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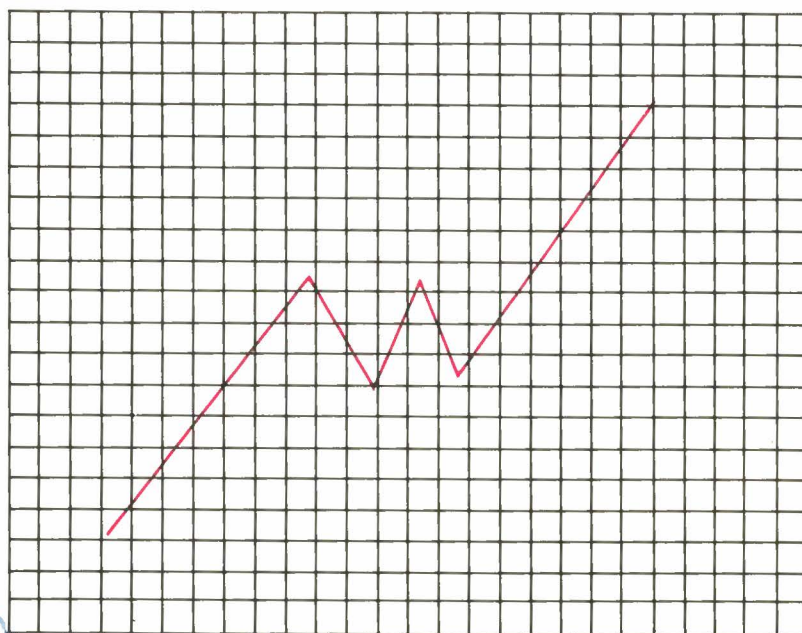
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# STRUCTURAL CHANGES IN RESPECT OF OWNERSHIP AND THE RIGHT OF USE OF LAND IN COMMERCIAL AGRICULTURAL PRODUCTION UNITS - CAUSATIVE FORCES AND INFLUENCE ON SOCIAL WELFARE

by M.F. VILJOEN\*

## ABSTRACT

In this article the focus is on the structural changes that have occurred recently in South Africa in respect of ownership and the right of use of land in commercial agricultural production units. Attention is devoted more specifically to changes in respect of the number of farmers and farms, farm sizes, types of enterprise, the lease of land and part-time farming. An effort was made to answer the following questions in respect of every structural component:

- What changes have recently occurred?
- What were the most important socio-economic forces behind these changes?
- What socio-economic forces should have an important influence on these changes in the near future?
- What are the effects of these changes on their structural components likely to be?
- Is the direction which the changes are expected to take desirable from the point of view of social welfare?

Briefly, the finding was that important changes, caused by a variety of factors, are taking place in respect of every structural component and that the direction which these structural changes are taking is not very desirable from the point of view of social welfare. Possible courses of action to deal with this problem are discussed.

## DISCUSSION OF CONCEPTS AND APPROACH

In this fast-changing world the structure of commercial agricultural production units is changing continuously, although relatively slowly (Groenewald, 1974, p.12). The structure of agricultural production units refers, according to Scholtz (1987, p.14) to the number of enterprises, the size of an enterprise and the ratio in which production factors such as natural resources, capital and labour are applied by the entrepreneur within the context of the farm and the industry. Structural changes are the result of a variety of forces working together. Put in another way, the structure at any

one point is the result of forces that have influenced the structure until that moment. This view of structural changes partially coincides with that of Dreyer and Brand (1986, p.131), who regard structural changes as on the one hand derivatives of changes occurring elsewhere in the economy and on the other hand conditions for an increase in economic growth and social welfare.

When the structure of agricultural production units is studied over a period of time, it is found that meaningful changes in respect of almost all structural components take place in the course of time (compare, for example, the publication series of the Division of Agricultural Production Economics on structural changes in various farming areas of the RSA). The scope of this article is restricted to those structural components that relate to aspects of ownership and the right of use of land. Attention is focused specifically on changes that have occurred in the recent past (and should occur in the near future) in respect of the number of farmers and farms, farm sizes, types of enterprise, the leasing of land and part-time farming. The emphasis is placed on socio-economic forces as causative factors, i.e. those forces of social and economic origin that change the structure of agricultural production units by changes in their scope or nature. The possible influence of the structural changes on social welfare is also indicated.

The following questions in respect of each of the structural components mentioned will be addressed in detail:

- What changes have occurred in the recent past?
- What were the most important socio-economic forces that gave rise to these changes?
- What socio-economic forces should have an important influence on these changes in the near future?
- What are the effects of these changes on the structural components likely to be?
- Is the direction that the changes are expected to take desirable from the point of view of social welfare?

The approach followed is firstly to give a review of a social welfare model. The purpose of the model is to provide guide-lines on the basis of which the influence of structural change on social welfare can be determined and also to place the relevant

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structural components in perspective in the context of welfare. After reviewing the welfare model, the first four questions will be answered in respect of each of the structural components. (A macro approach will have to be followed, owing to limited data, instead of the more desirable regional approach (Kotzé, 1968, p.28).) The last question will then be answered by bringing expected changes in the structural components into relation with the model for social welfare.

## THE SOCIAL WELFARE MODEL

The theory of economic welfare has a comprehensive and generally acceptable argument on the effective (optimum) application of resources (Spies and Bester, 1975, p.26) and also provides the fundamental logic for the model proposed here.

Beginning with the assumptions that are necessary in a free-market economy for its successful operation, the conditions for optimum effect are set out first in the theory. These conditions consist of three sets of necessary and one set of sufficient conditions. The necessary conditions refer to certain marginal equalities which have to apply in order to obtain successive optimums in the production sphere and the consumer sphere and between the production and the consumer sphere. If these conditions are fulfilled, what is known as a Pareto optimum situation is obtained. Since, depending on the allocation of inputs and outputs to the production of particular goods and services and the allocation of goods and services to persons in the community, it is possible to obtain an infinite number of Pareto optimum situations for an economic system. It is consequently necessary to add the sufficient condition for the maximisation of prosperity, in order to select the best of the Pareto optimum situations. The sufficient condition is contained in the idea of a social welfare function. This function is, according to Spies and Bester (1975, p.28), an order of preference in the authoritative decision-maker in a community, containing a complex series of moral-ethical arguments and in which the nature and type of function in a democratic community are determined by the aspirations and values of the community participating in the decision-making process.

By bringing the social welfare function (sufficient condition for maximising welfare, represented by the social curves of indifference in Figure 1) into relation with the Pareto optimum situations (necessary conditions for maximising welfare represented by the general marginal utility), the point of general satisfaction can be achieved. This point will automatically be reached in an economic system, provided that the assumptions of the free-market system are complied with, and readjustments will also automatically take place as the relevant variables change.

Although a variety of valid arguments can be put forward for welfare-economic theory not working in practice as it stands (this argument revolves mainly around the assumptions of the

theory, which do not hold water in practice), the model at least provides a framework and guide-lines for thought and analytical purposes.

Applied to this particular problem, the social welfare function may be regarded as consisting of various welfare objectives pursued by the community (James and Lee, 1971). These welfare objectives, in which overall social welfare is manifested, are embodied, among other things, in the policy objectives of the Government as contained in White Papers and public statements by Government decision-makers. It could be argued that if certain structural changes in respect of the commercial agricultural production units tend to promote one or more of the policy objectives, they increase social welfare. On the other hand, if they conflict with certain policy objectives, they are prejudicing social welfare. Finality on the extent to which structural changes influence social welfare, if certain policy objectives are promoted and other simultaneously prejudiced, is not possible without value judgements.

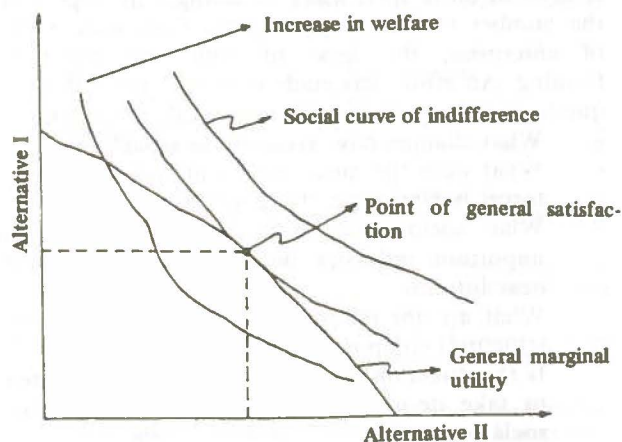


FIG. 1 - Maximisation of welfare by interaction between the social curve of indifference and the general marginal utility (Spies and Bester, 1975)

Although it is realised that it is necessary to consider the effect of structural change on all the objectives of social welfare in the community to reach finality, the following points only, as contained in the White Paper on the Agricultural Policy of the Republic of South Africa (1984), are investigated for the purpose of the article:

- Striving towards optimum use of natural agricultural resources.
- Pursuit of a maximum number of well trained and financially sound owner-occupant farmers.
- The promotion of regional development.

Figure 2 gives a visual representation of this social welfare model. The natural resources (these are the resources which are of particular relevance to the discussion), must be allocated to agricultural enterprises of various sizes, with various land use rights and also various types of enterprise that all influence certain policy objectives and therefore also social welfare in various ways. An optimum use of the natural resources will be that allocation to the various types and sizes of agricultural enterprises



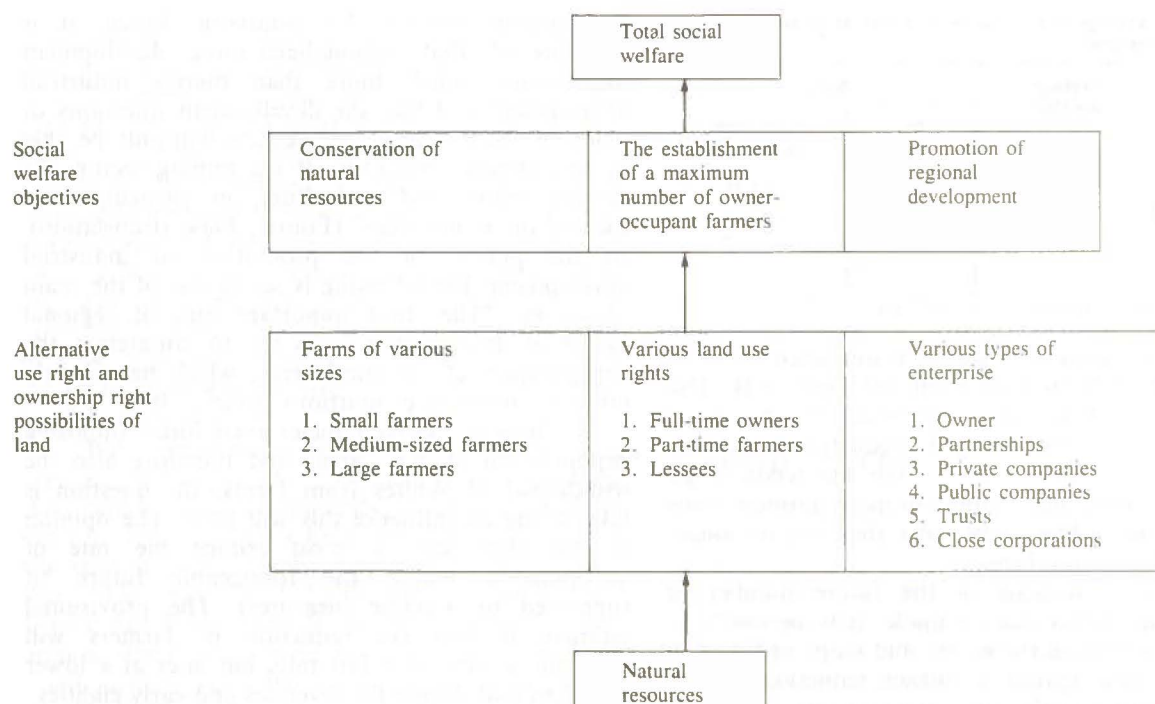


FIG. 2 - Model for social welfare

which promotes the various policy objectives in an ideal balance with one another in order to maximise social welfare intertemporally. Before the model is applied, it is necessary to indicate changes in the relevant structural components.

### THE NUMBER OF FARMERS AND FARMS

When considering the statistics concerned, the most significant characteristic is that the number of farmers and farms has decreased steadily since 1950 and that the rate of decrease is continuing to accelerate. (The farmer is described as the manager of the farm or any other person who runs the farm.) Table 1 indicates that the number of farms, which is in direct proportion to the number of farmers (Hattingh, 1986, p.3), decreased for the period indicated in the table, at an increasing rate from 0.9 per cent per annum during the fifties, 1.4 per cent per annum during the sixties and 2.4 per cent per annum during the seventies to 2.9 per cent for the first half of the eighties.

The total area devoted to farming did not decrease to the same extent (the area increased until 1960 before beginning to decrease), however, so that the average size of farms continued to increase. Table 2 indicates that the average size of farms increased from 744 ha in 1950 to 1 193 ha in 1978, with the greatest increase of 2.73 per cent per annum during the period 1970 to 1978. The relative share of farms larger than 1 000 ha in the total number of farms increased from 20.4 per cent in 1950 to 28.5 per cent in 1978.

The most important factors (socio-economic forces) determining the number and size of commercial farms are according to Tweeten (1986, p.9), technology and growth in national income: "Technology usually relates to size and creates economies of scale that lead to fewer, larger commercial farms. Growth in national income increases the opportunity costs of farm labour in terms of the real *per capita* income of non-farmers and farms need to enlarge in order to maintain an economic balance with earnings comparable to those of non-farmers."

TABLE 1 - Number of farms in White areas and the change in the course of time

Year	Number of farms	Change	
		Numbers	Average % per year
1950*	117 000	-11 000	-0.9
1960*	106 000	-15 000	-1.4
1970*	91 000	-22 000	-2.4
1980*	69 000	-10 000	-2.9
1985**	59 000		

\*Abstract of Agricultural Statistics, 1987, p.6

\*\*Hattingh, 1986, p.3

In addition to the above forces, there is another important force in the RSA, namely the price-cost squeeze. This is reflected, for example, in the ratios between the indices of producer prices and agricultural production agents. The terms of trade that reflect the ratio of producer prices to prices of



**TABLE 2 - Average size of farms in White areas and the change in the course of time**

Year	Average size (ha)	Change	
		ha	Average % per year
1950	744	123	+1,65
1960	867	112	+1,29
1971	979	214	+2,73
1978	1 193		

Abstract of Agricultural Statistics, 1987, p.6

agricultural means of production weakened from 1,0 in 1975 to 0,77 in 1986 (Scholtz, 1987, p.4). This proportional weakening in the prices of agricultural products to pay for means of production, which has been taking place for a long time and tends to get worse with time, has resulted in many farmers being forced to leave their farms since they can no longer make a living from them.

Before a forecast of the future number of farmers and farms can be made, it is necessary to form an opinion on the nature and scope of forces in favour of and against a further reduction. Forces which will favour this are predominantly economic ones. The expectation is that the terms of trade will not improve within the foreseeable future. Various factors contribute to the fact that prices of agricultural products should not rise fast, such as increasing surpluses of agricultural products, the steadiness of the increase in the domestic demand for agricultural products, among other things as a result of low income and price elasticities of demand, limited export opportunities for most products and low international prices. Input prices, on the other hand, should continue to increase at a relatively high rate as a result of the expected high domestic inflation. With the cost-price pressure increasing in this way ever more farmers will be required to give up farming or to enlarge farming units.

Opposing the economic forces, there are also certain social forces at work, which may be classified as short-term, medium-term and long-term, and which are aimed at reducing the number of farmers leaving farming. Short- and medium-term forces refer to the measures launched by the Government to improve the financial position of farmers affected by natural disasters. Long-term forces include measures that should be introduced as a result of a variety of new policies announced during the eighties. The White Paper on the Agricultural Policy (1984), for example, sets out two objectives in this field, the pursuit of a maximum number of well trained and financially sound owner-occupant farmers and the promotion of regional development. The White Paper (p.10), among other things, explains in respect of the latter, that: "...rural development has agriculture as basis" and further that "secondary industries which process primary agricultural products represent an indirect contribution by agriculture to regional development, and the establishment of such industries in rural areas is a matter of high priority". In an information document on the White Paper the promotion of industrial development as an element of a coherent regional

development strategy for Southern Africa, it is "emphasised that regional-economic development incorporates much more than merely industrial development and that the development questions of many of the less developed regions will only be able to be addressed effectively if the mining sector, the services sector and agriculture, in particular, are focused on as priorities" (Fourie, 1984) (translation). In the policy for the promotion of industrial development, the following is set as one of the main objectives: "The third important aim of regional industrial development is to try to counteract the depopulation of the rural areas, which has already taken on alarming proportions" (*ibid.*, 1984).

Where the above policies exert forces opposing depopulation of rural areas and therefore also the withdrawal of Whites from farms, the question is how strong an influence this will have. The opinion is that they will at most reduce the rate of depopulation within the foreseeable future (if supported by suitable measures). The provisional estimate is that the reduction of farmers will continue, at first at a fast rate, but later at a lower rate than that during the seventies and early eighties.

## SIZE OF ENTERPRISES AND SKEWED DISTRIBUTION OF INCOME

In the preceding paragraph it was noted that the average size of farms continues to increase with time. This average figure conceals two diverse trends, however, which occur simultaneously, and both of which are regarded by the community as undesirable, namely the trend towards the formation of uneconomic, small farming units and that towards excessively extensive land ownership. The extent of this phenomenon is illustrated by the skewed distribution of income. Hattingh (1986, p.7) for example indicates that approximately 30 per cent of the farming units were estimated to contribute 75 per cent to the total gross farming income in the RSA in 1985, with an average gross farming income of R409 500 per farming unit. The 70 per cent that contributed the rest, approximately 25 per cent of the gross farming income, had an average gross farming income of R58 000 per farm. 30 per cent of the farmers contributed only 3,5 per cent to the gross farming income, with an average income per farm of R19 110.

This phenomenon of an ever greater concentration of wealth in the hands of ever fewer people and the increasingly skewed distribution of income is a feature not only of the agricultural industry in the RSA, but that occurs also in other sectors and in other countries. It occurs in almost all capitalist countries in the world (Hattingh, 1986, p.9).

When the forces that have given rise to this situation are considered, it is found that they are both economic and social ones. In a second report of a commission of enquiry into agriculture (pp. 24-25), the reduction in size of units is attributed to the following causes, among other things: division of land among heirs, financial pressure, lack of capital requirements, desire for land, injudicious extension



of credit, the acquisition of land as an investment, land speculation and Government policy.

The question of what the future will look like may now be asked against the background of the above. Hattingh (1986, p.12) in this respect predicates the following: "Owing to differences in management and methods by which land is obtained, a wide range of farm sizes will always exist alongside one another in a free economy. Research results that are available indicate, however, that from a productivity point of view, as well as from the point of view of food production, farming units that are too small or excessively large are usually detrimental to the community".

With regard to the diminution of units, there are, in addition to the economic factors opposing this, certain social (community) factors which have been in operation for a long time. One may refer in this respect to the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970) and the Agricultural Credit Act 1966, (Act 28 of 1966), which include among their objectives consolidating non-viable small farming units into viable units. Considerable success has been achieved with these measures. The drought, an increased debt burden and high interest rates have recently contributed, however, towards many units that would otherwise still have been economic becoming uneconomic.

In contrast with this, little has been done to reduce the possession of excessively large areas of land, in spite of the recommendations of various commissions (Hattingh, 1986, p.20). If the information on the establishment of public companies (these are relatively few, when expressed as a percentage of the total number of enterprises) is to serve as an indication of the extent to which excessively large enterprises are being formed, this number increased by approximately 32 per cent between 1976 and 1981. Owing to the disadvantages inherent in such a situation from the point of view of the security of the country and from the point of agricultural and regional development and the greater emphasis placed by the community on these factors, ever greater pressure may be exerted for direct measures such as compulsory occupation and/or the implementation of a progressive land tax.

(The phenomenon of foreigners buying farms in the RSA using the financial rand is a recent development, and should be regarded as undesirable for the above reasons, among others.) Practical problems may prevent such measures from being implemented in the near future. Two economic forces that could indeed place a damper on growth are the increased debt burden incurred by many large enterprises over the past three to four years which will make it difficult for them, at least for a little while, to expand further, and the trend towards more market-related interest rates for agriculture which will reduce the investment value of land.

## TYPES OF ENTERPRISE

We will now consider the relative share of the various types of enterprise found in farming, and Table 3 provides more information on these. The following are apparent from the table:

- The number of enterprises has decreased from 86 099 in 1971/72 to 64 430 in 1981, a reduction of 21 669.
- The only reduction, and the largest overall change, occurred in respect of one-man businesses and partnerships, namely from 83 438 in 1971/72 to 58 395 in 1981, a reduction of 25 043.
- The type of enterprise which had the greatest increase over the same period was companies, the number of which increased from 2 293 in 1971/72 to 5 590 in 1981; an increase of 3 297.
- Where the share of the number of one-man businesses and partnerships in the total of types of enterprise was 96,9 per cent in 1971/72, this dropped to 90,6 per cent in 1981. The proportional share of companies increased from 2,66 per cent in 1971/72 to 8,68 per cent in 1981. The percentage by which one-man businesses and partnerships dropped was almost equal to the percentage by which companies grew.

The relevant question here is: What forces led to the change in composition of types of enterprise and in particular to the increased share of companies when compared with one-man businesses? The most

TABLE 3 - Types of farms in White areas, 1971 to 1981

Type		Number								
		71/72	72/73	74	75	76	78	79	80	81
One-man businesses	1						63 503	58 944		54 236
Partnerships	2						4 956	4 532		4 159
1 + 2	3	83 438	78 958	76 485	74 063	72 033			63 206	
Companies	4	2 293	2 584	2 964	3 118					
Public companies	5					118	150	143		156
Private companies	6					2 967	2 599	5 180		5 434
Co-operatives	7						27	25		24
5 + 6 + 7	8								5 640	
Public corporations	9						3	2	8	1
Municipalities	10	46	89	63	87	92	46	57		73
Government enterprises	11	199	210	206	186	164	207	217		195
10 + 11	12								242	
Other	13	123	94	137	137	188	130	260	270	152
<b>Total</b>	<b>14</b>	<b>86 099</b>	<b>81 935</b>	<b>79 855</b>	<b>77 591</b>	<b>75 562</b>	<b>71 621</b>	<b>69 360</b>	<b>69 366</b>	<b>64 430</b>

Source: Central Statistical Service, Pretoria, telephonic communication, 1987



important reason for a change from one-man businesses and partnerships to private companies was, according to Jordaan (1987), the income tax benefit. (Other reasons such as continuity, avoidance of estate duty on and limited liability were of lesser importance.) The income tax benefit, which was originally large, decreased with time and even in 1979, when there was a particularly large increase (the number of private companies increased from 2 599 to 5 180 between 1978 and 1979), the income tax benefit dropped from 18 per cent to 13 per cent the following year, as against the marginal tax rate of one-man businesses. This benefit has in the meanwhile disappeared completely, so that the income tax rate of private companies is at present 5 per cent higher than the marginal rate of individuals.

A reduction in the number of private companies in favour of close corporations is expected for the future. The advantages of the latter are of such a nature that this type of enterprise should become very popular. In addition to distributed ownership, limited liability and estate duty benefits, these offer an income tax solution for the hanging tax burden on accumulated income reserves in companies (a fixed rate of 10 per cent on conversion, in contrast with a maximum rate on dividends of 33 $\frac{1}{3}$  per cent if it were to remain a company). It is further also expected that the establishment of public companies will continue to increase as a result of the benefits inherent in this type of enterprise and in accordance with the trend towards amalgamation and agglomeration which exists in the non-agricultural sectors (Spies and Bester, 1985, p.32). The rate of increase should, however, be fairly slow, on the one hand because the space for such companies may be fairly limited and on the other hand because the risk-yield ratio is now more unfavourable than before.

## LEASING AS OPPOSED TO OWNING

Leasing as a method of using land remains relatively unimportant in the RSA, in contrast with certain countries overseas. Analysis of the data shows that land leased as a percentage of the total area owned by Whites in the Republic stabilised at approximately 18 per cent for the decade up to 1978. Both the commission of enquiry into agriculture and the commission of enquiry into rural reform recommended "that the system of leasing of agricultural land be encouraged and that serious consideration be given to methods promoting this" (Hattingh and Herzberg, 1980, p.3) (translation). The most recent information with regard to the above indicates that there has been no significant progress in this respect since then. It seems that a system where owner farmers lease additional land with a view to enlarging their own farming enterprises has taken root in some areas over a period of time. The leasing of land without actually owning some land too only occurs on a small scale, however. The most important causes (socio-economic forces) giving rise to the fact that the leasing of land has not increased significantly are the following:

- Present legislation in South Africa is not such

as to directly promote the leasing of agricultural land (Hattingh and Herzberg, 1980, p.6). Joubert and Groenewald (1975, p.6) indicate that in countries where leasing is very important, such as Belgium, the United Kingdom and the Netherlands, comprehensive legislation exists, giving the lessee greater security.

- Most lessees further find leasing contracts prejudicial in the RSA and not in the least promotive of leasing as an alternative method of land use. The lessee's record of maintenance and development of the natural resources is relatively poor. (Hattingh and Herzberg, 1980, p.6; Heady, 1952, p.587).
- Private ownership of land is a particularly deep-rooted value (Groenewald, 1974, p.14), making the leasing of land without some prior land ownership unacceptable to many farmers.
- For economic reasons, people who wish to farm full-time on leased land only are usually not successful. The profitability, compared with the risk related to farming, is often too low for them to survive economically without the hedge provided by appreciation of land value (in which owner farmers share). People who are exclusively lessees also lack the security basis to obtain sufficient credit.

In contrast with the above forces which have largely limited the popularity of lease-farming until now there are certain forces which should promote this phenomenon in future.

- The appreciation in land value makes it increasingly difficult to become a landowner, and the need to attract new, young farmers may lead to a greater measure of acceptance of lease farming, in contrast with ownership farming. The White Paper on the Agricultural Policy (1984, p.6) already contains a policy aim on this and it reads as follows: "The pursuit of a maximum number of financially sound owner-occupant farmers is an important aim of agricultural policy, and although this could make an important contribution to the retention and establishment of a stable, happy and prosperous rural population, the importance of new entrants and a revival of entrepreneurial skills in agriculture is emphasised, while the value to agriculture of part-time and tenant farmers under given circumstances, is not ignored."
- A second force promoting lease farming is the financial situation in which a large percentage of farmers at present find themselves, where they are not in a position to retain their land and where the mortgagee (certain financial establishments for example) becomes the owner (other farmers are not in a position to buy the land). The mortgagee will then either have to farm itself, or have to lease out the land.
- A third force, related to the one above, is the opportunity that exists now for the State as mortgagee, to become a larger land-owner, which on the one hand may fit in well with the



programme of constitutional reform and on the other hand may also help to solve certain surplus production problems.

- Fourthly, greater pressure for the consolidation of self-governing territories, where White agricultural land is being bought up, may create the opportunity for more White farmers to lease land during the bridging period.

The net consequences of the forces working for and against the extension of lease farming indicate that leasing of agricultural land will increase in the future.

## PART-TIME FARMING

Particulars on the extent of part-time farming in the RSA are limited and it is also not possible to determine from the official sources to what extent part-time farming has changed with time. Smith and Odendaal (1980, p.20) state that 17,3 per cent of the farmers in the Eastern Cape in 1974 could have been described as part-time farmers, while they controlled 19,2 per cent of the area, (therefore not necessarily smallholders) and actually produced more than 20 per cent of the gross value of the agricultural production in the area. These data indicate, according to them, "that part-time farmers in certain areas of the Eastern Cape play a significant role in the agricultural sector and even produce more effectively than the average farmer. There is no reason why the same trend should not prevail in most other farming areas of South Africa - particularly in areas that offer more job opportunities outside agriculture."

A study carried out by Lombard and Kassier (1985) in the Stellenbosch-Paarl-Wellington area shows, however, that although the level of solvability of part-time farmers seemed to be reasonably high, the efficiency based on net agricultural income per R100 of capital investment is unsatisfactory. The limited size of the part-time agricultural unit was regarded as a great problem, since it led to a high unit cost. Although the income and yields showed great variation, they nevertheless compared fairly well to well with the norm.

The dissertation of Nel (1986), where an efficiency comparison was made between part-time and full-time farmers on the Transvaal Highveld, drew the distinction between three types of part-time farmers: potential entrants to full-time farming, potentially permanent part-time farmers and potential leavers. The survey found that the above groups constituted 56,4 per cent, 41,3 per cent and 2,3 per cent respectively of the total number of part-time farmers. Full-time farmers were in general more efficient than part-time farmers, while the first group of part-time farmers, according to Nel, should be singled out for extra encouragement. More than 75 per cent of the part-time farmers were owners of their own land, and the main types of farming practised by part-time farmers were mixed farming (37,7 per cent), followed by extensive farming (33 per cent).

The extent to which part-time farming has increased or decreased in the Republic in the course

of time remains an open question. Smith and Odendaal's expectation was that, in spite of the fact that this type of entrepreneurship has been discouraged in South Africa, it will continue to increase here over time, in accordance with trends in overseas countries. If Harrison's (1987, p.132) contention is correct - he states that of the approximately 55 000 farming enterprises belonging to Whites 20 000 are predominantly part-time farms or the enterprises of retired farmers - it would seem that part-time farming has increased significantly.

Various forces operate in favour of the establishment of part-time farms, such as the growing inability of an increasing number of farms to provide a viable income for the farmer and his family, the desire that many people feel to own land, the attraction that land holds, for example, as an investment for professional people who work outside agriculture and the income tax benefits that farming holds for such people.

On the other hand, there are certain opposing forces such as the relative isolation of certain areas, making it almost impossible to work elsewhere too, the nature of farming in certain areas, making it difficult to farm part-time, and the fact that this type of enterprise does not share in certain types of Government aid.

It is expected that this type of enterprise will grow in importance in the course of time. Certain types of part-time farming may also get the official sanction of the Government.

## STRUCTURAL CHANGES AND SOCIAL WELFARE

Significant changes are occurring in respect of all the structural components discussed so far.

- The average size of farming enterprises is expected to continue to increase and the number of farmers to continue to decrease initially at an accelerated rate, but then at a lower rate than during the seventies and

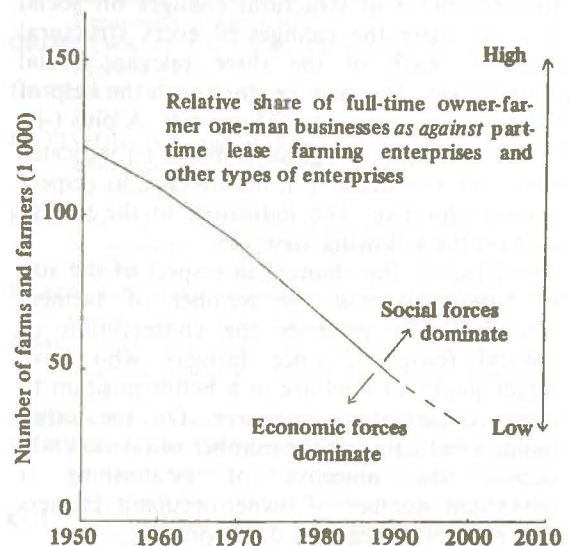


FIG. 3 - Summary of structural changes in respect of land use rights and land ownership rights



Land-ownership rights and use-rights arrangements	Welfare objectives	Conservation of natural resources	Establishment of a maximum number of owner farmers	Promotion of regional development
Size of enterprises and number of farmers		+	-	-
Land use rights		-	+	-
Types of enterprise		*	*	*

FIG. 4 - Social welfare impact matrix

eighties. The diverse trends accompanying this, namely the appearance of farms which are either too small or too large, should also continue. The inviably small farms may appear relatively faster than the exceedingly large farms in the short term, but the pattern is expected to change later.

- The number of full-time and owner farmers is expected to decrease in favour of more part-time and lease farms respectively. Part-time farming may increase at a faster rate than lease farming.
- As regards types of enterprise, the number of one-man businesses, companies and private companies should decrease, while close corporations, commercial trusts and public companies may increase.

Figure 3, which comprehensively demonstrates the above change, also indicates that the projected course of the structural changes (the reduction in the number of farms and farmers, and the accompanying substitution of land use rights and types of enterprise) is the result of economic and social forces. Whereas it may be expected that the economic forces will be relatively stronger than the social over the short and medium term, the latter should become ever stronger over the long term.

A first approach to determine the influence of the expected course of structural changes on social welfare is to relate the changes of every structural component to each of the three relevant social welfare objectives. This may be done with the help of a social welfare impact matrix (Figure 4). A plus (+) in the matrix indicates progress, a minus (-) indicates regression and an asterisk (\*), indifference in respect of a certain objective. The indicators in the matrix are based on the following views:

- The effect of the changes in respect of the size of enterprises and the number of farmers should be to promote the conservation of natural resources, since farmers who have larger pieces of land are in a better position to apply conservation measures. On the other hand, a reduction in the number of farmers will oppose the objective of establishing a maximum number of owner-occupant farmers and promoting regional development.
- A change in land use rights in the direction of a larger percentage of part-time farmers and lessees may have a negative effect on the

conservation of natural resources, but may make a contribution in the course of time towards keeping or establishing more farmers in agriculture. The net impact on regional development may, however, be rather more negative than positive.

- Changes in the relative composition of types of enterprise should have a fairly neutral effect on all the above objectives.

In order to get an indication of the joint influence of the structural changes on social welfare, use is made of a postulated demand and supply curve of the community for and of full-time owner-occupant farmers (Figure 5). The demand curve derives its course from the fact that the community should be prepared, for a variety of socio-economic and political reasons, to "pay" an ever higher price per full-time owner-occupant farmer in order to keep the farmer in agriculture, as the number of full-time owner-occupant farmer diminishes. The supply curve, on the other hand, is based on the view that more owner-occupant farms will be run if the price that the community wishes to pay to support these, increases.

Where the area below the demand curve and above the supply curve gives an indication of the welfare of the community (consumer surplus plus economic surplus, Spies *et al*, 1977, p.36), the further reduction in the number of owner-occupant farmers expected in future (i.e. a shift upward in the supply curve) will necessarily lead to a reduction in the total social welfare (represented in the figure by area ABC).

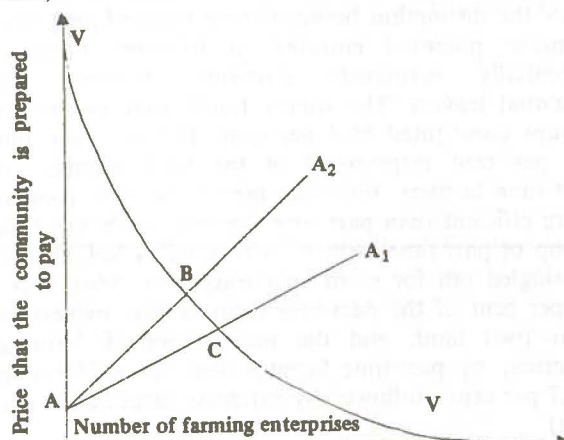


FIG. 5 - Postulated demand and supply curves for full-time owner farming enterprises



## POSSIBLE COURSES OF ACTION

The following possible courses of action arise in view of the above findings. In the first place, it could be decided to allow the expected changes to continue without doing anything effective about them. A motivation for this decision would be that such structural changes are unavoidable in the process of economic growth and development and should therefore be accepted.

Secondly, the changes could be regarded as too undesirable and it could be argued that the farmers should themselves, through co-operative action, work out a system by which full-time owner-occupant farmers are retained in agriculture. There is not much prospect of success for this possibility, particularly over the short and medium term, owing, for example, to the domination of individual interest above group interest in this matter, as well as to the lack of funds for the purpose within the co-operative system. The method could have some merit over the long term if farmers could acquire a significant share in the marketing chain of their products through co-operative action, and if the productivity within the agricultural sector could be considerably raised.

Thirdly, certain measures could be launched by the Government to check the move of full-time owner-occupant farmers from agriculture. This alternative is not possible over the short and medium term, owing to the funds that would be necessary (given the present financial condition of most farmers and the variety of other claims on Government funds), and the relatively low measure of success traditionally experienced by Government measures in this respect. By accompanying the structural changes taking place by purposeful new measures, the potential that the changes have can be applied in the welfare context. A primary example is the support of certain types of part-time and lease farming by the Government by making the benefits in which farmers, known as *bona fide* farmers, share, applicable to these groups too, for example. A further example is the establishment of a system of leasehold, in which the Government takes possession of the land that becomes available from farmers who have to give up their farms, and makes it available to deserving farmers at an agricultural potential-based lease value. As long as the leasehold farmer then looks after the land and pays the applicable rent, he remains in effect the "owner" of the land, which his children may then also inherit.

The examples above imply, however, adaptations in welfare norms and therefore also in the welfare model which has served as the basis for the analyses and in the present agricultural policy.

## CONCLUSION

Significant changes are occurring in all the structural components discussed as a result of the joint operation of a variety of socio-economic forces. The following changes are expected to occur.

- The average size of farms is expected to continue to increase and the number of farmers to decrease - initially at an accelerated rate, but

then at a slower rate than during the seventies and eighties. The two diverse trends accompanying this, namely the appearance of non-viably small and excessively large farms, should continue. Non-viably small farms may appear relatively faster over the short term than the exceedingly large farms, but the pattern is expected to change later.

- Full-time and ownership farming is expected to decrease relatively in favour of part-time and lease farming. Part-time farming may increase at a faster rate than lease farming.
- As regards types of enterprise, the number of one-man businesses, partnerships and private companies should decrease, while close corporations, commercial trusts and public companies may increase.

In estimating the influence of the structural changes on social welfare, it has been found that some changes should promote certain welfare objectives, others will detract from them and others still will leave them unchanged. Viewed as a whole, it seems that the influence of the structural changes on social welfare will be more detrimental than beneficial. Various possible courses of action to deal with the disadvantages on social welfare have been analysed. It does not seem possible to guide structural changes meaningfully in a "favourable" direction over the short to medium terms. A certain measure of success can indeed be achieved with purposeful action over the long term.

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