ENTREPRENEURS AND THE POLITICAL ECONOMY OF REFORM IN SOUTH AFRICAN AGRICULTURE

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1. Introduction

The programme for this year's conference is designed to introduce entrepreneurship in South African agriculture and its relevance in a changing political, social and economic environment. Subjects for discussion include the role of entrepreneurs in farm production, in related agri-support sectors and in the agro-industrial complex. A wide range of invited and contributed paper sessions will address these issues at the high level of competency we have come to expect. By the end of the proceedings on Tuesday, members of this Association will have been exposed to the state of the art as far as this theme relates to South Africa.

In this address I try to set the context within which entrepreneurs in both the private and the public sectors will have to operate in the short to medium term future. In doing so I will adhere to the First Law of Economists. I will make some predictions about the future, and even some predictions about specific times in the future. I just will not join these two together in the same sentence.

The theme for this address comes from a statement by Kenneth Boulding (1981) who surveys the history of the taxonomy of the factors of production, originally thought of as land, labour and capital. According to Boulding, Adam Smith, who of course was always right, had only just begun to see the relevance of his insights on the division of labour to a theory of human learning in production. This was never developed further by his successors, although Marshall did include the factor of 'organization' in his own taxonomy. Boulding (1981:792) continues:

"Both Ricardo and Marx missed the crucial point...that it is human knowledge and know-how which is the real genetic factor, not 'labor', which from the point of view of production is a hopelessly heterogeneous aggregate. I have argued, indeed, that land, labor, and capital, from the point of view of the theory of production, are medieval aggregates with all the scientific validity of earth, air, fire, and water, and that they represent a totally inadequate taxonomy of the production process and of the evolutionary process. Once we look at production from the point of view of one genetic factor, know-how, and a set of limiting factors...the whole process looks very different..."

And later (p794):

Agricultural economics strikes me as being the ideal starting point for empirical investigation into both limiting-factor models and exhaustible-factor models...It is obvious in agriculture that human know-how has been the critical factor in agricultural production. This know-how, however, is limited in its realization by the limiting factors of energy, materials, space and time, but is also constantly engaged in pushing back these limits."

In more conventional terms this translates into recognizing the entrepreneur as the key to the production process, yet constrained by technology, institutions, natural resources (or 'land'), capital, etc. It is in this setting that this address aims to describe the environment in which entrepreneurs in the farm sector of South Africa have to operate.

The paper starts with a historical survey of the farm sector. The context is important, both for illustrating the dynamic nature of the sector and for better understanding the preconditions for further reforms. In the third section the current state of the sector is described. The paper ends with some implications for further reform policy.

2. The historical context

The two best known outcomes of the complex interaction of social, political and economic factors that characterizes South African agriculture are probably the highly skewed distribution of land ownership and food production's consistent outpacing of population growth rates. In this century these have been the result of at least three distinct phases of structural adjustment in the sector (eg Vink, 1990; Brand *et al*, 1992; Kassier Report, 1992).

2.1 Segregation and support: 1910 to the Second World War

When the Union was established in 1910, legislation from its constituent parts was consolidated into national laws and supplemented by other farm policy measures. The most important legislation was the Land Bank Act, the 1913 Land Act, the Land Settlement Act and the legislation establishing the KWV. In the period leading up to the Second World War further legislation was promulgated, including the Cooperative Societies Acts of 1922 and 1939, the Natives Administration Act of 1927, the Land Act of 1936 and the Marketing Act of 1937. This body of policy instruments set the scene for the almost total segregation of agriculture and for a comprehensive system of support measures to white farmers.

The main features of this period can be summarized as follows:

1. The existing racial discrimination in access to land was consolidated in the early part of this period and extended as time went on. The cumulative effect of the Land Acts was the eventual 87:13 split in access to land, with many African land owners deprived of ownership during the decades after 1913. The maldistribution of land ownership is of course worse than this, as most of the land in the

present day homelands is owned by the state. The Land Acts also attempted to outlaw other forms of access to land such as labour tenancy and share cropping. This caused much disruption to the farm production of the black peasantry (Keegan, 1981; Matsetela, 1981; Willan, 1984; Plaatje, 1987).

2. The form of land access in the 'reserves' was controlled by the Land Acts, the Administration Act of 1927 and a wide range of Proclamations made in terms of these Acts during the 1960s. The legislation served to coopt traditional chiefly systems into the structures of the state and to cement the ruling interpretation of 'traditional' tenure systems in law. The principal economic effect was to increase the transaction costs of evolutionary changes to these tenure forms (Vink, 1986; Ault and Rutman, 1993).

3. A wide range of instruments was introduced for supporting commercial (white) farmers. These included the Land and Agricultural Bank, formed out of existing provincial institutions; the securing of input supply and marketing services for farmers under the Cooperative Societies Acts of 1922 and 1939; and the tightening of controls over produce marketing under the Marketing Act of 1937 and various other bits of legislation. Settlement of state owned land by white farmers under the Land Settlement Act of 1912 took place at a time when, in the USA for example, there was considerable pressure to keep state owned land in the public domain for conservation purposes (eg Schmidt, 1987).

4. Although it would change more rapidly in the future, the structure of the agricultural sector was subjected to a number of changes during this period. The number of farms in the commercial farming areas of South Africa was still increasing throughout the first half of the century. Labour tenancy and share cropping remained features of the farm economy despite legal prohibition under the Land Acts (eg Keegan, 1983; Morrell, 1986; Trapido, 1986; Murray, 1992). At the same time population pressure in the homelands was increasing and already above the environmental carrying capacity (eg Simkins, 1981). The economically perverse inverse spatial pattern of farm sizes, with the smallest farms on the geographical and economic periphery of the country, was largely set in this period.

2.2 The post-war period to 1980

The South African economy grew at above 5 per cent per annum to 1970 and above 3 per cent to 1980, both well above population growth rates during this period. Despite these increases in *per capita* incomes, the economy was characterized by a number of negative features that have been ascribed to apartheid and bad economic policies (Kritzinger - van Niekerk *et al*, 1992). The most important of these features, with their impact on agriculture, were the rise in the inflation rate from the early 1970s (eg. Moll, 1993) and increasing concentration in the agro-industrial complex. The latter was largely a result of industrialization through import substitution (Board of Tariffs and Trade, 1992; Brand *et al*, 1992; Kassier Report, 1992). By the beginning of the 1980s these distortionary influences on prices, together with a range of farm-specific policies, had created an agricultural sector that desperately needed to be reformed (Kassier and Groenewald, 1992).

The main features of the second phase of agricultural restructuring, which took place after the Second World War, were the mechanization of commercial farming and the increased pressure on food production in the homelands. Regarding the former, the experience in the maize farming areas tells the story of capital and labour substitution in agriculture (De Klerk, 1983; Van Zyl et al, 1987). The total number of farm employees in South African agriculture grew to 1970, and then fell between 1970 and 1980. Despite the decline in the latter period, farm employment was higher in 1980 than it had been in 1950 (Van Zyl *et al*, 1987). More detailed analyses of farms in the maize producing areas show a turning point around 1970, with the growth rate in employees per 1 000 ha dropping faster than that per 1 000 ha cultivated land in the period 1945-1970 as compared to 1970-1985 (Van Zyl *et al*, 1987:245). This turning point around 1970 is graphically illustrated by De Klerk (1983:46), who shows that while 16 per cent of the maize crop was harvested with combines in 1968, this had increased to 81 per cent by 1977. The area planted to maize increased from 1945 - 1970 as tractors were introduced on a large scale. This increased the demand for labour to harvest the bigger crop. Combines were introduced in the late 1960s, stimulated by preferential tax treatment (Van Zyl *et al*, 1987), and the demand for labour fell. This period simultaneously saw the highest rates of forced removals from the farms and an increasing use of temporary or seasonal labour, most of whom were women and children (Marcus, 1989).

Other features of the commercial farm sector in the post war period included the tightening of control over prices and the movement of produce in terms of the Marketing Act, and an increase in subsidies to white farmers. The latter was both direct in the form of budgetary transfers for disaster relief, irrigation infrastructure, water subsidies, research etc and indirectly through for example price policy and interest rate subsidies (eg Van Zyl *et al*, 1992; Vink *et al* 1992).

The early part of this period also saw the release of the Tomlinson Commission Report (1955), which proposed development of the reserves, emphasizing the creation of a class of small property owning farmers. Most of the recommendations of this Commission were rejected by the government, which subsequently created the vision and practice of ethnically based homelands. This in turn was the ideological precursor to extensive forced removals, Trust land purchase and consolidation of the homelands, which were to occur throughout this period. These processes had disruptive social and economic effects on the farming sector as a whole. Government intervention in homeland agriculture was directed towards physical 'betterment planning' and administrative control (De Wet, 1987). The absence of commercial farming in the homelands was ascribed to a lack of managerial and entrepreneurial ability among black farmers, despite a long history of evidence to the contrary (Bundy, 1979; Keegan, 1981; Matsetela, 1981; Beinart *et al*, 1986). This served to justify the use of public institutions and expatriate management to 'develop' agriculture, resulting in large scale centrally managed projects with little or no community participation. In a later adaptation some of these schemes were adjusted to settle selected labourers as 'project farmers' under the control of central management. The farmer settlement approach became the mainstay of agricultural development efforts in the 1970s and early 1980s.

This combination of segregation of land ownership and a two-track approach to access to support services had a number of major effects on the farming sector. **First**, it resulted in extraordinary institutional duplication with attendant high fiscal cost (eg Vink and Kassier, 1991; Lipton, 1993). South Africa ended up with 11 Departments of Agriculture by 1980 (14 by 1984) and with internal barriers to trade in farm commodities through duplication of control over marketing (Kassier Report, 1992). **Second**, it created 'two agricultures' (Lipton, 1977) which differed in access to land and support services, productivity, etc (Brand *et al*, 1992). **Third**, it created the anomaly of a country that regularly exported food 'surpluses' while most of the population lived well below minimum levels of living. In addition, the food self-sufficiency index showed exports of field crops and imports of red meat while the country has a poor arable resource base (McKenzie *et al*, 1989). **Fourth**, for much of this period farm input prices were rising faster than product prices despite attempts to keep domestic prices above parity with imports. **Fifth**, there was much evidence of severe environmental damage to fragile land resources in both the commercial farming areas and the homelands (eg McKenzie *et al*, 1989; Brand *et al*, 1992). **Sixth**, the combination of subsidies and distortive price policies led to high rates of growth in farm land prices. By the beginning of the 1980s the farm sector had become inflexible and it has been argued that these farm policies made the sector particularly vulnerable to the disastrous drought that struck the subcontinent in the early 1980s (Van Zyl and Groenewald, 1988). **Seventh**, the processes of forced removals and homeland consolidation created a high level of uncertainty among individual farmers, both black and white, as to the protection of existing property rights, with predictable economic consequences in some of the ecologically most vulnerable parts of the country.

2.3 The 1980s: A time of change

That South African farm policy changed in the period around 1980 is hardly disputed today (Brand *et al*, 1992; Van Zyl and Van Rooyen, 1991; Kassier Report, 1992; Food Studies Group, 1993; Lipton, 1993 and Sender, 1993). However, most commentators have underestimated the true extent of these changes or have at best highlighted only some effects. **When looked at over the past 10-15 years, the scale and extent of deregulation in some respects matches the standard case studies of liberalization of farm policy, such as Chile and New Zealand** (eg Frengley and Johnston, 1992; Valdes, 1993).

The story of farm sector deregulation starts outside the sector itself. **First**, starting in the late 1970s the South African financial sector was extensively liberalized following the publication of the De Kock Commission report (1985). The most immediate effect on agriculture came from changes in the external value of the currency and in the interest cost of farm borrowing. As the Rand started a decade long decline in value, farm input prices, which have a relatively large import component, rose faster farm output prices. As part of the financial sector reforms the reserve requirements of the banking sector were changed, making it impossible for the Land Bank to continue subsidizing farmers' interest rates. The use of interest rate policy by the Reserve Bank saw interest rates rise to very high levels during the widespread drought of 1983/4. Interest rapidly became the single largest cost of production in agriculture. **Second**, many of the existing controls over the movement of labour in South Africa were lifted by the mid-1980s, setting in motion vast population movement from the farms and the homelands to the towns and cities (Urban Foundation, 1991). This was accompanied by migration of people from most parts of Southern Africa to the rural and urban areas of South Africa (eg Simkins, 1993). **Third**, considerable microeconomic deregulation took place, also starting in the late 1970s and early 1980s and leading to a significant increase in activity in the informal economy (eg Kirsten, 1988; May and Schacter, 1991; Moll, 1993). One of the most visible effects was the increase in informal marketing of farm products in the urban areas (eg Karaan and Myburgh, 1992; Myburgh, 1992).

Beginning in the 1980s, the agricultural authorities effected much deregulation and policy change in the farm sector within this climate of macroeconomic adjustment. The most prominent examples include the following:

1. **Deregulation of marketing** in terms of the Marketing Act and other legislation. This included the elimination of restrictive registration of processors in the red meat industry; the abolition of most controls on domestic marketing of deciduous and citrus fruit; the abolition of production quotas in the wine industry; deregulation of the grain sorghum and leaf tobacco single channels; further envisaged deregulation of the mohair and maize schemes; and the eventual abolition of some control schemes, particularly in the banana, wool, egg and chicory industries. The main effect of these steps has been to decrease the scope for micro-management in most of the sub-sectors in agriculture. The report of the Kassier Committee (1992) can be regarded as a milestone in this process.

2. **Liberalization of price controls** in large parts of the farm sector, again mainly in terms of the Marketing Act. This included the change in price setting in the grain industries from a cost plus basis to market-based systems (Brand Committee Report, 1988), leading to substantial declines in real farm output prices. The most important reason was the restriction on the ability of Boards to carry losses and profits on stabilization funds into a following year. Further examples include the eventual abolition of price control of dairy products, and later of flour, meal and bread; and the termination of consumer price subsidies on maize meal and bread.

3. **A change in tax treatment of agriculture.** This, for example, reduced the implicit subsidy represented by income tax concessions to farmers amounting in 1981-84 to 70 per cent of their theoretical tax bill (eg Lamont, 1990). Changes in tax policy have also resulted in an extension, from 1 to 3 years, of the period over which capital purchases can be written off and restrictions on the extent to which farming can be used as a tax shelter for other income sources.

4. **A change in direct budgetary expenditure on agriculture**, including a proportionate increase in budgetary transfers to the Departments of Agriculture in the homelands and a proportionate decrease to commercial agriculture (eg Vink and Kassier, 1991). There are two important issues here. The first is that the proportion of budgetary transfers that is absorbed as administrative costs is higher in the homelands than in commercial farming. Vink and Kassier (1991) estimated that homeland farmers recei-

ved 3,15 per cent of total budget outlays as direct transfer payments, compared with 50 per cent for white farmers in 1989/90. The second is that expenditure on white farmers went off-budget during the 1980s as the state shifted from direct transfers to the guaranteeing of farmer debts incurred as a result of drought. Most of these guarantees were brought back onto the budget in 1992/3, but the effects for prudential management of the fiscal deficit were severe (eg Rimmer, 1993). In addition, there was a reduction in real spending on commercial farming during the 1980s (Brand *et al*, 1992).

5. A shift to the farmer support philosophy in the homelands away from estate type farming schemes. Agricultural 'development' in the homelands was based on the assumption that capital and management were scarce production factors and therefore had to be imported into these farming systems. The result was a number of large scale, capital intensive irrigation schemes, in which local farmers were little more than labourers (Brand *et al*, 1992). The fiscal cost of these schemes, including management fees(paid in many cases to expatriate consultants) was also typically higher than any net returns accruing from farming. The farmer support approach was propagated by the DBSA, which adopted it in 1986 as the basis of its agricultural loan portfolio. This programme is being evaluated at present.

6. Scrapping, in 1991, of the Land Acts and related legislation that enforced the racially based segregation of access to land. This was the most visible of the policy changes in agriculture following the breaking of the political logjam in February 1990. The Abolition of Racially Based Land Measures Act was widely welcomed, although the accompanying White Paper on Land Reform came under heavy criticism, again from a wide spectrum of interest groups (eg Vink and Van Rooyen, 1993). The debate on land reform has reached a political stalemate at present and it has not been possible to establish a negotiating forum on this issue. This could have a number of unanticipated consequences, including making it easier for institutions such as the World Bank to set the agenda on this sensitive issue if they were so inclined. There is, in much the same manner as has been occurring in the cities, also much anecdotal evidence to show that people are moving onto unoccupied land in the rural areas and establishing a *de facto* presence on the land. This will be increasingly difficult to influence as time goes by. Notwithstanding the difficult political issues at stake, it is easy to argue that the implications of scrapping the Land Acts will be felt for at least as long as the effects of their original promulgation (Vink and Van Rooyen, 1993). Proposals for land reform in South Africa that concentrate on an implementation period of 5 or 10 years ignore this reality, and could potentially be highly disruptive. This does not deny the need for initial intense implementation of a land reform and rural restructuring programme, but rather calls for a much clearer vision of the desired outcome of such a process based on the needs and aspirations of the affected parties.

7. Reduction in the institutional confusion caused by the large number of ministries and parastatals responsible for agriculture. This started with streamlining the 'own' and 'general' affairs departments and dismantling the Department of Development Aid. The next step will be to formalize arrangements between the central ministries and new regional governments, as agriculture has been included in the list of concurrent functions in the draft constitution. Institutional arrangements for agricultural support services still have to be finalized. These will depend largely on the shape of future farm policy.

8. **Labour legislation in agriculture.** This has been on the agenda over a number of years and has become highly politicized. The most recent proposals seem to have taken proper account of the realities of the interests of both farmers and farm labourers, particularly concerning the vulnerability of farmers to strike action and the difficulty of organizing a geographically scattered work force. The farm sector has now become part of the mainstream of industrial relations in South Africa, with the advantage of the protection of due process that this implies.

9. **The tariffication of farm commodities,** mainly as a result of the pressures arising from the Uruguay Round of the GATT (Kassier Report, 1992; Van der Merwe and Kirsten, 1992; Vink, 1992). Tariffs have already been established for commodities such as poultry, tobacco, vegetable oil, meat. Difficulties (evident, for example, from the recent Western Cape court case) are foreseen in the tariffication of maize and wheat, given the continued existence of pan-territorial pricing systems (Food Studies Group, 1993). The next stage in this process will be the reduction in duties as described in the formal Tariff Offer to the GATT (Government Notice 687 of 1993).

2.4 Summary

The period up to 1980 was one in which the racial segregation of South African agriculture was completed, subsidization of commercial farming peaked and the productive base of the farming sector in the homelands ceased to provide any meaningful income opportunities to all but a handful of farmers. Over the past decade and a half, however, farm policy and the farm sector have changed significantly. It is also evident that the changes have been partial within agriculture, have not been synchronized with policy changes in the rest of the economy, and have not been completed. These issues are discussed in the next sections of this address.

3. The implications for farming

It is only recently that systematic analyses have begun to show the real effects of the changing policy environment on the farm sector. Partial studies and anecdotal evidence over the past decade have however served to give direction to the kinds of questions that have to be answered in determining the success of such shifts. Partial evidence thus far shows the following about the state of farming:

1. The **debt position** of the farm sector has changed considerably since the early 1980s. This is reflected in what is superficially two conflicting trends, namely a lowering of the

overall debt burden in the sector (Standard Bank, 1993) and an increase in bankruptcies. The latter is hardly surprising given that the annual weighted rate of interest paid by farmers increased from between 5 and 10 per cent in 1970-1974 to between 15 and 20 per-cent in 1988-1992 (Standard Bank, 1993).

The solvency position of the sector (total debt/ total assets) stood at under 15 per cent in 1980, having fluctuated in the narrow band of 10-15 per cent since 1970. Between 1980 and 1985, however, it increased to almost 30 per cent. At the same time the ratio of critical debt to debt (an estimate of the ability to pay from expected income streams) increased from below 20 per cent to about 120 per cent in 1984. However, both of these measures of the debt burden have improved from their peak levels in the mid-19-80s. These averages also conceal the fact that the critical debt has been concentrated mostly in the field crop sector, implying also that farmers in the medium and low potential areas have been most affected (Brand *et al*, 1992).

2. The **pattern of farm production** also shifted considerably during the 1980s. One of the most striking examples is the withdrawal of almost a million hectares of land planted to maize (Brand *et al*, 1992) and an increase of 720 700 ha by the middle of 1993 in land planted to pasture under the livestock conversion subsidy scheme (Agricultural News, 1993). These are examples of so-called cropping pattern and area effects of growth in farm output and are the results of the adaptations made by individual farmers as they try to react to the new policy environment. At the macro level, the shift from field crop production to other commodities is reflected in the long run contribution of the three major categories of farm produce to total farm output (Table 1).

The high rate of growth in horticulture was already noted by Groenewald (1965) for the period 1945/6 to 1962/3, and this growth performance has been repeated in the 1980s (Thirtle *et al*, 1993). The main determinants of strong growth in this sub-sector since especially the latter half of the 1980s have been identified as deterioration in the exchange rate, the lifting of sanctions and a strong position in export markets (Kassier Report, 1992), while Cleasby *et al* (1991) show the importance of real income growth in importing countries.

3. The pressures of more than a decade of policy reform have already resulted in a greater **diversity of farm sizes** in some parts of the country. Farms in the more marginal cropping regions are arguably becoming bigger as low-input cropping practices are adopted or as farmers switch to livestock (including game) farming. In the intensive, high potential regions a dual process seems to be taking place. In the wine industry for example some farmers are expanding and a range of 'boutique' businesses have also been established., while on the tea estates the 'mini-farmer' idea has been implemented (eg Vink and Van Rooyen, 1993; Van Zyl and Vink, 1992a). A similar trend towards a dual structure is to be found in the sugar industry, with readily identifiable results from long standing support to emerging black farmers. The latter provides a good example of the increased diversity in farm sizes brought about by land reform. Although the effects of the policy reforms to date are hard to determine, it is reasonably safe to predict a smaller median farm size in the future and possibly even a smaller average farm size (Groenewald, 1991). This trend will be reinforced by an expected increase in part time farming and in land rental as an alternative means of securing access to land (Brand *et al*, 1992).

4. As shown earlier in this address, there was a marked decline in the level of total **employment in agriculture** after about 1970. The received wisdom is that this process has continued and that agriculture, much like the rest of the economy (eg Kritzinger van Niekerk *et al*, 1992), has lost the ability to create formal sector jobs. However, the nature of the reform process and the high level of income and employment multipliers for agriculture (eg Van Zyl and Vink, 1988) could lead one to the opposite conclusion. Recent research by Van Schalkwyk and Groenewald (1992) shows that the level of total labour per hectare decreased from 42,2 persons per 1 000 hectares in 1976 to 35,5 persons in 1981, but subsequently increased again to 38,4 in 1988. The effect of the recent drought is of course not yet clear, but this analysis would suggest that the trend to higher employment will not have been reversed. Van Schalkwyk and Groenewald (1992) show the positive effect of both macro and micro level liberalization on total farm employment despite their conclusion that labour supply is still relatively inelastic, mainly as a result of the remaining effects of influx control measures.

5. Official data show a decline in the index of **total input use** in agriculture, starting in 1983 (Thirtle *et al*, 1993).

These authors measure input use by the relative contribution of different types of inputs to total input use. This is shown in Table 2.

Input growth in the period 1947-91 is evident from the increase in the use of intermediate inputs and of capital. Sub-period trends in input use also tell an interesting story. **Land use** increased up to 1960 and has declined since then, reflecting the period of the introduction of tractors. **Labour**, as was seen above, grew to 1959, stabilized until the late 1960s with the arrival of the combine harvester, declined to about 1980 and has followed an uncertain trend since then. **Machinery** use increased at the hig h rate of 7,57 per cent per year to 1958, then at a rate of about a tenth of that to 1981 and has fallen by some 4,6 per cent per annum in the 1980s. Among **intermediate inputs** the category 'dips and sprays' showed a growth of 20,56 per cent per annum from 1972 to 1980, but has fallen by 1,83 per cent per annum since then. Fertilizer use also increased by 7,73 per cent per annum to 1979, but has dropped by 4 per cent per annum in the 1980s.

Table 1: Growth in farm production.

	Growth rate (average per annum, real) 1947-91
Field crops	3,06
Horticulture	4,20
Livestock	2,39

Table 2: The changing share of inputs in agriculture, 1947-91

	1947 (%)	1991 (%)	Growth (% per annum)
Labour	36	15	-0,58
Land	7	9	-0,10
Intermediate	28	33	4,20
Capital	28	35	1,67

6. The shift to a **farmer support approach** in the homelands is of recent vintage, so it is difficult to draw firm conclusions about its impact beyond a reduction in the establishment of money-losing state controlled estate projects. Evaluation of the DBSA-supported FSP has produced a considerable body of publications (eg Van Rooyen *et al*, 1987; Van Zyl *et al*, 1991; Dankwa *et al*, 1992; Kirsten and Sartorius von Bach, 1992; Naledzani, 1992; Singini *et al*, 1992; Van Zyl and Vink, 1992b). Three primary concerns are evident from the research that has been conducted thus far. First, there is a large gap between the philosophy and principles of the FSP and its implementation.

   Second, despite some fairly sophisticated analyses, it is difficult to distinguish between cause and effect in assessing the impact of the FSP. Third, and most important, it is not clear to what extent the FSP approach will be applicable outside the homelands. Both conceptual and implementation issues are at stake in assessing this.

7. Farm **land prices** in South Africa are a function of the structural segmentation of the land market as a result of racial segregation of ownership; a range of macroeconomic influences; the degree of subsidization of the commercial farm sector; and the profitability of farming. The effect of these various influences on land values over time has been analyzed by, for example, Van Wyk (1967); Behrmann and Collett (1970); Janse van Rensburg (1984); Nieuwoudt and De Jongh (1985); Roth *et al* (1992); and Van Schalkwyk and Groenewald (1993). These studies conclude **first**, that the price of rainfed arable land in 1976-88 depended on the real debt load per farmer rather than soil quality (Van Schalkwyk and Groenewald, 1993); **second** that average real land prices have dropped sharply since the early 1980s, with prices in the summer rainfall regions for example 45 per cent lower in 1990 than in 1982 (Roth *et al*, 1992); **third** that land prices have consistently increased during periods when interest rates were negative in real terms and have decreased when the real price of intermediate inputs increased (Roth *et al*, 1992); and **fourth** that the land market in South Africa is fairly active, with 4 to 5 per cent of farms being transacted each year.

8. Official data show a fairly extensive shift in **the pattern of demand for consumer goods** over the past few years of the re-cessionary phase of the economy. In particular, recorded sales of non-durables have shown a consistent decline in real terms for the past 12 months and more, despite some increase in the sales of semi-durables and durables (Econometrix, 1993). The most likely explanation for this trend is an increase in parallel or unrecorded markets, as farmers and consumers try to cut down on the often high margins between farm gate and retail prices (eg Vink and Kugel, 1993). Further, there have been well-documented shifts in consumer demand away from red meat in favour of poultry, largely as a result of the meat control scheme (eg Lubbe, 1992), and towards bread and away from maize meal.

9. A flexible structure for agriculture is an important precondition for and result of structural reform. The **flexibility of the commercial farming sector** in South Africa, as measured by the responsiveness of farmers to change, has improved considerably over the past decade. In an earlier publication, Van Zyl and Groenewald (1988) measured flexibility in input substitution for the period 1960-85. This research showed that the sector became less flexible during the 1970s and early 1980s, lagging behind countries such as the USA. Subsequent research (Van Zyl and Sartorius von Bach, 1991) shows that there was a considerable increase in flexibility in the late 1980s mainly as a result of the policy reforms listed above. Other, more anecdotal, evidence of a willingness to change can be found for example in the reactions to the release of the Kassier Report, which was publicly criticized by many factions in organized agriculture. An exhaustive survey of the letters' pages of the general press and of the agricultural media,

however, shows very little if any critical correspondence from ordinary farmers.

10. The evidence on **scale efficiency** in South African agriculture is ambiguous at this stage, although recent research (Chavas and Van Zyl, 1993) has started to provide more consistent answers. Two things have to be accounted for. The **first** is that there are few countries in the world where the average farm size is as large as in the commercial farming sector in South Africa. This was 988 ha at a time when UN FAO data for 1970 show that the average farm in the world was 14,1 ha, with averages of 161 ha in North America, 47 ha in Latin America and 2,9 ha in Africa (excluding South Africa). The **second** is that international experience shows that agriculture is characterized by constant returns to scale (Binswanger *et al*, 1992), and that by the evidence field crops, which take up some 90 per cent of South Africa's cultivated area, have minimal increasing returns to scale. The evidence that is available for South Africa at present covers the full spectrum of possibilities. In the tea industry, for example, Van Zyl and Vink (1992a) show that mini farmers are at least as efficient with yields as large scale farmers, but more important that both the estate renting out the land and the small farmers benefit from this approach. Chavas and Van Zyl (1993) also show that farms of a widely different sizes in seven rainfed areas of the commercial farming areas of South Africa are efficient. Sartorius von Bach and Van Zyl (1992) in two case studies from the commercial farming sector show that farm size is directly related to manager efficiency. Two aspects that require further research are the possible biases in current farm policies concerning large or small farms, and the influence of management on scale effects (eg Sartorius von Bach and Van Zyl, 1992). Given the diversity of farming conditions in the country and that an optimal size structure implies diverse farm sizes, it seems unlikely that a homogeneous structure will emerge in a policy neutral environment (Groenewald, 1991).

11. Agriculture plays an important role in the **agro-industrial sector** in South Africa and therefore in the broader economy. This became quite apparent in 1992 when the collapse in farm production created a serious, if temporary, balance of payments problem. The subsequent return to a normal summer rainfall pattern was likewise largely responsible for the 20 per cent annualized growth rate in the general economy for the second quarter of 1993. This points to a high degree of integration of commercial farming with the rest of the economy. Sender (1993), for example, shows that some two thirds of total farm production is used as intermediate inputs, with 84 per cent of this going to the domestic manufacturing sector. Similarly, some 60 per cent of total farm inputs are sourced from the manufacturing sector. This manufacturing-agricultural complex accounts for 28 per cent of the manufacturing sector's recorded employment, 31 per cent of its output, 21 per cent of its capital stock and almost a quarter of its contribution to GDP. It also accounts for 23 per cent of manufacturing sector exports, and only 9 per cent of imports. These data underscore the fact that South Africa's manufacturing sector is still underpinned by resource-based industries, as the mineral-energy complex plays a similar role in the economy. These industries are generally more labour intensive, and the income elasticities of demand of poor households are generally higher for such goods.

The effect of recent farm policy change on these farm-industry links is still unclear. The decline in overall sales of such inputs as farm machinery and fertilizer is well documented. However, farm input purchases constitute only some 3 per cent of the total output of the manufacturing sector at present, although increasing demand from the rural market could provide an important outlet for manufacturing sector products in the future. The forward linkages of agriculture, measured by the contribution of the manufacturing-agriculture contribution to GDP, have been relatively stable since 1972 (Sender, 1993). Agriculture therefore has an important role to play in future economic strategies for South Africa.

The most rigorous macro-level analysis of the effects thus far of the substantial shift in South African farm policy in the 1980s is the recent publication of a consistent time series of total factor productivity from 1947 to 1991 (Thirtle *et al*, 1993). The major input and output components of productivity growth have been described above. These are brought together in summary form in Table 3.

Table 3 shows that farm output has grown at substantially more than the rate of population growth in the five decades since the Second World War. While inputs more than doubled over this period, their aggregate use has declined since 1979, that is in the early stages of the adjustment in farm policy. The high growth rate in input use of 2,52 per cent per annum in the immediate post-war years is also easily explained by the distortive policy environment of that period. The result has been a relatively strong growth in total factor productivity for the period as a whole, but with no growth in the years 1947-65. In the 1965-81 period TFP growth was driven by strong output growth, while from 1981 to 1991 it has been dominated by the decline in input use.

Thirtle *et al* (1993) conclude that the results of their analysis are valid although preliminary as they do not fully account for technical change. The results show a stronger growth rate in total factor productivity than indicated in earlier studies, which concentrated mostly on the maize producing areas. **This tends to confirm a general though initial conclusion that can be drawn from the policy shifts of the past decade. There is little doubt that the farm sector, and therefore the wider South African economy, has benefited at the aggregate level. However, there have been winners and losers within agriculture, and the aggregate social consequences have yet to be analyzed.** These issues are taken up in the next section.

4. Winners and losers: The consequences of policy change

The evidence cited above shows that, among **farmers**, the major beneficiaries of these policy changes have generally been those involved in the horticultural sector and also industrial producers who have incorporated small farmers, as in the sugar and tea industries. Among the main losers are those farmers and regions specializing in field crop production. The support that these farmers were given in the period up to the late 1970s proved to be unsustainable over the longer term.

Table 3: Total Factor Productivity: the macro view (Per cent per annum)

Time period	Output growth	Input growth	TFP growth
1947-91	3,02	1,79	1,26
1947-79		2,52	
1947-65			0,00
1965-81			2,15
1979-81		-0,90	
1981-91			2,88

Source: Thirtle, *et al*, 1993.

It is important to note, however, that within this broad group of farmers there have been many who have benefited from the more liberalized policy environment. Further, it is probably too early to draw any firm conclusions about either the efficiency or the equity effects of farmer support programmes in the homelands. Black farmers have benefited from the scrapping of all the major instruments of racial segregation of access to land. However, this has not yet been accompanied by the necessary changes to the support elements that these farmers will require to make effective use of the newly liberalized legal environment.

The identification of other beneficiaries is even more problematical. Clearly the relative position of **farm labourers** has changed as a result of these policy shifts. To the extent that agriculture has not shown a decline in total employment, unlike for example the manufacturing sector over the past four years, the changes have been beneficial at the aggregate level. However, this seems to be true only of permanently employed labourers; there is little evidence of any improvement in the position of temporary and seasonal workers, consisting mainly of women and children (Brand *et al*, 1992).

The question of the extent to which these changes have benefited **consumers** also raises a wide range of issues. During late 1992 and the first part of 1993 it became evident that rising food prices were largely responsible for the increase in inflation in the economy despite the recorded decline in the real level of farm gate prices for many controlled commodities. The rise of parallel markets, mainly because of the high margin between farm gate and consumer prices, is at least theoretical evidence of a reduction in effective consumer prices of a wide range of commodities. This has however not yet had any measurable effect on the general level of (especially) rural poverty. The evidence is better, at least at the macro level, for intermediate buyers of farm output, both in the farm sector and in the processing and distribution sectors: these consumers have generally seen their raw material costs decline and final selling prices increase.

The final category surveyed is those sectors of the private and the public economy that supply **support services** to farmers. The range of winners and losers here is wide and depends largely on the type of service rendered and the region of the country in which it is provided; their fortunes are therefore strongly tied to the relative effects of the policy changes on different categories of farmers. Among those adversely affected are suppliers of commercial inputs such as tractors and fertilizer to field crop producers in the marginal areas of the country. Suppliers to the export oriented industries on the other hand have benefited.

This asymmetry in the effects of the farm policy changes raises at least three important questions. The **first** is, why have the policy changes taken this particular shape? The **second** is, why have the South African population at large, and farmers in particular, not benefited in the manner that comparative static analyses based on conventional market theory would predict? The **third** is, what sort of policy environment can be expected to unfold in the future?

4.1 Public choice and the shape of policy reform

It has become evident that conventional economic theory provides an insufficient paradigm for analyzing public policy reform (eg Hagedorn *et al*, 1990). Clearly, governments take policy decisions on the basis a range of considerations, including voter appeal, lobby group pressure, the general policy environment and notions of economic rationality. The farming industry world-wide has proved to be particularly susceptible to non-economic pressures, and in many countries it is often the most distorted sector. South Africa certainly falls in this category up to the 1980s. The subsequent liberalization has changed this picture, as has happened in a widely diverse range of countries (eg Food Studies Group, 1993; Mieliestudiegroep, 1993; Valdes, 1993). The path of reform has differed in these various countries, as has been the results of the process. Public choice theory makes it possible to explain at least some of the reasons for these differences. In a recent article, MacLaren (1992) shows that farm policy will always lead to sub-optimal outcomes, regardless of the type of governance structure. A comparative static analysis of this proposition is given in Figure 1.

The **surplus transformation curve** reflects different distributions of producer and consumer surplus resulting from intervention in a perfect market. Its shape and position are also determined by the characteristics of the commodity market. This curve will always lie below the slope of -1 because of the deadweight loss arising from a departure from the pareto equilibrium. In a world of perfect markets equilibrium will be at point *a*.

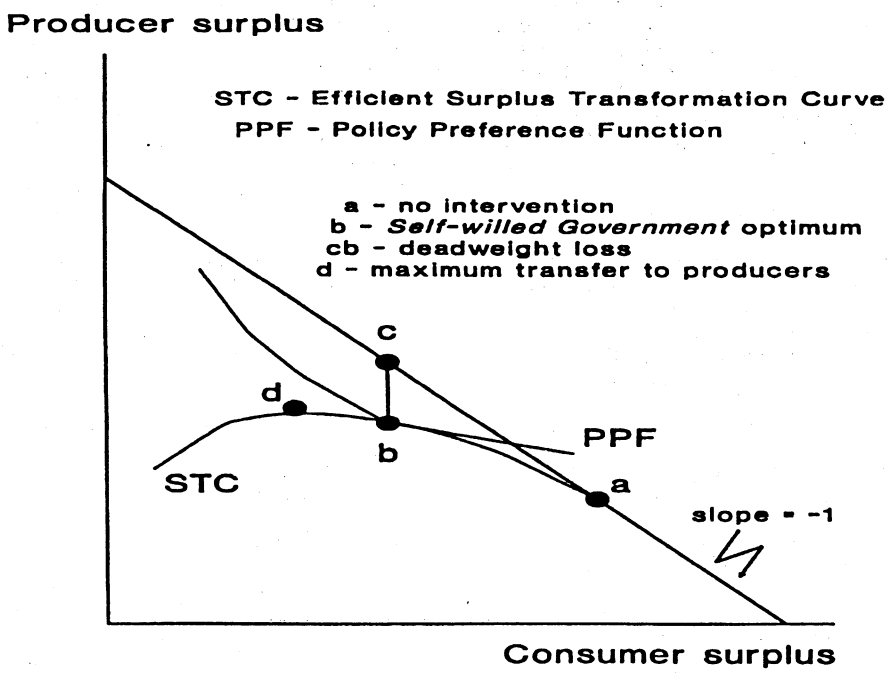

Figure 1: Equilibrium policy outcomes

The stylized case of a *self-willed government* represents an authority that tries to maximize some social welfare function, while a *clearinghouse government* is assumed to react purely to lobby group pressure in maximizing its chances of reelection. The **policy preference function** of the government measures the relative weights between consumer and producer surplus and government expenditure.

If it is assumed that governments intervene in markets to redistribute, then a self-willed government will find political equilibrium at point *b*, at which the marginal cost of redistributing surplus is equal to the rate at which the government is prepared to transfer the surplus. The deadweight loss of the transfer, or more correctly of the deviation from pareto optimality, is therefore *bc*. This equilibrium is of course dependent on changes in underlying market characteristics (principally the magnitude of demand and supply elasticities) and the policy weights assigned by the government to these respective surpluses.

In the case of a clearinghouse government there is no policy preference function. Political equilibrium is at a point on the surplus transformation function that reflects the relative lobbying strengths of different interest groups. The turning point *d* represents the outer limit of this redistribution, as no further producer gain is possible after this point.

This model misses at least three important points necessary for a full understanding of the processes of farm policy reform (MacLaren, 1992). **First**, in many countries farmers are able to bargain special privileges in support of their objectives by appealing to the sentiments of the general public. This usually takes on some variation of 'farm fundamentalism', where the family farm and the rural way of life are essentially romanticized. Hagedorn (1989) describes this as an exchange of public goods: farmers preserve the countryside in exchange for preferential access to the public purse. This they are able to do despite constituting a minority of the voting public. This phenomenon is common in industrial countries, where farmers are able to retain substantial lobby influence despite their small numbers. This will affect the position of the policy preference function. In South Africa the structure of voting rules allowed a small section of the farming population to capture most of the benefits. This is reflected in the wide range of structural imbalances between white and black farmers, within the commercial farming sector and within the homelands (Fenyes *et al*, 1988).

Second, farm policy reform is not a smooth process. It often depends on reaction to crises, random and external influences, and confluences of interests at different points in time. Again, the shape of the policy preference function is affected. The story of farm policy reform in South Africa told above sufficiently illustrates this point. Particular examples that have been highlighted include the reaction of the agricultural authorities to the new combine harvesting technology, to the changed macroeconomic environment caused by financial market deregulation and to the periodic droughts that occur in the subcontinent. Other examples include the ascendancy of economists in public decision processes after the division between 'own' and 'general' affairs in the 1983 constitution and the change in farm policy after the creation of the Conservative party in the early 1980s. **Third**, the structure of decision making in government will also influence the equilibrium outcome, various outcomes being possible under unitary, federal and supranational systems of governance. South Africa has experienced elements of all three of these in the past. The production

structure has been relatively isolated within a unitary decision environment, and segregated between the homelands and the commercial areas. The marketing system has been influenced by overlapping decision making competencies as between the 'own' and 'general' affairs departments, commercial farming and the two distinct types of competencies in the TBVC and self-governing homelands, between South Africa and the Customs Union; and in a number of bilateral and multilateral arrangements with Southern African countries; and then jointly and severally among this confusion of decision makers.

The main determinants of the shape of farm policy in a particular country therefore include the commodity mix produced there; the demand and supply characteristics of these commodities (and therefore a wide range of other influences describing the population and production structure); the nature of governance; the relative lobbying strength of farmers; voting rules; and the constitutional structure of decision making in the society.

4.2 Why have the benefits been so skewed?

The determinants of the shape of policy reform given above tell only part of the story of how and why these processes take place, and who benefits from them. A range of more specific determinants of South African reforms can be identified. These will have to start with the determinants of change in the political structure of South African society, a particularly difficult example of a moving target. Such broader constitutional issues will not be analyzed here. The more prosaic influences include issues such as the place of agriculture in the South African economy; general government policy; and some exogenous influences.

One of the most important conclusions that have been drawn from this analysis of farm policy shifts in South Africa is that they are not part of a synchronized economy-wide process of reform. To date the economic reforms have amounted to some macroeconomic reforms, financial market deregulation and some microeconomic reforms affecting mainly the urban economy. Sectors such as manufacturing, construction, transport, distribution etc that are tied to the farm sector have generally lagged behind and in some cases have seen even more distortive policies being implemented. Examples of the latter include Mossgas and the Atlantis diesel project. The new directions being taken in competition policy, trade liberalization and manufacturing sector liberalization have as yet had little influence on the farm sector. **The current structure of and policy environment in these sectors are jeopardizing the farm adjustment process in a number of rather serious ways.**

The most obvious symptoms of this lack of synchronization in policy reform include the continued high rate of inflation in input costs for most farmers; management of the exchange rate to serve the interests of urban industrial producers and consumers; the large and growing gap between farm gate and consumer prices in formal markets together with the rise in informal markets; and the lack of any real progress in integrating South Africa's two agricultures after the abolition of the Land Acts. The reason for the uneven impact of policy reforms is therefore twofold. The first reason is the lack of a well-programmed policy reform process in farm policy and in sector policies affecting agriculture. The second reason is the imbalances that exist within the system, namely within commercial farming, within the homeland agricultural sector and between these 'two agricultures'.

In the case of imbalances within the commercial farming sector, Wright and Nieuwoudt (1993) use the maize industry to illustrate the effect of lobby groups on farm policy. They use a partial equilibrium framework and 1990 data to estimate the welfare effects of maize marketing policy on both producers and consumers. Their calculations show that maize marketing policy is redistributive between producers, between maize farmers and livestock producers and between farmers and consumers. The per capita consumer cost of the maize marketing scheme was R26, while the rent per farmer was R23 000. This provides an incentive for producers to lobby for intervention, and explains many of the distortions in the current marketing system. It also explains the relatively slow pace of reform in maize marketing compared with for example that in the banana industry. These strictly farm level considerations cannot however explain the fact of substantial shifts in maize marketing policy over the past decade. For this, one must consider the strategic importance of ensured maize supplies to consumers; the tight fiscal constraint of the past years; the shifting political allegiance of maize farmers; more professional management of the marketing system; the threat of international competition with changed GATT rules; and the recent political changes and imminent changes to the constitutional structure.

4.3 What can be expected of the future?

As noted above, future farm policy will be affected by a range of farm and non-farm elements. These will include the current production structure; the demand and supply characteristics of farm produce; public sector management capacity; the relative lobbying strength of farmers and the particular outcome of reform in sectors connected with agriculture; the 'rules of the game' or constitutional structure of decision making; and the narrower issue of voting rules within the farm sector. Future economic policy, including macroeconomic policy and policy shifts in the farm and related sectors will in turn have further effects on the structure and composition of farm production.

Each of these determinants is in a state of flux in South Africa at present. The effects of policy changes on the structure of farm production have already been mentioned. Future policies on issues such as land reform, accommodating to the new GATT rules, deregulation as spelled out in the Kassier Report, etc will decrease uncertainty only if managed as part of a comprehensive, legitimate and transparent strategy. The need for a comprehensive strategy implies that farm policy changes will have to be synchronized with broader macroeconomic and development strategies for South Africa, and also with changes in related sectors. To ensure legitimacy and transparency, all stakeholders in agriculture must be made part of the process of debating and designing policy reforms. The management of these change processes is therefore of central importance.

Successful management of economic change requires that the constitutional rules of the game are known. South Africa is undergoing constitutional change; this and the prospect of greater integration in Southern Africa, with agriculture expected to be one of the leading sectors, means that there is uncertainty about these rules. Changing the constitutional order in a country usually entails either decentralizing to federal-like structures from a unitary state, or recentralizing from a degree of existing fragmentation. The process in South Africa encompasses elements of both; recentralizing as the TBVC states are reincorporated and decentralizing to the new regional constitutional order.

In addition, new horizontal relationships have to be worked out as the homelands are integrated into the new regions, while new Southern African relations add a further dimension to vertical relationships. The new constitutional order will have both direct and indirect effects on future farm policy, especially as agriculture has been defined as an area of public policy where concurrent powers will be held between the centre and the regions.

The most important direct implication of the current constitutional proposals is the potential danger of continued balkanization of farm policy if coordination at the centre is weak. A related danger is the possibility of creating interregional barriers to trade in farm commodities within South Africa in a federal type constitution (eg MacLaren, 1992 on Australia). The most obvious indirect effect is on the lobbying strength of farmers relative to that of interest groups in the food and fibre processing and distribution sectors, and relative to urban industrial interests. At the least, the farm sector should ensure that it has a voice in the future constitutional ordering of the country.

These three questions provide the basis of a research agenda for agricultural economists in the short to medium term. The proceedings of our conferences of the past few years, including this 1993 conference, show that we have not been shy of tackling many of these larger issues, and we have learned much from these analyses. There is a need, however, to broaden our focus if we are to keep up and make sense of the changing political economy around us.

5. The research agenda for agricultural economists

The Presidential Addresses to the members of this Association of at least the past eight years have shown that agricultural economists in South Africa have broadened their scope of interest to include analytical issues in other parts of the economy and also aspects of the political economy of reform in this country. This expansion of the research agenda is not unique to South African agricultural economists, as is for example evident in the debate on the future of the profession in the United States (eg Houck, 1992; Eckert, 1993). The profession has largely met the challenge presented by the particular circumstances of multiple reforms within agriculture and in the broader economy, the constitutional ordering of the country and the wider Southern African region. One of the more immediate effects has been an increased demand for agricultural economists in new fields of endeavour (Eckert, 1993). Yet there are many issues that need to be explored further by members of our profession.

The major theme of this Address is that agriculture in South Africa has for more than a decade been at the forefront of policy reforms that have made the sector more efficient at the macro level. However, there has not been much progress in meeting equity objectives; nor have these reforms been properly matched by changes in the structure of the rest of the economy. In addition, the processes of political change have added a further layer of uncertainty to farm policy reform.

Conversely, constitutional change in South Africa provides probably the best opportunity for addressing the remaining unanswered questions on the future structuring of the farm sector. Agricultural economists will have to concentrate on at least the following issues in the short to medium term as part of their research agenda:

1. Continuing to monitor the efficiency and equity effects of farm policy on farmers, consumers and the agro-industrial complex.

2. Adding the sustainability effects of farm policy shifts to conventional analyses to gain a better understanding of the environmental effects.

3. Supporting new entrants to the farm sector and assessing their impact on the production structure of agriculture and their links to the broader political constituencies.

4. Incorporating the unmeasured activities of that growing part of the market for farm produce about which we know too little, and whose production, processing, distribution and consumption activities will have an even greater influence on farm policy in the future.

5. Learning more about the agro-industrial complex as a whole and about the needed reforms in many of these sectors of the economy.

6. Comparing farm policy in the international context, and learning the lessons of experience from countries which have embarked on similar processes of change.

7. Internalizing the global processes of change in world trade and their implications for South Africa.

8. Getting to know our neighbours, and specifically the costs and benefits to agriculture and the agro-industrial complex of a more open trade regime in Southern Africa.

9. Setting priorities in accessing bilateral and multilateral development assistance, both in terms of source and in applying such aid to reconstructing the South African economy.

10. Understanding the changing political economy of South Africa and how it affects the ability of the farm lobby to bargain in favour of the rural sector against urban industrial interests.

This is a partial list, as all such lists must be. Agricultural economists in South Africa have already gone far in their understanding of the changing agricultural environment. This will not lessen the demands made on existing and new entrepreneurs in the sector, on entrepreneurs in the related sectors of the economy and on entrepreneurs in the public sector. Our profession has many exciting challenges to face in the future.

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