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Contents

		Page
I.	EDITORIAL	1
II.	ECONOMIC TENDENCIES IN SOUTH AFRICAN AGRICULTURE	5
III.	ARTICLES	
	1. The contribution of the agricultural departments to agricultural development - C. van der Merwe and S. J. du Toit	6
	2. Trends in land values in South Africa - C. A. G. van Wyk	23
	3. The agricultural economic structure of the Transvaal Region - D. J. G. Smith, J. B. de Swardt and C. S. Blignaut	31
IV.	STATISTICS	40
V.	GENERAL, COMMENTS AND ANNOUNCEMENTS	50

The Contribution of the Agricultural Departments to Agricultural Development [1),2)]

by

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INTRODUCTION

The writers wish to pay attention to the departments more directly linked with agriculture and take the view that development in agriculture means merely its growth, and that this growth must take place according to a balanced pattern in order to meet the demand for agricultural products in the most economic manner. Stated broadly, this is based on the following:

1. An increase in the quantity and an improvement in the quality of the means of production employed;

2. more efficient utilisation of these means of production by applying improved practices and techniques; and

3. the expansion of demand and the creation of new markets, since optimal production would otherwise be meaningless.

Attention is therefore directed to those departments more directly linked with agriculture. This narrow approach is not intended to detract in any way from the importance and value of the broad institutional framework, more particularly as the latter provides the stability and safety within which agriculture can develop. So, for instance, the contributions by the Bureau of Statistics, the Bureau of Standards and the Department of Commerce and Industry are of more than merely indirect importance. The agricultural departments are therefore not by any means the only departments contributing to agricultural development. In fact, even in the case of those departments directly linked with agriculture, the approach should also be limited to creating the correct climate for the development of individual's enterprise.

AIM OF AGRICULTURAL POLICY

The agricultural departments are geared to give direct assistance in regard to the formulation and implementation of agricultural policy. The basic aim of agricultural policy is, subject to the national interest as regards the welfare of the country as a whole, to increase and stabilise the income of the farming community in the long run.*

This policy is based on the four principles mentioned below:

1) Paper delivered at the fifth annual congress of the Agro-Economic Society of S.A. on 27 October, 1966.

2) The writers consulted officers of the four Departments and made use of published and unpublished data obtained from these Departments. It is obviously not possible to acknowledge such assistance to each of these individuals.

* For a comprehensive exposition of South African agricultural policy and its objectives, see Agrekon, Vol. 2, No. 2, April 1963.

(i) The most effective utilisation of the Republic's natural resources, including its manpower. The broad and balanced development of the Republic must therefore be taken into account in all agricultural measures.

(ii) The retention of private initiative and enterprise.

(iii) Constantly increasing efficiency in the utilisation of the soil, capital and manpower - which includes the ability to constantly adapt to changing conditions.

(iv) The taking into account of social considerations, with particular reference to efforts to ensure a reasonable standard of living for the agriculturist and his family.

IMPLEMENTATION OF AGRICULTURAL POLICY

Over the years a number of measures have been designed in order to implement agricultural policy. Their administration and implementation devolve mainly on the agricultural departments, namely the Department of Agricultural Technical Services, the Department of Agricultural Economics and Marketing, the Department of Agricultural Credit and Land Tenure, and also the Department of Water Affairs and the Department of Bantu Administration and Development. The services and facilities concerned more directly with agriculture are divided into nine categories for the purpose of this discussion.

(i) Soil and water conservation

In regard to the natural resources, soil and water, there is a long-term policy of conservation, effective utilisation and improvement, as contained in the Soil Conservation and Water Acts. The Soil Conservation Act provides for the control and prevention of soil erosion; protection of natural vegetation, catchments and water supplies; and increasing the productivity of cultivated land and pastures. The Water Act is aimed at the control, conservation and utilisation of water for domestic, agricultural, urban and industrial purposes.

(ii) Protective services

The State assumes responsibility for a considerable range of protective services of direct benefit to agriculture, although also of benefit to the community as a whole. These include measures for the control of plant and animal diseases and pests, and also for control over fertilisers, stock feeds, stock medicines and sprays. The provision of these services arises out of the inability of individuals to control effectively such diseases as foot-and-mouth disease.

(iii) Research and extension services

Science and technology are harnessed in order to obtain knowledge of agricultural resources and methods for their most economic exploitation. The extensive research services in the technical sphere - and on a more modest scale also in the sphere of economics - and the training of scientists and technicians at universities and colleges are all part of this process. The propagation of more efficient farming practices for optimal production is undertaken by extension officers who make use of a great variety of methods to convey to farmers in a usable form the knowledge gained by research.

(iv) Co-operative movement and finance

In order to promote the production and marketing of agricultural products, the Government has promoted the co-operative movement and a system of financing which meets the particular requirements of agriculture. Agricultural co-operatives today not only play an important part in the handling and marketing of agricultural products, but also in supplying farming requisites and services. The Land Bank Act originated out of a desire to provide farmers and their co-operative societies as cheaply as possible with credit suited to the particular requirements of agriculture as regards redemption of loans and security.

(v) Assistance and settlement

With the Agricultural Credit and Land Tenure Acts, assistance to farmers and their establishment on the land has been brought under unified control. The aim of this legislation is to assist by means of uniform and adequate measures, deserving farmers who are no longer in a position to obtain essential funds in times of set-backs, for their farming enterprises from commercial financial institutions. Attention will be concentrated on improving the position of the farmer who has inherent possibilities as a person and as a farmer but who is in a weak financial position owing to concurrent circumstances. The assistance which may be granted includes inter alia, making State land and funds available for the purchase of privately owned land an includes provision for opportunities to convert small units into units capable of providing a living. Provision is also made for the judicious purchase and utilisation of land for various purposes - agricultural as well as other objectives.

(vi) Stabilisation and marketing arrangements

A variety of measures have been introduced to promote price stability or efficient marketing - or both - in regard to farm products. The basic aim is to stabilise prices. Associated with this is the regulation of distribution, in order to promote the objective of price stability and, in some cases, to rationalise the collection, processing and distribution of products.

At present, statutory measures cover some 90 per cent of total agricultural production, of which approximately 70 per cent is covered under the Marketing Act and 20 per cent under specific legislation. As regards control measures, the various agricultural products may be divided into two main groups: those under one-channel systems, and those under surplus removal and supervisory schemes. In the first group are products which the farmer is permitted to sell only to the control organisation or its appointed agencies, and under which the farmer receives for his products either fixed or pool prices. The products included under surplus-removal and supervisory schemes are sold at "free" market prices, but under certain specified circumstances the control organisation may intervene to support prices in some way or other. The value of products whose prices may be fixed or influenced, represents some 60 per cent of the total value of all agricultural products.

Although the State acts in an advisory and supervisory capacity, the administration of the price and marketing arrangements introduced under both the Marketing Act and specific legislation rests mainly with the respective control boards or other organisations created specially for the purpose.

(vii) Ancillary services

Many types of ancillary services are rendered to agriculture, including the statistical services, commodity inspection, import and export arrangements, and international matters. The statistical information collected and processed, particularly that in respect of economic trends in agriculture, are becoming increasingly indispensable - not only in the determination of policy by the authorities, but also to the individual farmer and his organisations. More and more information, in greater detail, is constantly demanded. The agricultural departments make an important contribution by means of their crop and livestock estimating services. With more knowledge of expected production and disposal, solutions to a problem which are at present sought mainly in increased control measures, may possibly be provided to a large extent by judicious planning of production or marketing, or of both. (In this connection, the wholehearted co-operation of the farmers themselves is a prerequisite). In addition to prices and production costs, the quality of the products marketed is also an important factor in determining the income of the producer; and in this connection the inspection and grading services provided by the agricultural de-

partments constitute an important contribution. To the extent that these services are linked with research, the inspectors also act as extension officers in the sphere of quality and packing problems. Since international trade is so important to the Republic, it is probably not necessary to elaborate on the value of the arrangements made by the Government in this sphere.

(viii) Ad hoc assistance

Under this heading is included assistance to farmers who find themselves in difficulties as a result of temporary conditions such as droughts and floods. When drought conditions reach such proportions that farmers are compelled to move their livestock in order to obtain grazing elsewhere, or to buy feed to maintain their stock, considerable reductions in transportation costs of livestock and fodder are granted to all farmers in the stricken areas. In addition, the State has in recent years - because of the length and intensity of the droughts - made a contribution towards feed costs in badly stricken areas. This emergency assistance is over and above the loans granted by the Department of Agricultural Credit and Land Tenure for the purchase of feed, the hiring of grazing, and the purchase of means of production such as fuel, fertilisers, etc.

(ix) Subsidisation

In addition to the ad hoc relief dealth with in the previous paragraph, which is actually also a form of subsidisation, there are also several other forms of subsidisation on a more permanent basis. To begin with, there is the subsidy under the Soil Conservation and Water Acts for the conservation or development (or both) of natural resources. Here the State contributes a predetermined percentage of the cost in respect of all works which qualify. Then there is a subsidy to reduce the cost of fertilisers, and a rebate is paid on railage in respect of maize. In conclusion, subsidies are also paid in respect of the staple food products butter, maize and bread. These benefit both the consumer and the producer. The subsidies were originally introduced as consumer subsidies in order to keep down living costs. Over the years, however, they have become significant factors in achieving price stability, and have become of greater benefit to the producer in so far as sales of these products have been promoted. This is largely the case in regard to the subsidy on butter, and to a lesser extent for maize; and as regards wheat, it may be regarded virtually as an outright consumer subsidy - probably with little direct benefit to the producer.

As will be observed from the estimates which will be discussed at a later stage, these subsidies constitute a very considerable percentage of the total expenditure of the agricultural departments. It is obviously not possible to determine what percentage of the subsidies benefits agriculture directly.

CO-ORDINATION OF AGRICULTURAL POLICY

In order to achieve the set objectives of the country's agricultural policy, it is essential to have close and continuous liaison between the various groups whose interests are involved. At the highest level, liaison between the agricultural departments and organised agriculture finds expression in the functioning of the Agricultural Advisory Board. The object of this board, which confines itself to broad principles only, is to advise the Ministers of Agriculture on matters of general policy in the sphere of agriculture. The reciprocal co-operation between the respective departments is accomplished by a Cabinet Committee consisting of the three Ministers for the Departments of Agricultural Economics and Marketing and Agricultural Credit and Land Tenure, the Departments of Agricultural Technical Services and Water Affairs and the Department of Forestry. In addition, there is a Committee consisting of the five Secretaries of these Departments. The object of the two committees is to co-ordinate policy, but also to ensure that officials of the various departments co-operate very

closely at all levels in all matters affecting more than one department.

NATURE AND SCOPE OF THE ACTIVITIES OF THE AGRICULTURAL DEPARTMENTS

One way of obtaining a picture of the nature and scope of the activities of the agricultural departments is to note the staff and funds made available. It would be ideal if this discussion could take place in relation to the aids established for the implementation of policy, since it does happen that more than one department renders the same type of service. Extension services, for instance, are undertaken by the Department of Agricultural Technical Services and to a lesser extent also by the Department of Agricultural Economics and Marketing and the Department of Water Affairs. (In this connection, there is close liaison between the interested groups). An attempt to make the analyses according to the forms of aid did not succeed, because of the particular allocation problems, encountered.

The following are among the matters that must be considered in evaluating the utilisation of manpower and the funds allocated:

(i) All the funds and facilities are not utilised solely for agricultural purposes. The subsidies on staple food products mentioned previously, and the construction costs in respect of dams for industrial purposes are examples of this;

(ii) some of the expenditure incurred is recoverable, such as the loans granted by the Department of Agricultural Credit and Land Tenure, while the subsidies paid by the respective departments are not recoverable;

(iii) part of the expenditure is used for agricultural maintenance, such as that for protective services, while part is allocated for development such as that for certain research institutions;

(iv) part of the expenditure is in respect of services of which results are soon reflected in production, while part is spent on services of which the results can only be observed over a long period;

(v) some of the facilities and services provided, such as the provision of water supplies, require capital expenditure; others again, such as grading and inspection, require mainly staff;

(vi) certain services are rendered for the farmer's own account, such as expenditure by the control boards where this is recovered from levy funds, while other services such as extension services, are for the account of the agricultural departments;

(vii) part of the expenditure is for equipment which can be employed usefully for several years, and such expenditure should really be calculated over a longer period than just for one specific year; and

(viii) as in the case of equipment, subsidies paid in respect of natural resources are paid out annually. Moreover, this annual expenditure shows a rising trend; and notwithstanding the long-term impact, such expenditure for certain specific purposes may indeed be regarded as current annual disbursements.

A few analyses based on information obtained from the estimates of expenditure on revenue account for the year ending 31 March 1967, are given below in respect of the composition of the staff of the agricultural departments.

The establishment of the Department of Agricultural Technical Services is set out in annexures 1(a) and 1(b) and is summarised in Table 1.

TABLE 1. - Establishment of the Department of Agricultural Technical Services, 1966

Divisions	Number of posts		
	National	Regional services and education	Total
Professional	798	952	1,750
Administrative and clerical	371	182	553
Technical and general	2,078	1,580	3,658
Total	3,247	2,714	5,961

Note: "General" includes, inter alia, female assistants, technical assistants, stock inspectors and storemen.

According to Tabel 1, which reflects the available posts, this Department has one professional post for approximately 60 farms. As regards active service to agriculture, however, the position is less favourable - since a total of 89 professional posts were vacant as at 30 June 1966, and 182 officers were engaged in full-time post-graduate study at South African and other universities. It may also be mentioned that for the year ended 30 June, 1966 the Department made a total of 160 professional appointments as against a loss of 159 officers.

The establishment of the Department of Agricultural Economics and Marketing is set out in Annexure 2, and the comparable position is given in Table 2.

The number of farms per professional post works out at about 700; but in this instance, too, it may be mentioned that 23 professional posts were vacant on 30 June 1966, while 20 officers were engaged in full-time study. During the year ended 30 June, 1966, 26 professional appointments were made as against a loss of 17.

TABLE 2. - Establishment of the Department of Agricultural Economics and Marketing, 1966

	Number of posts
Professional	146*
Administrative and clerical	139
Technical (315) and general (69)	384
Total	669

* Includes 29 Regional posts of the Department of Agricultural Technical Services.

The establishment of the Department of Agricultural Credit and Land Tenure - see Annexure 3 - which is concerned mainly with the provision of means of production, is set out in Table 3.

TABLE 3. - Establishment of the Department of Agricultural Credit and Land Tenure, 1966

	Number of posts
Professional	22
Administrative and clerical	518
Technical and general	211
Total	751

The establishment of the Department of Water Affairs is not dealt with here, partly because of services rendered to other sectors and because the establishment in this Department does not represent the total personnel available. In addition, it may also be mentioned that a big majority of the staff are concerned with construction work and the expenditure in respect thereof is theoretically recoverable from the users of the facilities so created.

TABLE 4. - Provision in the estimates of the four Departments, 1966/67

Department of:	Provision
	R
Agricultural Technical Services	
(1) Expenditure according to estimates on revenue account	
National services	12,218,000
Regional services and education	13,664,000
	25,882,000
(2) Expenditure according estimates on loan account	1,200,000
Total	27,082,000
(3) Departmental and miscellaneous revenue	1,951,000
Agricultural Economics and Marketing	
(1) Expenditure according to estimates on revenue account	
Departmental	2,120,000
General	62,397,000
	64,517,000
(2) Expenditure according to estimates on loan account ...	500,000
Total	65,017,000
(3) Departmental and miscellaneous revenue	1,000,000
Agricultural Credit and Land Tenure	
(1) Expenditure according to estimates on revenue account	2,311,000
(2) Expenditure according to estimates on loan account ...	18,550,000
Total	20,861,000
(3) Departmental and miscellaneous revenue	150,000
Water Affairs	
(1) Expenditure according to estimates on revenue account	6,300,000
(2) Expenditure according to estimates on loan account ...	39,000,000
Total	44,300,000
(3) Departmental and miscellaneous revenue	453,000
Total provision	157,260,000

An attempt will also be made to form an estimate of the total expenditure for agricultural purposes by the agricultural departments and the control boards. The estimates of expenditure by the agricultural departments are based on the estimates of expenditure for the year ending 31 March, 1967 and include funds in respect of both revenue account and loan account. The expenditures of the control boards were obtained for their most recent financial years. For the sake of completeness it should be mentioned again that the allocations, particularly those between agricultural and non-agricultural expenditure, have had to be made on a rather arbitrary basis.

Except for the expenditure of the Department of Water Affairs, the provision for expenditure on revenue account in respect of the other agricultural departments is set out fairly fully in Annexure 4, and summarised in Table 4.

The amounts in the estimates do not include any provision for items such as interest on capital, office rent or the State's contribution to pension funds. Strictly these should also be brought into account.

If office rental in respect of all offices is taken into account, the expenditure on this, together with that on contributions to pension funds, amounts to approximately R2¼ million for the agricultural departments - excluding Water Affairs. As an indication of what the interest on capital investment can amount to, a calculation of this item in respect of the Tobacco Research Institute at Kroondal has been made, and a list of the research institutes, faculties of agriculture, colleges, research stations and experimental farms under the control of the Department of Agricultural Technical Services is given in Annexure 5.

The investment in facilities in respect of the Tobacco Research Institute at Kroondal, according to a departmental valuation, is given in Table 5.

TABLE 5. - Investment in facilities at the Tobacco Research Institute

Value	R
Buildings	751,132
Equipment	324,051
Stocks	77,971
Land	90,000
Total	1,243,154
Interest at 6 per cent	74,589

The annual expenditure at the Institute, according to the Estimates of expenditure, amounts to R289,700. If an estimated amount in respect of interest on investment and pension contributions is added, this sum is increased to R374,000. The expenditure appearing in the Estimates is therefore about three-quarters of the total.

Although no particular reference has thus far been made to the non-White sector of agriculture, the assistance mentioned above and the amounts spent on it, bring benefits to this sector of agriculture as well. In addition, the Division of Bantu Agriculture of the Department of Bantu Administration and Development devotes itself specifically to the development of the agricultural potential in the Bantu Homelands. Conservation, effective utilisation and development of natural resources is also of decisive importance here.

A great variety of ancillary services is made available to Bantu agriculture. So, for instance, the implementation of physical conservation of the soil is undertaken by the Division of Bantu Agriculture. It is estimated that more than half of the area involved has already been stabilised against soil erosion, and it is expected that this task will be completed within the next five years. Much attention is also given to extension services, and the Division already has at its disposal 485 trained Bantu extension workers. Good progress is being made.

The view may be held that the cost of services rendered by the private sector is borne by the farmer, just as the expenditure of the control boards, defrayed from levy funds, is borne by the farmer. There may, however, be some measure of doubt in those cases where higher prices are maintained than would prevail under "free" market conditions. It is not proposed to go into this, and for the purpose of this discussion it is assumed that such expenditure is borne by the farmer. The expenditure of the Wool Board and Wool Commission, together with that of the boards constituted under the Marketing Act, in respect of their latest financial years, is summarised in Table 6.

TABLE 6. - Expenditure by the Wool Board, Wool Commission and the control boards

Item	Allocation R
Expenditure on stabilisation .	7,492,500
Publicity and public services .	4,235,300
Technical services	1,150,600
Administrative costs	5,550,400
Total	18,428,800

If the expenditure by the Department of Bantu Administration and Development on the relative State property is left out of account, together with all provision for interest, the total expenditure of the four departments and the control boards amounts to approximately R179 million. After deductions in respect of departmental revenue and for other services regarded as being for the account of the farmer, this amount is reduced to R158 million. If further reductions are made in respect of that part of the expenditure intended to be recoverable from agriculture, there still remains an amount of R98 million. In this calculation it has been assumed that not only the loans by the Agricultural Credit Board, but also the amounts allocated for the provision of water, for instance, are fully recoverable. This is not the case, since land for settlement and water for irrigation purposes have thus far not been made available at economic prices.

Other expenditure which similarly cannot be allocated in full to agriculture, is that paid out in respect of subsidies. Although it cannot be denied that agriculture benefits from this, this expenditure can with greater justification be regarded as being in the interest of the community as a whole. The provision for subsidies for the year ending 31 March, 1967 is set out in Table 7.

TABLE 7. - Subsidies payable up to 31 March, 1967

Subsidies	Provision R
Natural resources	5,459,500
Means of production	8,800,000
Emergency aid	4,442,700
Staple food products	44,876,200
Other	4,278,100
Total	67,856,500

If the subsidies are left out of account completely, approximately R30 million remains, which was provided mainly for research, training, extension services, protective services and administration.

INCREASE IN DEPARTMENTAL EXPENDITURE AND GROWTH OF AGRICULTURE

With a view to obtaining in addition an indication of the increases in departmental expenditure over the years, an analysis was made of the financial provisions for the agricultural departments for the year ended 31 March, 1959, the first year after the former Department of Agriculture was divided into two separate Departments. The allocation of expenditure was made on the same basis as for 1966/67. The comparable data are given in Table 8.

TABLE 8. - Provision for expenditure, 1966/67 compared with 1958/59

	1958/59	1966/67
	R	R
Total non-recoverable expenditure	50,000,000	98,000,000
Subsidies	35,000,000	68,000,000
Amount more directly for account of Agriculture	15,000,000	30,000,000

As against this, agricultural production and the contribution of agriculture to the net domestic product from 1958/59 was as indicated in Table 9.

TABLE 9. - Gross value of production and contribution of agriculture to the net domestic product

	Gross value of agricultural production at constant prices*	Index of prices of agricultural products*	Gross value of agricultural production	Contribution of agriculture to net domestic product
	R1,000,000		R1,000,000	R1,000,000
1958/59	728.8	142	728.8	440.5
1959/60	759.0	145	786.3	478.0
1960/61	809.2	145	826.1	495.8
1961/62	874.6	145	868.9	534.4
1962/63	884.6	147	903.4	548.0
1963/64	854.5	155	930.0	575.5
1964/65	894.7	164	1007.6	617.2
1965/66	894.7	169	1045.2	632.9

* Basis 1947/48 to 1949/50 = 100

According to Table 9, the gross value of agricultural production, as well as the contribution of agriculture to the net domestic product, shows an increase throughout. It also emerges, however, that during the earlier years the main contribution to this growth resulted from an increase in the volume of production, while in recent years rising prices were of greater importance.

Droughts during recent years naturally brought the rate of physical growth virtually to a standstill, and on the other hand caused expenditure on emergency aid and to some extent on subsidies, to rocket. Even so, it would appear at first glance that the growth of agriculture has been modest compared with the level of departmental expenditure and the increases.

EVALUATION OF THE CONTRIBUTION OF THE DEPARTMENTS

A comparison as in Tables 8 and 9 of the extent and growth of departmental expenditure with the extent and growth of agriculture is, of course, of very limited value, if any. It does indeed give some idea of the relative extent of some of the values involved. However, as will be shown, so many imponderable factors are involved that one should really not even hazard a comparison of this nature. In fact, the more one endeavours to evaluate,

the more questions arise to which answers cannot be found.

To begin with, it is already a difficult matter to measure the growth of agriculture. Both the volume of production and price levels are involved. As regards volume, allowance must be made for exceptional conditions brought about by nature. As regards prices, an evaluation provides even more problems. From the consumer's point of view it can be alleged that price levels in agriculture contain a hidden subsidy to the extent that prices are maintained at higher levels than would have obtained under conditions of "free" marketing. On the producer's side it could be alleged with equal justification that price levels remain chronically too low. In virtually every country of the world agricultural prices are subject to a greater or lesser degree of Government intervention. So-called "open market" or world market prices in so many instances reflect merely the prices realised by "surpluses" in a few markets. These are not at all representative of the producers' prices in any particular country. Moreover, many other industries or sectors of the economy are protected, with a cost-increasing effect on agriculture.

As Government officials, we naturally believe that our general price level in agriculture is being kept very close to what prevailing conditions both here and overseas indicate as being rational. (Social considerations are, of course, not left out of account entirely. Considerable fluctuations nevertheless occur in the economy, making it difficult to measure the rate of growth with confidence.

The growth in the sphere of agriculture, is of course also attributable to a variety of factors of which the contribution by the agricultural departments constitutes only a part. The rate of development of the country as a whole determines to a considerable extent the rate of development in agriculture, and the farmer himself makes a contribution.

The question also arises to what extent the expenditure by the departments is in the broader long-term interest of the country, rather than merely in the restricted interest of the producer. A major part of the expenditure on subsidies clearly falls within this category; so, too, a great part of the expenditure on the development and conservation of our natural resources - water and soil. Even the expenditure which ostensibly in the first place benefits the producer directly, in virtually all instances also holds benefits for the community as a whole.

However, it would appear to be a reasonable deduction that a very considerable part of the expenditure on services, training and even research, really amounts to the maintenance or protection of agriculture or - to express it differently - merely succeeds in maintaining the level of agricultural production. Only part of this expenditure - it would almost seem possible that this could be a subordinate portion - contributes to the actual growth of agriculture.

This gives rise to various questions, including whether there is something basically amiss in regard to our agriculture, either physically, economically or socially, resulting in a comparatively large expenditure producing such modest dividends in the shape of actual growth. Is this expenditure being incurred in the most effective manner? For instance, could part of the amounts allocated to subsidies not be devoted more beneficially to research and other services? Is too great a part of the allocation perhaps being concentrated (for social reasons) on the poorer and less productive facets of agriculture? In this regard there have recently been indications of a change in approach, as evidenced by the policy in the process of being developed in respect of the new Department of Agricultural Credit and Land Tenure.

It is perhaps inevitable that conservation, protective and maintenance services should receive priority. But actual growth and development can be achieved only to the extent to which more adequate provision is made for research and other services over and above the minimum essentials for maintenance. It is therefore pos-

sible that a moderate addition to the provisions for expenditure in other directions (research and information services) may bring about a proportionately greater acceleration in the rate of growth.

PLANNING OF AGRICULTURE

These questions have some bearing on planning, in respect of which only a few ideas are offered.

Planning, seen from the viewpoint of the individual producer, is concerned mainly with the physical and economic planning of his farming enterprise with a view to obtaining optimum results. For this purpose, the physical and economic conditions are accepted as given. From the point of view of the departments concerned, planning may also be seen as the task of utilising limited resources as efficiently as possible in order to implement the policy which has been agreed upon.

However planning is also significant in the broader sense, namely in respect of the balance between agriculture and the rest of the economy and between the various branches of agriculture mutually. It is perhaps in this spere where most groping occurs, and the complaint originates that insufficient attention is given to the planning of agriculture.

Our approach is that in a "free" economy planning of this nature should at most serve the purpose of guiding farmers in the right direction. A plan with preconceived ideas on the scope of agriculture or its separate branches, or of the income levels in agriculture, could be highly dangerous. We are living in a highly dynamic world, demanding constant adjustment to changing conditions. These conditions actually determine what will be the most advantageous scope or pattern. In our view, it is the task of the planner to interpret these conditions correctly, even to anticipate them as far as possible, and to convey them to agriculture. Viewed in this light, prices are in the first instance the guiding factor.

To the extent to which it is found possible to achieve the correct balance, this will in the long run also lead to the most favourable price structure and income levels in agriculture. If the matter were to be approached from the other end, namely by utilising prices in the first instance to increase levels of income, this could easily lead to such a rigid, unbalanced or uneconomic agricultural structure that in the long run income levels may become less favourable.

Annexure 1 (a) - Establishment - Agricultural Technical Services - National Services, 1966

Division	Professional	Administrative and clerical	Technical and general	Total
Administration	90	223	124	437
Plant Protection	67	9	77	153
Animal Husbandry and Dairying	44	12	94	150
Tobacco	31	4	35	70
Soils	56	7	48	111
Horticulture	26	6	50	82
Citrus and Subtropical Fruit	34	6	37	77
Fruit and Food Technology	77	-	108	185
Botany	31	4	42	77
Viticulture and Oenology	25	-	29	54
Veterinary Science	142	44	220	406
Veterinary Field Services	151	39	966	1,156
Plant Pest Control	8	7	61	76
Agricultural Engineering Services	7	7	124	138
Seed Control	9	3	63	75
TOTAL	798	371	2,078	3,247

Annexure 1 (b) - Establishment - Agricultural Technical Services - Regional Services and Education, 1966

Region	Professional	Administrative and clerical	Technical and general	Total
Transvaal	189	23	255	467
Natal	150	25	208	383
Winter Rainfall	169	35	222	426
Karoo	89	25	276	390
Highveld	140	25	254	419
Orange Free State	161	29	221	411
Eastern Cape	54	20	144	218
TOTAL	952	182	1,580	2,714

Summary: Establishment - Agricultural Technical Services, 1966

	Professional	Administrative and clerical	Technical and general	Total
National services	798	371	2,078	3,247
Regional services and education	952	182	1,580	2,714
TOTAL	1,750	553	3,658	5,961

Annexure 2 - Establishment - Agricultural Economics and Marketing, 1966

Division	Professional	Administrative and clerical	Technical and general	Total
Administration	13	74	16	103
Co-operative Societies	23	4	2	29
National Marketing Council	14	4	1	19
Commodity Services	20	49	334	403
Agricultural Economic Research	76[1)]	8	31	115
TOTAL	146	139	384	669

[1)] Includes 29 regional posts.

Annexure 3 - Establishment - Agricultural Credit and Land Tenure, 1966

Division	Professional	Administrative and clerical	Technical and general	Total
Head Office	-	357	123	480
Regional Offices	-	134	22	156
Settlements	-	27	18	45
Settlement systems	22	-	48	70
TOTAL	22	518	211	751

Annexure 4 - Estimates of expenditure on revenue account for the year ending 31 March, 1967

DEPARTMENT OF AGRICULTURAL TECHNICAL SERVICES

DIVISIONS	R 1,000	R 1,000
National Services:		12,218
Administration	1,682	
Research Institutes for:		
Plant Protection	497	
Tobacco	290	
Horticulture	309	
Citrus and Subtropical Fruit	313	
Fruit and Food Technology	779	
Botany	268	
Viticulture and Oenology	228	
Plant Pest Control	514	
Seed Control	262	
Soil	455	
Animal Husbandry and Dairying	869	
Veterinary Science	1,937	
Veterinary Science and Field Services	3,376	
Agricultural Engineering Services	226	
Training and Publicity	156	
Grants, contributions and subscriptions	108	
Regional Services and Education:		13,664
Transvaal Region	2,130	
Natal Region	1,820	
Winter Rainfall Region	1,667	
Karoo Region	1,202	
Highveld Region	1,609	
Orange Free State Region	1,601	
Eastern Cape Region	955	
Soil conservation	2,674	
Agricultural regional bursaries	5	
Total Department of Agricultural Technical Services		25,882

FUNCTIONAL SUB-DIVISION	R 1,000	R 1,000
Salaries and wages		15,735
Subsistence and transport costs		2,540
Postal, telephones and printing		769
General expenditure, national services		2,034
Research Institutes	1,415	
Other services	619	
General expenditure regional services		4,467
Maintenance costs	1,097	
Agricultural Research Institutions	663	
Soil conservation	2,674	
Experimental work	33	
Grants minor construction works, etc.		336
Total Department of Agricultural Technical Services		25,882

Annexure 4 (Continued)

DEPARTMENT OF AGRICULTURAL ECONOMICS AND MARKETING

DIVISIONS	R 1,000	R 1,000	R 1,000 2,120
Administration		473	
Co-operative Societies		77	
National Marketing Council		94	
Agricultural Economic Research		280	
Commodity Services		1,196	
GENERAL			62,397
Subsidies in respect of means of production:		12,535	
Grazing distress areas	3,735		
Fertilisers	8,800		
Consumption:		49,665	
Dairy products	4,850		
Maize	25,000		
Kaffircorn	568		
Bread	19,246		
Assistance to egg industry		119	
Export of citrus		3	
Interest adjustments, contributions in respect of loans to farmers		75	
TOTAL			64,517

FUNCTIONAL SUB-DIVISION	R 1,000	R 1,000 2,120
Salaries and wages	1,771	
Subsistence and transport costs	203	
Postal, telephones, printing etc.	138	
Equipment for inspection	8	
GENERAL		62,397
TOTAL		64,517

DEPARTMENT OF AGRICULTURAL CREDIT AND LAND TENURE

DIVISIONS	R1,000	R 1,000 2,311
Administration	1,194	
Regional offices	360	
Settlement systems	258	
Settlements	499	
TOTAL	2,311	

FUNCTIONAL	R 1,000	R 1,000 2,311
Salaries and wages	1,648	
Subsistence and transport costs	201	
Postal, telephones and printing	151	
Maintenance and development of State land	6	
Maintenance, settlements	16	
Probationary lessees	203	
Welfare settlements - Loskop	85	
		2,311

Annexure 5 - Names of Research Institutes, Agricultural faculties, Colleges, Research Stations and Experimental Farms of the Department of Agricultural Technical Services

A. National Services

Research Institutes for:

(1) Citrus and Subtropical Fruit - Nelspruit
(2) Tobacco - Rustenburg
(3) Fruit and Food Technology - Stellenbosch
(4) Viticulture and Oenology - Stellenbosch
(5) Soil - Pretoria
(6) Botany - Pretoria
(7) Plant Protection - Pretoria
(8) Horticulture - Pretoria
(9) Veterinary Science - Onderstepoort
(10) Animal Husbandry and Dairying - Pretoria

B. Regional services and education

(1) Faculties of agriculture:
- (i) University of Pretoria
- (ii) University of the Orange Free State
- (iii) University of Natal
- (iv) University of Stellenbosch

(2) Agricultural colleges:
- (i) Potchefstroom
- (ii) Glen
- (iii) Cedara
- (iv) Grootfontein
- (v) Elsenburg

(3) Research stations and experimental farms:
- (i) Transvaal Region
  - (a) Roodeplaat - Pretoria
  - (b) Soutpan - Pretoria
  - (c) Rietvlei - Pretoria
  - (d) Losperfontein - Brits
  - (e) Nooitgedacht - Ermelo
  - (f) Barberton
  - (g) Mara - Louis Trichardt
  - (h) Messina
  - (i) Towoomba - Warmbad
  - (j) Experimental plots at Sterkrivier
- (ii) Highveld Region
  - (a) Potchefstroom
  - (b) Bethlehem
  - (c) Aspley - Standerton
  - (d) Braklaagte - Wesselsbron
  - (e) Goossens - Senekal
  - (f) Holfontein - Ottosdal
- (iii) Orange Free State Region
  - (a) Glen
  - (b) Rietrivier - Ritchi
  - (c) Koopmansfontein - Barkly West
  - (d) Vaalhartz - Jan Kempdorp
  - (e) Armoedsvlakte - Vryburg
  - (f) Upington
  - (g) Massakloutjie - Gordonia
  - (h) Fauresmith Veld Reserve
- (iv) Natal Region
  - (a) Ukulinga - Pietermaritzburg
  - (b) Springfontein - Kokstad
  - (c) Estcourt
  - (d) Tabamhlope - Estcourt
  - (e) De Hoek - Estcourt
  - (f) Onverwacht - Weenen
- (v) Karoo Region
  - (a) Grootfontein - Middelburg
  - (b) Vlekpoort - Maraisburg
  - (c) Klerefontein - Carnarvon
- (vi) Eastern Cape Region
  - (a) Döhne - Stutterheim
  - (b) Bathurst - Port Alfred
  - (c) East London
- (vii) Winter Rainfall Region
  - (a) Elsenburg
  - (b) Welgevallen - Stellenbosch
  - (c) Nortier - Lambert's Bay
  - (d) Varkensvlei - Phillippi
  - (e) Outeniekwa - George
  - (f) Tygerhoek - Riversonderend
  - (g) Langgewens - Moorreesburg
  - (h) Olifantsrivier - Lutzville
  - (i) Worcester Veld Reserve