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AGRICULTURAL RESTRUCTURING
IN
SOUTHERN AFRICA

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AGRICULTURAL RESTRUCTURING IN SOUTH AFRICA: SOME CONSIDERATIONS ON THE FOOD QUESTION

J van Rooyen and J van Zyl

THE SOUTH AFRICAN CONTEXT

The South African agricultural sector has succeeded in performing its role and functions reasonably effectively: it has supplied sufficient food and fibre to meet the internal demand and earn valuable foreign exchange; it has operated as the single biggest supplier of jobs; agriculture has generated twice as many jobs in the total South African economy per R1 investment as sectors such as industry and mining, and it has generated substantial linkages and multipliers (Van Zyl & Van Rooyen, 1990; Van Zyl & Vink, 1988).

This favourable position, however, has been achieved at a substantial cost when viewed from an economic efficiency viewpoint, and in terms of sustainability when viewed from an ecological and political position. The South African agricultural sector is therefore in the process of restructuring. It can be argued that the agricultural sector lagged in reform compared to sectors of the economy, in accommodating labour legislation, etc. However, this process is gaining momentum through current policies which emphasise market considerations while political events will promote further changes in the agricultural production structure. Most important here will be future policies and programs to improve access by black citizens to agricultural resources, especially land and farming support services. An important question arising from the above relates to the continued position and ability of the agricultural sector to produce sufficient food for the nation. In this context the other side of the "food equation" also needs to be examined. Wealth is very skewedly distributed in South Africa. Situations of poverty, malnutrition and famine is found amongst the South African population, while surpluses of certain food commodities are exported at a loss.

In this paper the impact of agricultural restructuring on the supply and demand of food will be considered and certain options for "balancing" the food equation will be proposed.

THE FOOD EQUATION

In the future South Africa, it is expected that balancing of the "food equation" will be afforded high priority in terms of social and economic welfare. This should essentially deal with bringing together the demand for and the supply of food commodities. To ensure this, it is important that the "right quantities" of desired or "right" foodstuffs be provided at the appropriate or "right" time. It will be necessary for the "right" signals to be sent between consumers and producers through the market system so that actual supply and demand can be balanced. In South Africa with its unbalanced economic development patterns, skew income distribution and a large percentage of the population which is relatively poor, disposable income might not be sufficient to "bargain" the required quantities of food by poor groups.

In addition to this, prices are distorted (through inter alia government subsidies, administered prices, control and quota allocations). Measures will therefore have to be devised to ensure an effective and efficient flow of food.

PRESENT AND FUTURE DEMAND FOR FOOD

The growth in demand for food is a function of population growth, per capita income growth and the income elasticity of demand.

Population growth rates, expendable income and changing markets

Blacks, the poorest population group in South Africa, are experiencing the highest annual growth rate in average remuneration (16,8%). Blacks also have a high population growth rate (2,36%), although it is lower than that of Coloureds (2,45%). Due to these two factors, blacks' relative share of total expendable income in Southern Africa has increased substantially over time and will increase even more in the foreseeable future.

The relative share of whites of the total expendable income decreased from about 66,7% in 1970 to 46,8% in 1988. Such non-uniform changes in per capita income will cause structural changes in the domestic demand for agricultural products and food.

With respect to the size of the black market, it is important to take note of the magnitude of changes taking place and the profile of a typical black consumer. With the abolishment of especially the "pass laws and influx control", the movement of blacks from rural to urban areas increased considerably. The effects associated with urbanisation, mainly to expose households to the city lifestyle (electrical appliances, stoves, refrigerators, televisions, etc.), higher incomes, a larger selection of goods and services, especially consumer goods, fashion trends, etc. will thus increasingly influence a larger part of the South African markets and as such determine the future structure and nature of demand in South Africa.

Income elasticities of demand

The income elasticity of demand for food by blacks are without exception higher than the corresponding values for the other three population groups. If, for instance, the income of all population groups were to increase by 10%, the total expenditure on food will increase by 5,9%. The various population groups will, however, react differently with whites, blacks, Coloureds and Asians each increasing their consumption of food by 4,7%, 8,3%, 5,8% and 6,2% respectively (Van Zyl & Van Rooyen, 1990). Meat as well as vegetable products have a large potential in this respect. Increases of 10% in the expendable income of blacks will result in increases in consumption of respectively 11,9% and 14,6% for these products. On the other hand, a 10% increase in the expendable income of whites will only result in comparable consumption increases of 4,8% and 6,5% respectively. It is also important to note that especially grain and grain products (e.g. bread) have lower income elasticities, indicating that meat and vegetables will become relatively more important in the household budgets in future. It also indicates that the Maize Board and the Wheat Board should, for example, concentrate more on an appropriate policy for promoting the animal consumption of grains rather than the direct human consumption thereof, i.e. to sell maize "on the hoof".

Some projections on food demand

The non-uniform changes in population growth, increased urbanisation and changes in per capita income will result in an asymmetrical expansion and structural changes in the domestic demand for agricultural products and food.

With an expected population growth of $\pm 2,1\%$ per annum and in view of the

relatively stable income elasticity of demand for food (around 0,6 in Southern Africa since 1950 (Van Zyl and Vink, 1988)) and provided that sufficient income-earning jobs can be created to enable real income growth, consistent increases in demand for food can be expected. Regional differences in population and income growth prospects should be noted while the positive impact of income- and employment-creating strategies and higher income elasticities of demand for food in developing areas will further boost the demand for agricultural products and food (Van Rooyen, 1989). Income increases will further also stimulate the demand for higher value food commodities and processed food.

By using the above information and estimating a 0,5% to 2% per annum increase in real income, the demand for food can be expected to grow between 2,5% and 3,3% per annum. This growth rate will, however, also differ between commodities, population groups and areas, and these aspects need further research. From provisional calculations in this regard, it can be seen that meat (4,6%), fish (4%), milk (3,8%) and vegetables (5,2%) will expand most significantly in the back consumer market, with grains and sugar also projecting a steady growth.

AN ANALYSIS OF SOUTH AFRICAN AGRICULTURE

An analysis of the present position in agriculture is given through the following statements (cf. Van Zyl & Van Rooyen (1990); Vink & Kassier (1990) for more detailed analyses and information):

Agriculture in South Africa has a key role to play in economic growth and equitable welfare generation

Linkages and multipliers give the agricultural sector a far wider impact on the economy than through direct effects alone, e.g. the contribution of the agricultural sector to the GDP is 5,3% with 13,6% economically active people directly employed in agriculture. The total impact of the agricultural sector on the economy was, however, measured as 12,8% of GDP and 24,4% employed (1988 figures). One rand investment in agriculture also generates twice as much employment in the economy as similar amounts invested in mining and industry.

Agricultural efficiency and sustainability are presently in question and more flexible land acquisition systems may result

The agricultural resource base of South Africa is not particularly well-endowed, especially when soil quality and climate are considered. Despite these features, commercial farming succeeded in producing food and fibre at reasonable costs while also employing the single largest number of workers per sector.

However, at present agricultural production in both commercial and developing farming in South Africa is faced with the challenge of restructuring.

- Analyses indicate that commercial farming in general is producing in an increasingly less economically efficient manner, especially when intermediate inputs are considered. Input-output ratios for grain production, for example, declined from an index of 100 in 1960 to 88 in 1988.
- Commercial farming systems are increasingly under pressure from financial constraints, inflation, decreasing international terms of trade and moves towards more market-related agricultural policies, including the reduction of government subsidies.
- Past pricing policies, which distorted market signals to farmers, have distorted farming

practices and technology use in contravention of economical, ecological and environmental parameters, e.g. grain production on marginal soils. The resulting short-sighted farming practices, especially of some commodities such as maize in the Western Transvaal, have led to the degradation of soil and grazing resources, increasing incidences of acid rain, water pollution and salinisation of soils.

- An extremely skew distribution of income and production on white commercial farms reflects in a Gini coefficient of 0,67 and 0,85 for all farmers (black and white). A small number of farmers are therefore capturing most of the benefits of farm policy while a majority of commercial farmers are presently experiencing financial problems resulting in an increased number of bankruptcies.

The design of farming systems, technologies and practices would therefore have to take note of the economic and ecological factors more stringently in future. Indications are that these factors could move crop production to the higher potential eastern areas of South Africa and at the same time possibly lead to a reduction in average farm size, while livestock production will take the place of crop production practices in areas such as the Western Transvaal and parts of the Swartland. Land utilisation practices will become more flexible. One reason is that farming might not provide a sufficient source of income and part-time activities would have to be considered to supplement household incomes. An interesting observation in this regard is that more than 40 percent of rural household incomes in certain commercial farming areas are already generated through non-farming activities. Factors related to increased capital cost in large farm areas, limited opportunities to achieve economies of scale in farming, the complication to manage large labour forces and the inflexibility of large-scale farming are other reasons. These factors may contribute towards an extensification process to save on input costs on the one hand, but smaller farm units on the other hand.

As these factors will release farm land, an array of alternative land-acquirement and operation systems can be expected to emerge, i.e. share-cropping, various rental and tenancy arrangements, supplementing private land ownership. Land ownership is thus expected to become less important as a basis for farming in South Africa.

Small farms can make as effective a contribution to economic growth as large farms

The expected movement to smaller farms in the commercial sector, occupied by both white and black families, could promote an equitable, efficient and cost-effective farming system due to the greater involvement of family labour, more owner/labour-intensive production methods, lower capital requirements to enter farming and more flexible farming systems. For obvious reasons large-scale commercial farmers generally outperform black smallholders where production levels are compared, i.e. larger farm sizes, more protection and comprehensive support systems. However, a comparison of input/output ratios and cost efficiency indicates that black smallholders in South Africa, where appropriately granted access to farming support services, are approximating, and under certain circumstances even outperforming, large-scale commercial agriculture on a per unit basis.

Agricultural restructuring towards fair access to farming opportunities will not necessarily jeopardise the food security position

Food security is not synonymous with food self-sufficiency. Indices show that the agricultural sector is at present providing far in excess of the country's food needs (130%).

This, however, does not imply that the "food equation" is balanced or that food demand is sufficiently met through methods of food acquirement and entitlement. People remain hungry and suffer the effects of malnutrition. The magnitude of self-sufficiency in especially crops (150%) and horticultural production (130%) is of such a degree that the short-term impact of restructuring will not jeopardise food security, provided that programmes are structured on an economically sound basis.

THE "LAND ISSUE" AND LAND REFORM OPTIONS

The racial division of farm lands, as governed by the 1913 and 1936 Land Acts, is one of the major issues for attention in a "new" South Africa. This can be argued from political, equity and efficiency viewpoints.

Critical shortages of land are bound to place pressure on existing institutional and legal land tenure arrangements, particularly if the relative profitability of agriculture is increased through small-farmer support efforts. Not only will an incentive exist to alter traditional tenure systems within the developing areas towards a land market, but calls for access to farmland in commercial areas will increase, in particular through the scrapping of the 1913 and 1936 Land Acts.

It is expected that the mentioned Land Acts and all other acts restricting access to farm land and the subdivision of land will soon be scrapped. These measures will, however, in all likelihood not be sufficient to ensure broad-based farmer participation and satisfy political aspirations.

The fact that there is very little unutilised agricultural land implies that expropriation of currently productive land would be necessary if redistribution of land were to be conducted on a significant scale (as is *inter alia* the case with the present Land Consolidation Programme). This is different to other experiences in Africa where substantial areas of unutilised and unoccupied land was available for redistribution, as in Zimbabwe and Namibia. The relative scarcity of arable land in South Africa would mean that cropping land could not administratively be redistributed on a wide scale without risking production levels and the food self-sufficiency of the country. Nationalisation and socialisation of land resources, i.e. expropriation without fair compensation, proved to be disastrous in terms of food security, economic efficiency and effectiveness.

Market-related methods of access complementing the scrapping of the various acts and laws restricting access to farming land and farming, should rather be given preference, e.g. purchasing, rental, share-cropping, shareholding and tenancy arrangements. The present occurrences of "illegal" and "informal" leasing arrangements of white land by black farmers point to the need to increase access to land resources through economic measures and legal institutional arrangements (Van Zyl & Van Rooyen, 1990). Potential also exists for opening access to smallholders in the vicinity of urban markets to produce horticultural products, milk, etc. i.e. "green belts" (Fényes, Van Rooyen & Vink, 1987).

Land presently in the hands of the South African Development Trust ($\pm 2\,000\,000$ ha) as well as land use under the present Land Consolidation Programme should be directed towards providing access to farm land by individual black farmers rather than large-scale corporate-type projects managed by the public sector.

THE FOOD-DISTRIBUTION SYSTEM

The food-distribution system links the production capacity of a country to demand through the creation of form, place and time utility.

The observation that, despite a positive self-sufficiency position for almost all the basic foodstuffs, malnutrition and hunger still prevail in certain areas in South Africa, is a manifestation of problems within the food-acquirement and -distribution system. The fact that a fifth of all children between six months and two years show signs of the four most important nutritional diseases underscore this problem.

One element of this "food paradox" relates to the observation that a high percentage of poor rural households are net consumers of staples even though many of them are engaged in food crop production. Food production is also highly concentrated and skewly located (Van Zyl & Coetzee, 1990). Distribution networks are therefore stressed to deliver sufficient food when and where it is required, resulting in higher food prices due to transfer costs, effecting the acquirement and affordability of food to poor households (the majority of South African households). This situation is inter alia the result of agricultural policy in South Africa which frequently does not take realities in developing areas into account. Higher food prices are often a given because of what happens in the commercial sector of South Africa. This statement is illustrated by reference to maize prices. It can be argued that higher maize prices mainly help white commercial farmers although they also influence small black farmers in developing areas. But as rural households are in general net consumers of maize, they are adversely affected by increased consumer prices.

The point of policy impact on the food-distribution system can be argued further. McKenzie & Nieuwoudt (1985) estimate that a free market in fresh milk between 1979/80 and 1982/83 would have resulted in a lower consumer price of between 14 and 19 percent, a producer price between 5 and 8 percent lower, a decline in output of between 2,3 and 4,5 percent, and an increase in consumption of between 8 and 10 percent. The income transfer from consumers to producers and to the Dairy Board was between 5 and 17 percent under different supply and demand elasticity assumptions.

Nieuwoudt (1985) has estimated that if meat marketing quotas affected only a 5 percent restriction in supply to consumers, this would result in an increase of 6,5 percent in retail prices and a decline of 6,3 percent in prices at uncontrolled abattoirs. The value of a quota was estimated to be R52 and a permit to a speculator to market a thousand head of cattle represented in essence and unearned income of R52 000. Van Zyl (1988) indicates that the freeing of the maize market, while maintaining import restrictions, would have resulted in a decline in the producer surplus of R223,7 m while the consumer surplus would have increased by R608,9 m because of reduced consumer prices. Similar analyses were conducted for bananas and the sugar industry. It is also remarkable to note that, while poultry meat is considerably cheaper than beef at the consumers end (January - September 1988 beef was 116 per cent more expensive than poultry), the producer prices did not differ much. The same applies for mutton and pork.

It can be argued that South Africa's agricultural sector did succeed in providing food at relatively low prices to consumers at a cost of 23 per cent of their disposable income - the sixth cheapest in the world during the late seventies and early eighties. However, the above references as well as the 322 per cent increase in food prices since 1988 as compared with a 246 per cent increase in producer prices, indicate that food prices rose substantially in recent years and that increases can to a degree be subscribed to increased marketing margins.

From this it can be concluded that the rationalisation of the food-distribution system towards a freer market system would greatly improve the ability of consumers to acquire food at reduced prices.

Other measures that need to be considered in terms of improving the efficiency and effectiveness of the food-distribution system relate to deregulation, inter alia where state enterprises are protected, such as the rail transportation system, monopolistic tendencies prevailing in the agricultural marketing system, the restriction in the selling of foodstuffs, such as in the maize industry where a one-channel maize marketing system is followed.

In an analysis of the expected market forces and future market developments, Van Zyl & Van Rooyen (1990) conclude that (marketing) policy should focus on restricting monopolistic practises in markets for agricultural products. Vink & Kassier (1990) support this argument pointing out excessive margins due to control and intervention.

Recent developments in this regard are encouraging e.g. recommendations of the Brand Committee on maize marketing, the movement towards market-related producer prices (Maize and Wheat Boards) and the privatisation of certain marketing board functions. The Meat Board is presently also conducting studies of these matters.

Health standards in food-processing should be considered. Although it remains important not to jeopardise health conditions, especially in large population concentrations, the consumer target groups should be considered. For example, applying EEC standards will add considerable cost to the processing side but might not be required by the local consumer target group.

From the preceding analyses it can be concluded that improved economic efficiency and operational effectiveness will be required to ensure a sound food-distribution system. Restructuring the food-distribution process need not increase food prices at consumer levels. In certain cases price levels might even decline. More research on these particular aspects, however, needs to be done to ensure sound policy measures. In this respect the uniqueness of each commodity as well as the interrelatedness with other commodities, i.e. cross-elasticities, need to be taken into consideration (Van Zyl & Van Rooyen, 1990).

CONCLUSIONS

Economic and socio-political forces will force major structural adjustments in the agricultural sector. The success of restructuring will depend on the rapid generation of benefits across a broad front while minimising economic and social costs. The approach proposed in this paper represents an "optimistic" scenario where both these conditions can be attained.

According to indications, the South African resource base, although restricted, appears to be sufficient to provide a growing nation with sufficient food until some time into the next century. This will occur on the further condition that the restructuring of the production and distribution structures will successfully be attended to, inter alia by taking economic, ecological and political aspects into consideration and through the improved functioning of markets.

The securing of increasing real per capita income levels to entitle consumers to acquire food represents the other side of the equation. The problem of food-acquirement, malnutrition, hunger and poverty will only be solved, or at least partly solved, within a comprehensive Food Security Policy attending to both the demand and supply side of the "food equation".

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