk and promoting farm productivity through improving quality of managerial inputs, enhancing the flow of technical information to growers, and better access to credit, thus promoting adoption of more efficient technologies. Contractors also gain through their access to farmer resources, their ability to exploit economies of size (Paul *et al*, 2004) and BEE accreditation, and may therefore be willing to bear the higher transaction costs of contracting with small-scale farmers. In South Africa, small-scale sugarcane farmers have contractual agreements with sugar millers, who absorb or subsidise the transaction costs involved in dealing with many small-scale growers. Ginners in southern Africa provide small-scale cotton farmers with technical information and buy their product at a negotiated price, which has contributed to the success of

some farmers. A similar contractual arrangement by SA forestry companies has established thousands of small-scale timber growers in KwaZulu-Natal. These contracts have promoted household incomes and economic growth in rural areas. Delgado (1999) maintains that a key to the success of contract farming is effective farmer participation in decision-making.

Horizontal cooperation through producer groups may also be useful in overcoming access barriers to assets, information, services and markets for high-value products. Collective action can help to reduce market transaction costs, stimulate entry into the market and promote growth in rural communities (Holloway *et al*, 2000). Reardon and Barrett (2000) maintain that the increasing importance and changing nature of food grades and standards is a reason for the rise of specialised cooperatives and contract farming in developing countries, particularly for perishables such as horticultural, meat, dairy and fish products. Applying grades and standards requires investments in training, equipment, infrastructure and monitoring systems, which may only be afforded by larger firms.

However, producer groups have their own transaction costs and unique problems. For example, traditional cooperatives face “horizon” and “portfolio” problems due to non-proportional property rights and non-marketable shares (interests). The “horizon” problem refers to the disincentive for cooperative members to invest in long term projects because future members benefit without having to pay higher prices for their shares. The “portfolio” problem arises because members who are willing to risk larger investments may be forced to accept a low return – low risk portfolio preferred by minority shareholders who have equal voting power (see Cook and Iliopoulos, 2000). Other forms of business organisation, like private companies, may create stronger incentives for investment and good governance since shareholders’ expected benefits and voting rights are proportional to their investment in the organisation.

### **4.3 Promoting education and skills training**

South Africa’s sustainable economic growth in future will be affected by the level of education and skills of the country’s human resources. This also applies to the agricultural sector. South Africa’s poor and mismatched skills profile has constrained economic growth in the past (Paton and Singh, 2005). Bernstein (2005) agrees that South Africa is significantly disadvantaged by the poor performance of its mathematics (maths) and science education system. To gain a competitive edge in an increasingly global environment requires more investment in R&D, and innovative developments in technology. This requires “a large and growing number of people with a sound maths and science

education background" (Bernstein, 2005:16). Many studies show education to have a positive impact on farmers' managerial skills and technology adoption (e.g., Admassie and Asfaw, 2004; Huffman, 2001; Lin, 1991; Pudasaini, 1983).

South Africa is experiencing a national crisis in higher-grade (HG) maths and science schooling. For example, between 1991 and 2003, HG enrolment dropped by one-third, and less than one-quarter of HG maths graduates were African (Bernstein, 2005). This poses a major challenge for South Africa's education system, particularly given that the entry of newly qualified maths and science teachers is not keeping pace with retirements, retrenchments, deaths (due mainly to HIV/Aids) and losses to other sectors in the economy (where remuneration packages are better). For example, in 2000 the number of students at teacher training colleges was 56% less than in 1994 (Bernstein, 2005). Importantly, the SA government has recognised the critical need to improve the quality of school education, particularly in maths and science, and prioritising technical and quantitative skills (Paton and Singh, 2005). Clearly, the demand for appropriate skills will increase as the economy grows, and it may be necessary to import appropriate skills in the short to medium term in order to augment existing skills. This will, however, require a more liberal immigration policy.

With regard to farmers' education and skills training in South Africa, commercial farmers are relatively well educated and have acquired appropriate skills for their operations compared to small-scale farmers. The challenge for both the national and provincial departments of agriculture is to create a well-trained and motivated extension service that can advise and assist smallholders with regard to agricultural production and farm and financial management issues. Mentoring of emerging farmers by commercial farmers could also be an effective approach to training emerging farmers who have acquired redistributed land. Government should also make more bursaries available to appropriate candidates to study agriculture at SA tertiary institutions. This may encourage more grade 12 learners to study agriculture, which would help to alleviate the skills shortage (especially in agricultural economics and agribusiness) in the provincial and national departments of agriculture.

#### **4.4 Promoting agricultural R&D**

The highly competitive nature of the US agricultural sector over many years, as reflected in its healthy export performance, has been promoted by the country's strong public and private agricultural research systems (Colyer and Jolly, 2000). Developing and implementing technological innovations is essential for a country to remain competitive, particularly in a global

environment where new rules and requirements for competing in international markets are being introduced by the WTO. Many studies have shown that agricultural research is a high-payoff investment (e.g., Griliches, 1957; Khatri *et al*, 1996; Thirtle *et al*, 1998; Townsend *et al*, 1997).

Although public sector finance is still the most important source of agricultural R&D funding in South Africa, it has decreased substantially in real terms in recent years. For example, baseline funding for agricultural research provided by the government dropped from a high of R337 million in 1997/98 to R262 million in 2001/02 in nominal terms. In real terms the grant in 2001/02 was worth only 55% of the grant received in 1992 (Liebenberg and Kirsten, 2003). An increasing proportion of R&D funding is being sourced from producer organisations and international donors, with universities conducting more of the research. According to Liebenberg and Kirsten (2003), the decrease in core government funding and changes in leadership styles have led to an exodus of top researchers from the Agricultural Research Council (ARC), which is the main agricultural research provider in South Africa.

Given the increasing demands on public funding in South Africa, the question whether the public or private sectors should be responsible for agricultural research is important. Nieuwoudt and Nieuwoudt (2004:239) argue that "Whether agricultural R&D is a private or public good depends on whether developers of new technology can capture returns from investments through copyrights, patents or fees. If the latter is possible then R&D is a private good and government R&D is unwarranted and unfairly competes with commercial interests". They also maintain that relevant research may be undertaken by commodity organisations (such as the SA Sugar Association) even if patents or fees are not possible (i.e., R&D is a public good). In such a case, the organisation would internalise the externalities arising from the research. Nieuwoudt and Nieuwoudt (2004) recommend that the SA government should consider shifting its role from administrator of research organisations to stimulator (sponsor) of research. It should, therefore, still play a critical role in R&D funding.

In a 2001 policy report, entitled *The Strategic Plan for South African Agriculture*, the government stated its objective to increase funding for agricultural research, education and extension from the then 1% of agricultural GDP to about 3% (NDA, 2001). If realised over the next few years, it could significantly promote research activity and resource productivity in the agricultural sector. However, it is critical to encourage increasing numbers of students to train in the agricultural sciences in order to create "an effective and world-class agricultural science fraternity in South Africa" (Liebenberg and Kirsten, 2003:223). The

government could play a major role in this regard by offering more students substantial bursaries to study agriculture at SA tertiary institutions.

#### 4.5 Adoption of new technologies

Adoption of new technologies enables farmers to produce more output from the same quantity of available resources, the same output with fewer inputs, or enhance product quality. This can promote their competitiveness. Improved technologies that have increased agricultural supply include high-yielding crop varieties and livestock breeds; better methods of insect, disease and weed control (including lower levels of chemical use); improved mechanisation that enables planting and harvesting to be done more timeously; and better tillage techniques. Such improvements in technology have been the main source of long term shifts in agricultural supply (Tomek and Robinson, 2003:77) and have led to a decrease in the real prices of agricultural commodities over time as agricultural supply has shifted more than demand (driven by increases in population and real incomes) has. New technology, therefore, disproportionately benefits the poor because the proportion of their budget spent on food purchases is relatively high. Whether agricultural producers adopt a new technology or not depends on the expected economic benefits relative to the costs of adopting and using the new technology.

Continual research generates a stream of new technologies that enter the market (Tomek and Robinson, 2003). A relatively new technology that shows great promise for the future in terms of promoting competitiveness of farmers is *biotechnology*. As was discussed in section 2, firms may pursue both cost leadership and/or product differentiation strategies to enhance their competitiveness. However, any value creations must filter down the supply chain to the customer for them to be effective in promoting firm competitiveness. Kalaitzandonakes (2000:293) maintains that agro-biotechnology is "a new technological platform that will enable value creation in various parts of the agribusiness supply chain for years to come". Many transgenic or genetically modified (GM) crops are being approved for commercialisation. First-generation agro-biotechnology products included crops with herbicide tolerance and resistance to certain insect pests, while second generation products include transgenic plants with enhanced quality traits (Kalaitzandonakes, 2000). Colyer and Jolly (2000:318) maintain that traditional approaches to technology development (e.g., mechanical and biological/chemical innovations) have experienced diminishing returns, while biotechnology is restoring increases in productivity.

Biotechnology crops have been rapidly adopted in various countries. For example, in the US nearly 50% of the total maize (corn), soybean and cotton acreage was planted with transgenic crops in 1999, merely four years after commercial introduction (Kalaitzandonakes, 2000). In South Africa, the area of GM crops under cultivation increased by 25% in 2004, following a rise of 33% in 2003, bringing the total area of GM maize, soybean and cotton in 2004 to around 500 000 hectares (of which about 80% is under (mainly yellow) maize) (Lünsche, 2005). About 15% of South Africa's maize production is now GM, compared to 50% for cotton and 85% for soybeans. Globally, the area under cultivated crops has increased by more than 10% per year since they were introduced in 1996. At the end of 2004, the global area under GM crops was almost 80 million hectares. Although South Africa's GM crop is only 1% of global production, it is presently one of eight countries in the world accounting for 99% of global transgenic crop production. The leading country is the US (59%), followed by Argentina (20%), Canada (6%), Brazil (6%) and China (5%) (Lünsche, 2005). The rapid adoption of GM crops in South Africa is reflected in the increasing number of GM seed permits approved by the NDA – from only three in 1999 to over 200 in each of the past three years. “Fast adoption rates are consistent with initial empirical evidence on value creation. Herbicide-tolerant and insect-resistant crops have created significant on-farm value, mainly through cost savings from reduced insecticide and herbicide use and improved risk management in pest control” (Kalaitzandonakes, 2000:294).

However, consumer concerns about the safety of GM products present regulatory challenges to governments. In South Africa, the NDA has enlisted university scientists to assist with the evaluation of permit applications and food items requiring labelling if they contain GM material. Also, many African countries have not allowed use of GM seeds for fear of jeopardising their food exports to the European Union, where consumer resistance to GM products is high (Lünsche, 2005). Colyer and Jolly (2000:318) point out that prohibitions, restrictions, labelling requirements, and other barriers have been erected to impede the international flow of GM products. Nevertheless, small-scale farmers in South Africa have benefited from the use of GM seeds. For example, in northern KwaZulu-Natal many farmers using GM maize seed have reported yields some 20% higher than conventional maize crops (Lünsche, 2005). Gouse *et al* (2003) also report that both small- and large-scale farmers who had adopted Bt cotton achieved significantly higher yields and income advantages than non-adopters.

With the rapid adoption rates of GM products in various countries, the on-farm economic benefits from the first-generation GM products may, however, be transitory. As Kalaitzandonakes (2000) points out, product prices could fall



substantially if fast adoption rates result in oversupplied markets, leading ultimately to a loss in value. However, he argues that the first generation agro-biotechnologies are input-reducing rather than strongly yield-increasing. "In such a case, the "technological treadmill" effects may be limited and the value created through first generation agro-biotechnologies may be sustainable" (Kalaitzandonakes, 2000:294). The relatively high yield increases achieved by small-scale farmers in South Africa who have adopted GM seeds are probably due mainly to improved control of weeds and pests in their fields compared to the traditional cultivation methods.

Value may also be created by adopting second-generation biotechnologies that have quality-enhancing traits, such as maize with high oil or lysine content and soybeans with high oleic acid or sucrose characteristics. With the commercialisation of these GM products, the challenge remains how the enhanced value created can be distributed along the agrifood chain since this will determine the competitiveness impacts of agrobiotechnology on different firms and industries. Kalaitzandonakes (2000:302) argues that quality-enhanced crops "must be produced and distributed within tightly coordinated identity-preserved chains to maintain value". This implies strong interdependencies between players in the supply chain so that the competitiveness of firms will also depend on the competitiveness of the whole supply chain (see also Darroch *et al*, 2002).

Nevertheless, a major challenge for firms producing biotechnology products is to ensure (by communicating and demonstrating) that their products are safe for human and animal consumption, and that their developments will not have any detrimental impacts on the environment in the longer term. Only then will the many sceptical potential consumers of biotechnology products across the world adopt their products.

## 5. SUMMARY AND CONCLUSIONS

South Africa's global competitiveness could be improved, judging by its current ranking as determined by the World Economic Forum. There is also evidence that some agricultural sectors and value-adding activities are not competitive. This paper has attempted to identify the major challenges facing SA farmers and agriculture, and some strategies and institutional innovations that could help to promote their competitiveness.

Essentially, a firm's competitiveness depends on its ability to produce goods and services at a lower cost than rivals and/or by differentiating its product or service to gain higher prices. The competitiveness of a whole industry, such as

the beef, maize or sugar industries, depends on the competitiveness of its individual farms and their associated value chains, and is reflected in its sustained ability to profitably maintain or gain market share. Government has an important role to play in creating a business-friendly environment, i.e., one in which the cost of conducting business is relatively low, to promote farmers' competitiveness.

SA farmers and agriculture as a whole face some major challenges that affect their competitiveness in global markets. Land reform, AgriBEE, restrictive labour policies, HIV/Aids, a new land tax, a volatile exchange rate, and relatively high transport and communication costs probably comprise the main challenges. Land reform is generally accepted as necessary for political stability and hence economic growth. However, government's efforts over the last 10 years to redress the imbalances in land ownership through various programmes (e.g., SLAG and LRAD) have not been very successful. Lack of capacity and funds in government departments have been contributory factors and need to be addressed for the pace of successful land reform to increase. Farm worker equity-sharing schemes have become popular due to the costs, delays and uncertainty associated with the formal registration and transfer of affordable subdivisions of farmland. The private sector has been innovative in seeking solutions to land reform. For example, the SA Sugar Association has established Inkezo that facilitates commercial land redistribution in the sugar industry, while commercial banks are active in developing innovative financial products for emerging commercial farmers. A major challenge is how to effect land transfers so that the efficient use of commercial farmland and other agricultural resources is not compromised in the long term.

In addition to land reform, AgriBEE includes other measures aimed at empowering farm workers. The AgriBEE proposals in 2004 attracted considerable criticism, particularly from organised agriculture, and were widely considered as a "shifting of the goal posts" by the government. The lack of consultation and transparency by government in formulating the draft proposals led to considerable confusion and uncertainty, particularly among commercial farmers. If this uncertainty persists then commercial farmers will most likely reduce investments in their farm businesses; this will lower productivity and hence their ability to compete. Transparency and consultation in all aspects of AgriBEE, and strong and competent leadership and management among government officials and organised agriculture are critical if AgriBEE is to succeed and uncertainty be reduced.

In communal areas, insecure land tenure and free rider problems discourage investment in agriculture and hence diminish the competitiveness of this sector. Improving land tenure security would promote access to credit,

strengthen incentives to improve land and to adopt new technologies, and facilitate allocative efficiency and equity through rental transactions in cropland. An efficient land rental market requires rental contracts to be upheld in a court of law and transaction costs, including perceived risks, to be reduced.

For emerging farmers, financing models that address their cash flow problems must be complemented with effective extension, education, information and infrastructural support (physical and legal). A secondary land market should also be encouraged so that the better farmers are able to expand, even at the expense of poor performers. Better links to value chains (including processing and marketing firms) may also be crucial for smallholders to compete effectively with large-scale farmers in world markets for high-value products. Contract farming (vertical cooperation) may help to reduce transaction costs, reduce income risk for smallholders and improve their access to managerial advice, technical information and credit. Barriers to assets, information, services and markets for high-value products may also be overcome through horizontal cooperation (producer groups). However, producer groups have their own transaction costs and unique problems, such as “horizon” and “portfolio” problems experienced by traditional cooperatives. In South Africa, farmer cooperatives have converted to private companies, which create stronger incentives for investment and good governance because shareholders’ expected benefits and voting rights are proportional to their investment in the organisation.

Although labour laws that have been implemented in South Africa generally benefit employees, they have resulted in higher wage and transaction costs for employers. Commercial farmers have responded by substituting labour with capital, labour contractors and other labour-saving technologies. However, less restrictive labour policies would improve the competitiveness of SA businesses (farms) and increase employment. This is particularly crucial in view of the high unemployment rate and the HIV/Aids epidemic, which has increased production costs due to lower labour productivity, higher labour turnover rates and greater investment in recruiting and training replacement workers. Rural land taxes will also increase farmers’ cash outflows, and it may be crucial for farmers’ organisations to negotiate with local municipalities regarding the tax rate and the benefits farmers can expect from these taxes. SA farmers also face relatively high transport and communication costs caused by deteriorating rural roads, high telephone charges, inflated vehicle and machinery costs (caused by high tariff protection), and generally poor service delivery from government parastatals (railways, ports, and electricity and communication utilities). Government urgently needs to address these

problems in order to reduce the cost of doing business in South Africa so that firms and farms can compete better in global markets.

South Africa's relatively poorly educated and poorly skilled labour force leads to significant disadvantages for the country from a global competitiveness perspective. Gaining a competitive edge requires increased investment in research and development of innovative technologies. This depends on an increasing number of people with excellent maths and science training. The national crisis in higher-grade maths and science schooling could be alleviated over time if the government made more bursaries available to potential maths and science teachers. In the short to medium term, appropriate skills may have to be imported to alleviate the chronic shortage of these skills. This will, however, require a more liberal immigration policy from government.

Research in agriculture should also be vigorously promoted. Agricultural research seems to be a high pay-off investment and improves the competitiveness of countries that have strong public and private research systems. Although public funding for agricultural research in South Africa has decreased in real terms over the last decade, the government has indicated that it intends to increase funding for agricultural research, education and extension from 1% of agricultural GDP to about 3%. It could, therefore, play an important role as a sponsor of research. The government should make more bursaries available for students to study agriculture at SA tertiary institutions. This could help to alleviate the shortage of competent agricultural researchers in South Africa. Commodity organisations may also play a more important research function in future by funding relevant research for their industries. It appears that biotechnology will play a crucial role in future, enhancing the competitiveness of farmers and countries that adopt it. In South Africa, small-scale farmers have benefited from the use of GM maize and Bt cotton through significantly higher yields and incomes.

In essence, the main factors that will help promote the competitiveness of SA farmers, and the agricultural sector in general, include good governance at all levels of government and industry, institutional innovations for commercial and small-scale farmers, improving the quality of education (particularly of maths and science) and skills training, promoting research in agriculture, and farmers adopting new technologies. Government should focus its relatively scarce resources on creating a business-friendly environment by providing physical and legal infrastructure to reduce transaction costs, including risk, so that markets for products and resources (such as land and water) work more efficiently; relax restrictive labour laws; reduce uncertainty regarding land claims, AgriBEE and the rural land tax; improve efficiency in disbursing

LRAD grants to approved projects; reduce crime rates; and promote education, agricultural R&D and skills training.

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