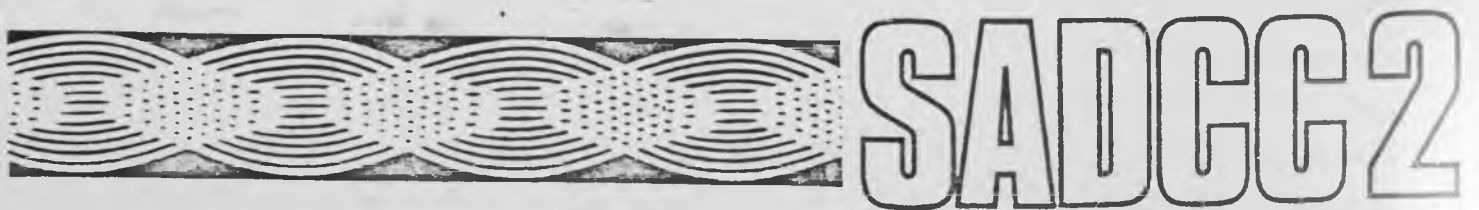


SOUTHERN AFRICA: REGIONAL FOOD SECURITY

Project Proposals



SECOND SOUTHERN AFRICAN DEVELOPMENT COORDINATION CONFERENCE
Segunda Conferência para a Coordenação do Desenvolvimento na África Austral
Conferência do Maputo 27-28 de Novembro de 1980

REGIONAL FOOD SECURITY

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Background to Achieving
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REGIONAL FOOD SECURITY

INTRODUCTION

Food security is critical to the independent states of Southern Africa:

- (a) to meet the basic human need for food;
- (b) to provide a buoyant agrarian sector including both peasant and commercial subsectors
- (c) to reduce present heavy drains on foreign exchange imposed by basic food imports;
- (d) to reduce dependence on the Republic of South Africa as a food supplier.

The present situation has been reviewed by SADCC agricultural officials meeting in Zimbabwe during October 1980. A review of the position appears in "Proposals for Achieving Regional Food Security by the SADCC Group of Countries" appended to this document.

Problems to be overcome in achieving regional food security include inadequacy of production, of supply (including imports), of storage, of marketing and of information. Each must be strengthened primarily at national level but regional coordination can both increase the pace and effectiveness of national action.

Expertise on many aspects of food security exists in one or more SADCC countries. However, it is fragmented and both exchange of

and coordinated development of knowledge and experience are very limited. Thus the first step toward regional action for agrarian change is to create an effective interaction of national personnel through regional workshops, specialist meetings and data exchanges.

Regional food security can be advanced by action on several fronts. The initial studies and steps in this progression form the main body of this document. They include:

- (1) the Agrarian Coordination initiative for regional interaction cited above;
- (2) development of a regional and national early warning system to identify impending food shortages in adequate time to take preventative action;
- (3) a regional data bank to allow storage and quick retrieval of basic agricultural information;
- (4) an inventory of agrarian and agricultural resources available or capable of development regionally and nationally;
- (5) a regional food reserve system built on enhanced national reserves and interaction among them;
- (6) storage loss reduction based on identification and application of better techniques and development of better storage facilities in the peasant and commercial sectors;
- (7) development of food processing technology especially to increase the range of foods used and methods of preserving them;
- (8) improvement of regional and national infrastructures for marketing including procurement, transportation, storage and distribution;

(9) exploration of possible regional action to coordinate procurement of extra-regional food aid and to facilitate intra-regional food trade.

While requiring different approaches and skills, these nine projects all relate to - and taken together comprise the first stage of - a comprehensive programme for attaining regional food security.

Maputo, MOZAMBIQUE

NOVEMBER 1980

PROJECT ONE

- 1. PROJECT TITLE: A Technical Assistance Programme designed to achieve Coordination and Cooperation on all Agrarian Issues

2. OBJECTIVE

The objective of the programme is to promote and facilitate closer cooperation between the nine member states on agrarian issues, with particular emphasis on issues designed to improve the food supply system of the region.

3. IMMEDIATE OBJECTIVE

The creation of facilities designed to permit the easy interchange of ideas and personnel between the nine states with a view to ensuring that all knowledge is commonly available and used to best advantage. In addition facilities would be required to permit the holding of "workshops" designed to deal with specific problems in the field of food production, food handling, food processing, food nutrition and other such related matters. These "workshops" could be specific to a commodity or a discipline. It is envisaged that experts could be drawn in from appropriate external agencies who could give momentum to the regional research efforts.

4. BACKGROUND AND JUSTIFICATION

The programme has its origins in the "Background to achieving Regional Food Security", a copy of which is attached as an information paper. In essence these proposals outline the problems facing the nine states of

the region and indicate certain strategies for resolving these problems. The central concern of the nine states is one of creating a satisfactory food supply system ultimately from within its own resources, which will meet the future needs of its population and at the same time lessen its dependence on countries outside the region as a source of supply. On the available evidence, only 90 percent of the food requirements of the population within the region are being met, and a considerable proportion of that food requirement is currently imported. Population projections for the region suggest that within ten years the region's population will have increased by one third. It follows therefore that to adequately satisfy the nutritional needs of a growing population, and to lessen dependence on external countries, a very determined programme must be mounted to increase the food supply within the region.

In the past, political, social and economic barriers within the region have impeded effective communication between the nine states. In recent times some of these constraints were largely removed. The political will to move towards cooperation in numerous economic spheres was given expression at the Lusaka Summit of 1st April, 1980.

In terms of food the basic requirement is for energy, the prime source of which is derived from grains and root crops. For most of the region grain constitutes the most important component of the diet. Despite the limitations on the availability of precise data, it is probable that grain output within the region amounts to between 8 and 9 million tonnes per annum. On top of this, it is estimated that over 1 million

tonnes of grain is imported into the region. Assuming that the demands of the anticipated population increase will be met from grain and assuming that consumption per capita increases by 10 percent over present modest consumption levels, then the demand for grain in 1990 will be some two thirds over present levels of production. The bulk of this grain must be found from internal resources since logistical constraints alone will inhibit the movement of grain into the region from external sources.

5. OUTPUT

The proposals for Regional Food Security outline a strategy which could lead towards the attainment of an improved food supply system for the future. It would be erroneous to assume that any one of the proposals taken in isolation would achieve the necessary objective. However research and improved technology in agriculture are generally recognised as a fundamental precursor to overcoming the food problem, particularly in those regions where very little research has been undertaken.

Accepting the need for a multi pronged attack on the overall food supply problem, the output from the project must be the attainment of a food supply system adequate to cater for the needs of a population within the region estimated at 67 million in 1985 and 78 million in 1990. In very crude terms this would require the production by 1985 of some 18 million tonnes of available food rising to 21 million tonnes in 1990. This assumes an adequate though far from exciting diet.

6. INPUT

An external agency is invited to participate in discussions with the SADCC for the drawing up of a comprehensive technical assistance programme which will enable meaningful cooperation and liaison between the nine states to be achieved.

7. WORK PLAN

The nine states would in the first instance appoint a Consultative Technical Committee consisting of the Directors of their respective agricultural Research, Extension, and Economic organisations. This Committee would identify the need for, and the priorities in, the development of a coordinated effort in their respective fields for the purpose of improving the food supply system of the region. As a precursor to this consultative technical meeting, each member country would set out for consideration its existing food aims and strategies, identifying their principle food needs and food production targets for the years 1985 and 1990. This information would be consolidated and would be used to assist the Consultative Technical Committee in determining their priorities on a commodity basis. Obviously these priorities would take cognisance of environment and resource preservation.

The recommendations put forward by the Consultative Committee will embrace the interests of all nations within the region and thereby form the basis of priorities in coordinated regional strategies.

The establishment of subcommittees and workshops covering specific commodities and disciplines will follow as and when the need arises. In the initial stages of promoting coordination a considerable degree of flexibility will be required. Stress must be laid on the need to keep liaison at the technical level avoiding if possible any measure of formality in the consultative process. This approach will be reinforced by budgetary and financial considerations. The need for a communications support system need not be an issue to be considered at the initial stages but might form a very necessary link as the coordination process develops. The need for a technical assistance programme to promote this project stems from the limited financial resources available to the respective agricultural ministries/departments within the nine states. All the countries have to work on tight expenditure budgets which do not permit effective communication at the technical level. Furthermore, most countries in the region are very conscious of the foreign exchange considerations which currently restrict official travel. It is hoped that the provision of a technical assistance programme will overcome this constraint to effective communication.

8. COOPERATION AGENCIES

Regional Ministries/Departments of Agriculture/Food.

9. EXECUTING AGENCY

Agrarian Coordination Committee of SADCC Officials.

10. SOURCE OF FUNDING

Multilateral, Bilateral or Private Sector foundation.

PROJECT TWO1. PROJECT TITLE: An Early Warning System for Regional Food Security2. OBJECTIVE

The establishment of a food data recording system that will monitor food availability in terms of stocks, progress during the production season and final food output.

3. DEVELOPMENT OBJECTIVE

With a view to facilitating the creation of food security within the region, an effective early warning system is a necessary requirement. The objective is to devise and establish a system, or reinforce an existing system, which would permit the timeous recording of food availability within the countries of the region so as to determine if, when, and how, domestic food supplies need augmentation from external sources or whether food supplies within the region need, and can, be re-located to meet the needs of specific countries or areas within the region.

4. BACKGROUND AND JUSTIFICATION

Crucial to any regional food plan is the need to determine with greater accuracy the existing level of food output within the region. The fact that food production within the region is determined largely by climatic circumstances throughout the

growing season, requires that crop progress be effectively monitored during the growing season. Existing crop reporting systems within the region vary from country to country, but essentially few if any of the countries are in a position to assemble data sufficient to provide an accurate forecast of the harvest. Fundamental shortcomings are the inability to determine satisfactorily the area under crops and the yield from such crops. It is possible that satellite imagery could contribute significantly in resolving this problem but would require suitable ground control in terms of crop identification, yield variations and relevant meteorological data.

A sequitur to proposals for the creation of an early warning system is the existence of an adequate food data base. This project attempts to explore the requirements and possibility for establishing such a data base.

5. OUTPUT

The preparation and presentation to S.A.D.C.C. of a project feasibility study. This feasibility study would examine and report on the efficacy of existing food reporting systems within the region. The feasibility study would report and make recommendations on methods designed to modify, reinforce and (where appropriate) establish suitable food supply recording systems. Within this study, the possibility of employing satellite imagery as a means of measuring crop area and yields should be considered.

6. INPUT

a) External requirement

1	agricultural economist	(4 months)
1	statistician	(4 months)
1	consultant satellite imagery	(1 month)

b) Internal requirement

Ground support backing in the nine member states.

7. DURATION AND COST

	US \$
Experts (9 man months)	50 000
Travel external	4 000
Travel internal	<u>6 000</u>
Total	<u><u>60 000</u></u>

8. COOPERATING AGENCIES

National Ministries of Agriculture/Food, Ministries of Economic Planning, Departments of Statistics.

9. SCURCE OF FUNDING

Multilateral, Bilateral, Private Sector foundation.

PROJECT THREE1. PROJECT TITLE: A Regional Resources Information System2. PURPOSE OF PROJECT

In order to promote the meaningful fulfilment of regional cooperation between the nine states, it is necessary to establish a centralised bureau where existing specialised information can be catalogued and its place of storage recorded. This is a preliminary step towards the establishment of what can be termed a regional data bank. A further step in this process would be the standardising of the method of recording data. This would be followed by the development of a rapid retrieval system together with all the adjuncts associated with a resource information system.

The problem is essentially one of large scale data storage for the region, which can be stored in a form capable of manipulation to cater for the needs of any user. Ideally the system must be capable of analysing all data relating to a particular land unit. The comparison of modern data with old data would have considerable relevance to planning for the future throughout the region.

The problem is one which would require time and considerable resources to resolve. A feasibility study is required to determine what information is available within the region and to propose how a regional resource information system could be established and what realistic time scale would be entailed in its establishment.

3. REQUIRED ACTION

Feasibility study.

4. INPUTS

To be determined.

5. COOPERATING AGENCIES

All Government Ministries, Parastatal Agencies, Educational Institutions and Private Sector Organizations.

6. EXECUTING AGENCY

To be determined.

7. SOURCE OF FUNDING

Multilateral or Bilateral.

PROJECT FOUR

1. PROJECT TITLE: A Regional Inventory of Agricultural Resource Base

2. PURPOSE OF PROJECT

Regional cooperation in the field of food security hinges to no small extent on the utilisation of resources within the region for the attainment of an adequate food supply system. The development and utilisation of such resources is conditional in the first instance on knowing what resources are available within the region. These resources include all elements which make up the overall food system, and embrace inputs utilized in the agricultural production process, and processing facilities. All these elements are important components in the food chain. A need exists to measure and document those resources of the region that are of consequence in the progression towards food security.

3. REQUIRED ACTION

A feasibility study to determine the need for, and the approach to, the drawing up of an inventory of the region's resources that constitute part of the food system.

4. INPUTS

To be determined.

5. COORDINATING AGENCIES

Ministries/Departments of Agriculture/Food, Ministries of Commerce, Ministry of Industry, Minis-

Ministries of Natural Resources/Water, Ministries of Transport.

6. EXECUTING AGENCY

To be determined.

7. SOURCE OF FUNDING

Multilateral, Bilateral, Private Sector Foundation.

PROJECT FIVE1. PROJECT TITLE: A Regional Food Reserve2. PURPOSE OF PROJECT

A fundamental element in food security for the SADCC region is the creation of a food reserve which can be drawn upon in times of emergency. Certain countries within the region already had some form of food reserve. Logistical constraints impede large and rapid movement of grains throughout the region and necessitates that the problem of a regional food reserve be tackled on a national basis. The SADCC accepts that the establishment of food storage facilities in the individual countries and, the holding of food stocks within these facilities, constitutes the currently realistic method of creating an adequate food reserve for the region. National stocks also increase regional security because they allow interim transfers between regional states. This has happened on occasion in the past and could be enhanced if national reserves were systematically strengthened. Accordingly, this project can be treated as individual projects for the individual states. It is considered that a coordinated aid programme designed to achieve a regional food reserve as its end result should be promoted by SADCC itself.

3. REQUIRED ACTION

Feasibility Study.

4. INPUTS

To be determined.

5. COOPERATING AGENCIES

Ministries/Departments of Agriculture/Food, Parastatal Agencies.

6. EXECUTING AGENCY

To be determined.

7. SOURCE OF FUNDING

Multilateral, Bilateral.

PROJECT SIX

1. PROJECT TITLE: Regional Post Harvest Food Loss Reduction
2. PURPOSE OF PROJECT

Although no estimate of post harvest food losses within the region is available, it is reasonable to assume that the position in the SADCC countries is not significantly different from the position in other developing countries where such losses have been variously estimated at 10 percent. In view of the existing insufficiency in food for the region, a major improvement in the strategy towards food security must be the preservation of such food as is currently produced within the region.

The amount of resources that should be directed into such food preservation programmes is difficult to determine but should conceivably be related to the amount of food lost. A need exists for research to be undertaken in post harvest food losses. Such a research programme would concern itself not only with developing appropriate technology for tackling the problem but would include programmes of education and training.

3. REQUIRED ACTION

A feasibility study for the purpose of identifying and examining the problem of post harvest food losses within the region, and to offer proposals for establishing an appropriate organization for tackling the problem.

4. INPUTS

To be determined.

5. COOPERATING AGENCIES

Ministries, Departments of Agriculture/Food, Ministries of Health, Ministries of Education, Parastatal Agencies.

6. EXECUTING AGENCY

To be determined.

7. SOURCE OF FUNDING

Multilateral, Bilateral, Private Foundation.

PROJECT SEVEN

1. PROJECT TITLE: Regional Food Processing Technology

2. PURPOSE OF PROJECT

Urban influx into the cities of the region will continue. This fact together with an anticipated increase in incomes is likely to create an ever increasing demand for processed foods. Food processing facilities may be developed either by public or private sector funds. Nevertheless it is apparent that a need will arise for technological expertise in the processing of foods. The possibility of establishing an institute within the region for providing research and training facilities into food processing requires investigation.

3. REQUIRED ACTION

Feasibility Study into the need for and the requirements of a Regional Institute of Food Technology.

4. INPUTS

To be determined.

5. COOPERATING AGENCIES

Ministries/Departments of Agriculture, Ministries of Health, Ministries of Industries, Educational Institutions, Private Sector Organizations.

6. EXECUTING AGENCIES

To be determined.

7. SOURCE OF FUNDING

Multilateral, Bilateral, Private Sector Foundation.

PROJECT EIGHT1. PROJECT TITLE: Regional Food Marketing Infrastructure2. PURPOSE OF PROJECT

Some form of food marketing infrastructure exists in all of the nine states, though one of the major constraints in the effort towards increasing food output is indeed the inadequacy of this marketing infrastructure. The objective of achieving a greater measure of self sufficiency in food must be accompanied by an effort to provide the necessary marketing facilities to handle the commodities between producer and consumer. This project lays emphasis on improving the marketing infrastructure at the national level but naturally extends beyond into the regional level.

3. ACTION REQUIRED

A feasibility study to examine the existing marketing infrastructure within the region, to identify the strength and weaknesses of these marketing systems and to propose measures aimed at improving the marketing infrastructure throughout the region.

4. INPUTS

To be determined.

5. COORDINATING AGENCIES

Ministries/Departments of Agriculture/Food, Ministries of Commerce, Ministries of Health, Parastatal Marketing Agencies, Private Sector Organizations.

6. EXECUTING AGENCY

To be determined.

7. SOURCE OF FUNDS

Multilateral, Bilateral, Private Sector Foundation.

PROJECT NINE1. PROJECT TITLE: Regional Food Aid2. PURPOSE OF THE PROJECT

The SADCC plan for regional food security lays stress upon the need to ensure an adequate supply of food for the region's population.

Certain proposals within the plan aim at the objective of self sufficiency in food needs. This objective is clearly long term in nature. The immediate problem is that food supplies of one sort or another are deficient in the region. Furthermore in most of the countries severe production constraints impose limitations on plans to increase food output. In all countries of the region there appears to exist a growing demand for imported cereals such as wheat and rice - commodities that require a high level of technological inputs. Throughout the region climatic hazards are an important determinant of food output. The point at issue is that whereas constraints exist in the food production process the demand for food continues unabated. Under these circumstances it is probable that for some time to come food aid of one sort or another will continue to be a requirement for the region. At present the determination of food aid requirements can only be assessed at the individual national level. These can be consolidated into a regional need. The timing of requirements together with logistical considerations should be coordinated at the regional level.

3. REQUIRED ACTION

Project Appraisal.

4. INPUTS

To be determined.

5. COOPERATING AGENCIES

Ministries/Departments of Agriculture, Health, Transport, National Planning, Parastatal Bodies.

6. EXECUTING AGENCY

To be determined.

7. SOURCE OF FUNDING

Multilateral, Bilateral.

A N N E X

BACKGROUND TO ACHIEVING
REGIONAL FOOD SECURITY

1. INTRODUCTION

At the summit conference on Southern Africa Development Co-ordination held in Lusaka on 1st April 1980, the Government of Zimbabwe was charged with the task of preparing a food security plan embracing the following countries:

1. Angola
2. Botswana
3. Lesotho
4. Malawi
5. Mozambique
6. Tanzania
7. Zambia
8. Swaziland
9. Zimbabwe

What follows was prepared by Zimbabwe after consultations had taken place between officials of other SADCC countries.

2. A GENERAL DEFINITION OF THE PROBLEM

The estimated current and future populations of the nine countries are indicated in Table 1.

Table 1 Current and future estimated population *

COUNTRY	Estimated population ('000)			Growth rate %
	1980	1985	1990	
Angola	7 315	8 389	9 645	2,8
Botswana	792	909	1 044	2,8
Lesotho	1 291	1 461	1 653	2,5
Malawi	5 643	6 542	7 583	3,0
Mozambique	10 543	12 106	13 902	2,8
Tanzania	18 046	21 230	24 979	3,3
Zambia	5 915	7 025	8 344	3,5
Swaziland	548	645	758	3,3
Zimbabwe	7 439	8 836	10 494	3,5
TOTAL	57 532	67 143	78 402	3,3
INDEX	100	117	136	

* SOURCE: F A O

The Food and Agricultural Organisation of the United Nations in their publication "The State of Food and Agriculture 1977", estimate per caput dietary energy supplies in relation to nutritional requirements.

This data for the region is shown in Table 2.

Food availability * and requirements

Table 2

Country	Kilocalories required per caput per day	PERCENT OF REQUIREMENTS AVAILABLE				
		1970	1971	1972	1973	1974
Angola	2 350	85	85	85	84	86
Botswana	2 320	90	94	89	87	85
Lesotho	2 280	95	97	90	99	100
Malawi	2 320	103	104	104	105	103
Mozambique	2 340	86	85	84	87	84
Tanzania	2 320	88	83	82	85	86
Zambia	2 310	84	87	87	85	89
Swaziland	2 320	90	94	93	92	89
Zimbabwe	2 390	96	102	103	99	108
Weighted average for the region	2 334	90	89	89	90	91

SOURCE: F A O.

* Note: Food availability implies local production plus net imports.

The figures in Table 2 indicate that with exception of Malawi, Zimbabwe and, on occasion, Lesotho, the population of the region is undernourished. On average, throughout the area, food availability is about 10% below requirement. Furthermore, the equivalent of about 20% of food availability is obtained from grain imports.

Table 3 shows the total extent of regional maize, wheat and rice imports. More detailed data giving imports of these commodities country by country is contained in the appendix.

Table 3 Total maize, wheat and rice imports in '000 tonnes

Crop	1976	1977	1978	1979	1980 *
Maize	102,0	110,6	181,0	510,0	700,0
Wheat	450,5	563,0	515,0	542,5	553,0
Rice	85,2	154,0	129,0	160,6	150,0
Total	637,7	827,6	825,0	1 218,1	1 403,0

Note*: 1. USDA statistics to 1979 and an estimate for 1980

2. Rice imports relate to Tanzania, Angola, Moçambique and Zimbabwe only.

The regional import bill for all cereals in 1980 is estimated to cost in excess of US\$340 million.

If food security is to be achieved within the region, the SADCC countries believe their population must have available not only the required Kilo-calories per caput per day but also food of adequate quality.

This goal could be achieved either by increasing food imports or by increasing food production.

While the SADCC countries consider that self sufficiency in food production within the nine countries is both practical and essential, they also recognise that the achievement of this goal will take time.

While differing in various ways from each other the economies of all nine countries are still at a comparatively early stage of development. in consequence, they can ill afford to expend the limited amount of foreign exchange available to them on the purchase of food. This is particularly

the case if they already have much of the necessary internal resources to produce what is needed to feed themselves.

Table 4 Land resources of the Region

Country	Land Utilization (millions of ha)			Other land as a % of total land
	Total Land	Arable*	Other	
Angola	124,7	1,8	122,9	98,6
Botswana	53,5	1,4	57,1	97,6
Lesotho	3,0	0,4	2,6	86,7
Malawi	9,4	2,3	7,1	75,5
Mozambique	76,5	3,1	73,4	95,9
Tanzania	88,6	6,3	82,3	93,9
Zambia	74,1	5,0	69,1	93,3
Swaziland	1,7	0,2	1,5	88,2
Zimbabwe	38,7	2,5	36,2	93,5
Total	475,2	23,0	452,2	95,2

* Note: Arable land refers to land currently under cultivation.

SOURCE: FAO production year book 1977.

Table 5

Population pressure on land used for crop production

Country	Number of inhabitants per hectare of arable land (1977)
Angola	3,7
Botswana	0,5
Lesotho	3,0
Malawi	2,2
Moçambique	3,1
Tazania	2,6
Zambia	1,1
Swaziland	2,5
Zimbabwe	2,7
Average	2,4

As shown earlier in Table 2, Zimbabwe is one of the few countries in the region which usually has available the required kilocalories per caput per day. In addition she is often a food exporter. These two aspects are especially striking when considered in relation to the fact that she also supports a greater than average number of inhabitants per hectare of cultivated land (2,7). They suggest that on average, the land that she presently uses for crop production achieves a higher level of output per hectare than is achieved in the other countries of the region.

This view reinforced when it is remembered that the kilocalories available per caput in most of the remaining countries are below the required level in spite of the fact that several of them are fairly significant food importers. Further it is believed that the quality of the land and the climatic conditions in Zimbabwe are not more favourable for agricultural production than in many other parts of the region.

Table 6 Crop yields in the countries of the region

Country	Average yields over the three year period 1975 to 1977	
	Maize Tonnes per hectare	Shelled groundnuts Tonnes per hectare
Angola	0,746	0,542
Botswana	0,683	1,119
Lesotho	0,928	-
Malawi	1,117	0,627
Mozambique	0,538	0,467
Tanzania	0,728	0,595
Swaziland	1,332	-
Zambia	0,962	1,017
Zimbabwe	2,831	0,716

The SADCC countries therefore believe that considerable scope exists for improving the output per hectare of the Region's land area presently utilized for crop and livestock production.

3. THE PROMOTION OF AGRICULTURAL PRODUCTION

A number of major constraints to increased regional food production exist at present.

Firstly, the comparatively small area of land thus far developed for irrigated crop production prevents the area from achieving self-sufficiency in wheat and rice requirements.

Secondly, the limited agricultural research and extension resources which the region is able to to deply, act as a constraint on the ability of many food producers to apply appropriate technology to their production.

Thirdly, the lack of adequate capital throughout the region both for the purpose of providing credit to producers and for financing needed infrastructural development greatly inhibits increased food production.

Fourthly, the economic enviroment in many parts of the region is not sufficiently conducive to promoting increased food production.

In an endeavour to overcome the above constraints the SADCC countries propose to address themselves to the following matters:

9/.....

(a) Agricultural research and extension

Productive research and efficient extension form an important cornerstone for increased agricultural productivity. It is accepted there are differences in agro-ecological conditions within the region and as a result specific research programmes are required to deal with local problems. Nevertheless many of the problems encountered are common throughout the nine countries and in consequence it is self-evident that co-operation in agricultural research between member states would be of mutual benefit both from a technical and economic point of view.

Diseases and pests do not respect or conform to territorial boundaries, A re-establishment and strengthening of former co-operation in such fields as tsetse, trypanosomiasis, foot and mouth and red locust control measures is considered necessary.

Much research expenditure will be wasted if the results obtained are not translated by extension staff for practical application by farmers. The development of a vigorous well-trained extension service is therefore of vital importance. It is stressed that extension staff should be experienced in local conditions. In order to achieve this, conditions of service must be sufficiently good to attract and retain the desired type of personnel. It is considered that there is no satisfactory substitute for local experience.

Sound conservation and land use are fundamental to any food security plan. It is believed that land degradation is reducing food production potential in many parts of the region. This is caused by overstocking and mismanagement of natural grazing areas, coupled with inadequate mechanical and biological protection of arable land, thus leading to declining soil productivity. The training of farmers in sound conservation and cultural practices by qualified well-trained extension staff is therefore imperative.

A transfer of information between the countries of the region would be of considerable mutual benefit. Such a programme must include expertise in conservation, extension methods, staff training, and in all technical aspects of agricultural.

(b) Encouragement of increased Food Production

Food production within the region is undertaken at two distinct levels, specifically small scale and large scale. Both sectors have an important role to fulfill in the attainment of a satisfactory food supply system for the region.

i) Small Scale Sector: It is accepted that many countries within the region have a very limited number of large scale agricultural operations within their national food systems. Accordingly these countries must of necessity place heavy reliance on the small scale sector of agriculture for the attainment of food security goals. Further, since the greater proportion of the regions' population is engaged in agriculture it follows that the attainment of a greater level of food security within the region must of necessity look to the small scale sector to enlarge its output of food. Like the large scale sector, the small scale sector will require inputs of an appropriate technology level. A certain level of managerial expertise will be required to manipulate these inputs effectively. An important element in the encouragement of food production from the small scale sector of agriculture is the resultant impact on rural incomes, the raising of which is a common goal for all Governments within the region.

ii) Large Scale Sector: By definition the large scale sector contrasts to the small scale sector in terms of the magnitude of output. The decision making component in the production process may be undertaken by the private sector, the public sector or by cooperative association of one form or another.

In Zimbabwe a feature of the current food system is its dominance by the large scale sector. The greater part of the country's urban food needs and nearly all food export surpluses are derived from the large scale sector.

The large scale sector of agriculture has several significant characteristics. The level of output is a function of the application of modern technology in which seed, fertilizer, chemicals and mechanisation are fundamental inputs. Farming units are of a size that permit advantage in the economies of scale. High levels of finance and managerial skills are necessary to convert this input mix into a suitable output level. The contrast between these two agricultural sectors is illustrated in Table 7.

Table 7 Crop yields in Zimbabwe by agricultural sector

Agricultural sector	Average yields over the three year period 1975 to 1977	
	Maize Tonnes per hectare	Shelled groundnuts Tonnes per hec- tare
1. Small scale	0,6	0,7
2. Large scale	5,2	1,3
3. Both sectors combined	2,8	0,7

Were it possible to raise crop yields throughout the region to half the level attained by this large scale sector of agriculture the regions food security problems would be largely resolved.

Like other countries in the world grains constitute the main component of the region's diet. Maize, wheat and rice are imported in ever increasing quantities. The production of the latter two grains are particularly dependent on irrigation. High levels of capital are required to establish irrigation projects and a relatively high level of expertise is required for its efficient utilisation. This appears to be an area in which large scale agriculture features successfully. Since capital and managerial expertise is in short supply throughout the region it is the belief of the SADCC that the creation of an environment, in which commercial large scale food production enterprises can be encouraged to operate and allowed to flourish, would be an important step towards establishing a greater level of food security for the region.

c. Agricultural pricing, marketing, consumer prices and food aid

The Governments of the region are confronted with the difficulty problem of trying to keep the cost of food-stuff to consumers at an acceptable level while at the same time avoiding the impoverishment of their food producers. This dilemma has unfortunately resulted, on occasion, in policies which have lessened rather than increased the food security of the region.

It is maintained that farmers will adopt predictable attitudes towards production incentives. Consequently it is considered vital to the promotion of increased food production that producer price policies should not act as dis-incentives to this objective.

Although not forgetting the commodity prices prevailing on world markets, the SADCC group consider that when establishing food producer prices, cognisance must be taken of the need to balance production according to needs. Within reason, an attempt must also be made to take into account producer costs of production and the need for adequate price location policies.

It is also recognised that price equalisation funds, measures to bring relief to food producers affected by drought, and the existence of effective marketing systems, could contribute to the promotion of increased food production.

The SADCC group accept that in principle the consumer prices for food commodities should cover producer prices plus the cost of marketing and handling. Because the establishment of food prices on this basis often creates difficulties for low income urban consumers, it is believed important that such prices be carefully co-ordinated with wage policies and specifically established food and nutritional welfare programmes.

Similarly, while it is recognised that food aid can play an important part in the food supply of the region, it is felt that such aid should be channelled through ~~the~~ indigenous marketing institutions in order to protect the interests of domestic producers and to ensure that the aid reaches target population groups.

The SADCC group believes that regular contact between the officials of the nine countries, who are responsible for national pricing and marketing policies, would be most valuable in attempting to establish a regional food security plan. Such meetings would facilitate the exchange of ideas and assist in the formulation of co-ordinated policies.

d) Further measures to safeguard regional food security and to increase production

The SADCC countries agree that the following measures should be adopted for the region:

- i) All countries of the region should establish national food reserve policies.
- ii) There should be criteria and guidelines to co-ordinate the release and management of these national reserves.
- iii) As developing countries they should be helped to meet their growing food import requirements and emergency needs.
- iv) There should be more international assistance for the national food security programmes of SADCC countries.
- v) The collective self-reliance of SADCC countries should be fostered.

d) i) Food reserves

While it is accepted that stockholdings of food are most expensive to maintain, it is believed that an effort should be made to establish them in the countries of the region. It is suggested that approximately three months requirements of one or two staple commodities should be held within each country, at locations suitable to facilitate distribution. This level of stocks, which relates to internal sales, should be on hand at the commencement of each intake period.

d) ii) Food exports

Where food production exceeds domestic requirements in one or more of the nine countries, consideration should be given to offering such surpluses to other states of the region before attempting to dispose of them on

markets outside this area. While such a policy could contribute to regional food security, great care would be needed to ensure that neither the exporting nor the importing countries suffer financial disadvantages.

d) iii) An early warning system and data bank

The establishment of an early warning system in each country throughout the region is seen as an important safeguard measure in any food security plan. A regular, systematic arrangement to forecast crop production and probable food availability, both nationally and regionally, would allow timely action to be taken in order to stave off the development of critical food shortages. A reliable data bank is an important element of an early warning system and indeed for other aspects of a regional food security plan. The SADCC group therefore proposes that an early warning system and data bank be established on a regional basis.

d) iv) The co-ordination and planning of food imports

The co-ordination and planning of food imports would enable participating governments to make optimum use of the transport infrastructure at their disposal, as well as to minimize the cost of securing their food import requirements. The SADCC countries believe that regional co-ordination in the purchase and movement of food imports should be given consideration.

d) v) Input requirements for agriculture

An increase in regional food production is not possible unless the necessary input requirements are available in adequate quantity at the right time. It is recognised that there is room for improvement in this matter within the region. Food security would be more assured if the member countries were in a position to produce their own input requirements and it is believed that every effort should be made to develop the region's capacity in respect of agricultural input needs.

Despite such efforts it is realised that it may be necessary to continue importing a considerable quantity of the inputs wanted. That being so, every possible step must be taken to ensure that sufficient foreign exchange is set aside to obtain these requirements.

The SADCC countries propose that a regional organisation consisting of officials from all nine countries be established to co-ordinate and determine what input requirements are needed to meet specific food production targets, to promote maximum self-reliance as far as regional agricultural input requirements are concerned, and to organise import movement where necessary.

d) iv) Credit for agricultural food producers

A lack of adequate finance will prevent farmers, be they at the commercial or peasant level, from responding to otherwise favourable circumstances for increasing the production of food commodities. It is considered that much that is useful could be gained by the exchange of information on these matters throughout the region.

d) vii) The Food and Agricultural Organisation of the United Nations

FAO operates a Food Security Assistance Scheme throughout the world. Under the Scheme FAO assists developing countries on request to:

1. Formulate national food security policies and action plans in line with the international undertaking on world food security which was endorsed at the World Food Conference in 1974.
2. Identify and develop projects to carry out national food security policies, and
3. Mobilize external aid to fund identified projects.

The SADCC countries believe that such help would be invaluable and therefore propose that FAO and other interested organisations be invited to give every assistance where possible.

4. C O N C L U S I O N

In general, it appears that food availability throughout the region is about 10% below desirable levels. With a rapidly growing regional population the position could seriously worsen in a comparatively short time. Furthermore, the marginal and sub-marginal levels of food currently available, coupled with the fact that the area is subject to periodic drought conditions, underlines the precariousness and unacceptability of the present situation.

Despite the food security problems which face the region, it is the view of the SADCC group that the resources of the region are enormous. If well marshalled, they are capable of turning the region into one area of the world,

not only able to provide food security for its own population, but also to produce a food surplus for export.

It is thought that when the proposals outlined above are implemented a significant step will have been taken towards establishing the food security of the region.

NOVEMBER 1980

THE SADCC

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APPENDIX

Table 1. Annual maize imports (tonnes)

Country	1976	1977	1978	1979	1980*
Angola	2 000	26 500	59 000	30 000	60 000
Botswana	6 000	9 500	2 000	-	10 000
Lesotho	-	-	-	-	30 000
Malawi	21 000	-	-	-	-
Mozambique	25 000	50 000	70 000	200 000	200 000
Tanzania	73 000	24 200	50 000	30 000	60 000
Zambia	-	400	-	250 000	200 000
Zimbabwe	-	-	-	-	140 000
TOTAL	102 000	110 600	181 000	510 000	700 000

* NOTE: The 1980 figures are estimates. SOURCE: USDA and FAO
Botswana and Lesotho figures for 1976-1978 are underestimated.

Table 2. Annual wheat imports (tonnes)

Country	1976	1977	1978	1979	1980 *
Angola	76 000	110 000	10 000	110 000	110 000
Botswana	14 000	19 500	19 500	20 000	20 000
Lesotho	62 500	62 500	62 500	62 500	63 500
Malawi	22 000	26 000	11 000	10 000	15 000
Mozambique	121 000	130 000	137 000	125 000	130 000
Tanzania	30 000	70 000	85 000	65 000	85 000
Zambia	125 000	145 000	90 000	150 000	130 000
TOTAL	450 000	563 000	515 000	542 500	553 000

* NOTE: The 1980 figures are estimates. SOURCE: USDA and FAO

Table 3. Annual rice imports (tonnes)

Country	1976	1977	1978	1979	1980 *
Angola	18 000	30 000	25 000	25 000	25 000
Mozambique	53 000	75 000	40 000	57 000	50 000
Tanzania	9 000	45 000	60 000	75 000	70 000
Zimbabwe	5 200	4 000	4 000	3 680	4 000
TOTAL	85 200	154 000	129 000	160 000	150 000

* NOTE: The 1980 figures are estimates. SOURCE: USDA