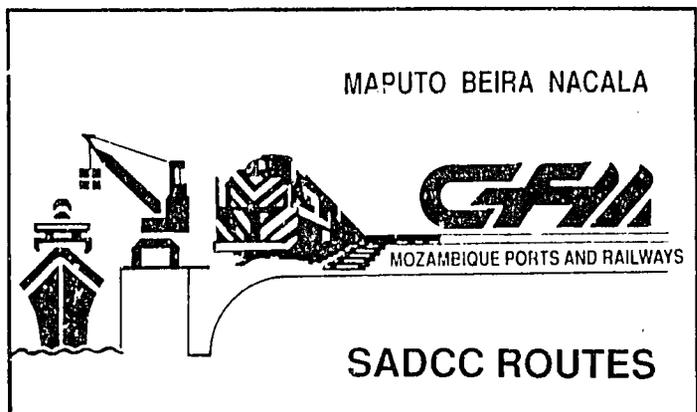


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FOOD, AGRICULTURE

SOUTHERN AFRICAN DEVELOPMENT COORDINATION CONFERENCE



Maputo, Republic of Mozambique
29th — 31st January 1992

**FOOD, AGRICULTURE
AND NATURAL RESOURCES**

SECTION ONE:

OVERVIEW

SECTION TWO:

FOOD AND AGRICULTURE

Part I: Agricultural Research

Part II: Food Security

Part III: Livestock Production and Animal Disease Control

SECTION THREE:

NATURAL RESOURCES AND ENVIRONMENT

Part I: Environment and Land Management

Part II: Fisheries, Forestry and Wildlife

PROJECT NUMBERING SYSTEM

Projects are numbered as follows:

1. The first code defines the country:

AAA	-	Regional	NAM	-	Namibia
ANG	-	Angola	SWA	-	Swaziland
BOT	-	Botswana	TAN	-	Tanzania
LES	-	Lesotho	ZAM	-	Zambia
MAL	-	Malawi	ZIM	-	Zimbabwe
MOZ	-	Mozambique			

2. The second code defines the Sector:

0	-	Overall Coordination
1	-	Food Security
2	-	Livestock Production and Animal Disease Control
3	-	Agricultural Research and Training
4	-	Fisheries
5	-	Forestry
6	-	Wildlife
7	-	Environment and Land Management

3. The third code indicates a serial number.

A B R E V I A T I O N S

ADB	=	African Development Bank
AGIP Spa	=	AGIP Spa
AIDAB	=	Australian International Development Aid Bureau
ANG	=	Angola
AUS	=	Australia
BADEA	=	Arab Bank for Economic Development in Africa
BEL	=	Belgium
BOT	=	Botswana
BRA	=	Brazil
CAN	=	Canada
CBI	=	Confederation of British Industries
CFTC	=	Commonwealth Fund for Technical Cooperation
CHI	=	Peoples Republic of China
CITES	=	Convention on International Trade in Endangered Species
DEN	=	Denmark
EEC	=	Commission of the European Communities
FAO	=	Food and Agriculture Organisation of the United Nations
FIN	=	Finland
FRA	=	France
FRG	=	Federal Republic of Germany
IBRD	=	International Bank for Reconstruction and Development
ICAO	=	International Civil Aviation Organisation
ICE	=	Iceland
IDA	=	International Development Association
IDRC	=	International Development Research Centre
IDU	=	Industrial Development Unit of the Commonwealth Secretariat
IFAD	=	International Fund for Agricultural Development
ILO	=	International Labour Organisation
IMPOD	=	Import Promotion Office for Products from Developing Countries
IRE	=	Ireland
ISNAR	=	International Service for National Agricultural Research
ITA	=	Italy
ITB	=	International Tourism Board
ITU	=	International Telecommunications Union
JAP	=	Japan
KUW	=	Kuwait Fund
LES	=	Lesotho
MAL	=	Malawi
MOZ	=	Mozambique
NAM	=	Namibia
NET	=	Netherlands
NOR	=	Norway
NORDICs	=	Nordic countries
OPEC	=	Organisation of Petroleum Exporting Countries
POR	=	Portugal
SADCC	=	Southern African Development Coordination Conference
SAFTTA	=	Southern African Federation of Travel and Tour Associations
SAREC	=	Swedish Agency for Research Cooperation with Developing Countries
SATEP	=	ILO Southern African Team for Employment Promotion
SAP	=	Spain
SWA	=	Swaziland
SWE	=	Sweden
SWI	=	Switzerland
TAN	=	Tanzania
TAZARA	=	Tanzania Zambia Railway Authority
UAPTA	=	Unit of Account of the Preferential Trade Area
UK	=	United Kingdom

UNDP	=	United Nations Development Programme
UNIDO	=	United Nations Industrial Development Organisation
USSPEC'd	=	Unspecified
USA	=	United States of America
USSR	=	Union of Soviet Socialist Republics
WB	=	World Bank
ZAM	=	Zambia
ZIM	=	Zimbabwe

Section One

Overview

OVERVIEW

INTRODUCTION

- 1.1 The 1990-91 farming season in the SADCC region experienced very abnormal weather. In most areas, the rain started a month or more later than usual. When it came, it was excessive in some member states and it led to flooding. The most affected countries were Botswana, Malawi and Tanzania. In one of these countries, namely Malawi, it caused a landslide on the northern side of the Mulanje Mountain leading to the disappearance of the whole village with its inhabitants of about 500 people. The abnormal weather for agriculture should be a reminder to the region that investment should continue to be made in soil and water conservation programmes, including better water harvesting techniques, flood control, planned landuse, afforestation, storm drain construction and the construction of dams for irrigation purposes.
- 1.2 The civil wars in Angola and Mozambique continued to disrupt agricultural production. Consequently, there will be need for the international community to continue to send food aid to these countries. The realisation of peace in Angola gives hope that agricultural activities might be resumed and the country will become again a large agricultural producer.
- 1.3 Farmers in SADCC member states are being urged by both national and international agricultural policy research institutes to adopt sustainable agricultural production systems. The concept of sustainable agricultural production systems involves the successful management of natural resources of soil, water, flora and fauna for agriculture, in order to satisfy the changing human needs while simultaneously maintaining or enhancing the productivity of the resource base. Deforestation and overgrazing lead to soil, water and germplasm disappearance or erosion and eventually to decreased agricultural productivity. The misery that food insecurity causes to communities in rural and urban areas in member states where there is no stable agricultural production ensures that agriculture should continue to be given high priority in all development efforts. Particularly, support should be given to public and private agricultural research and extension systems by providing an enabling environment which will influence the farmers to adopt a science based agriculture.
- 1.4 The potential prospects and constraints that are likely to influence agricultural growth in the SADCC region during the next 20 years indicate that the following commodities or sub-sectors merit special attention:

- * Food commodities. In addition to research on traditional cereal staples, such as maize, more research is required on wheat, rice, potatoes, oilseeds, fruits and vegetables, dairy and poultry. However, much will depend on the comparative advantage of the region in the production of one or more of these crops.
- * Traditional commercial crops. Tobacco, cotton, tea, maize, wheat, coffee, groundnuts, pyrethrum, cashew nuts, and other horticultural crops are still very important foreign exchange earners. The region has comparative advantage in the production of several of these crops.
- * High value crops. There is an increasing need for crop diversification on small holdings in the intensively-populated high potential agricultural areas of the region. There is strong domestic demand for oilseeds and there is export demand for certain spice crops and essential oils. There are good prospects, for example, for the production of cashew and macadamia nuts.
- * Livestock. The internal demand for livestock products, particularly meat and milk, will continue to expand. Increased research effort will be needed in animal health and on pasture management systems.
- * Production input/factor research. The region has considerable potential for irrigation, but there is little irrigated farming. Fertilizer responses for different crops need further investigation. Further, research on improved tools and implements is warranted.
- * Natural Resources. The fuller non-consumptive exploitation of wildlife and plant resources deserve research support. Protection of marginal and fragile areas may result in activities with the potential for foreign exchange earnings, rural employment and food security.

The region is developing programmes and projects based on some of these priority commodities/fields. The Agricultural Research and Training Sector has commissioned a consultancy to come up with a blueprint on priority areas and strategy to implement these during the next twenty years. This assignment should be completed during 1992.

The realisation of most of the potential outlined above will require massive investments not only in research but also in extension services, so as to bring the products of research to the farmers, and to ensure sustainability of all new systems of production adopted by farmers.

The Food Security Sector is currently coordinating work on the amalgamation of the strategies for Food and Agriculture, and for Natural Resources into a single strategy document for the overall Sector of Food Agriculture and Natural Resources.

1.5 Food Situation

Food security assessment for the SADCC region now cover cereal grains only and exclude non-traded commodities such as cassava, bananas and sweet potatoes following agreement to that effect at a meeting between the REWU/_1, all 10 NEWUs/_2, SADCC authorities, and FAO in Gaborone, Botswana in late February, 1991. It was felt that inclusion of non-traded commodities inflated, and thus distorted, the level of regional food availability as these commodities cannot be utilized in most SADCC countries except the few countries in which those commodities are consumed. It was also agreed to discontinue the use of Maize Equivalent (M.E) in aggregating commodities but to combine all grain tonnages.

Outlook for the 1991/92 Marketing Year

The latest food security assessment for the SADCC region compiled for the period up to the end of June, 1991 shows that the food security situation during the current 1991/92 marketing year appears difficult and unsatisfactory as total domestic cereal availability assessed at 11.698 million tonnes is expected to be inadequate to meet total cereal requirements of 14.496 million tonnes.

A regional cereal deficit of 2.8 million tonnes, about 20% of annual requirements, is anticipated after allowing for limited substitutions between cereal and cassava. When compared with a regional deficit of 0.95 million tonnes during the previous year, the regional cereal shortfall has worsened, thereby indicating a further deterioration in food security prospects for the region. By contrast, the situation during the 1989/90 marketing year showed a regional surplus of 0.638 million tonnes in maize equivalent terms.

All countries will, therefore, require cereal imports in order to ensure satisfactory food security and maintain food reserves at desired levels. The Food Security situation is expected to be particularly difficult in Mozambique where an estimated 0.98 million tonnes of cereal grain will need to be imported in order to ensure adequate food supplies. As has happened in the past, logistical constraints will continue to severely disrupt the handling and distribution of food imports.

While overall cereal production for the 1990/91 growing season (10.15 million tonnes) shows little change at the regional level from that of the previous year (10.5 million

tonnes), significant movements have taken place at country level; production was significantly reduced in Zimbabwe by 21%, Lesotho (-29%) and Mozambique (-25% as compared to the previous season. On the other hand, Angola (19+%), Swaziland (+17%) and Zambia (+31%) reported significant increases over the previous season.

All SADCC member States face cereal shortages during the 1991/92 marketing year, the shortfalls are particularly serious in Mozambique (0.98 million tonnes), Angola (0.62 million tonnes) and Lesotho (0.21 million tonnes). Tanzania, Zambia and Zimbabwe which reported grain surpluses during the previous year, are assessed as grain deficit in 1991/92 and will need to import 0.26, 0.20 and 0.19 million tonnes of cereals respectively if they are to maintain normal levels of strategic reserves. Malawi, although more or less self-sufficient in maize (except wheat), will need to import 0.13 million tonnes to meet the needs of 900 000 Mozambican refugees in that country.

Expected cereal imports currently amount to 1.87 million tonnes, most of which will be supplied from outside the region. Cereal imports so far received this marketing year amount to only 0.28 million tonnes, the remaining 1.59 million tonnes are expected to be received during the remainder of the marketing year. A net uncovered import gap of 1.21 million tonnes remains. It is unlikely that the current uncovered import gap will be bridged and thus some countries, particularly Angola and Mozambique, will have acute food security problems during the course of the 1991/92 marketing year. Other countries including Tanzania, Zambia and Zimbabwe, may have to reduce their strategic grain reserve levels which could jeopardise future food security.

Though there are no net exportable surpluses in any country in the region, 0.11 million tonnes of cereals have so far been exported by SADCC States and another 0.17 million tonnes are to be exported during the current marketing year. Most of these exports constitute maize export commitments of Zimbabwe (228 000 tonnes) made in the previous marketing year which the country has to honour during the 1991/92 marketing year. Intra-regional trade within SADCC is estimated to account for only 14 percent of total cereal trade.

/_1 REWU = Regional Early Warning Unit
/_2 NEWUS = National Early Warning Units

The nature and extent of the insecurity varies considerably from country to country. These problems have been brought about by serious disparities in the consumption and production of cereals, lack of accessibility to food grains and logistical and financial constraints in the transportation and distribution of food grains to deficit areas. Even countries which have food security at the national level are confronted with food insecurity at the sub-national level.

Food and Agriculture

Agriculture Research and Training

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1. EXECUTIVE SUMMARY

- 1.1 The Agricultural Research and Training Sector continued to pursue its objective of strengthening the national agricultural research systems (NARS) of member States so that they may develop a capacity to plan, manage, monitor and evaluate location-specific research that is aimed at generating technologies that can be used in removing constraints to agricultural production.
- 1.2 The Sector also continued to organise meetings of Deans of the Faculties of Agriculture, Forestry and Veterinary Medicine so that they exchange views on how to train more research, extension and training personnel for the public and private agricultural enterprises and institutions. SADCC has accorded human resources development issues a high priority. The sector of Agricultural Research and Training has, therefore, responded by producing a blue print on strategies for the improvement of the quantity and quality of trained personnel for the whole agricultural industry of SADCC.
- 1.3 Progress has been realised in the establishment of the Gene Bank for long term storage of crops and forest seeds. The architectural drawings of the buildings have been approved, and in June 1991, title deeds for the Centre were obtained by SACCAR from the Zambian Government. The construction of the buildings would start after the formalities of selecting a contractor are completed.
- 1.4 The Sector has seventeen regional projects including the establishment of the coordinating centre (SACCAR) itself. Nine projects have been funded, and are at various stages of implementation. The appraisal of five projects has confirmed their continued relevance, and funding is being sought for these five projects namely, Establishment of a Maize and Wheat Improvement Network, Regional Vegetable Research Network, Wool and Mohair Improvement, Strengthening Faculties of Agriculture, Forestry and Veterinary Medicine, and Studies of Ecologies and Biology of the African Silkworm.
- 1.5 SACCAR was reviewed again in July 1991 and it is anticipated that SADCC's funding for the Centre will increase to 41 percent from the current 20 percent starting from the 1992/93 financial year, while that of the cooperating partners will decrease from 80 percent to 59 percent. The latter will be confined to programmes and projects only, while SADCC will cover all the operational costs of SACCAR plus some elements of the programmes and projects. It is expected that after this review, SACCAR will cease to be regarded as a project but as an institution of SADCC.

- 1.6 The other projects that have been reviewed and will be moving into phase II include the Land and Water Management Research Programme, Inservice Training in Research Management, Agroforestry, and Bean Component of the Grain Legume Improvement Programme. The Master of Science Programmes Project supported by Germany was reviewed during the year and it will also move into the second phase.
- 1.7 The implementation of the Cowpea Project based in Maputo, Mozambique continued. The team leader, an agronomist and support staff were recruited during the year. A Cowpea breeder was identified and will report for duty in January 1992. The Cowpea Market Study has been undertaken by two consultants during June-July, 1991, and the report is being prepared.
- 1.8 Notable progress continued to be made in generating adaptable and improved germplasm through regional projects and programmes. The sorghum and millet programme has so far released eleven varieties and two hybrids of sorghum, three varieties of pearl millet and one variety of finger millet through national agricultural research systems (NARS). Seeds of these crops have gone to small and large scale farmers. Over five hundred tonnes of seeds of Okashana 1 pearl millet variety, for example, has been taken up by farmers in Northern Namibia. Improved varieties of groundnuts, beans, cowpea, multipurpose trees will soon be released. The programmes also improved the capacity of NARS to conduct research through higher degree and in-service training.
- 1.9 SACCAR organised, during the year, in addition to the on-going ICRISAT-assisted training programmes, two scientific conferences, which were attended by research scientists from private and public sectors and from all fields of agriculture, including forestry, fisheries, wildlife, crops, livestock, agricultural economics, animal health and soil science. Several cooperating partners also sent their representatives. The importance of agricultural research in generating new technologies and new germplasm that will lead to increased agricultural productivity was stressed. However, the key issue was improving the environment in which scientists work so that their productivity may flourish. There is need also at national and regional levels to set up strong micro and macro agricultural policy analysis units which will address marketing and trade issues in agriculture, relationship between agriculture and other sectors, and global issues which impinge on agricultural development in member States. The two conferences held in September and November, 1990 in Botswana identified constraints to increased agricultural productivity and possible priority areas to be addressed by the research sector. The conferences stressed the need to set up a consultancy team to prepare a blueprint for research during the next twenty years. The Board of SACCAR identified in April, 1991 seven scientists from the region

to start preparing a blueprint on research. The team met in Gaborone in early June 1991 to start work. The final document is expected to be considered by the Board of SACCAR at its November, 1991 meeting in Windhoek, Namibia.

2. REVIEW OF THE REGIONAL SITUATION

- 2.1 The region is rich in renewable natural resources of land, water, livestock, forests, wildlife and fish. Considered on sub-Saharan basis, the region is a major producer of beef, cereals and commercial crops. In the last two years, the region has been self-sufficient in maize - its principal cereal staple - but the domestic and intra-regional trade have been exacerbated by lack of adequate transport and appropriate market policies. Governments in the region are working hard to set up policies that will allow trade in grains to take place, and policies that will allow market forces and the enterprise Sector to participate fully in agriculture, thereby stimulating agricultural productivity.
- 2.2 The Sector recognises that both private and public institutions can operate side by side in generating technologies that farmers can use to increase agricultural production. Because there are many demands on the national budgets of member States, the Sector recommends that the private sector be encouraged to fund research on those agricultural commodities that lend themselves to commercial operations, and can give higher returns on investment. The public sector should continue to fund research on the rest, especially those that can sustain the livelihood of poor farmers. The support for agricultural research by the farmers' cooperative unions or societies in the commodities of coffee, cotton, maize, horticulture, sugar cane, tea, tobacco, etc. in various member States should be encouraged. There is need for the public sector to provide market information, including the production of good quality and uniform agricultural products on a continuous basis.
- 2.3 On the international scene, research that encourages the raising of productivity per unit of land, on a sustainable basis, using natural means of revitalising soil fertility, biological control of pests, diseases and weeds continues to be encouraged. The need to develop, through agricultural research, techniques to manage properly, the renewable resources of forests and grasslands continues to be given high priority.
- 2.4 The proper management of renewable natural resources of soils, water, forests and animals will lead to reduced air and water pollution and this will lead to improved health of the region's citizens.

- 2.5 Given that current population growth rate is at 2.3 percent per annum, and the fact that agriculture is the main stay of the economies of member State, the agricultural sector should grow at an average rate of 4 to 5 percent per annum, until such time that other sectors contribute substantially to the GDP. While agricultural production has increased in some member States, the production per unit of land or per person in most of them has stagnated or declined, especially in the smallholder sector. To correct this situation, there will be need to firstly, increase investments both in the public and private agricultural sectors, in order to keep up with the demands of population growth and the need for food security and improved quality of life. Secondly, there is a need to focus on environmental issues, including research on developing sustainable production systems for food and cash crops, fisheries, forestry and wildlife. Thirdly, effective agricultural research must be established and sustained in order to underpin the development of a diversified agricultural system that offers a wide range of income options. Fourthly, policies that stimulate the development of rural non-farm activities will have to be put in place.
- 2.6 In addition, priority should be given by SADCC member States to the development of a conducive work environment for all research personnel, including scientists and support staff, in order to restore morale and enthusiasm, and instill a sense of mission in their work. It is critical for the success of the National Research Systems that they have effective research leaders, adequate resources and an enabling environment in which leadership can develop and flourish.

3. REVIEW OF THE PROGRAMME

- 3.1 The implementation of nine projects is proceeding well, and these are: Land and Water Management, Sorghum and Millet improvement, Sorghum and Millet Utilisation, Grain Legume Improvement comprising Beans, Groundnuts and Cowpea, Agricultural Research and Training Coordination, In-service Training in Research Management, Agroforestry, Crops and Forest Seeds Gene Bank and Professional Manpower Training.
- 3.2 The implementation of Phase I of the Land and Water Management project which was to last eighteen months will come to an end in March 1992 - four years after it started. This reflects the complex nature of water harvesting and studies on the movement of water in the soil, and relating these to crop production. It has been recommended that phase II should address location specific problems of managing water and soils such as the black cotton soils (vertisols), acid soils, etc.

- 3.3 The cooperating partners funding the Sorghum and Millet Improvement Programme have requested both the Executing Agency, the International Crops Research Institute for Semi-arid Tropics (ICRISAT) and SACCAR to show how the former will start a gradual phasing out and leave the project to be managed by the region. The Board of SACCAR is commissioning a Consultancy to advise on the matter.
- 3.4 Similarly, the In-service Training Project managed by ISNAR (International Service for National Agricultural Research) based in the Hague, has to be institutionalised in the region, and one of the regional Management Institutes that has the capacity and expertise will be requested to manage the project. Already a consultancy appointed by cooperating partners funding the project and SACCAR has completed a study to advise on the institutions that have the capacity to house the project. Selection of the institute(s) for this activity will be undertaken during 1991. Before the selected institution starts the training, SACCAR will run some of the ISNAR's activities after the ISNAR's contract ends in December, 1991.
- 3.5 The projects whose feasibility and appraisal studies have been completed and are due for implementation include part of the long term human resource management, Maize and Wheat Improvement Network and the Network for the Improvement of Vegetables in the Region. Under this category, there are also projects on Wool and Mohair Improvement and the Management of Black Cotton Soils. These projects require funding.
- 3.6 Projects on Smallholder Dairy Production, Small Ruminant (sheep and goats) meat and milk production, and Draught Animal Power and other farm machinery and equipment, require further development. The project on Biological Control of Pests and Maize and Cassava will require restructuring in view of the move to set up a Maize and Wheat Improvement Network. The cassava component will be separated from maize and be included under the network on root and tubers.
- 3.7 To develop its research infrastructure, for its northern regions, Namibia has budgeted an equivalent of US\$1.4million (4 million Rand). Because the major crop of this northern part is millet, the Government of Namibia has asked the SADCC/ICRISAT Sorghum and Millet Improvement Program for assistance. Accordingly, ICRISAT has set aside US\$1.0 million to augment Namibia's fund for this effort. The activities to be undertaken will include the establishment of an experimental station and hiring of research staff. The Okashana 1 variety of Millet which has been released in Northern Namibia from the SADCC programme, is doing very well. It is expected that Namibia will be the source of millet seeds for southern Angola.

3.8 SACCAR is currently conducting an Agricultural Research Resource Assessment study for Namibia involving Namibian nationals. This study is to assess the availability of manpower resources for agricultural research, extension and training including the number of research stations, training institutions, etc. Such information will be almagamated into the database of the region which is kept at SACCAR, and it will be used in the planning of regional projects and programmes.

3.9 Research Grants

3.9.1 Six research grants were awarded to SADCC Scientists during 90-91 and the comparison with other years is as follows:

<u>Country</u>	<u>No. of Research Grants</u>					
	<u>1985/86</u>	<u>1986/87</u>	<u>1987/88</u>	<u>1988/89</u>	<u>1989/90</u>	<u>1990/91</u>
Angola	0	1	0	0	0	0
Botswana	0	1	0	1	1	1
Lesotho	1	0	0	0	0	1
Malawi	0	3	1	1	1	1
Mozambique	2	1	0	0	1	1
Namibia	0	0	0	0	0	0
Swaziland	1	1	1	0	1	1
Tanzania	2	3	2	1	1	0
Zambia	2	1	0	2	2	0
Zimbabwe	1	2	2	2	2	1
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	9	13	6	7	9	6
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3.9.2 Considering that the grant is expected to be awarded to ten researchers per year, the above awards during the past five years have not been too disappointing. SAREC of Sweden provides SACCAR with US\$105,000 per year, on the basis of which up to ten grants of US\$10,000 each could be awarded. SACCAR, in turn, expected some grants to be about US\$7,000.00 only and that therefore, the total grant could be stretched to cover 12 to 15 scientists.

3.9.3 A workshop for research grants recipients was held in Maseru, Lesotho in September, 1990. Very useful suggestions on how to manage the grant and how to obtain feed back on the implementation status of the research projects by the recipients were received. The latter confirmed that the grant enhanced their capacity to conduct research and they proposed that it be continued. They recommended further that the amount per recipient be increased. SAREC and SADCC will review the programme in September 1991 and the views of the above workshop will be taken into account.

3.10 Travel Grants

SACCAR continues to use these grants to enable agricultural researchers, trainers extension workers and policy makers in the region to exchange visits. Twenty such visits were sponsored during the year under review. The awards during the past four years have been as follows:

REGIONAL DISTRIBUTION OF TRAVEL GRANTS BY COUNTRY AND BY YEAR

<u>Country</u>	<u>1987/88</u>	<u>1988/89</u>	<u>1989/90</u>	<u>1990/91</u>
Angola	-	-	-	-
Botswana	2	3	6	7
Lesotho	-	2	2	-
Malawi	3	4	4	-
Mozambique	-	5	1	-
Namibia	-	-	-	-
Swaziland	-	1	1	-
Tanzania	1	3	11	1
Zambia	-	1	7	7
Zimbabwe	3	4	6	4
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	9	23	38	20
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3.11 Publications

3.11.1 SACCAR Newsletter

The Centre published two issues, (numbers 13 and 14) of the the SACCAR Newsletter during the year under review. The publishers were slow in completing issues 15 and 16 that should have come out during the period under review, but are now expected before the end of the current financial year.

3.11.2 SADCC/Zimbabwe Journal of Agricultural Research

This is a joint venture between SACCAR and the Department of Research and Specialist Services of the Government of Zimbabwe. Three issues were printed during 1990-91.

3.11.3 Workshop Proceedings

During the year SACCAR published proceedings of three workshops on vegetable research, agricultural information and potential of rice production in SADCC. Three occasional publications on on-going agricultural research, directory of agricultural specialists and agricultural development in SADCC were produced.

4. CURRENT STATUS OF PROJECTS

Project AAA.3.1 Land and Water Management Research Programme (L&WMRP)

This multi-disciplinary programme addresses, in particular, the problems posed for agriculture, in the 400-600mm rainfall zone of the region, by low and erratic rainfall and poor utilisation of the available rainfall

The first phase (total cost US\$4.63 million) of identifying components of research on water harvesting techniques, movement of water in the soil profile (soil physics), identification of drought tolerant crops which will make use of the captured water without requiring supplementation, and tillage methods to minimise water loss, started in 1987 and will end in March 31, 1992. The Project comprises a Team Leader, a Hydrologist, a Soil Physicist and an Agronomist. The Mid-Term Review in March 1990 recommended that the team should analyse their experiments and write up the results before closing down this phase. The report of the Mid-Term Review was accepted by the Board of SACCAR. The report observed among other things that the research team had done a commendable job. The Board of SACCAR agreed with this observation. During 1990 and the first part of 1991, five regional scientists (a representative of SACCAR, a representative of ODA and the Team Leader of Phase I of the Programme) worked with the Programme Coordinator, to develop Phase II components of the Programme drawing on the results coming out of Phase I.

The results of their work were presented to the Board of SACCAR in April, 1991. The implementation mode of phase II of the project put to the Board, were that either a core team (centralised) continues to be based at Sebele undertaking research which would be very similar to that of Phase I or the Programme Coordinator and a Project Steering Committee continue to develop projects which will be based on location specific problem areas such as the black cotton soils, acid soils, hydrology and water and land management (decentralised). The Board of SACCAR accepted the decentralised idea of the project. Already, projects have been developed for Botswana, Tanzania and Zimbabwe. A project on hydrology is being developed for Malawi. A start has been made to develop a project on studies of acid soils for Zambia. Like the Grain Legume Improvement Programme which has several components, the Land and Water Management Programme should have various components. The Programme Coordinator, the Agro-climatology researcher, a Training Officer and a Socio-Economist would be based at Sebele, Botswana working closely together with other regional scientists based in the national programmes looking after specific problem areas such as black cotton soils, acid soils, hydrology, etc.

The budgets for each component of the Programme will be prepared as details are worked out.

The training component of the project has received equivalent of US\$2.75 million from the EEC. The IPC (Interdisziplinäre Projekt Consult GmbH) of Germany has won the tender to supply and back-stop a Training Officer. The latter reported for work in October 1990. Under this support a training laboratory building including office facilities will be provided. Discussions were held between SACCAR and the Department of Buildings and Architect of the Government of Botswana on one hand the EEC Delegate on the other to appoint a consulting architect to design and supervise the construction.

Project AAA.3.1(1) Management of Black Cotton Soils

The objective of the project is to develop technologies related to the management of black cotton soils (vertisols) by using different methods of drainage and tillage. The project will include studies of economic and social factors which affect the adoption of generated technologies for the management of Black Cotton Soils. Efforts will be made during 1991 to link this project for management purposes, with other components of the Land and Water Management Research Programme. This would include setting up one Steering Committee and one Technical Advisory Panel for all components of the Land and Water Management Research Programme. Funding of US\$3.10 million for the Black Cotton Soils studies is still being sought.

Project AAA.3.2 Sorghum and Millet Improvement Programme (SMIP)

This project aims at producing improved germplasm of sorghum and millet that is adaptable to the region, generating improved technologies of sorghum and millet production, strengthening national Research Systems' Capacity to conduct research in these crops through training and direct material support and generating information and literature to make farmers, scientists and policy makers aware of all aspects of sorghum and millet production including marketing. The project moved into phase II of five years during 1989-90. It is expected that the programme will have four to five phases of five years each. During the Meeting of the Board of the Executing Agency (the International Crops Research Institute for Semi-Arid Tropics (ICRISAT) held at Matopos, Bulawayo, Zimbabwe from April 20-28, 1991 and attended by SACCAR and by the donors (USAID, CIDA and GTZ) funding the programme, ICRISAT indicated its willingness during the third phase to start to phase itself out and to hand over the program to the region by the fifth year of the phase. SACCAR will appoint a consultancy team to prepare a paper on how the region will start to take over the running of the programme.

In the meantime it is worth noting that the following has been the achievements of the programme:

Country	Sorghum	Released Improved Pearl Millet	Germplasm/ 1 Finger Millet
Angola	-	*	-
Botswana	**	-	-
Lesotho	**	-	-
Malawi	2 Varieties	-	-
Mozambique	2 Varieties	-	-
Namibia	-	1 Variety Okashana 1	-
Swaziland	2 Varieties	-	-
Tanzania	**	**	-
Zambia	1 Hybrid	1 Variety	1 Variety
Zimbabwe	2 Varieties	1 Variety	-

/_1 Released jointly with the National Research Systems.

* Angola can use successfully Okashana-1 from Namibia.

** Here, local varieties continue to be used but there are promising varieties and hybrids which might out perform these local types.

NUMBER OF FARMERS WHO HAVE BENEFITED

<u>Country</u>	<u>Number of Farmers</u>
Angola	-
Botswana	-
Lesotho	-
Malawi	*
Mozambique	*
Namibia	400 and above
Swaziland	*
Tanzania	*
Zambia	4375 (sorghum) 250 (Pearl Millet) 50 (Finger Millet)
Zimbabwe	290
total	4965**

* Distribution hampered by lack of organised seed multiplication and distribution systems.

** The figure is much larger as Seed Companies have sold, large quantities of seed in Namibia, Swaziland, Zambia and Zimbabwe than can be accounted for by the number of farmers.

On the training side, the Programme has between 1985 and 1991 trained 107 technicians and farm managers, and 37 B.Sc. M.Sc. and Ph.D degree holders.

Project AAA.3.2(1) Plant Breeding in relation to the Utilisation of Sorghum and Millet for Food, Beverages and Animal Feed

The studies to mix flours of sorghum and millet with flours from wheat, soya or sunflower for baking or porridge making were being conducted in the food technology laboratory constructed at Matopos where other facilities for research on sorghum and millet improvement are located. One study on the development of weaner foods for pre-school and school children was being conducted jointly with the Ministry of Health of the Botswana Government. The eating quality (palatability) and shelf-life of foods made from flour of white types of sorghum mixed with soya flour looked very promising. Studies with some bakeries in Zimbabwe showed that wheat flour can be substituted by sorghum flour up to 30 percent in bread making before consumers can notice the difference in taste. The cane sugar growers in Zimbabwe are attempting to investigate if some sweet stem sorghums from the project that are more drought resistant than cane sugar can produce as high and as good quality industrial alcohol. If this is possible during drought years when there is little water for irrigating cane sugar, sorghum (which can still grow under these conditions) will be used. A hybrid type of Pearl Millet and elephant grass (Bana grass) (which has higher yields than most forages), adapted by the project for livestock has been distributed to more than 100 farmers in Botswana and Zimbabwe and it has been sent to National Research Systems in Swaziland, Tanzania and Zambia.

Project AAA.3.3 Grain Legume Improvement Programme (GLIP)

The project aims at releasing, through national agricultural research systems, beans, groundnuts and cowpea improved germplasm which is adapted to the SADCC member State's agro-ecological conditions and are amenable to production systems for both smallholder and large scale farmers. The Programme aims also at generating information on these crops for the benefit of farmers and extension workers. In addition, the project aims to strengthen the national agricultural research and extension systems through information exchange, advice and training.

For the Bean Component which is headquartered in Arusha, Tanzania efforts were undertaken by the Executing Agency the International Centre for Tropical Agriculture (CIAT) during the year to recruit a bean breeder to replace the breeder who resigned from the Regional Programme during the first half of 1990. Efforts are underway to identify a replacement to be based in Arusha and to continue the search for another breeder to be based in Malawi.

The Project underwent a mid-term review during the year. The report was very favourable on the achievements gained

so far. It recommended to the cooperating partner, CIDA that funding be continued for Phase II for the next seven years starting at the end of March 1992. The budget will be based on the components of the project that will be agreed upon between SADCC and CIDA.

The Groundnut Component of GLIP funded by Germany at US\$1.5 million continued to be executed by ICRISAT. The project is based at Chitedze Research Station in Malawi. The Steering Committee comprising representatives of national scientists specialising on this commodity from all SADCC member States continued to meet twice a year in April and October to monitor the management of the project. Promising varieties of groundnuts continue to be tested to see if they would have comparative advantage on yield, oil content, adaptability including disease resistance and acceptability by consumers when compared with the existing varieties.

Regarding the Cowpea Improvement Research Project, based in Maputo, Mozambique, the team leader of the project who is a pathologist was joined during the year by an agronomist. A breeder to compliment the research team has been identified and will join the project during 1991-92. The project is funded by EEC at US\$6.32 million.

Market Study of Cowpeas by two consultants one from SADCC and one from outside SADCC got underway during the year. The study is costing about US\$60,000 and is funded by EEC. The report will be submitted to SACCAR for clearing before wider circulation in the region. The member States will find the information on production and marketing of cowpeas useful. It will help them in planning increased production of this crop.

**Project AAA.3.4 Establishment of the Southern African
Centre for Cooperation in Agricultural
Research and Training (SACCAR)**

SACCAR continued, during the year under review, to discharge its activities in agricultural research and training. These included awarding research and travel grants, publishing a newsletter, publishing jointly with the Zimbabwe's Department of Research and Specialist Services an Agricultural Research Journal, running workshops, seminars and conferences, launching consultancies on problems of regional research and training projects and programmes as well as liaising with cooperating partners and institutions with similar mandate to identify ways and means of strengthening national agricultural research systems.

SACCAR was reviewed jointly by SADCC and Cooperating Partners funding the Centre during 1988. It will be reviewed again by representatives of the two groups in July 1991. It is expected that the contribution of cooperating

partners towards the operational costs of SACCAR will decrease while the contribution of SADCC will increase. The findings of the review will be expected by August or September, 1991. The cooperating partners will, however, be requested to continue to fund regional programmes and projects. The budget of SACCAR for 1992-93 will reflect SADCC's wish to sustain financially the institutions it creates.

SACCAR organised, in September and November 1990 in Botswana, scientific conferences to identify long term (twenty years) priority areas and strategies for agricultural research for SADCC. At the November conference, the regional scientists and several representatives of cooperating partners and International Agricultural Research Institutes agreed that the working environment of agricultural research scientists in governments, universities and the private sector needed to be improved if agricultural research was to continue to bring about agricultural productivity. The conclusions of the November meeting were further worked upon by four consultants appointed by SACCAR, the World Bank and the Special Programme for African Agricultural Research (SPAAR). The final recommendations were presented at the SPAAR meeting which took place in Abidjan, Ivory Coast. The SADCC region was represented by Zambia, Botswana, Zimbabwe and SACCAR. It was agreed in Abidjan that (1) cooperating partners should start to assist, for specified periods ranging from five to fifteen years, in funding recurrent costs for agricultural projects including agricultural research (2) governments in Sub-Saharan Africa should review and restructure their research systems so that research should concentrate on areas which are of priority to the countries and to weed out "pet" research projects. In this regard, cooperating partners were urged to fund only projects which were identified as priority by the countries themselves and to stop imposing on the National Research Systems their own priorities.

Project AAA.3.5 In-Service Training in Research Management

The aim of the project is to strengthen the research managerial skills of national scientists who are already employed in conducting research in the National Research Systems. It is executed by the International Service for National Agricultural Research (ISNAR) based in the Hague, the Netherlands on behalf of SACCAR.

Phase I of the Project will end in December, 1991. This Phase was funded by CIDA, ODA, USAID, SADCC at US\$0.80, 0.70, 0.30 and 0.40 million, respectively. During 1989-90 the project was reviewed and it was recommended that one of its earlier aims, namely that of institutionalising the project in SADCC, should be implemented. Consequently, a team from donors, ISNAR and SACCAR visited possible institutions in SADCC that could house the project. These

Institutions were the Institutes of Development Management (IDM) of Botswana, Lesotho and Swaziland; IDM of Tanzania, the National Institute of Public Administration, Lesotho; the Eastern and Southern African Management Institute (ESAMI) based in Arusha, Tanzania; the Management Services Board (MSB) of Zambia; the National Institute of Public Administration (NIPA) of Zambia; the Zimbabwe Institute of Public Administration and Management (ZIPAM); the Department of Agricultural Economics of the University of Zimbabwe; the Mananga Agricultural Management Centre based in Swaziland, the Regional Management Resource Unit (MRU) of the Regional Training Council (RTC) based in Swaziland, the Malawi Institute of Management (MIM) and the University of Malawi. From this list, three institutions that have capability to mount courses in agricultural research management and meet the criteria of regionalism will be requested during the second half of 1991 to tender for the training. The Board of SACCAR will decide, after receiving the bids, whether or not to give the training to one institute or to two or three. While the management of the project by any of the contending Institutes is being considered, SACCAR might take on the running of workshops and the development of teaching materials.

Another consultancy to prepare the second phase of the project, identified by the project's Steering Committee has submitted its report to SACCAR. The report will be used in developing the contents of the project document for phase II.

Project AAA.3.6 Agroforestry Research Programme

The project aims at developing technologies related to sound management of the Savannah grass and wood land, and is being implemented in Malawi, Tanzania and Zambia. The project was also due to start its operations in Zimbabwe after an MOU between the Executing Agency, the International Council for Research in Agroforestry (ICRAF) for the project and the host country was signed. A resident regional scientist for the project in Zimbabwe has been identified. The project includes Multipurpose Tree screening and testing, Tree Surveys and Management for Fodder, Fuelwood, Soil Fertility enhancement and Timber. The project is being implemented in close collaboration with the Sectors of Energy, Forestry, Livestock and Animal Disease Control and Soil and Water conservation and Land Utilization.

The project started in 1986 funded by Canada at US\$5.2 million has undergone a review during the early part of 1991. Its first phase will end in 1992. The review just mentioned, recommends to SADCC that it be continued for phase II. The Board of SACCAR will study the report and recommend to higher organs of SADCC accordingly.

Project AAA.3.7 SADCC Crops and Forest Seed's Genebank (SRGB)

The objective of the project is to establish a facility for the long term storage of crops and forest germplasm for future plant improvement. It will be served by a satellite of national seed storage facilities. The latter are expected to hold working collections for the plant breeders. All the SADCC member States have formed National Plant Genetic Resources Committees and the chairpersons of these form the Board of SRGB. The SRGB has now SADCC nationals at the positions of Director, Curator, In-situ Officer, Finance and Administrative Officer, and a Documentation and Information Officer. An expatriate Project Manager continues to assist the project's development.

The start of the construction of the SRGB building was delayed by about six months due to the cooperating partners' insistence that the right of occupancy needed to be obtained from the Zambian Government first. Since the title deeds have been obtained, construction will start in July, 1991.

A newly formed Technical Advisory Panel comprising two scientists from SADCC, a representative of SACCAR, two managers of genebanks from ICRISAT and Denmark evaluated the project in May, 1991. The recommendation was that the project is fulfilling the objectives set by SADCC.

Project AAA.3.8 SADCC Maize and Wheat Research Network

Although SADCC, with the assistance of cooperating partners, has invested a lot of resources in research on sorghum and millet, maize continues to be the principal source of food calories in the majority of SADCC member States. Wheat is also an important cereal, mainly because the region spends its hard earned foreign currency in importing the grain or its flour.

The UNDP provided up to US\$0.23 million to enable SADCC undertake a feasibility study to establish if there was a strong case to set up such a network. A team of consultants from the International Centre for Research on Maize and Wheat (CIMMYT) based in Mexico and from two SADCC countries namely, Tanzania and Zimbabwe undertook the study in late 1989. Their report was reviewed by maize and wheat scientists in the region from Botswana, Malawi, Swaziland, Zambia and Zimbabwe and it was recommended very strongly that a network be established. The Board of SACCAR has accepted the recommendation to establish the network and to appoint CIMMYT as the executing agency. CIMMYT has, after consulting the coordinating country, Botswana, appointed a Coordinator for the network. The Coordinator will be based in Zimbabwe closer to the CIMMYT centre located near the University of Zimbabwe.

M.Sc. Animal Science: 3 from Zimbabwe, 1 from Tanzania and 2 from Zambia.

M.Sc. Crop Science: For 1989/90 only 3 from Zambia; 1 from Botswana; 4 from Zimbabwe and 2 from Tanzania for 1990/91. For 1989/90 only 5 from Zambia.

M.sc. Agricultural Economics: 1 from Botswana and 1 from Zimbabwe.

US\$1.2 million has been secured for 40 scholarships per year for four years.

Lack of hostels is hampering student exchange and SACCAR is looking into ways to provide these facilities.

Germany is also funding a technical officer to assist SACCAR in coordinating these programmes. Due to lack of facilities at these Universities, there has been little progress during the period under review.

The project was reviewed in May and June, 1991 by two appointees of GTZ and two appointees of SADCC. The latter will come from Swaziland and Tanzania. The report will be studied by the Board of SACCAR before it is sent to the higher organs of SADCC for consideration.

Project AAA.3.9(1) Programme to develop scientific, technical and professional manpower for the sector of Agricultural and Natural Resources of SADCC

The objective of the programme is to increase the stock of human capital in scientific fields in order to shift to a science based agriculture. A regional blueprint outlining the programme for the development of facilities over a period of 20 years to train most scientists within the region now exists. Canada has already sent a mission to identify components of the programme which she wants to contribute to. These include a diploma in Irrigation Management at the University of Botswana, Master of Science in Agricultural Education and Extension at the University of Swaziland, a Master of Science in Food Science at the University of Zambia and a B.Sc. in Horticulture at the University of Zimbabwe. Belgium has also indicated that she wishes to assist in funding some aspects of the programme that have yet to be identified. A mission will be sent in 1991-92 to SACCAR for discussion on the matter.

The above twenty year programme is expected to cost US\$150.0 million during the first ten years at about US\$15.0 million per year. A centre manned by three officers to coordinate the programme will be established in Swaziland to run the existing Master of Science Programmes and to develop new programmes for the training of professional manpower for the sector of Food, Agriculture

and Natural Resources of SADCC. The location of the centre in proximity of the Regional Training Council will facilitate closer liaison.

Project AAA.3.10 Livestock Improvement in SADCC

The project aims at supporting the efforts of member States to increase the smallholder milk production from cattle and goats, meat from cattle, sheep and goats, wool and mohair from wool sheep and Angora Goats, draught animal power and forage production.

During the year under review, SADCC livestock scientists participated in the Cattle Meat and Milk, Small Ruminant Meat and Milk, Forages and Draught Animal Power Networks established by the International Livestock Centre for Africa (ILCA). In early March 1991 about 80 livestock scientists from all countries in Sub-Saharan Africa met in Gaborone, Botswana to establish a pan-African network on Forages by amalgamating the Pasture Agronomy Network for Eastern and Southern Africa (PANESA), the West African Forage Network (WECAFNET) and the African Research Network for Agricultural by-products (ANARB). The sector of Agricultural Research and Training in collaboration with the sector of Livestock Production and Animal Disease Control, will study the above developments and find ways in which SADCC will benefit from them while avoiding the possibilities of overloading the SADCC scientists and the duplication of effort.

Project AAA.3.11: Regional Vegetable Research Programme

The development of horticulture in SADCC is still in its infancy. The per capita consumption of tropical and temperate vegetables in the region is among the lowest in the world. Increased vegetable production can lead to improved nutrition, cash incomes for families and surpluses for export. The project aims at developing technologies to increase vegetable production in the region. The workshop on the subject, convened by SACCAR in April 1987, recommended that the region should start with projects to generate technologies to produce temperate and tropical vegetables, and additional projects to improve fruits and nuts be developed.

SACCAR has held consultations with the Consultative Group for International Agricultural Research (CGIAR), International Service for National Agricultural Research (ISNAR); and Asian Vegetable Research Development Centre (IVRDC), to determine the possibility for establishing vegetable research network. A report was discussed at a workshop of regional horticulturists held in Arusha, Tanzania in July, 1990. The recommendations made to the Board of SACCAR proposed to distribute research responsibilities as follows:

Initially there should be lead countries in some species of vegetables:

Malawi	-	Leafy vegetables
Tanzania	-	Indigenous vegetables
Zambia	-	Onions
Zimbabwe	-	Tomatoes

All SADCC countries will participate in the Steering Committee of the Programme. This will ensure that the testing of suitable germplasm takes place in all member States as they are being developed. Assistance to National Research Systems in training and conducting vegetable research will also cover all SADCC member States right from the start of the programme.

Six regionally recruited staff will be needed for the project. They will be deployed as follows: three including a Team Leader will be stationed at the Coordinating Centre (Tengeru Horticultural Centre near Arusha, Tanzania) and three will be spread among the remaining lead countries namely, Malawi, Zambia and Zimbabwe.

The Asian Vegetable Development Research Centre (AVRDC) was appointed by the Board of SACCAR as the executing agency for the programme. During 1991 six SADCC nationals went for training at the AVRDC Headquarters based in Taiwan funded from AVRDC's core budget. Funding of US\$8.50 million over five years is being sought.

Project AAA.3.12 Network on Farm Power and Equipment for small and large-scale farming systems in SADCC

The Network aims at promoting the development of appropriate low-cost agricultural machinery and equipment; promote the exchange of know-how on agricultural machinery, equipment and farm power; promote the training of research and technician manpower in these fields and provide a forum for exchange of information in this field.

Approaches on how to develop the network in relation to existing Animal Traction and Machinery of the International Livestock Centre for Africa (ILCA) will be examined by SACCAR

Project AAA.3.13 Biological Control of Introduced Pests of Maize and Cassava

The introduction of natural pests of the Larger Grain Borer Prostephanus truncatus, the Cassava Mealybug (Phenacoccus manihoti) and the Cassava Green Mite (Mononychellus tanajoa) from the original habitat of these pests (South America) has been successful in reducing their incidence in West Africa. Because of the severity of the damage to the above

crops in some SADCC member States, it was decided to extend the research to SADCC.

The project's objectives were (a) to reduce damage to maize due to the introduced large Grain Borer (Prostephanus truncatus); (b) to reduce losses in cassava yield due to Mealybug and Cassava Green Mite; (c) to establish biological control programmes against these pests in SADCC member States and (d) to train nationals in SADCC member States in research to develop methodologies and technologies to control these pests.

Because of other important pests and diseases facing these crops such as the stem borers in maize and the cassava mosaic it is felt that the project be re-examined and restructured with the view to dealing with these two important crops separately. The International Institute for Tropical Agriculture (IITA) has a Network for Roots and Tubers for Eastern and Southern Africa with the Coordinator based in Malawi. It is felt that SADCC could set up its own project on Cassava Improvement in view of its importance in Angola, Malawi, Mozambique, Tanzania and Zambia. The pests and diseases of Maize could be covered under the Maize and Wheat Improvement Network.

Project AAA.3.14 Wool and Mohair Improvement in SADCC

There is a great potential for the improvement of wool and mohair in Lesotho. There is also scope for the production of these fibres in other SADCC member States. Zambia and Zimbabwe have started to rear Angora goats for the mohair production. With the collaboration of Winrock International, SACCAR has finalised plans to phase the project. Phase I, costing about US\$28,000 to come from SACCAR's studies funds, involves a study to ascertain the market for the fibres.

The study has confirmed that there is a market for mohair, and less so far for wool, and that SADCC should go ahead to launch the project. Funding of US\$2.22 million is being sought for production enhancement and market development.

New Projects

Project AAA.3.15 Research on the Ecology and Biology of the African Silkmoth (Gonometa) in SADCC

The objectives of the project are:

- a) to develop and improve the seeding techniques in order to establish new populations of the moth at will;
- b) to assess the distribution and abundance of the moth and its foodplants in the SADCC; and

- c) to elucidate the mechanism of diapause induction and termination, thereby rendering the species amenable to human manipulation.

In 1985 it was established in Botswana that the cocoons of the African Silkmoth found in the wild can yield high quality silk. SACCAR at the request of its Board, convened a workshop comprising entomologists from SADCC to assess whether the moth was wide spread in the region and what needed to be done to expand the silk cloth manufacture based on this resource. The entomologists confirmed that there are two species of the moth that produce these cocoons. One breeds under the Acacial trees while the other breeds under the Mopane trees. The cocoons have been sighted in Botswana, Malawi, Tanzania, Zambia and Zimbabwe. The entomologists recommended to the Board of SACCAR that it is worth assisting SADCC in the development of the silk industry especially as the pilot industry at Shashe near Francistown in Botswana has shown that there is a viable market for the industry especially in Africa and Europe. The EEC has already been funding one position of an expatriate entomologist based at the pilot silk plant. The EEC has assured SACCAR that it would consider helping SADCC in this endeavour. Some studies will be undertaken in the wild where the moth exists while others will be undertaken by entomologists in the universities and research institutes in SADCC and in any institutes overseas wishing to collaborate with SADCC.

The total cost for phase I is US\$2.4 million over a period of five years.

Project Descriptions

AAA.3.1(1): **MANAGEMENT OF BLACK COTTON SOILS (VERTISOLS)**

Estimate Cost

Financing Gap: US\$3.10m

Total : US\$3.50m
Foreign : US\$3.10m
Local : US\$0.40m

Execution Agency: SACCAR

Funding Secured

Commencement:

Foreign:

As soon as funds have been secured.

Local: US\$0.40m (SADCC)

Duration: 4 years

OBJECTIVE:

The project's objective is to develop technologies on the management of the black cotton soils (vertisols) by employing different methods of drainage and tillage. The economic and social conditions which affect the adoption of the generated technologies will also be studied. More specifically the objectives will be:

- a. to study local agricultural systems in black cotton soil areas with the aim of identifying factors that limit crop production;
- b. to test the hypotheses that vertisols do not require deep tillage for efficient crop production;
- c. to identify and demonstrate economic forms of field preparation systems.

DESCRIPTION:

The Black Cotton Soils (vertisols) are prone to water logging and hence poor or zero plant growth. They are inaccessible by farm machinery for tillage or transport if drainage is not improved and there is poor nutrient utilisation if techniques such as ridging or broad-base terraces are not used.

The project will, therefore, generate technologies for efficient use of these soils in the whole region. There will be mechanisms for scientists engaged in the project to visit other SADCC member states to interact with counterpart researchers engaged in soils studies, and exchange views on the management of these soils. Workshops have also been planned at which progress in the management of these soils will be assessed.

STATUS: Funding is being sought.

AAA.3.3 GRAIN LEGUME IMPROVEMENT PROGRAMME

Estimated Cots:

Financing Gap

Total : US\$16.30m
Foreign : US\$16.30m
Local : -

US\$2.48m

Executing Agency:

Bean Project - CIAT
Groundnut Project - ICRISAT
Cowpea Project - IITA

Funding Secured:

Start: Bean Project - 1986
Groundnut Project - 1986
Cowpea Project - 1989

Foreign: US\$6.00m (CAN)
US\$1.50m (FRG)
Local: US\$6.32m

OBJECTIVES: The objectives of this project are to:

- a) make available to national agricultural research systems improved germplasm of Phaseolus bean, groundnuts and cowpeas adapted in particular to smallholder farming systems in SADCC countries;
- b) develop viable strategies to control pests and diseases affecting these legumes;
- c) exchange information on research and production problems in the region; and
- d) strengthen national research on these three crops through advice and training.

DESCRIPTION: The bean and groundnut components of the Programme are both well established programmes directed to testing and developing adapted germplasm. A Steering Committee for each crop has been formed and research networks in the region are operational.

STATUS: A. Bean Improvement

It is being implemented in Tanzania. The recruitment of a breeder for the sub-station in Malawi is in progress.

B. Groundnut Improvement

The laboratories and offices for the project are nearing completion. The Federal Republic of Germany will provide US\$1.5 million per three years. The Steering Committee for the project continues to meeting twice a year, and the EEC approved ECU 1.5 million for the year 1989/90.

C. Cowpea Improvement

EEC provided US\$0.08 million for market study of Cowpeas in SADCC.

AAA.3.8 MAIZE AND WHEAT IMPROVEMENT NETWORK

Estimated Costs:

Total : US\$5.82m
Foreign : US\$5.82m
Local : To be determined

Financing Gap

US\$5.82m

Executing Agency: CIMMYT

(International Centre for Maize & Wheat Improvement Institute)

Funding Secured:

Foreign: Nil
Local: To be determined

Start: When funding secured, preferably 1991-92.

Duration: Initially five years.

OBJECTIVES: The objectives of the network are:

- a. Ensure that the benefits of technology generated through research are shared as widely as possible in the SADCC Region.
- b. Develop maize and wheat varieties and hybrids that are high yielding and adapted to local conditions.
- c. Encourage and facilitate the exchange of germplasm.
- d. Promote training of maize and wheat research professional in the region.
- e. Provide a forum for communication and exchange of information among research workers through

workshops, study tours and publications in newsletter, etc.

- f. Strengthen the research capabilities of the National Research Systems (NARS) by carrying out the above activities.

DESCRIPTION: The UNDP funded the feasibility study which was undertaken jointly between SADCC and the International Research Institute for Maize and Wheat (CIMMYT) based in Mexico. The study costed US\$0.23million. The report produced by the study was appraised by maize and wheat specialists and it was found to be a viable one.

STATUS: A budget of US\$5.82million for the first five years will cover the cost of two man senior network coordinators and few support staff and the activities of the network. Funding is being sought.

AAA.3.9 ESTABLISHMENT OF FOUR MASTER OF SCIENCE DEGREE PROGRAMMES

Estimated Costs: Financing Gap: US\$12.00M

Total : US\$13.20m
Foreign : US\$13.20M
Local : -

Executing Agency:

SACCAR and GTZ

Funding Secured

Start: 1988-89 Academic year

Foreign: US\$1.2m (FRG)
Local: -

Duration: 20 - 50 years

OBJECTIVES: The objectives of the project are to strengthen the University faculties of agriculture, forestry and veterinary medicine in SADCC, in order to enable them to achieve quality and quantity of training and exchange of students.

DESCRIPTION: In most SADCC member States there are serious shortages of professional manpower especially at post-graduate levels in agriculture, forestry and veterinary medicine that are able to take leading roles in national research and extension

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structures. The cost of post-graduate training outside the region is very high and some post-graduate students fail to return after training, or do so only after a long period. Overseas course contents may also have little direct relevance to regional needs and concerns.

The capacity of universities in the SADCC region to train at post-graduate level is limited and needs strengthening to achieve regional self-sufficiency in basic subjects. To maximise on staff and resources and build on existing strengths, it has been agreed that centres of specialisation in post graduate training, initially to M.Sc. level, be established as follows:

- * Animal Production - Bunda College, Malawi
- * Agricultural Engineering and Irrigation Management - Sokoine University of Agriculture, Tanzania
- * Agricultural Economics - University of Zimbabwe
- * Crop Production University of Zambia.

STATUS:

A regional Master of Science (M.Sc.) degree programme in crop science and a regional Master of Philosophy (M.Phil.) later to develop into M.Sc. programme in Agricultural Economics were launched in the Universities of Zambia and Zimbabwe respectively, in 1988. The M.Sc. in Animal Science will commence during 1989, and the one in Agricultural Engineering, Land Use and Irrigation will commence during 1990. Representatives of cooperating partners who support a Special Programme for African Agricultural Research (SPAAR) and those of SADCC visited all SADCC Universities to identify needs for strengthening the Faculties of Agriculture, Forestry and Veterinary Medicine. The Team prepared a report which is being evaluated by SADCC.

The FRG has provided US\$1.20 million for the initial activities.

Other cooperating partners are urged to assist and provide US\$12.0 million to cover hostel, laboratory and library infrastructure.

AAA.3.9(1) PROGRAMME TO DEVELOP SCIENTIFIC AND TECHNICAL AND PROFESSIONAL MANPOWER FOR AGRICULTURE AND NATURAL RESOURCES IN SADCC

Estimated Costs:

Financing Gap: US\$146.60m

Total : US\$146.60m
Foreign : US\$146.60m
Local : -

Executing Agency:

Funding Secured

Start: As soon as funds are secured.

Foreign: -
Local: -

Duration: 1991-2000
Phase I 1991-92
Phase II 1992-96
Phase III 1997-2000

OBJECTIVE:

The objective of the programme is to increase the stock of human capital in scientific fields in order to shift to a science-based agriculture.

DESCRIPTION:

SADCC realised in 1986 that one of the reasons for lack of increased productivity in agricultural fields was lack of a critical mass of scientific and technical manpower. It directed SACCAR to develop a long term blueprint to train more scientists in the region. The programme aims at improving the training institutions in SADCC so that they may produce the quality and quantity of scientists for the public and private sectors of agriculture, with the following components:

General Administration Support (US\$3.5m);
Consultancies and Studies (US\$3.0m); Operational Expenses; (US\$2.3m);

Construction of Offices, Staff Houses and Equipment for Headquarters (US\$1.0m); Special assistance to New Faculties in Botswana, Lesotho and Namibia (US\$6.0m); Special Assistance to War Ravaged Faculties - Angola and Mozambique US\$6.0m); Student Exchanges (US\$41.0m); Staff Development (US\$7.5m); Institutional Support equipment and materials, technical assistance US\$60.0m); and Development of New Projects and Training activities (US\$10.8m).

STATUS:

Funding sought.

AAA.3.11 REGIONAL COLLABORATIVE NETWORK FOR VEGETABLE RESEARCH AND DEVELOPMENT IN THE SOUTHERN AFRICAN REGION

Estimated Costs

Financing Gap: US\$8.50m

Total : US\$8.50m
Foreign : US\$8.50m
Local :

Executing Agency: The Asian Vegetable Research and Development Centre.

Funding Secured:

Foreign
Local

Start: 1991-92
Duration: 5 years
Initially.

GOAL: The long-term aim of the Network is to provide a regional framework for collaborative vegetable research and development to solve the pressing problems of vegetable production and utilisation in the SADCC region.

OBJECTIVES:

- * to facilitate the generation and adoption of improved technologies for selected vegetable crops, through collaborative research, information exchange and scientific consultations;
- * to develop and/or upgrade, the technical proficiency of the vegetable researchers and technicians in the NARS, the ultimate goal being to build the critical mass of scientists capable of responding to the national and regional needs for sustained vegetable production;
- * to establish ways and means for collaborative research partnership among the SADCC country members, to attain better and more efficient use of expertise, technologies and the scarce resources available for vegetable research and development in the region;
- * to establish and strengthen the linkages for exchange and acquisition of relevant technologies developed by regional and international centers, or any other external sources of technology; and
- * to develop an information and diffusion network in the SADCC region which will facilitate the assembly

and dissemination of technical information to and from the region's vegetable researchers and eventually to and from their clientele, the extension workers and the vegetable growers.

DESCRIPTION: Per capita consumption of vegetables in SADCC region is among the lowest in the world. There is need to develop and promote technology for increasing the production of vegetables and vegetable seeds, thereby improving the nutrition of populations and increasing the supply of vegetables for export markets.

The project aims at promoting the development of new technologies for the production of indigenous and introduced vegetables in SADCC. Vegetables production will lead to improved food security (increased consumption and sales hence increased incomes of farmers) and improved health of SADCC nationals. A consultation held in Arusha, Tanzania during the period under review made recommendations to the Board of SACCAR and these were agreed upon as follows:

Initially there will be lead countries in some species of vegetables:

Malawi	-	Leafy vegetables
Tanzania	-	Indigenous vegetables
Zambia	-	Onions
Zimbabwe	-	Tomatoes

All SADCC countries will participate in the steering committee for the Programme. This will ensure that the testing of suitable germplasm takes place in all member states as they are being developed. Assistance to National Research Systems in training and conducting vegetable research will also cover all SADCC member states right from the start of the programme.

Six regionally recruited staff will be needed for the project. They will be developed as follows: three including a Team Leader will be stationed at the Coordinating Centre (Tengeru Horticultural Centre near Arusha, Tanzania) and three will be spread among the remaining lead countries namely, Malawi, Zambia and Zimbabwe.

STATUS: The Asian Vegetable Development Research Centre (AVRDC) was appointed by the Board of SACCAR as the executing agency for the programme. During 1991

six SADCC nationals went for training at the AVRDC Headquarters based in Taiwan.

Funding of US\$8.50million is being sought.

AAA.3.14 WOOL AND MOHAIR IMPROVEMENT

Estimated Costs:

Total : US\$2.30m
Foreign : US\$2.27m
Local : US\$0.03m

Financing Gap:US\$2.27m

Estimated Agency: SACCAR

Funding Secured:

Foreign : -
Local : US\$0.03m(SACCAR)

Duration: Initially 5 years

-
- OBJECTIVES:**
1. Increase income earning potential of wool and mohair producers through improvement of quality and quantity of these products in Lesotho.
 2. Expected to double production per animal through use of better bred animals, better management, and by providing the necessary inputs.
 3. Spread germplasm and production technologies to other SADCC member states through a network of wool and mohair producers.
 4. Train Basotho, and later other SADCC nationals on better technologies related to the production of these commodities.

DESCRIPTION: Wool and Mohair are natural fibres which come from wool sheep and Angora goats. Lesotho ranks fourth in the world in the production of Mohair and there are currently over 1000 Angora goats in Zimbabwe. There is potential for sheep and Angora goats in Angola, Botswana, Malawi, Mozambique, Swaziland and Tanzania.

The average production of these fibres per animal is low (see table).

Production per animal per year

	Elsewhere	Lesotho
Wool	3.96kg	2.40kg
Mohair	3.86kg	0.80kg

There is therefore great room for improvement.

STATUS: Funding is being sought.

PROJECT AAA.3.15 RESEARCH ON THE ECOLOGY AND BIOLOGY OF
GONOMETA SILKMOTHS IN SADCC

Estimated Costs US\$2.4m

Foreign US\$2.4m

Financing Gap US\$2.4m

Executing Agency

Duration: 5 years

Funding Secured:

Foreign: Nil

Local:

a. Public Sector:

Normal Government involvement with an agro-industrial enterprise, involving time spent by public officers from, inter alia, Ministry of Agriculture (Agricultural Research, Agricultural Extension), Ministry of Commerce and Industry, Department of Water Affairs, Labour Department, etc.

2000 man-hours plus associated costs
(travel, accommodation, etc.)

b. Private Sector:

Shashe Silk Ltd.

Egg-sorting, cocoon sorting etc.: 1,000 man-hours per annum

OBJECTIVES: The aim of this project is to establish a research unit in close proximity to a silk manufacturing unit near Francistown, Botswana. The initial objectives would be:

1. To develop and improve seeding techniques in order to be able to establish new populations of the silkmoth at will.
2. To assess the distribution and abundance of Gonometa rufobrunnea and its foodplant Colophospermum mopane in the SADCC Region.
3. To elucidate the mechanism of diapause induction and termination, thereby rendering the species amenable to human manipulation.

DESCRIPTION:

In 1985 it was established in Botswana that the wild cocoons of Gonometa silkmoths can yield high quality silk. It is now known that these silkmoths occur in at least seven of the SADCC member states.

In the meantime, the Botswana Government has encouraged the development of this naturally occurring resource through the Botswana registered company BGI Ltd., and its associate company, Shashe Silk (Pty)ltd. Their efforts have shown Gonometa silk production to be commercially viable. An investment of more than US\$2.5 million has already been made and high quality fabrics are being produced in Italy and France using Gonometa silk. The collection of cocoons is undertaken by rural men, women and children who in turn sell these to the industry (about 13,000 families have been involved in harvesting and selling cocoons).

Shashe silk has an installed capacity to process 300 tonnes of cocoons per annum. In the event of cocoon supplies being assured through research efforts this equates to approximately US\$185,000 being paid out annually to the families who collect the cocoons.

By 1989, over 500 tonnes of cocoons had been collected and had, in the form of silk fibre, an export value of US\$3.2 million.

The present state of knowledge of wild silkmoths in Southern Africa is based solely on three years study by one man of one of the two silk-producing species of Gonometa.

Almost nothing is known of the geographical distribution of either species in the SADCC region, nothing at all is known of the ecology of the second species, we have no knowledge of the factors which induce and terminate diapause, the dormant

condition in which cocoons spend the winter, and our knowledge of the best methods for seeding new populations is at present limited. This lack of knowledge seriously handicaps the industry since, for example, it cannot plan to harvest cocoons until it is known where they are present and in what abundance; it cannot fruitfully seed new populations until better techniques have been developed; it cannot store cocoons for seeding at specific times until the mechanism of diapause is understood and it becomes possible to stimulate moth emergence when required. The establishment of a Research Institute where these studies will be undertaken is envisaged. It is proposed that it be located near the silk factory in northern Botswana.

STATUS:

Implementation will start as soon as funding has been secured.

Funding Status of Projects

Project	Project Title	Estimated Cost US\$ Million		Local	Funding Secured & Source US\$ Million	Funding Under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foreign					
AGRICULTURAL RESEARCH								
AAA.3.1	Land and Water Management Programme Phase I	4.63	4.63		2.75 (EEC) 1.88 (UK)	-	-	Under implementation.
	Phase II	0.51	0.51	-	0.51 (UK)	-	-	Under implementation.
AAA.3.1(1)	Management of Black Cotton Soil	3.50	3.10	0.40	0.40 (SADCC)	-	3.10	Funding sought.
AAA.3.2	Sorghum and Millet Improvement Programme - Phase II	23.20	22.90	0.30	15.20 (USA) 5.90 (CAN) 1.80 (FRG) 0.30 (SADCC)	-	-	Under implementation.
AAA.3.2(1)	Plant Breeding in Relation to Utilisation of Sorghum & Millets for Food, Bakery, Animal Feed & Industrial Uses	-	-	-	-	-	-	Costings included in AAA.3.2 Construction of Food Science Laboratory complete.
AAA.3.3	Grain Legume Improvement Program	16.30	16.30	-	6.00 (CAN) 6.32 (EEC) 1.50 (FRG)	-	2.48	Bean and Groundnut under implementation. Cowpea commenced November, 1989. Additional funding sought.
AAA.3.4	Establishment of SACCAR	5.30	5.10	0.20	1.50 (CAN) 1.50 (USA) 1.50 (NOR) 0.60 (SAREC) 0.20 (SADCC)	-	-	Funded for five years.
AAA.3.5	Training in Research Management	2.30	2.00	0.30	0.70 (USA) 0.80 (CAN) 0.10 (UK) 0.30 (SADCC) 0.40 (ISNAR)	-	-	Funded for the first four years.
AAA.3.6	Agroforestry Research Programme	5.20	5.20	-	5.20 (CAN)	-	-	Fully funded for five years.
AAA.3.7	SADCC Crops & Forest Seeds Genebank	22.60	11.00	11.60	11.60 (SADCC) 11.00 (NORDICS)	-	-	Project Manager appointed. Operation Plan 1989 - 92 proposed.
AAA.3.8	Maize and Wheat Improvement Network	0.23 5.82	0.23 5.82	-	0.23 (UNDP) -	-	- 5.82	Feasibility study completed. Funds being sought for Programme Development
AAA.3.9	Strengthening Facilities of Agriculture, Forestry & Veterinary Medicine	13.20	13.20	-	1.20 (FRG)	-	12.00	Four M.Sc. programmes underway. Additional funding sought.

Project	Project Title	Estimated Cost US\$ Million		Funding Secured & Source US\$ Million		Funding Under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foregin	Local				
AAA.3.9(1)	Programme to develop scientific and technical manpower for Agriculture and Natural Resources	146.60	146.60	-	-	-	146.60	Funding sought.
AAA.3.10	Livestock Improvement in SADC	0.10	0.10	-	0.10 (UNDP)	-	-	Feasibility study to commence after review of PANESA and ILCA initiatives.
AAA.3.11	Regional Vegetable Research and Development Network	8.50	8.50	-	-	-	8.50	Funding being sought to establish the Network.
AAA.3.12	Network on Drought Animal Power Power & Other Farm Power Equipment	-	-	-	-	-	-	Funding included in project AAA.3.10
AAA.3.13	Biological Control of Introduced Pests of maize and Cassava	-	-	-	-	-	-	To be reformulated.
AAA.3.14	Wool and Mohair Improvement	2.30	2.27	0.03	0.03 (SACCAR)	-	2.27	Funding sought.
AAA.3.15	Research on Gonometa silk moth in SADC.	2.40	2.40	-	-	-	2.40	Funding sought.
TOTAL		262.69	249.86	12.83	79.52	0.00	183.17	

Part II

Food Security

1. EXECUTIVE SUMMARY

1.1 The following are the main highlights of the Food Security Sector during the period under review:

- (a) The Food Security Programme consists of 30 projects valued at US\$187.39 million of which US\$59.15 million has been secured. Of the 30 projects, only 11 are regional, and the rest are national projects with a regional impact. No progress has been realised in the implementation of the national projects.
- (b) Consultants have started the work on the integration of the Strategies for Food, Agriculture and Natural Resources.
- (c) Regional Food Reserve Project has been re-drafted by a SADCC Team of Experts was approved in principle (pending further work on the implementation mechanism and cost benefit analysis) by the Committee of Ministers for Food, Agriculture and Natural Resources at their Special Meeting in Arusha, Tanzania in August, 1991.
- (d) The Regional Early Warning System has continued to provide valuable information about the food security situation in the member States. This information has enabled member States facing food deficits to take appropriate steps in advance, to ameliorate cereal shortages and possible famine.

1.2 The latest food security assessment for the SADCC region, shows that the food security situation during the 1991/92 marketing year appears difficult. A total domestic cereal availability is assessed at 11.698 million tonnes against requirements estimated at 14.496 million tonnes.

1.3 A regional cereal deficit of 2.8 million tonnes, about 20% of annual requirements, is therefore, anticipated compared with a regional deficit of 0.95 million tonnes during the previous year (1990/91).

1.4 All countries will require cereal imports in order to ensure satisfactory food security and maintain food reserves at desired levels.

2. REVIEW OF THE REGIONAL SITUATION

Food security assessments for the SADCC region now cover cereal grains only, and exclude non-traded commodities such as cassava, bananas and sweet potatoes following agreement to that effect at a meeting between the REWU, all NEWUs, and FAO in Gaborone, Botswana in February, 1991. It was felt that inclusion of non-traded commodities inflated, and thus distorted, the level of regional food availability as these commodities cannot be utilised in most SADCC

countries except for the few countries where those commodities are consumed. It was also agreed to discontinue use of Maize Equivalent (M.E.) in aggregating commodities but to combine all grain tonnages.

Outlook for the 1991/92 Marketing Year

The latest food security assessment for the SADCC region compiled for the period up to the end of June, 1991 shows that the food security situation during the current 1991/92 marketing year appears difficult and unsatisfactory as total domestic cereal availability assessed at 11.698 million tonnes is expected to be inadequate to meet total cereal requirements of 14.496 million tonnes.

A regional cereal deficit of 2.8 million tonnes, about 20% of annual requirements, is anticipated after allowing for limited substitutions between cereal and cassava. When compared with a regional deficit of 0.95 million tonnes during the previous year, the regional cereal shortfall has worsened, thereby indicating a further deterioration in food security prospects for the region. By contrast, the situation during the 1989/90 marketing year showed a regional surplus of 0.638 million tonnes in maize equivalent terms.

All countries will, therefore, require cereal imports in order to ensure satisfactory food security and maintain food reserves at desired levels. The Food Security situation is expected to be particularly difficult in Mozambique where an estimated 0.98 million tonnes of cereal grain will need to be imported in order to ensure adequate food supplies. As has happened in the past, logistical constraints will continue to severely disrupt the handling and distribution of food imports.

While overall cereal production for the 1990/91 growing season (10.15 million tonnes) shows little change at the regional level from that of the previous year (10.5 million tonnes), significant movements have taken place at country level; production was significantly reduced in Zimbabwe by 21%, Lesotho (-29%) and Mozambique (-25% as compared to the previous season. On the other hand, Angola (19%), Swaziland (+17%) and Zambia (+31%) reported significant increases over the previous season.

All SADCC member States face cereal shortages during the 1991/92 marketing year, the shortfalls are particularly serious in Mozambique (0.98 million tonnes), Angola (0.62 million tonnes) and Lesotho (0.21 million tonnes). Tanzania, Zambia and Zimbabwe which reported grain surpluses during the previous year, are assessed as grain deficit in 1991/92 and will need to import 0.26, 0.20 and 0.19 million tonnes of cereals respectively if they are to maintain normal levels of strategic reserves. Malawi, although more or less self-sufficient in maize (except

wheat), will need to import 0.13 million tonnes to meet the needs of 900 000 Mozambican refugees in that country. Table 1 shows the food situation by type of cereal.

Expected cereal imports currently amount to 1.87 million tonnes, most of which will be supplied from outside the region. Cereal imports so far received this marketing year amount to only 0.28 million tonnes, the remaining 1.59 million tonnes are expected to be received during the remainder of the marketing year. A net uncovered import gap of 1.21 million tonnes remains. It is unlikely that the current uncovered import gap will be bridged and thus some countries, particularly Angola and Mozambique, will have acute food security problems during the course of the 1991/92 marketing year. Other countries including Tanzania, Zambia and Zimbabwe, may have to reduce their strategic grain reserve levels which could jeopardise future food security.

Though there are no net exportable surpluses in any country in the region, 0.11 million tonnes of cereals have so far been exported by SADCC States and another 0.17 million tonnes are to be exported during the current marketing year. Most of these exports constitute maize export commitments of Zimbabwe (228 000 tonnes) made in the previous marketing year which the country has to honour during the 1991/92 marketing year. Intra-regional trade within SADCC is estimated to account for only 14 percent of total cereal trade.

The nature and extent of the insecurity varies considerably from country to country. These problems have been brought about by serious disparities in the consumption and production of cereals, lack of accessibility to food grains and logistical and financial constraints in the transportation and distribution of food grains to deficit areas. Even countries which have food security at the national level are confronted with food insecurity at the sub-national level. Table 2 shows the food situation by country.

TABLE 1: 1991/92 WADCC FOOD SECURITY SITUATION BY COMMODITY (000'S METRIC TONNES OF GRAIN)

	MAIZE	RICE	WHEAT	SORGHUM & MILLET	TOTAL CEREALS
A. DOMESTIC AVAILABILITY					
A.1 Formal Opening Stocks	1104	46	344	56	1551
A.2 Gross Harvested Production	7898	495	406	1349	10148
A.3 Total Availability (A.1+A.2)	9002	541	751	1405	11698
B. ANNUAL REQUIREMENTS					
B.1 Gross Consumption Requirements	9568	749	1159	1562	13037
B.2 Normal Strategic Reserves	974	44	219	0	1237
B.3 Millers Minimum Stocks	97	17	79	29	222
B.3 Total Requirements (B.1+B.2+B.3)	10639	809	1457	1591	14496
C. DOMESTIC BALANCE (A.3-B.4)	-1637	-268	-706	-186	-2797
D. DOMESTIC CROSS SUBSTITUTIONS	-175	8	0	163	-5
E. IMPORT REQUIREMENT/EXPORT SURPLUS (C+D)	-1812	-260	-706	-24	-2802
F. TRADE					
F.1.1 Imports Already Completed	157	55	65	3	280
F.1.2 Imports Still Expected	1044	140	398	8	1590
F.1.3 Total Expected Imports (F.1.1+F.1.2)	1201	196	463	11	1870
F.2.1 Exports Already Completed	98	0	2	8	108
F.2.2 Exports Still Expected	157	8	3	5	173
F.2.3 Total Expected Exports (F.2.1+F.2.2)	256	8	5	13	281
G. UNCOVERED IMPORT GAP/EXPORT SURPLUS (E+F.1.3-F.2.3)	-867	-73	-248	-26	-1213
H. FORECASTED CLOSING STOCK (G+B.2+B.3)	204	-12	50	3	245
I. CURRENT FORMAL STOCKS (30 Jun 91)	678	58	256	48	1040

TABLE 2: 1991/92 SADCC FOOD SECURITY SITUATION BY COUNTRY (000'S METRIC TONNES OF CEREAL GRAIN)

	ANGOLA	BOTSWANA	LESOTHO	MALAWI	MOZAMBIQUE	NAMIBIA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE	SADCC
A. DOMESTIC AVAILABILITY											
A.1 Normal Opening Stocks	0	112	55	126	64	7	7	70	223	887	1551
A.2 Gross Harvested Production	367	51	113	1655	520	109	153	3572	1583	2026	10148
A.3 Total Availability (A.1+A.2)	367	163	168	1780	584	116	160	3641	1806	2913	11698
B. ANNUAL REQUIREMENTS											
B.1 Gross Consumption Requirements	937	216	365	1784	1566	159	185	3678	1745	2402	13037
B.2 Normal Strategic Reserves	50	0	9	112	0	0	0	141	225	700	1237
B.3 Milliers Minimum Stocks	0	95	8	14	0	2	2	69	33	0	222
B.4 Total Requirements (B.1+B.2+B.3)	987	311	382	1910	1566	161	187	3888	2003	3102	14496
C. DOMESTIC BALANCE (A.3-B.4)	-620	-148	-214	-129	-982	-45	-26	-247	-197	-189	-2797
D. DOMESTIC CROSS-SUBSTITUTIONS	0	0	0	-5	0	0	0	0	0	0	-5
E. IMPORT REQUIREMENT/EXPORT SURPLUS (C+D)	-620	-148	-214	-134	-982	-45	-26	-247	-197	-189	-2802
F. TRADE											
F.1.1 Imports Already Received	105	31	0	39	65	15	8	0	0	18	280
F.1.2 Imports Still Expected	218	118	177	167	574	52	28	104	69	84	1590
F.1.3 Total Expected Imports (F.1.1+F.1.2)	323	149	177	205	639	67	35	104	69	102	1870
F.2.1 Exports Already Completed	0	2	0	0	0	3	0	0	0	103	108
F.2.2 Exports Still Expected	0	3	0	8	0	18	10	0	0	135	173
F.2.3 Total Expected Exports (F.2.1+F.2.2)	0	5	0	8	0	20	10	0	0	238	281
G. UNCOVERED IMPORT/GAP EXPORT SURPLUS (E.F.1.3-F.2.3)	-297	-4	-38	64	-344	2	-1	-143	-127	-325	-1213
H. FORECAST CLOSING BALANCE(G+B.2+B.3)	-247	91	-21	189	-344	3	1	66	131	375	245
I. CURRENT FORMAL STOCKS	0	110	55	109	46	25	8	47	119	521	1040

3. REVIEW OF THE PROGRAMME

- 3.1 The sector has eleven regional projects. The total cost of the programme is US\$187.39 million of which US\$59.15 million has been secured and US\$126.77 million is the funding gap. The summary of the cost and funding status of the sectoral programme is shown in the annex tables.
- 3.2 The implementation of four regional projects, namely the General Technical Assistance Programme, the Regional Early Warning System, the Regional Inventory of Agricultural Resource Base, and the Strengthening and Coordination of Migrant Pest Control is proceeding well.
- 3.3 Implementation of the first phases of the two other projects, namely the Post-production Food Losses Reduction, and the Food Processing Technology, ended on 30th June, 1989. A review of the projects has been undertaken and confirmed the need to proceed into second phases. Funding is being sought.
- 3.4 The draft project proposal for the restructured Food Reserve Project has been completed, and approved in principle, by Ministers of Agriculture and Natural Resources, pending further work on implementation mechanisms and on the cost-benefit analysis of the impact of the project. The pre-implementation phase of the training component of the project has been completed. Funding is now being sought for the first phase, through Project AAA.1.5(1).
- 3.5 Feasibility studies for the Regional Food Marketing Infrastructure and the Regional Seed Production and Supply Projects have been completed. Several specific regional and national proposals have been identified from these two studies. Detailed formulation of projects identified under the marketing study can now proceed with the completion of the Namibian component in 1991.
- 3.6 A detailed work-plan for implementing the Regional Information System for Food Security was completed in September, 1988. The project has now been reviewed to concentrate on national elements of the project. Negotiations for funding the project are underway with the Netherlands Government.
- 3.7 In order to ensure that vulnerable groups can be identified and benefit from appropriately formulated intervention at the regional level, a Nutrition Monitoring Project is being developed for inclusion in the regional food security programme.

4. CURRENT STATUS OF PROJECTS

Project AAA.1.1: General Technical Assistance Programme

The project continues to provide the core financial and technical support for the processes of cooperation within SADCC on all agrarian issues.

The Food Security Technical and Administration Unit (FSTAU) has established links with the University of Zimbabwe's Food Security policy research programme being conducted in Botswana, Malawi, Tanzania, Zambia and Zimbabwe. This component of the project is terminating at the end of 1991.

Proposals for extension of the project implementation for a further 5-year period have been developed. AIDAB, which provided support for the project during Phase 1, has agreed to provide a grant of A\$2m (US\$1.6 million) for the extended 5-year period. AIDAB has provided the services of a Technical Advisor/Planning Economist. The US\$1.6m will support the salary of the Technical Advisor, workshops and seminars, exchange visits, travel by the Technical Advisor, a vehicle and some operating costs.

A regional expert, funded by UNDP, has been appointed to the FSTAU, initially for two years, to ensure that issues relating to women in development and nutrition receive appropriate recognition in the Food Security Programme.

Project AAA.1.2: Regional Early Warning System

The project continues to make significant progress in the collection of information and the compilation of regular national and regional food security bulletins. Phase 1 of the project, which started in June, 1986, ended in October, 1990. In order to consolidate the achievements made during Phase 1 and to strengthen the REWS in future, the Council of Ministers approved a second phase of the project, lasting a further 5 years. Phase 2 started to operate in early 1991.

A meeting of all national Early Warning Unit (NEWUs) and their supervisors, staff of the Regional Early Warning Unit (REWU), SADCC Government Officials, and FAO - the project executing agency - was held in Gaborone, Botswana, during late February/early March, 1991, to prepare and agree on a work plan for Phase 2, as well as to decide on future training needs for NEWU staff and related project activities.

Since Phase 2 became operational, the REWU has provided technical back-stopping and professional consultancies to NEWUs in Lesotho and Mozambique. The same assistance will be provided to the other eight NEWUs in the near future. Considerable progress has been made in unifying and

improving the methodologies for assessing the food security situation in member States.

The distribution list for the SADCC Food Security Bulletin has continued to grow due to the increasing demand, and the bulletin has received wide coverage in the national press and the electronic news media of several member States.

Officials of the REWU visited Namibia in October, 1990 to compile the initial food security assessment for the country, and the REWU has already set up the procedures necessary for Namibia to participate in the SADCC Regional Early Warning System. A project funded by the UNDP has already been formulated to support early warning activities in that country. The project is expected to become operational soon.

The Sector Coordinator, assisted by the Secretariat, in consultation with member States, has prepared a draft Memorandum of Understanding to provide a mechanism and legal framework for the long-term financing of REWU. In the meantime, the Secretariat will continue to provide bridging finance to the project from the OAU grant.

Project AAA.1.2 (1): Remote Sensing Component of the Regional Early Warning System

The remote sensing component of REWS continues to be strengthened on several fronts: training workshops, distribution and use of remote sensing data products, expansion of contacts between the regional unit and user clientele. In 1990, one regional workshop was held in Harare and one national practical-oriented training workshop was held in Gaborone. These were aimed at assisting the NEWUs to interpret remote sensing data and to incorporate these into other data for early warning. The Regional workshop, held in Harare, was attended by 14 participants from seven member States: Angola, Botswana, Lesotho, Swaziland, Tanzania, Zambia and Zimbabwe. Remote sensing information covering cloud cover (for rainfall) and vegetation index (for greenness) are distributed every ten days to all NEWUs, and Meteorological Departments in the member States. The national workshop was held in Gaborone and aimed at assisting clientele interpret data.

An appraisal meeting held by SADCC and FAO in January 1991 recommended continued funding of the project. A SADCC counterpart expert joined the project on 1st September, 1990. Equipment for satellite data is expected to be installed during 1991.

Project AAA.1.3: Regional Information System for Food Security (RIS)

During the pre-implementation phase of this project, which was between March, 1987 and December, 1988, a regional

information system for food security was designed and a project proposal was formulated.

The project proposal was approved by the Ministers of Food, Agriculture and Natural Resources at their meeting in Gaborone, Botswana in October 1988. The project has now been reviewed and is to concentrate principally on national elements. It is proposed that FSTAU manage the implementation of the project. Financing of the revised proposal is being sought.

Project AAA.1.4: Regional Inventory of Agricultural Resource Base (RIARB)

The project, which is funded by the Irish Government, is aimed at establishing an inventory of the agricultural resource base at both national and regional levels. The inventory will provide background information for agricultural land use and other planning purposes. The project is also correlating soils, agroecology and land use data throughout the region.

Phase 1 of the project is coming to an end in December, 1991. By that time, the following tasks will have been completed:

- the establishment of a computerised inventory, operational at national and regional level;
- the provision of a facility for data transfer;
- international conferences on all the main aspects of the RIARB have been convened in 1987, 1988 and 1989, and attended by RIARB Technical Liaison Officers and representatives from USAID, FAO and ISRIC. A regional meeting on agricultural land use planning, followed by a course on computer hardware and software, was held in Harare in 1990, attended by all RIARB Technical Liaison Officers;
- approval by SADCC of two regional proposals aimed directly at increasing agricultural production (see below);
- digital mapping of regional and national boundaries at a scale of 1:1 million, to enable the production of map overlays on soils, agro-ecology and land use; and,
- the correlation and presentation of available data on the above topics.

The soils information at a scale of 1:1 million is currently available for just 10% of the region (incl. Namibia). The information for Botswana and Zambia will increase this to 34%. At present, however, it is not possible to estimate when data will be available for the

entire region. Agro-ecological determinations at a scale of 1:1 million are dependent on the availability of the soil map.

Land use assessment and monitoring, although listed as one of the major objectives of the project, was not included in the project budget and attempts to raise funds, are underway.

Phase II of the project has been developed.

The objective of the second phase of the project is to institute a Geographical Information System within the SADCC Food Security Programme. Thus, it will not only pursue the ultimate objectives of the RIARB but will further strengthen the basis for planning and policy making by interpreting and presenting available data from a variety of sources, especially the RJS, in map form and according to the preferred mapping projection of individual member States.

A time-span of four years is proposed for Phase II, at an estimated cost of \$1.9m covering the salaries and travel costs of technical assistance staff, equipment, consultancies, subsistence and publications. Phase II of the project has been approved by Council.

Project AAA.1.4 (1): SADCC Soil Fertility Analysis Services

The objective of the project is to improve the capacity and efficiency of soil fertility analytical services, so as to maximise crop yields by prudent use of fertiliser. The project would consist of two main components;

- (a) a small regional Coordinating Unit with short term consultants and support services; and
- (b) Officially recognised contact persons or technical liaison officers within each member State to assist in the development and implementation of national projects and programmes. The Coordinating Unit will be accommodated within the present structure of the SADCC Food Security Programme.

Project AAA.1.3 and Phase II of Project AAA.1.4 will be merged into one project to be managed under the information and data section of FSTAU.

The total estimated cost of the project is US\$750,000. Funding is sought.

Project AAA.1.4 (2): SADCC Rangeland Development

The objective of this project is to maximise livestock feed from rangelands by undertaking inventories in each country

and then devising methods for upgrading and improving management. The project consists of two components:

- (a) a small coordinating component comprising one regional expert, support staff and equipment; and
- (b) a national component in each member State (see Section B of project document) with the capacity to undertake the inventory and management improvement activities to be undertaken in each State.

The estimated cost of the central component is US\$0.95 million. The estimated cost of the national components is as follows:

		US\$
Malawi	Foreign	1 940 800
	Local	186 200

		2 127 000
Swaziland	Foreign	1 750 000
	Local	180 000

		1 930 000

Tanzania	Foreign	8 905 740
	Local	25 100

		8 930 840

Zambia (Kagoro)	Foreign	543 000
	Local	79 000

		622 000

(Macha)	Foreign	1 195 000
	Local	143 000

		1 338 000

Zimbabwe	Foreign	356 290
	Local	82 910

		439 200

Council approved the project subject to the incorporation of the following recommendations:

- the definition of livestock to include cattle and small stock;
- the need for concerted effort during implementation of the project to collaborate with the following SADCC organs to avoid duplication:
 - * HRD Sector - in relation to the training programme;
 - * Agricultural Research - in relation to research activities;
 - * Soil and Water Conservation and Land Utilisation -in view of a similar project on Range Inventory Monitoring and Rehabilitation Trial being implemented by the Sector;
 - * Livestock Production and Animal Disease Control Sector.

All the Sector involved in rangeland development will discuss mechanisms for close collaboration including the amalgamation of all related projects soon after the merging of the strategies for Food, Agriculture and Natural Resources.

Funding is sought for the implementation of the projects.

Project AAA.1.5: Regional Food Reserve

The Food Reserve Project has been reviewed by a team of SADCC regional experts assisted by the Secretariat and the Sector Coordinator. Further work on cost/benefit analysis and the establishment of an implementation plan and institutional framework will begin soon.

Projects AAA.1.6/AAA.1.7: Regional Post-Production Food Loss Reduction and Food Processing

These projects are concerned with reducing post-production food losses in the region by encouraging more efficient post-production operations, and the establishment of rural facilities for the storage, preservation, processing, distribution and marketing of food products.

Implementation of the projects was coordinated by the Post Production Food Industry Advisory Unit (PFIAU), which assessed the post-production systems in member States, and conducted workshops and seminars to identify potential areas of useful intervention. The PFIAU assisted member States in identifying, initiating and monitoring projects and obtaining funding support for their implementation. National projects which were developed under this programme are being implemented in Angola, Botswana, Lesotho, Malawi,

Tanzania and Zimbabwe. These projects have been funded jointly by Canada (CIDA) and International Development Research Centre (IDRC), since 1984.

The regional project closed at the end of the first phase of implementation in 1989. It is hoped that the project activities can be resumed soon. Negotiations are underway with Canada to support a further phase of the projects, but await conclusion of the integration of the strategies for Food, Agriculture and Natural Resources.

Project AAA.1.8: Regional Food Marketing Infrastructure

The revised project report provides proposals to improve the capacity of the existing food marketing and distribution infrastructure at both regional and national levels. The document is divided into two parts:

- * Part I comprises the regional overview, and contains an assessment of regional commodity flows and their infrastructural, management, pricing, training and communications requirements.
- * Part II comprises nine separate reports on the existing food marketing infrastructure in each member State (except Namibia) including an analysis of the major issues facing the marketing of selected commodities and a series of recommendations for initiatives to be taken by respective Governments.

The Namibian component was carried out in April 1991 by SADCC experts in conjunction with Australian experts. The report on this component will appear as Volume III of the study report. The Australian Government provided funds for the studies.

Member States are responsible for the implementation of the national proposals contained in the documents. Member States are, therefore, expected to ensure that their relevant national institutions further develop these proposals.

The development of regional proposals recommended in Part 1 rests with FSTAU, in conjunction with the other Sector Coordinating Units, such as Transport and Communications, Industry and Trade and Manpower Development, as appropriate, and will take place on the completion of the Namibian component of the report.

Project AAA.1.10: Recruitment and Retention of Professional Staff in the Ministries of Agriculture in member States

The Project will be reviewed and reformulated. Discussions will be held with the RTC and SACCAR after the two strategies of the overall Sector have been merged.

Project AAA.1.11: Regional Seed Production and Supply

A feasibility study on the project was completed in February, 1989, and identified the main constraints to production and availability of seeds, and ways by which member States and SADCC can overcome these constraints. Six regional projects were identified which appear below. The feasibility study also identified a series of short and long-term measures which could be taken at a national level to overcome constraints to the production and supply of improved seeds.

FSTAU and SACCAR are collaborating over the implementation of these project proposals.

Discussions will be held with the other Sectors with similar projects, after the integration of the overall Sector's strategies, with the view to merging these projects into one programme.

Funding is being sought for all the sub-projects viz:

Project AAA.1.11 (1): Regional Seed Technology and Information Centre

The project is concerned with the establishment of a centre, preferably attached to a suitable existing institution in the region to:

- (a) provide training for personnel in seed production, processing and marketing; and
- (b) serve as source of information on regional seed production and availability and on seed production and processing technology.

The cost of the pre-implementation phase, to plan the centre and assess its cost, is estimated at US\$0.21 million.

Project AAA.1.11 (2): Plant Quarantine Project

The project's main objective is to support the establishment or upgrading of quarantine facilities in member States, as part of a regional network, to facilitate movement of seed across national boundaries while at the same time avoiding the spread of crop diseases. The cost of a pre-implementation phase to determine national requirements and plan the regional network is estimated at US\$0.3 million.

Project AAA.1.14: Regional Food Security Training

The project is responsible for all the training requirements for the Sector.

The training proposed is restricted to in-service training short-term up-grading of skills, and provision of practical experience to supplement classroom theoretical knowledge. The justification for the regional approach lies in the need to share experiences, to make use of complementarities, to exploit economies of scale, and to capture the benefits of comparative advantage. The strategy is to use, and further develop, existing regional training expertise and facilities for training trainers and to develop training materials which can later be used in national programmes. The following training methods are envisaged:

- regional training courses, seminars and workshops;
- some support to the development of national capacity; and
- a work attachment programme.

The three areas of concentration in English and Portuguese are also envisaged. These are:

- Food Policy: raising the level of capacity in the region to analyse food policy options.
- Training trainers in Household Food Security extension (health and agriculture); effective food aid delivery; food and nutrition surveillance systems; and artisanal food processing.
- Grain marketing systems management: concentrating on logistics and filling gaps in existing training programmes in relation to depot management, grain operations, quality control, marketing accounting and transport planning.

The programme will be implemented in two phases of three years each. The estimated cost of Phase 1 is US\$4.3m. Funding is sought.

Project AAA.1.11 (3): Production and Breeding of Vegetable Seed

The project's primary objective is to establish two vegetable seed production and breeding centres; one for temperate vegetables, and the other for tropical vegetables, linked to existing national production/breeding programmes; to meet the requirements for improved vegetable seed in the region. The ICRTAU will work very closely with SACCAR in the development of this project.

The cost of the pre-implementation phase, to determine suitable locations for the centres and plan and cost of their requirements, is estimated at US\$0.20 million.

**Project AAA.1.11 (4): Advanced Training Courses in
 Plant Breeding and Seed
 Production**

The aim of this project is to provide support for advanced theoretical and practical training in plant breeding and seed production for senior personnel in the seed industry, at suitable existing institutions in the region, to reinforce practical experience with modern technology in the industry.

The cost of the pre-implementation phase, to identify suitable institutions, determine course requirements, prepare cost estimates and implementation programmes, is estimated at US\$0.30 million.

**Project AAA.1.11 (5): Regional Quality Laboratory and
 National Sub-Units**

The aim of this project is to provide support initially for the up-grading or establishment of national seed quality laboratories and, subsequently, for the establishment of a regional laboratory to meet the requirements of member States for analyses requiring more sophisticated technology.

The cost of the pre-implementation phase to assess the requirements for up-grading or establishment of national units is estimated at US\$0.06 million.

**Project AAA.1.11 (6): Harmonisation of Seed Laws in the
 SADCC Region**

The aim of this project is to harmonise the different laws of member States, so as to achieve similar regulations and standards, which will facilitate intra-regional trade in seed.

It is proposed that the project be implemented in two phases:

- Phase 1 - survey and collection of available legal and non-legal information from each member State;
- the subsequent drafting of harmonised regulations/laws;
- Phase 2 - convening a working group of representatives of member States' organizations responsible seed laws to recommend modification of existing national laws.

SADCC Seed Training Courses (Zambia)

FSTAU and the Seed Control and Certification Institute (SCCI) of Zambia organised a training course for Seed Inspectors on Seed Quality Control in Zambia during the period March 10 - 24, 1991. The course was run by SCCI - Zambia. Funding for the course (US\$35,500) was secured from Canada (CIDA). Nine SADCC member States participated in the training course.

A similar course on Seed Testing for Seed Analysis was run by SCCI with the assistance of appropriate qualified regional experts during the period September 30 - October 11, 1990. CIDA provided funding (US\$34,000) for this second phase.

It is anticipated that future short courses of this nature will be held at the proposed Regional Seed Technology and Information Centre (1.0.11(1)) once it is operational.

Project AAA.1.12: Improved Irrigation in the SADCC Region

The objective of this study is to identify appropriate ways by which SADCC can improve regional food security through a more effective exploitation of the region's extensive irrigation potential. The study is expected to establish a strategy and programme of activities in the irrigation sector which can be implemented through the SADCC Programme of Action.

The Australian Government provided US\$0.5m for the study. An Australian consultancy team to carry out the study has been identified. During August 7 - 9, 1990, a workshop for irrigation specialists from member States and the consultancy team was held in Nyanga, Zimbabwe, to review the Terms of Reference and to approve a timetable for visits to member States by the consultancy team.

The second phase of the study will now be undertaken during 1991/92.

Project AAA.1.13: Strengthening and Coordination of Migrant Pest Control

The main objective of the project is to strengthen the coordination of migrant pest control in the SADCC region by reducing the crop losses caused by migrant pests. By the development of a coordinated approach to the problem, the project will enhance the capability of the National Plant Protection Units (NPPUs) in the member States to protect crops against locusts, African armyworm, weaver birds and rodents.

The pre-implementation phase of the project was completed at the end of 1989. During that phase, an assessment of the capacities of member States' Plant Protection Units was

carried out. This was followed up by a meeting of SADCC Technical Experts (Heads of National Plant Protection Units) in Kadoma, Zimbabwe in September, 1989 to discuss proposals for the implementation of the project. A detailed project proposal containing specific activities to be undertaken at both regional and national level was approved by Council in August, 1990. The main components of the project are technical assistance, short-term consultancies to assist member States to prepare development plans, equipment, and training staff of National Plant Protection Units. The Federal Republic of Germany provided DM1.9m (US\$1.2)m to implement these proposals.

A workshop was held in Harare in September, 1990 to agree on the main activities which should be undertaken during the implementation phase of the project. In close cooperation with the International Red Locust Control Organisation - Central and Southern Africa (IRLCO-CSA), an armyworm trapping network in Angola, Lesotho and Namibia has been established. Short term consultancies to assist in the development of national plans, and in setting up communication systems, are underway.

The first working phase of the project will be completed at the end of 1991. A mid-term evaluation of the first working phase was undertaken jointly by a SADCC/GTZ team of experts in June, 1991. At the end of the evaluation, a planning workshop mapped out strategies for the implementation of the second phase of the project. The project will be extended from January, 1992 for another three years to allow for the completion of the regional communication and data exchange system concerning migrant pests. Training activities and the installation of the necessary communication equipment in SADCC countries will be undertaken in this phase.

Project AAA.1.14: Regional Food Security Training

The project is responsible for all the training requirements for the Sector.

The training proposed is restricted to in-service training short-term up-grading of skills, and provision of practical experience to supplement classroom theoretical knowledge. The justification for the regional approach lies in the need to share experiences, to make use of complementarities, to exploit economies of scale, and to capture the benefits of comparative advantage. The strategy is to use, and further develop, existing regional training expertise and facilities for training trainers and to develop training materials which can later be used in national programmes. The following training methods are envisaged:

- regional training courses, seminars and workshops;
- some support to the development of national capacity; and
- a work attachment programme.

The three areas of concentration in English and Portuguese are also envisaged. These are:

- Food Policy: raising the level of capacity in the region to analyse food policy options.
- Training trainers in Household Food Security extension (health and agriculture); effective food aid delivery; food and nutrition surveillance systems; and artisanal food processing.
- Grain marketing systems management: concentrating on logistics and filling gaps in existing training programmes in relation to depot management, grain operations, quality control, marketing accounting and transport planning.

The programme will be implemented in two phases of three years each. The estimated cost of Phase 1 is US\$4.3m. Funding is sought.

National Projects with Regional Impact

The Sector also provides support in identification and development for projects which, though national in character, when taken together contribute significantly to the achievement of SADCC's overall food security objectives. These national projects are generally directed towards enhancing production activities which have the potential to improve food supply.

Progress on the national projects is reported in the funding Status of Projects.

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Descriptions

Project Descriptions

AAA.1.1 TECHNICAL ASSISTANCE PROGRAMME FOR COORDINATION AND COOPERATION

Estimated Cost
Total :US\$ 6.60m

Financing Gap: US\$3.68m

Foreign :US\$ 5.28m
Local :US\$ 1.32m

Executing Agency: FSTAU

Funding Secured
Foreign :

Start: 1991

:US\$1.6m (Aus)
Local :US\$1.32m (ZIM)

Duration 5 years

OBJECTIVES:

The objectives of the project are to provide financial and technical support for the process of cooperation within SADCC to ensure the development and implementation of coherent regional food security policies and programmes; and to enable the Government of Zimbabwe to fulfil its responsibility for:

- (a) coordinating and planning SADCC's regional food security programmes;
- (b) development and implementation of SADCC's regional food security projects; and
- (c) for undertaking overall coordination of SADCC's programmes covering food, agriculture and natural resources.

DESCRIPTION:

This project constitutes the core support for the operations of the SADCC Food Security Technical and Administrative Unit (FSTAU), and has been and will continue to be a spring board for the development and implementation of the Regional Food Security Programme. By facilitating the process of cooperation it has played a central role in the development of all the existing regional food security projects and in the exchange of technical information and know-how among member States on a wide range of agrarian issues. The project provides financial support for salaries and travel costs of the core staff of the FSTAU office equipment and running expenses document production and distribution library reference material funding of short-term consultancies and funding of seminars, workshops and technical experts' meetings.

STATUS:

Since its inception in July 1982, the project has supported the establishment of the FSTAU, the funding of its core staff and the services of technical adviser. The Unit has responsibility for managing SADCC's regional food security programme

Proposals for the extension of the project implementation for further five-year period have been developed. AIDAB who provided support for the project during Phase I, has agreed to provide a grant of US\$1.6m (A\$2m) for the extended 5 year period. AIDAB has also provided services of Technical Advisor (Planning Economist). The A\$ will support salary for Technical Advisor, workshops and seminars, exchange visits, travel by Technician Advisor, vehicles and equipment. The Government of Zimbabwe has also increased its contribution to the project by providing four additional staff to FSTAU

AAA.1.2: REGIONAL EARLY WARNING SYSTEM

<u>Estimated Cost:</u>	<u>Financing Gap:</u> US\$4.4m
Total : US\$6.1m	
Foreign: US\$4.4m	<u>Executing Agency:</u>
Local : US\$1.7	SADCC/FAO
	<u>Start:</u> 1991
<u>Funding Secured:</u>	<u>Duration:</u> five years
Foreign:	
Local : US\$1.7 (SADCC)	

OBJECTIVES:

- (a) to establish a SADCC Regional Early Warning Unit (REWU) which coordinates the early warning activities of the ten National Early Warning Units (NEWUs) in the SADCC member States;
- (b) to provide technical and organizational help to the NEWUs in the region;
- (c) to improve the methodologies of assessing the food security situation in the SADCC countries;
- (d) to organise and conduct the training of the professional staff of the National Early Warning Units;

- (e) to issue regular food security bulletins for the SADCC region so as to warn SADCC authorities and governments of impending food shortages or surpluses.

DESCRIPTION: The REWU analyses and summaries the food security situation received from the NEWUs in the form of national bulletins. This information is collated in the form of regular food security bulletins for the region as a whole. These summary bulletins are sent back to the countries or SADCC authorities for appropriate action to enable them to monitor the regional food situation regularly.

STATUS: The REWU and ten NEWUs are now operational and a sister project - the Remote Sensing component of the REWU - has been established. The REWU regularly produces quarterly food security bulletins. The first phase of the project which was funded by DANIDA came to an end in December 1990. A second phase of the project has been formulated, for which funding is being sought.

AAA.1.3 REGIONAL INFORMATION SYSTEM FOR FOOD SECURITY: PHASE I

<u>Estimated Costs</u>	<u>Financing Gap:</u> US\$1.95m
Total : US\$1.95m	
Foreign : US\$1.95m	
Local : -	<u>Executing Agency:</u> FSTAU
<u>Funding Secured</u>	<u>Start:</u> 1992
Foreign : -	
Local : -	<u>Duration:</u> 3 years

OBJECTIVES: The long-term objective of this project is to attain enhanced regional food security information system in the SADCC region to facilitate effective policy formulation and development, planning and decision-making, on the basis of adequate, reliable and timely data; and appropriate analytical methods:

- (a) to develop regional and national data bases on food production, distribution and consumption, inputs to food production, trade in food commodities and relevant socio-economic indicators;

- (b) to install computing resources at the regional and national levels, in order to enable ready access to available data and the production of adequate food security information; and
- (c) to train personnel of the SADCC countries in the fields of data processing and quantitative methods for food security.

DESCRIPTION: The project involves the development of a regional information system (RIS) for food security monitoring and planning. A system comprising regional unit in FSTAU, linked to units in each SADCC country, has been proposed. There will be data bases in the FSTAU and in the national units containing frequently used data. The Project will also support the other regional food security projects, in the area of data storage, retrieval and analysis. The project includes a training programme with activities at national and regional levels.

STATUS: A feasibility study funded by CFCT was carried out and completed in 1982. A pre-implementation phase was undertaken in 1987 and 1988.

The project has now been reformulated and scaled down significantly. The objectives remain the same but the activities will concentrate on strengthening national components in the first place.

Funding is being sought for implementation of the project.

AAA.1.4 REGIONAL INVENTORY OF AGRICULTURAL RESOURCE BASE (RIARB) PHASE II

<u>Estimated Cost</u>	<u>Financing Gap:</u> US\$1.9m
Total : US\$1.9m	<u>Executing Agency :</u> FSTAU
Foreign: US\$1.9m	<u>Start:</u> 1992
Local : -	
<u>Funding Secured</u>	<u>Duration:</u> 4 years
Foreign: -	
Local : -	

OBJECTIVES: The overall objective of the RIARB is to compile and correlate agricultural resource data in the SADCC countries and to estimate the potential agricultural

production capacity of the region. The inventory is to provide basis for agricultural land use planning.

DESCRIPTION: The inventory of agricultural resource base is a catalogue of the physical conditions which together constitute one of the basic factors of agricultural production. It includes, among other things, those elements which influence natural conditions such as water for irrigation and fertilizers to improve the fertility of the soil.

STATUS: Phase I of the project comes to an end in December 1991. During Phase I, a comprehensive collection of maps, publications, reports and references were made. A map catalogue and list of publications/ reports which were collected has been published and is being updated.

All soil legends in the SADCC region have been correlated with the latest FAO Soil Legend and the USDA Soil Taxonomy. The results are on computer spreadsheet programme for ease of editing.

A Computerized Agricultural Resource Inventory for Southern Africa (CARISA) has been established for the RIARB Central Unit, and a National Agricultural Resource Inventory for Southern Africa (NARISA) database has been established at the member State level. Personal computers, together with a range of appropriate software for use in compiling data for the inventory, have been distributed to all member States.

Further additions have been made to NARISA in accordance with member State suggestions and an interface for word processing, spreadsheet and dBase has been compiled.

Phase II of the RIARB will continue to pursue the overall objectives by establishing a Geographic Information System which will strengthen the basis for planning and policy making. It will present available data from a variety of sources in map form.

AAA.1.4(1) SADCC SOIL FERTILITY ANALYSIS PROJECT

<u>Estimated Costs</u>		<u>Financing Gap:</u> US\$0.75m
Total	: US\$0.75m	<u>Executing Agency:</u>
Foreign	: US\$0.75m	
Local	: -	<u>Start:</u> As soon as funding is secured
<u>Funding Secured</u>		<u>Duration:</u> 3 years
Foreign	: -	
Local		

OBJECTIVES: The aim of the project is to improve the capacity and efficiency of Soil Fertility Analytical Services so as to maximise crop yields by prudent use of fertiliser.

DESCRIPTION: The project will provide short term consultancies to assess the capacity of soil laboratories and will develop national projects to improve the capacity of soil laboratories in all the SADCC member States.

STATUS: Funding is sought to implement the project.

AAA.1.4(2) SADCC RANGELAND DEVELOPMENT PROJECT

<u>Estimated Cost</u>		<u>Financing Gap:</u> US\$15.63
Total	: US\$16.33m	<u>Executing Agency:</u>
Foreign	: US\$15.63m	
Local	: US\$ 0.70m	<u>Start:</u> As soon as funding is secured
<u>Funding Secured</u>		<u>Duration:</u> 4 years
Foreign	: -	
Local	: -	

OBJECTIVES: The aim of the project is to increase livestock production through better management of rangelands.

DESCRIPTION: The project consists of a regional component and five national components, the costs of which are shown below.

Country	Foreign	Local	Total
FSTAU	941 280	-	941 280
Malawi	1 940 800	186 000	2 126 800
Swaziland	1 750 000	180 110	1 930 000
Tanzania	8 905 740	25 100	8 930 840
Zambia	1 738 000	222 000	1 960 000
Zimbabwe	356 290	82 910	439 200

The project will study and, subsequently, introduce improvements in range management in SADCC member States. The regional components will assist in the implementation of the proposed national project components in (Malawi, Swaziland, Tanzania, Zambia and Zimbabwe) and in the development of other projects where necessary.

STATUS: Funding is sought to implement the regional project and the national projects.

AAA.1.6 REGIONAL POST PRODUCTION FOOD LOSS REDUCTION AND FOOD PROCESSING : PHASE II

<u>Estimated Cost:</u>	<u>Financing Gap:</u> US\$3.60m
Total : US\$3.60m	<u>Executing Agency:</u> FSTAU
Foreign : US\$3.60m	
Local :	<u>Start:</u> As soon as funding is secured
<u>Funding Secured:</u>	<u>Duration:</u> 5 Years
Foreign : -	
Local : -	

- OBJECTIVES:**
- a) to reduce post production food losses through efficient post production systems;
 - b) Establish rural industries and facilities for preserving, processing, distributing, and marketing food.

DESCRIPTION: Implementation of the first phase of the project was undertaken by a small team of specialists constituting the Post Production Food Industry Advisory Unit (PFIAU) of the FSTAU. The Unit undertook assessments of post production systems, covering aspects such as harvesting, handling, storage, processing, distributing, and marketing in all member States, to identify potential projects and programmes. On the basis of these assessments, project proposals were developed. The main focal points of contact by the Unit were the National Post Production Systems Committees which were established in each member State. A regional Technical Advisory Committee, which included a representative from each member State, provided technical guidance on the work of PFIAU.

STATUS: The first phase of the project, which was funded by Canada through CIDA and the IDRC, come to an end in June 1988. An evaluation in June 1988 recommended its continuation for a further five years. A proposal for the extension of the project based on the evaluation's recommendations, has been prepared and funding for phase II of the project is being sought.

AAA.1.11(1) REGIONAL SEED PRODUCTION AND SUPPLY (STUDY)

<u>Estimated Cost</u>	<u>Financing Gap:</u>
Total : US\$0.21m	US\$0.21m
Foreign : US\$0.21m	<u>Executing Agency:</u>
Local : -	FSTAU
	<u>Start:</u> As soon as
	funding is secured
<u>Funding Secured</u>	<u>Duration:</u>
Foreign : -	
Local : -	

OBJECTIVES: To establish a Regional Information and Training Centre for Seed Technology.

DESCRIPTION: The project is concerned with the establishment of a Centre, preferably attached to a suitable existing institution in the region to:

- a) provide training for personnel in seed production, processing and marketing; and

- b) serve as a source of information on regional seed production and availability and on seed production and processing technology.

STATUS: Funding sought.

AAA.1.11(2) PLANT QUARANTINE PROJECT

Estimate Cost

Total : US\$0.30m
Foreign : US\$0.30m
Local : -

Financing Gap: US\$0.30m

Executing Agency: FSTAU

Start: As soon as funding is secured

Funding Secured

Foreign : -
Local : -

Duration:

OBJECTIVES: The project aims to support the establishment or upgrading of quarantine facilities in member States, as part of a regional network, to facilitate movement of seed across national boundaries, while at the same time avoiding the spread of crop diseases.

DESCRIPTION: A pre-implementation phase is being proposed to determine the national requirements and plan the regional network.

STATUS: Funding is being sought for the pre-implementation phase of the project.

AAA.1.11(3) PRODUCTION AND BREEDING OF VEGETABLE SEED

Estimated Cost:

Total : US\$0.20m
Foreign : US\$0.20m
Local : -

Funding Gap: US\$0.20m

Executing Agency: FSTAU

Start: As soon as funding is secured

Funding Secured:

Foreign : -
Local : -

Duration:

OBJECTIVES: The project aims to establish two vegetable seed production and breeding centres; one for temperate vegetables, and the other for tropical vegetables; both to be linked to existing national production/breeding programmes to meet the requirements for improved vegetable seed in the region.

DESCRIPTION: A pre-implementation phase is being proposed to determine suitable locations for the planned centres, and cost of their requirements.

STATUS: Funding is being sought for the pre-implementation phase of the project.

AAA.1.4(4) ADVANCED TRAINING COURSES IN PLANT BREEDING AND SEED PRODUCTION

Estimated Cost:

Total : US\$0.30m
Foreign : US\$0.30m
Local : -

Funding Secured:

Foreign : -
Local : -

Financing Gap: US\$0.30m

Executing Agency: FSTAU

Start: As soon as funding is secured

OBJECTIVES: The aim of this project is to provide support for advanced theoretical and practical training in plant breeding and seed production for senior personnel in the seed industry in the region, at suitable existing institutions in the region.

DESCRIPTION: 1. pre-implementation phase will be carried out to identify suitable institutions, determine course requirements, prepare cost estimates and implementation programmes.

STATUS: Funding is being sought for the pre-implementation phase of the project.

AAA.1.11(5) REGIONAL QUALITY LABORATORY AND NATIONAL SUB-UNITS

Estimate Cost:

Total : US\$0.06m
Foreign : US\$0.06m
Local : -

Financing Gap: US\$0.06m

Executing Agency: FSTAU

Start: As soon as funding is secured

Funding Secured

Foreign : -
Local : -

Duration:

OBJECTIVES: The aim of the project is to provide support, initially for the up-grading or establishment of national seed quality laboratories and subsequently, for the establishment of a regional seed laboratory to meet the requirements of member States for analyses requiring more sophisticated technology.

DESCRIPTION: A pre-implementation phase will be carried out to assess the requirements if up-grading or establishment of national units.

STATUS: Funding is being sought for the pre-implementation phase of the project.

AAA.1.11(6) HARMONISATION OF SEED LAWS IN THE SADCC REGION

Estimated Cost:

Total : US\$0.86m
Foreign : US\$0.86m
Local : -

Financing Gap: US\$0.86m

Start: As soon as funds are secured.

Funding Secured

Foreign : -
Local : -

OBJECTIVES: The aim of this project is to harmonise the differences which exist in the seed laws amongst member States so as to achieve harmonized regulations and standards which will facilitate intra-regional trade in seeds.

DESCRIPTION: The project involves survey and collection of information from each country. Available documents, legal and non legal, will be collected and consultations held with ministry officials, seed quality control agencies, seed companies or national seed projects as well as plant breeding institutions. After the information has been collected, written proposals on harmonisation of the seed laws in the region will be produced for discussion with member States with a view to harmonising them. A working group will also be appointed to carry out the continuation of the project.

STATUS: Funding is being sought to carry out the above activities.

AAA.1.14: REGIONAL FOOD SECURITY TRAINING

Estimated Cost:

Total : US\$4.3m
Foreign : US\$4.3m
Local : -

Funding Secured:

Foreign : -

Financing Gap: US\$4.3

Executing Agency: FSTAU

Start: As soon as possible

Duration: 3 years

OBJECTIVES: The overall objective of this project, is to enhance the efficiency of people and of institutions engaged in the various activities related to food security including management of food marketing and processing, household food security and food policy analyses.

DESCRIPTION: The programme will consist of mainly short-term in-service training activities for technical middle level and senior personnel in government, parastatal organisations, and the private sector. Some post-graduate training (essentially at Masters level) will also be undertaken in close collaboration with SACCAR and the RTC.

Funding

Funding Status of Projects

The strategy is to use and further develop existing regional training expertise and facilities, particularly for training of trainers and developing training materials for later use in national programmes.

STATUS:

A pre-implementation study, funded by the EEC, was completed in August 1990. Funding is now sought to implement the project.

Project	Project Title	Total	Estimated Cost		Funding Secured		Funding Under Negotiation	Financing Gap	Comments/Status
			US\$ Million	Foreign	Local	US\$ Million			
FOOD SECURITY									
AAA.1.1	Technical Assistance Programme for Coordination & Cooperation	6.60	5.28	1.32	1.60 (AUS) 1.32 (ZIM)	-	3.68	Under implementation.	
AAA.1.2	Regional Early Warning System (REWS) Phase II	6.10	4.40	1.70	1.70 (SADCC)	-	4.40	Funding sought for Phase II.	
AAA.1.3	Regional Resources Information System	1.95	1.95	-	-	-	1.95	Project scaled down.	
AAA.1.4	Regional Inventory of Agriculture Phase II	1.90	1.90	-	-	-	1.90	Funding sought.	
AAA.1.4(1)	SADCC Soil Fertility Analysis Services	0.75	0.75	-	-	-	0.75	Funding sought.	
AAA.1.4(2)	SADCC Rangeland Development	0.95	0.95	-	-	-	0.95	Funding sought.	
AAA.1.5	Regional Food Reserve Project	-	-	-	-	-	-	Under review.	
AAA.1.6/7	Regional Post-Production Food Losses Reduction & Food Processing - Phase II	3.60	3.60	-	-	-	3.60	Funding sought.	
AAA.1.8	Regional Food Marketing	0.41	0.39	0.02	0.39 (AUS) 0.02 (TAN/ZAM/ZIM)	-	-	Study report being finalised. Extension to Namibia carried out in April 1991.	
AAA.1.10	Recruitment & Retention of Professional & Technical Staff in the Ministries of Agriculture in the SADCC Region.	-	-	-	-	-	-	Under review.	
AAA.1.11	Feasibility Study on Regional Seed Production and Supply	-	-	-	-	-	-	Study completed, recommended projects approved (See 1.0.11(1) - (6)).	
AAA.1.11(1)	Regional Seed Technology and Information Centre	0.21	0.21	-	-	-	0.21	Funding being sought.	
AAA.1.11(2)	Plant Quarantine	0.30	0.30	-	-	-	0.30	Funding being sought.	
AAA.1.11(3)	Production and Breeding of Vegetable Seed	0.20	0.20	-	-	-	0.20	Funding being sought.	

Project	Project Title	Estimated Cost US\$ Million		Funding Secured & Source US\$ Million		Funding Under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foreign	Local				
AAA.1.11(4)	Advanced Training Courses in Plant Breeding and Seed Production.	0.30	0.30	-	-	-	0.30	Funding being sought.
AAA.1.11(5)	Regional Quality Laboratory	0.06	0.06	-	-	-	0.06	Funding being sought.
AAA.1.11(6)	Harmonisation of Seed Laws	0.86	0.86	-	-	-	0.86	Funding being sought.
AAA.1.12	Improved Irrigation in the SADCC Region	0.50	0.48	0.02	0.48 (AUS) 0.02 (SADCC)	-	-	Inception report received.
AAA.1.13	Strengthening & Coordination of Migrant Pest Control	1.12	1.12	-	1.12 (FRG)	-	-	Under implementation.
AAA.1.4	Regional Food Security Training	4.30	4.30	-	-	-	4.30	Funding sought.
	Sub total	30.11	27.05	3.06	6.65	0.00	23.46	
NATIONAL PROJECTS WITH REGIONAL IMPACT								
ANG.1.3	Establishment of a preparation and Monitoring of Projects in the Field of Agriculture, ANGOLA	4.47	1.47	3.00	3.00 (ANG)	1.47	-	
ANG.1.4	Reinforcement of the National Service for Plant Protection, ANGOLA	8.26	1.18	7.08	7.08 (ANG)	-	1.18	Funding sought.
LES.1.1	National Food Reserve, LESOTHO	-	-	-	-	-	-	Under review.
LES.1.2	Irrigation Vegetable Production, LESOTHO	2.07	1.90	0.17	1.90 (EEC) 0.17 (LES)	-	-	Under implementation.
LES.1.5	Destocking Programme, LESOTHO	0.70	0.25	0.45	0.45 (LES) 0.25 (USA)	-	-	Under implementation.
MAL.1.1	Interim Grain Reserves, MALAWI	-	-	-	-	-	-	Government examining study report.
MAL.1.2	Small Irrigation Schemes, MALAWI	-	-	-	-	-	-	Government examining study report.

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Project	Project Title	Total	Estimated Cost US\$ Million		Funding Secured & Source US\$ Million		Funding Under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
			Foreign	Local					
AAA.1.4(2)	SADCC Rangeland Dev. SWAZILAND	2.13	1.95	0.18	0.18 (SWA)	-	1.95	Funding sought.	
TAN.1.1	Kapunga Rice Project, TANZANIA	26.10	20.60	5.50	5.50 (TAN)	-	20.60	Funding sought.	
TAN.1.2	Madibira Rice Project, TANZANIA	22.50	19.00	3.50	3.50 (TAN)	-	19.00	Funding sought.	
AAA.1.4(2)	SADCC Rangeland Dev., TANZANIA	8.93	8.90	0.03	0.03 (TAN)	-	8.90	Funding sought.	
TAN.1.3	Eradication of the Larger Grain Borer	0.93	0.73	0.20	0.20 (TAN)	-	0.73	Under implementation, more funding sought.	
ZAM.1.1	Construction of Food Storage Facility, ZAMBIA	4.02	4.02	-	4.02 (CAN/EEC/NOR)	-	-	Under implementation.	
ZAM.1.3	Lukhanga Water Development, ZAMBIA	5.00	5.00	-	-	-	5.00	Funding sought.	
ZAM.1.5	National Soil Mapping Programme ZAMBIA	0.20	0.14	0.06	0.06 (ZAM)	-	0.14	Funding sought.	
ZAM.1.6	Rehabilitation and Expansion of the Small Holder Irrigation Scheme ZAMBIA	25.50	25.00	0.50	0.50 (ZAM)	-	25.00	Funding is being sought.	
ZAM.1.7	Small Holder Irrigation Coffee Schemes (ZAMBIA)	3.80	3.00	0.80	0.80 (ZAM)	-	3.00	Funding is being sought.	
AAA.1.4(2)	SADCC Rangeland Development, ZAMBIA	1.96	1.74	0.22	0.22 (ZAM)	-	1.74	Funding is being sought.	
ZIM.1.1	Bunker Grain Storage (ZIMBABWE)	7.61	2.16	5.45	5.45 (ZIM)	-	2.16	Funding sought.	
AAA.1.4(2)	SADCC Rangeland Development, ZIMBABWE	0.44	0.36	0.08	0.08 (ZIM)	-	0.36	Funding being sought.	
Sub-Total		157.28	121.45	35.83	52.50	1.47	103.31		
GRAND TOTAL		187.39	148.50	38.89	59.15	1.47	126.77		

Livestock Production and Animal Disease Control

LIVESTOCK PRODUCTION AND ANIMAL DISEASE CONTROL

C O N T E N T S

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1.0 EXECUTIVE SUMMARY

- 1.1 The region generally experienced, with respect to livestock production, adequate rains which resulted in good grass cover throughout the region. There has however been few places like the northern communal areas of Namibia where up to 2,500 cattle died due to poor grazing.
- 1.2 In Zambia where 675 cattle are reported to have died of anthrax 57 000 herd of cattle were vaccinated against the disease before the outbreak was brought under control. Another disease which caused mortality in Southern Zambia is Blackquarter, where 470 animals were reported dead from the disease.
- 1.3 An outbreak of lumpy skin disease was reported in Botswana, Malawi, Zambia and Zimbabwe after a long absence. The outbreaks were compounded by the fact that no vaccine was available in the region at the time to control the disease. Only in Malawi and Zimbabwe was vaccine used by a limited number of commercial and government farms.
- 1.4 There were no outbreaks reported of the major diseases like Rinderpest and Foot and Mouth Disease (FMD) during the reporting period. They still remain a major threat to the region's livestock industry though, and surveillance remains high. Vaccination against FMD continues in Botswana, Malawi, Namibia, Tanzania, Zambia and Zimbabwe. Rinderpest is still a threat to Malawi and Tanzania, especially Malawi where the current level of immunity is probably below protection levels since vaccinations were discontinued in 1987.
- 1.5 The sector has fifteen projects. Of the 15 projects, 6 are under implementation either in their first or second phases, 6 are still seeking financial support while negotiations for funding for 2 are at an advanced stage. One project, the construction of the Animal Disease Reference Laboratory in Harare is completed and is operational. The Sector will review from time to time, the utilisation of this facility by member States.

2.0 REVIEW OF THE REGIONAL SITUATION

- 2.1 Livestock condition in the region can be described as generally good in most places, and fair to poor in a few others. This is due to, for the most part, adequate rains leading to good grass cover throughout the region.

Drought conditions were experienced in parts of Angola and Namibia and other parts of the region leading to high losses of stock. However, overstocking which led to overgrazing, had more to do with the deaths than poor rains alone.

- 2.2 In some countries, meat continues to be produced in enough quantities to sustain domestic demand. Botswana, Namibia and Zimbabwe continue to export reasonable quantities of beef. Foot and Mouth Disease continue to pose a threat to the export market.
- 2.3 The region is not yet self-sufficient in milk and milk products, and continues to be a net importer of these products. A concerted effort is required in the member States to boost dairy production.
- 2.4 Major diseases like Foot and Mouth Disease and Rinderpest were not reported in the region. There were, however, a lot of cattle deaths due to Anthrax and Blackwarter, especially in Zambia where 675 and 470 animals were reported dead from the two diseases respectively. 57 000 cattle were vaccinated against Anthrax and 40,000 against Blackwarter before the outbreaks were brought under control in Zambia.
- 2.5 Lumpy skin disease which had been under control for quite some time, flared up in Botswana, Malawi, Zambia and Zimbabwe. Vaccines were not readily available to control the outbreaks. Only in Zimbabwe were 53 495 cattle vaccinated, as well as Malawi where a limited number of commercial and government farms vaccinated against the disease.
- 2.6 Tick-borne diseases, as a group, are still a major threat to the livestock industry in the region. Corridor disease (one of the many tick borne diseases) continues to spread to formerly unaffected areas of central Zambia, while East Coast Fever remains confined to the Eastern and Northern parts of the continent. Encouraging results have been achieved, using the infection and treatment method, which is being perfected at the Central Veterinary Laboratories in Malawi. About 40 000 calves have so far been immunized in Zambia and 3 000 in Malawi against East Coast Fever.

3.0 REVIEW OF THE PROGRAMME

- 3.1 The programme has a total of 15 projects, valued at US\$102.67 million of which US\$56.22 million is foreign costs and US\$46.45 million is local costs. One project, the Animal Disease Reference Laboratory in Harare has been completed and is operational. Of the 15 projects 6 are operational either in their first or second phases, 6 are still seeking financial support, while negotiations for funding for the other 2 are at an advanced stage.

There has been no new projects added to the programme for the year under review.

- 3.2 The evaluation of the Regional Tsetse and Trypanosomiasis Control Project was completed, and member states concurred with the evaluation report recommendation that the preparatory phase of this project be extended for a further three years. A special meeting between the Project Steering Committee and the EEC was held earlier in the year to discuss the regional and national project proposals for the extended phase of the project. Funding is sought for the project which will cost ECU 6,963, million spread over a three year period.
- 3.3 The SADCC Regional Training Centre for middle level personnel for the control of Tsetse and African Trypanosomiasis in Zambia has been closed since December 1990. It has not been possible to proceed without interruption from the first phase to the second phase of the project due to lack of financial support. It is expected that cost sharing agreements will be entered into between the UNDP, the Netherlands Government and NORAD in time to open the centre before the end of this year. SADCC will convene a meeting of member States to discuss the long-term funding of the centre during the first year of phase two.
- 3.4 The SADCC Regional Training Centre for Meat Inspection and Meat Technology held a refresher course in Meat Inspection for Veterinarians in November 1990, which was attended by 21 participants from 16 African countries.
- 3.5 This was followed by a course on slaughter floor operations attended by 18 participants from 15 African countries. The last activity held at the centre under phase 1 of the project was a seminar on the Establishment of National Projects in Meat Inspection and Slaughter floor operations on 22-26th April 1991, which was attended by 27 participants from 16 African countries. The second phase of the project is to commence later this year.
- 3.6 The second phase of the Foot and Mouth Disease control project has not yet started. A review report has been presented to both SADCC and EEC by the consultants. The EEC, who are the prospective donors to the project, have rejected the report while the Technical committee of the sector have accepted it with some observations. Discussions are going on to see if the consultants can be asked to revise the report, to take into account all concerns raised by the parties to the project.

- 3.7 The project "Regional Artificial Insemination Service" has received pledges of financing from FINNIDA. A joint SADCC/FINNIDA mission has already visited member countries and produced a draft project proposal. The project proposal has been sent to member States for comments. The project on the Training of Laboratory Technicians for the maintenance and repair of equipment has received pledges from the Swiss Development Corporation. The Sector's comments on the final project document have been communicated to them and their response is awaited.
- 3.8 A summary of the funding status of all projects is contained in the summary tables.

3.9 Other Activities

3.9.1 **Manpower Needs Assessment Study**

- 3.9.2 The main objective of the study is to identify the training needs of the Livestock Production and Animal Disease Control Sector, as well as to assess the training capacities of institutions in the region in relation to the manpower development needs of the Sector, and identify institutions which will be used for implementing regional programmes.

The Sector Coordinator, with the assistance of the Regional Training Council in Swaziland, is seeking financial assistance for the project.

4.0 **CURRENT STATUS OF PROJECTS**

4.1 **AAA.2.3 - Regional East Coast Fever and Heartwater Vaccines Production and Immunization**

This project involves Malawi, Mozambique, Tanzania, Zambia and Zimbabwe. The main objective of the project is to create a self supporting regional centre for the production of East Coast Fever Vaccine and Heartwater Vaccine by biotechnology, to eliminate these major diseases which are an obstacle to the improvement of dairy and beef production and enhance the living standards of farmers, especially smallholder farmers in the region. The project is estimated to cost US\$8.4 million over a period of 5 years.

The East Coast Fever Vaccine Production component aims in the short term, at applying and evaluating the ECF immunization technique under field conditions in the respective member states, at an expanding scale, with regard to economy, safety and applicability.

The construction of the tick-borne disease vaccine production laboratories in Malawi has been completed. One hundred thousand doses of the various ECF vaccine components have been produced so far. The vaccine has been used extensively in Malawi and the Southern Province of Zambia where 3,000 and 45 000 herd of cattle respectively have been immunized.

Improvements in the efficacy and delivery of the vaccine to the field through the application of the concept of ID50 (Infective dose of 50% of the animals) and pooling of vaccine components in the laboratory prior to distribution, continue to be made. The quality of the vaccine produced is further being improved through the introduction and application of sterile techniques to the production process.

The heartwater vaccine component which is funded by the United States is located in Zimbabwe. The main aim is to develop diagnostic tests as well as a vaccine for heartwater. It also aims at studying the epidemiology of the tick-vector as well as train SADCC nationals in aspects of antigen production and diagnoses of heartwater employing newly developed diagnostic tools.

The project has isolated and developed DNA clones now being used as diagnostic probes. They are now in the process of developing a colorimetric fluorescent antibody test. The use of synthetic pheromone has already allowed extensive study of the vector.

A dominant protein of Cowdria Ruminantium has been identified and is a possible vaccine candidate.

Courses on advanced tissue culture are to be held from August 5th to September 14th 1991 and October 7th to November 15th 1991 for candidates from SADCC and other African countries. Four SADCC nationals have been sent for post graduate training in order to have qualified regional staff at the centre.

4.2 Project AAA.2.5 Training in Animal Health Auxiliary Personnel in the Diagnosis of Animal Diseases

The objective of this project is to strengthen SADCC Veterinary Manpower capacity by upgrading the knowledge of auxiliary personnel who are in the forefront in the fight against animal diseases, by holding short course of 6-7 weeks in SADCC member states, on a rotating basis.

The third course took place in Arusha, Tanzania from 3rd July to 19th August, 1989. There were a total of 16 participants, 3 from Botswana, 2 from Lesotho, 2 from Malawi, 2 from Zimbabwe.

The fourth course is due to be held at the Veterinary Training Institute in Mazowe, Zimbabwe from 26th September to 25th November 1991.

Two candidates from each of the SADCC member states have already been identified to attend the course. Support for these courses continues to be provided by Sweden.

4.3 Project AAA.2.7 Study of the Production and Distribution of Pasture Seeds and Legumes to Smallholder Dairy Farmers in the SADCC Region

This project aims at identifying constraints which have stagnated the production of pasture seeds and legumes, and their distribution to the target group. The study will also recommend action measures to be taken, both in the short and long term, to alleviate the current difficulties experienced by member states in sourcing pasture seeds and legumes. The estimated cost of the project is US\$180,000. Funding is being sought.

4.4 Project ANG.2.1 Veterinary Assistance to South West Angola

The objective of this project is to rehabilitate veterinary infrastructure in the Provinces of Huila, Curoene, Namibe and Banguela in order to facilitate easy handling of cattle during animal disease control campaigns. In this way, income earnings of smallholders will be increased, as more animals would survive, and the spread of diseases to neighbouring countries also minimised.

Financial support has been secured from UNDP/FAO US\$0.446 million, and the Spanish Government US\$1.8 million. Still required is US\$0.15 million. Cattle continue to receive veterinary services in the 6 cattle dips and 26 cattle crushes which have been rehabilitated.

4.5 Project ANG.2.2 Assistance for the Establishment and Organization of the National Laboratory in Luanda - Angola

This project aims at expanding, equipping and reorganising the existing laboratory so as to enable the government to accurately diagnose, treat and apply appropriate control measures against contagious and parasitic diseases. It also has the objective of strengthening zoo-sanitary measures to avoid contamination of human food by animal products and by-products.

The project is expected to cost US\$2.4 million in foreign exchange and US\$2.8 million in local costs over a period of six and a half years. Funding is being sought.

4.6 Project BOT.2.2 Regional Foot and Mouth Disease Control - Phase 2.

The objectives of the project are to control FMD in Botswana, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe, and also to study the epidemiology of the disease in both wildlife and cattle, as well as train technical field staff.

The total cost of the project is estimated at US\$34.0 million of which US\$15.7 million is foreign cost and US\$18.30 million is local costs. Before phase 2 could commence, an EEC funded consultancy was engaged to consider the capacities of the livestock departments of the SADCC member states to control animal diseases with special regard to Foot and Mouth Disease.

The consultancy report has been presented and discussed by the Livestock technical committee, who have accepted it in principle pending some improvements to be done on the report by the consultants.

Although the report was found to be unsatisfactory, it is, however, hoped that parties to the project will consult on the recommendations and findings of the study.

4.7 Project BOT.2.3 SADCC Regional Training Centre for Meat Inspection and Meat Technology - Phase 2

The objective of this project is to train middle level technicians in meat inspection and meat technology, so as to alleviate the shortages of cadre in member states. Phase 1 of the project, supported by DANIDA, ended in December 1989, but due to savings was extended to December 1990.

Phase II of this project will continue to offer courses in meat inspection and technology, short courses specific to individual member states and the following new activities:-

- a) training in hides and skins improvement;
- b) training in microbiology and veterinary public health;
- c) assisting in the setting up/strengthening of national institutions; and

- d) facilitating post-graduate fellowship in veterinary public health in preparation for take over of the centre by SADCC.

The project cost is estimated at US\$4.8 million over 5 years. Signing of the project document is expected sometime this year between SADCC and DANIDA.

A refresher course in Meat Inspection for Veterinarians held in November 1990 was attended by 21 participants, 1 each from Gambia, Ghana, Kenya, Lesotho, Mali, Mozambique, Nigeria, Sierra Leone, Sudan, Tanzania, Cameroon and 2 each from Angola, Chad, Ethiopia, Uganda and Zambia. The centre hosted a seminar on the establishment of National Projects in Meat Inspection and slaughter floor operations from 22nd to 26th April 1991. The seminar was attended by 27 participants from 16 countries.

4.8 Project BOT.2.4 Dairy Heifer Multiplication Units

The project aims at increasing the supply of dairy cross-bred heifers to smallholder farmers, in order to enhance national self sufficiency in milk and milk products.

It will also improve the living standards of the population, especially women and children, by making animal protein readily available to them. The project involves the strengthening of national dairy heifer multiplication units, training of farmers in range management of dairy cattle and the establishment of marketing channels. This project which will be co-ordinated by Botswana will initially involve Botswana, Mozambique, Tanzania and Zimbabwe. The Project is estimated to cost US\$ 1.55 million. Funding is being sought.

4.9 Project TAN.2.1 Regional Training Centre in Range and Ranch Management

The objective of this project is to alleviate the shortage of experienced technicians in range and ranch management.

In the short term, the project seeks to expand the existing Institute at Morogoro, Tanzania, in order to train more middle level technicians from the region. The project cost is estimated at US\$2.8 million over a five year period. Of this sum US\$2.4 million represents foreign cost and the balance local cost. Funding for the project is being sought.

4.10 Project ZAM.2.1 SADCC Regional Training Centre for Middle Level Personnel for the Control of Tsetse and African Trypanosomiasis.

The Objective of the project is to train personnel from SADCC countries in the skills of Tsetse fly and trypanosomiasis control so as to increase the number of personnel who are capable of managing and implementing control activities.

The first phase officially ended in February 1990 but was continued on three month extension intervals with funds from UNDP. When these funds ran out in December 1990, the centre had to close pending the availability of funds for the second phase of the project. The second phase is to cost US\$3.03 million over two years. The project document has already been sent to Zambia as the host to sign with the hope of getting the centre operating before the end of the year.

An evaluation of the project to look at all pertinent issues that may affect the project's sustainability is planned for during the first year of the second phase.

Before closure in December 1990 a six and half months course for 22 students from SADCC and other African Countries was held at the centre. One month country specific courses were also held for Tanzania and Zambia.

4.11 Project ZIM.2.1 Animal Disease Reference Laboratory

The main objective of the project are to diagnose animal diseases, and to provide a regional reference centre for zoonotic and other diseases in the region.

The construction of the Reference Laboratory has been completed, and the laboratory is fully operational. It is, however, desirable to look into how the reference laboratory can serve member states more than the present level.

No decision has been taken on the mission to member States to discuss the utilisation of the Laboratory.

4.12 Project ZIM.2.2 Regional Tsetse and Trypanosomiasis Control

The objective of the project is to eradicate Tsetse fly in the Zambezi Valley by aerial spraying, use of traps, baits and targets. This project involves Malawi, Mozambique, Zambia and Zimbabwe.

An evaluation mission has recommended that the preparatory phase of this project be extended for a further three years.

The prime objective during the extension period will be to develop a comprehensive strategic plan for an integrated strategy for the eradication of Tsetse - transmitted trypanosomiasis from the common fly belt, as well as to complete the work started in the first three years.

A special meeting of the Project Steering Committee was held in Harare in April 1991 to consider regional and national proposals for the three year extension. The cost of the project is ECU 6,963,300.00 (US\$9.94 million) over three years and it will be funded by the EEC.

4.13 Project ZIM.2.3 Training For The Maintenance and Repair of Scientific and Technical Equipment in Veterinary Laboratories

The objective of the project is to train technicians in the maintenance and repair of laboratory equipment.

It will also endeavour to rehabilitate the laboratories where necessary. It is estimated to cost US\$1.18 million for a period of 5 years, and 145 SADCC nationals are expected to be trained during this period.

The final project document resulting from the SWISS/SADCC fact finding mission has been studied by member states. Comments from member states have been sent to the Swiss Development Corporation who will hopefully provide funding.

4.14 Project ZIM.2.4 Support for Establishment of a Regional Artificial Insemination Centre and Rehabilitation of the National Artificial Insemination Services

The project aims at establishing a Regional Artificial Insemination Centre in Zimbabwe, for the production and distribution of semen to member states, to reduce dependence on outside suppliers. The programme includes the rehabilitation of national artificial insemination schemes, so as to enable them to utilise efficiently the semen produced at the Regional Centre. Training of middle-level technicians will also be undertaken by the Regional Centre, at the rate of about 20 trainees per year.

In the long run, this project will improve the productivity of the region's dairy and beef herds, improve nutritional standards of the smallholder community, and increase their income; as well as save foreign exchange being spent on current importation of dairy products.

A joint FINNIDA/SADCC fact-finding mission visited all the participating countries in April, 1991 except Mozambique. Mozambique was not visited due to time constraints, and will be visited by an appraisal mission before the final report is produced. A draft report has been studied by member states and their comments have been communicated to FINNIDA. The Project is estimated to cost US\$6.9 million over a period of five years.

4.15 Project ZIM.2.6 Support for Co-operative Production of Small Stock

The objective of the project is to improve the standard of living of small holder farmers.

This project involves Botswana, Zambia and Zimbabwe, and will be coordinated by Zimbabwe.

In Botswana, it will involve the establishment of pig production units in two districts Kgatleng and Bamalete/Tlokweng, as well as a pig processing complex for the manufacture of various pig products.

In Zambia, seven sheep and goat multiplication centres will be established in the Southern Province (2), Eastern Province (2), Lusaka Province (1), and Luapula Province (2).

The Centres will produce cross-breed sheep and goats which will be distributed to individuals and co-operatives in the rural areas.

In Zimbabwe, both pig production units and goat breeding centres will be established on a co-operative basis.

In all countries, training of individual farmers and co-operative members on modern small stock husbandry will be an important component of the project. The project is estimated to cost 1.83 million US Dollars. Funding is being sought.

Descriptions

Project Descriptions

- v) to field-test the heartwater vaccine in a wider context in other SADCC countries; and
- vi) to train veterinarians, other scientists and technologists in heartwater research and control.

DESCRIPTION:

Based on the results of the work which has been done in Malawi and Zimbabwe, and the successful of the immunisation technique to the field conditions in Malawi and Zambia, the work should now go into extended field immunization trials in the most affected countries within the SADCC region. This would be achieved by:

- i) assuring a continuing production of quality controlled stabilates for the immunizing cocktail, and heartwater vaccine to be provided to all countries of the region, as required;
- ii) the Lilongwe laboratory in Malawi, acting as reference centre for advice and back-stopping in the monitoring of ECF- immunized animals in the region;
- iii) the Lilongwe laboratory acting as a coordinating centre for the regional needs of the immunisation of cattle against ECF, babesiosis, anaplasmosis and heartwater;
- iv) continuing to improve the infection and treatment method of immunization against ECF, as regards standardization of the infectivity and efficacy of new drugs and formulation when available, best age of immunization, methods available production, storage, distribution to member States and ways of preventing contamination by pathogenic micro-organism, and;
- v) assisting in the training of SADCC nationals in the field of immunization against ECF and heartwater and monitoring immunised animals.

Training of SADCC nationals at post-graduate levels within or outside the region will also take place.

STATUS : The construction of the tick-borne disease vaccine production laboratories in Malawi has been completed and are ready for occupation. The Netherlands Government funding ends in December 1991. Discussions are underway with the UNDP Regarding the funding of the project from January 1992.

AAA.2.7 STUDY ON THE PRODUCTION AND DISTRIBUTION OF PASTURE SEEDS AND LEGUMES TO SMALLHOLDER DAIRY FARMERS IN THE SADCC REGION

Estimated Costs

Financing Gap: US\$00.18m

Total : US\$0.18m
Foreign : US\$0.18m
Local : NIL

Executing Agency: SADCC

Funding Secured

Start: 1989

Foreign: NIL
Local : NIL

Duration: 16 months

-
- OBJECTIVES:**
- i. To identify important pasture and legumes in the major agro ecological zones of the SADCC countries;
 - ii. To examine the current demand for high quality certified pasture and legume seeds, in the region;
 - iii. To examine the current seed production capacity of the SADCC countries;
 - iv. To identify the major factors constraining the production and supply of high quality pasture seeds and legume; and
 - v. To recommend short and/or long term measures which will alleviate and solve the present difficulties.

DESCRIPTION: The study will be undertaken in all the nine SADCC countries for a period of about 16 months. It is anticipated that experts from the Region will also be involved actively in the study. On the basis of an analysis and evaluation of data collected in each of the member States, the study will:

- i. provide a description of the current situation in regard to production and supply capacity and availability of improved pasture and legume seeds;
- ii. determine the current and future demand and estimates of supply up till year 2000;
- iii. identify constraints faced by this seed sub-sector; and
- iv. on the basis of the above, make recommendations for improvements to the seed production and supply systems in member States and propose specific projects for the implementation of these recommendations.

STATUS : Funding sought.

ANG.2.1 VETERINARY ASSISTANCE IN THE SOUTH WEST OF ANGOLA

Estimated Costs

Financing Gap: US\$ 0.15m

Total : US\$18.9 m
 Foreign: US\$ 2.4 m
 Local : US\$16.5 m

Executing Agency: Angola

Funding Secured

Start: 1986

Foreign: US\$ 2.25m (UNDP/FAO/SPA)
 Local : US\$ 16.5m (ANG)

Duration: 5 years

OBJECTIVES: The project aims at improving and extending sanitary coverage of livestock in the Provinces of Huila, Cunene, Namibe and Bengwela so as to increase the earnings of small holders livestock farmers. The project also aims at minimising the spread of some disease to neighbouring countries.

PROGRESS : Cattle continue to be handled and dipped in the rehabilitated crushes and dips.

STATUS : Additional funding sought.

ANG.2.2 ASSISTANCE FOR THE ORGANISATION AND ESTABLISHMENT OF
THE NATIONAL LABORATORY - ANGOLA

Estimated Costs

Financing Gap: US\$2.4m

Total : US\$5.2 million
Foreign: US\$2.4 million
Local : US\$2.8 million

Executing Agency:

Funding Secured:

Start:

Foreign: NIL
Local : US\$2.8 million

Duration: Six and half years

OBJECTIVES: Long-Term Objectives

- i. to increase the capacity of the Government to accurately diagnose, treat and apply appropriate control measures against contagious and parasitic animal diseases;
- ii. to facilitate the development of commercial farming in Angola;
- iii. to check/stop possible inter-territorial dissemination of diseases to neighbouring countries;
- iv. to attain self-sufficiency in animal protein;

Short-term objectives

- i. expansion of the National Veterinary Laboratory in Luanda;
- ii. to equip the newly constructed laboratory with functional equipment;
- iii. to reorganise the laboratory into different functional sections;
- iv. to train suitable staff for the different laboratory sections; and
- v. to reinforce research and surveillance programme on field animal diseases.

DESCRIPTION: The project has a duration of six and half years, and will be implemented in phases.

Phase I: This will take two and half years and involves preliminary and detailed planning of the buildings and then construction of the buildings. It will cost US\$3.73million.

Phase II: This will take one year, costing a total of US\$0.56m. The main activity will be procurement of equipment and appointing a laboratory Director and Technicians.

Phase III: This final phase will take 3 years and this is when organisation will take place. It will involve setting up scientific departments, standardization of technical works and training of staff.

STATUS : Funding is being sought.

BOT.2.2 REGIONAL FOOT AND MOUTH DISEASE CONTROL - PHASE II

Estimated Costs:

Financing Gap:US\$15.7m

Total : US\$34.00 million

Foreign: US\$15.70 million

Executing Agency:

SADCC member States

Funding Secured:

Start: 1990

Foreign: NIL

Local : US\$18.30 million (SADCC) Duration: 4 years

OBJECTIVES: Long-Term

The programme is aimed at eliminating Foot and Mouth Disease from the cattle-producing areas of Botswana, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe and conduct studies into the epidemiology of the disease in the Region. The programme will also enhance/facilitate intra-SADCC trade in livestock and livestock products as well as exchange of region's livestock genetic material for the improvement of our livestock

Short-Term

- i. To vaccinate over 2.9 million head of cattle every year in border areas of these countries in order to eliminate the possibility of dissemination of the disease;
- ii. To rehabilitate and erect new cordon fences in Swaziland, Botswana and Zimbabwe;
- iii. To rehabilitate such infrastructure as dip tanks, crushes and water supply to facilitate inspection and vaccination;
- iv. To equip FMD diagnostic unit at the Central Veterinary Laboratory in Tanzania;
- v. To expand Botswana Vaccine Institute to cope with its expanded mandate;
- vi. To conduct studies into the epidemiology of the disease both in the wildlife and livestock populations; and
- vii. To train technicians and professionals in the diagnosis and handling of Foot and Mouth Disease cases.

DESCRIPTION:

Botswana intends to continue vaccinating against FMD till the whole country is free of the disease. It is expected that 600,000 head of cattle would be vaccinated during the first two or three years, this number decreasing to 250,000 when only one area is to be vaccinated. Botswana also intends to erect a doublefence along its border with Zimbabwe as she is experiencing uncontrollable livestock movements along this border. Further, in order to avoid contact between wildlife cattle in the central parks of the country, fences will be created. The Botswana Vaccine Institute will be expanded by providing extra building space, laboratory equipment and training facilities. The Institute will also be involved in the epidemiological studies to be conducted in the region.

In Malawi, vaccination of cattle will take place in the Shire Valley, and Karonga and Chitipa Districts in the North, involving a total of 210,000 head of cattle. Apart from vaccination, constant patrol of the border areas will be mounted to prevent illegal movement of livestock.

Reinforcement of the reporting network will be emphasized such that suspected outbreaks on the other side of border could be known in good time. Provision will, therefore, be made to establish staff housing, while store and field laboratory will be built in the operational area.

The operational areas in Mozambique will include Zambezia, Manica and Sofala Provinces, along the Beira Corridor; and in Maputo and Gaza Provinces. About 250,000 animals will be vaccinated annually. Reliable transport facilities will be provided as well as undertaking the training of local staff in the monitoring and handling of FMD cases. Field and Laboratory equipment will be purchased while rehabilitation of livestock infrastructure necessary for vaccination, and water supply points, will be undertaken. Epidemiological and serological studies in both domestic and wild animals will be conducted to determine the extent and the endemicity of the disease in the country.

In Swaziland, the project will involve the vaccination of over 100,000 animals annually inside the buffer zone situated along the Mozambique border. Also, the cordon fence and some areas of the redline will be rehabilitated, especially No.1 fence which was completely devastated by cyclone "Domina" in 1984. In order to facilitate smooth vaccination activities, livestock handling facilities e.g. dip tanks, crushes within the buffer zone will be rehabilitated as well.

The programme in Tanzania would assume several activities. The FMD diagnostic unit at the Central Veterinary Laboratory will be equipped fully to enable it to quickly and accurately provide an immediate diagnosis to allow prompt action to be taken while confirmation from the Regional Reference Laboratory (BVI) is being awaited. Adequate transport facilities will be provided to the field staff while refresher courses will be carried out. Epidemiological studies to determine the relative endemicity of the disease in Arusha, Kilimanjaro, Iringa Mbeya, Tanga and Dar es Salaam Regions will be undertaken. Approximately 300,000 head of cattle from these same areas will be vaccinated against the disease. It will involve mainly dairy and ranch beef cattle. The Kafue Plains will be the area of activities in Zambia.

Over 800,000 head of cattle are expected to be vaccinated every two years in order to create an immune population. Epidemiological and serological studies involving both livestock and wild game will be conducted to determine the immunological status of these species as the disease is suspected to be in the game parks. To achieve this, vaccination equipment, cold chain, vehicles as well as camping equipment will be purchased.

Zimbabwe would continue on the same lines as was the previous FMD control programme. Vaccination of about 0.65 million head of cattle will be conducted using vaccine from Botswana Vaccine Institute. Studies on the disease will be continued on an island in Kariba. Game and cattle fences will be erected in the north of the country in areas where tsetse fly is to be eradicated. To support the project, vehicles, vaccination and fencing equipment and materials will be purchased.

STATUS : Although the consultants' report has shortcomings which need improvement, both the EEC and member States will continue to consult on the findings of the study.

BOT.2.3. SADCC REGIONAL TRAINING CENTRE FOR MEAT INSPECTION AND MEAT TECHNOLOGY - PHASE II

Estimated Costs

Financial Gap: US\$37m

Total : US\$4.80 million
Foreign: US\$3.37 million
Local : US\$1.43 million

Executing Agency: FAO

Funding Secured

Start:

Foreign: US\$3.37 million (DEN)
Local : US\$1.43 million (BOT)

Duration: 5 years

OBJECTIVES: Phase II will continue to offer short courses in Meat Inspection and technology to member States. The objective is to increase the availability of hygienic meat and animal by-products and reduce waste by improving slaughter and meat handling techniques.

It also aims at assuring that member States are self-sufficient with regards to the training of meat inspectors and slaughter and meat handling personnel.

The project will in addition offer

- a) training in hides and skins improvements
- b) training in microbiology and veterinary public health
- c) assistance in the setting up/strengthening of national institutions, and
- d) facilitation in post graduate fellowship for take over of the centre by SADCC.

PROGRESS : A refresher course in Meat Inspection for Veterinarians was held in November 1990 and attended by 21 participants. In April 1991, a seminar on the establishment of National Projects in Meat Inspection and slaughterfloor operation which was attended by 27 participants from 16 African Countries was held at the centre.

STATUS : Additional funding is being sought.

BOT.2.4 STRENGTHENING OF DAIRY HEIFER MULTIPLICATION UNITS

Estimated Costs

Total : US\$1.55m
Foreign: US\$1.10m
Local : US0.45m

Financing Gap: US\$1.10 m

Executing Agency:

Botswana Veterinary Services

Funding Secured

Foreign: NIL
Local : US\$0.45million
(BOT, MOZ, TAN, ZIM)

Start:

Duration: 5 years

OBJECTIVES: Short-Term Objectives:

- i) to increase the supply of dairy cross-bred heifers available to smallholders;
- ii) to enable smallholder farmers acquire dairy heifers at affordable prices; and
- iii) to afford demonstration of appropriate methods of dairy farm management at the multiplication units.

Long-Term Objectives:

- i) to attain self-sufficiency in milk and milk products;
- ii) to improve the living standard of smallholder farmers, especially of children and women, by making animal protein readily available to them;

DESCRIPTION: In Botswana, the existing unit will be expanded to a capacity of about 100 simmental heifers. These will be bred to Tswana bulls to eventual offspring of 3/4 simmental heifers. Artificial insemination will also be used when necessary. Identified smallholders with reasonable management will be given the first opportunity to purchase the improved heifers. Some 20 hectares of the breeding ranch will be set aside for rainfed fodder production. Doliclos lab as well as Cinchros ciliaris and seratro will be grown and fed during the dry season. Training will be an essential part of the project; extension workers as well as the farmers will be exposed to dairy management practices.

In Zimbabwe, the first project site will be at Domboosha Training Centre Farm. The present breeding herd consists of approximately 150 females, about 2/3 are of the Mashona breed and the rest are of the Nkone breed. The heifers will put to Friesian bulls to generate F1 crosses some of which will be sold to prospective smallholder farmers. It is also planned to improve the grazing on about 200 hectares by using Katambora Rhodes grass and the pasture-legumes Siratro and Stylo. The pasture development programme will be phased out over a four year period, establishing pasture and reinforcing veld at the rate of 50 hectare per year. Demonstration and training will be part and parcel of this project. This will include the conservation of forage for dry season feeding as well as milking techniques.

In Mozambique, two farms will be selected to be the breeding units. Each will have about 200 indigenous cows with 10 Friesian bulls to produce F1 cross-breeds. Artificial insemination may also be used. Males will be reared in the farm up to about 2.5 years and then sold as draught animals. Females will be crossed with Friesian bulls and after positive pregnancy at three months, they

will sold to smallholder farmers. Also, all the farmers involved in this project will follow a 15-day training course on nutrition, milking, and milk conservation and processing.

STATUS : Funding sought.

TAN.2.1 REGIONAL TRAINING CENTRE IN RANGE AND RANCH MANAGEMENT

Estimated Costs

Financing Gap: US\$2.4m

Total : US\$2.8 m
Foreign: US\$2.4 m
Local : US\$0.4 m

Executing Agency:

Funding Secured

Start:

Foreign: NIL
Local : US\$0.4 m

Duration: 5 years.

-
- OBJECTIVES:**
- (a) The long-term objectives are:
 - i. to alleviate the shortage of technicians currently experienced in the region;
 - ii. to attain the required levels of skills for range resource management and utilization; and
 - iii. to disseminate the knowledge thereof acquired to rural population.
 - (b) The short-term objectives:
 - i. to extend the existing Institute at Morogoro terms of buildings, manpower and other logistics in order to accommodate its expanded mandate; and
 - ii. to train more middle-level technicians from SADCC countries.

DESCRIPTION: Following the persistent drought in a number of SADCC countries, the grazing potential/capacity of the rangelands has been drastically reduced both in commercial ranches and communal areas. This has been exacerbated by the fact that the lot of the peasants have low knowledge on rangeland management.

There is considerable evidence to suggest that the productivity of the range is declining and will continue to do so for a considerable length of time. Even if the drought is finally broken it will take years of careful use of the range to bring back the grazing to its normal capacity. This calls for an increase of knowledgeable staff, especially those at the middle level, in Range and Ranch management to the extension services. The centre would therefore conduct courses for in-service personnel in this discipline from both the public and private sector.

The course would involve both theory and field practicals to acquaint the students with the real situation. Field trips to a number of SADCC countries will also be undertaken. In order to accommodate extra students and staff, the existing centre will be expanded by building new staff houses and dormitories, renovation of all buildings, by purchasing of extra kitchenware, field gear and by expanding the library.

STATUS : Funding is being sought.

ZIM.2.3 TRAINING OF LABORATORY TECHNICIANS FOR THE MAINTENANCE AND REPAIR OF SCIENTIFIC AND TECHNICAL EQUIPMENT IN VETERINARY LABORATORIES

Estimated Costs

Financing Gap: US\$1,18m

Total : US\$1,18m

Foreign: US\$1,18m

Local : NIL

Executing Agency:

Funding Secured:

Foreign: NIL

Local : NIL

Start: 1990

Duration: 5 years

-
- OBJECTIVES:**
- i. To train technicians in the field of mechanics and electronics to be assigned to national laboratories;
 - ii. To organize and develop maintenance and repair workshop for training at SADCC Animal Disease Reference Laboratory in Harare, Zimbabwe;

iii. To establish and organise store for maintenance material, tools and spare parts for the equipment utilized by the Veterinary Laboratories in the SADCC member States; and

iv. Assist in the procurement of new equipment when necessary.

DESCRIPTION: A central training and repair workshop will be established in Harare, Zimbabwe where appropriate national staff from SADCC countries will receive a thorough training in repair and maintenance of freeze-drying and low temperature equipment, electronic equipment; ordering and storage of spare parts and establishment of national repair shops. Two experts, mechanical and electronic engineers or technicians, will be attached to the centre. The experts will regularly visit the laboratories in the region, checking existing equipment, assisting with the installation of new equipment ordered and advise on the planning and establishment of suitable work shops.

STATUS : A fact finding mission comprising Swiss and SADCC nationals visited member States in March 1990. Comments on the final report have been sent to the Swiss Development Corporation who are expected to provide funding.

ZIM.2.4 ARTIFICIAL INSEMINATION SERVICES

<u>Estimated Costs</u>	<u>Financing Gap:</u> US\$3.4m
Total : US\$6.9m	
Foreign: US\$3.4m	<u>Executing Agency:</u> SADCC
Local : US\$3.5m	
<u>Funding Secured</u>	<u>Start:</u> 1989
Foreign: NIL	
Local : US\$3.5 Million (SADCC)	<u>Duration:</u> 5 years

OBJECTIVES i. To establish a Regional Artificial Insemination Centre for the production and distribution of semen to SADCC member States;

- ii. To rehabilitate/consolidate SADCC member States national A.I. Schemes;
- iii. To improve the productivity of existing dairy and beef cattle through rapid genetic improvement, thereby
 - (a) improving the nutritional standards among the smallholder farming community and also increase supply of commercial milk;
 - (b) increase the income and thus the level of living of, particularly, the small scale farmer; and
 - (c) reduce foreign exchange expenditure for import of livestock products and consequently contribute substantially to the overall economy of the SADCC countries.
- iv. To combat/control reproductive diseases.

DESCRIPTION:

The Regional Artificial Insemination Centre will be established in Harare, Zimbabwe, and will be run in collaboration between SADCC and Animal Breeders Company Ltd of Harare. In order for the Centre to meet the demands of SADCC, the quarantine area will be expanded so as to accommodate more bulls, the laboratory facilities will have to be increased, while initially some extra genetic material will have to be imported to ensure that bulls to be used at the centre are of high quality. While the current school facility is adequate, additional training aids, e.g. video and T.V. monitors, will be required to upgrade the course.

In the participating countries - i.e. Botswana, Mozambique, Swaziland, Tanzania and Zimbabwe, the national artificial insemination schemes will be rehabilitated by provision of transport facilities, re-building of infrastructure, supply of laboratory and field equipment and training of staff.

STATUS

: A joint FINNIDA/SADCC fact finding mission visited five member States in April. A draft report from the mission has been studied and commented on by member States. A final report is now expected from FINNIDA.

ZIM.2.6 **SUPPORT FOR COOPERATIVE PRODUCTION OF
SMALL STOCK.**

Estimated Costs

Total :US\$1.83million
Foreign:US\$1.21million
Local :US\$0.62million

Financing Gap US\$1.21m

Executing Agency: SADCC

Funding Secured

Foreign: NIL
Local :US\$0.62million
(BOT,ZAMB,ZW)

Start: 1990

Duration: 5 years

OBJECTIVES: The long-term objectives are:

- i) to increase the size and meat potential of local sheep goats and pigs by suitable cross-breeding to a degree which can be sustainable in the local ecological conditions;
- ii) to improve the standard of traditional animal husbandry management practices;
- iii) to improve the standard of living of the rural population;

The short-term objectives are:

- i) to establish small stock (sheep,goats and pigs) cross-breeding units for smallholder farmers;
- ii) to assist in the setting of smallstock raising units in a cooperative or individual basis; and
- iii) to establish marketing systems for livestock and their products from the farmers.

DESCRIPTION: In Botswana, the project seeks funds to establish a pig processing complex consisting of a chilled room, processing facilities, a retail outlet and an office. It will also need transport for the collection and distribution of pig products to individuals and butchers. The whole complex will be managed by pig production management association, with some advice from the

Ministry of Agriculture. The funds will be managed by the Association which will arrange for the purchase of materials and their delivery, equipment and other items necessary for the smooth operation of the project.

In Zambia, seven sheep and goats multiplication centres will initially, be established in Southern Province (2), Eastern Province (2), Luapula (2) and Lusaka Province (1). Offspring from these centres will be distributed to smallholders after these farmers have been given some training in the management of the stock. The establishment of the centres will be preceded by a comprehensive survey on goat and sheep development constraints in the rural areas.

In Zimbabwe, interested groups will be organized to embark on the project. For the goat production component, 100 indigenous does will be run with three selected billies. Progeny will be sold at 18 months to butchers. The project entails the purchase of 100 breeding does, equipment, drugs and other essentials during the first 18 months. Revenue realised from the sale of progeny will be used to pay for medication and other inputs in subsequent years. Kidding will be once per year and animals will be herded with no supplementary feeding. Members of the cooperative will provide labour. As for the pig component, there will be building of pig pens, purchase of equipment and breeding stock, purchase of medicine and feeds for the year of operation. In subsequent years, the cooperatives are expected to pay for all the variable inputs from profits generated in the first year. Labour will be provided by the members of the cooperatives.

Training of producers in the management of small stock will feature in the project as a way of overcoming management problems. And to train the producers effectively, there is a need to train trainers in various aspects of small stock management. Therefore, those cooperatives or groups of people intending or already are in production will have some of their members trained in small stock management.

STATUS : Funding is being sought.

Funding

Funding Status of Projects

9/11

Project	Project Title	Estimated Cost US\$ Million		Funding Secured & Source US\$ Million		Funding under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foreign	Local				
LIVESTOCK PRODUCTION AND ANIMAL DISEASE CONTROL								
AAA.2.3	Regional ECF & Heartwater Vaccine Production and Immunisation.	12.25	9.80	2.45	2.45 (SADCC) 1.30 (NET) 4.00 (USA)	4.50 (UNDP)	-	Under implementation.
AAA.2.5	Training of Animal Health Auxilliary Personnel Region	0.11	0.11	-	0.11 (SWE)	-	-	A fourth course in Zimbabwe took place in September, 1991.
AAA.2.7	Production and Distribution of Pasture Seeds and Legumes - Study	0.18	0.18	-	-	-	0.18	Funding sought
ANG.2.1	Veterinary Assistance to South West Angola	18.90	2.40	16.50	2.25 (UNDP/FAO/SPA) 16.50 (ANG)	-	0.15	Under implementation
ANG.2.2	Assistance for the Establishment and Organization of the National Laboratory Angola	5.20	2.40	2.80	2.80 (ANG)	-	2.40	Funding sought
BOT.2.2	Regional Foot and Mouth Disease Control Phase II	34.00	15.70	18.30	18.30 (SADCC)	-	15.70	Funding sought
BOT.2.3	Regional Training Centre for Meat Inspection and Meat Technology - Phase II	4.80	3.37	1.43	1.43 (BOT)	-	3.37	Funding sought for phase II
BOT.2.4	Strengthening of Dairy Heifer Multipli- cation Units	1.55	1.10	0.45	0.45 (SADCC)	-	1.10	Funding sought
TAN.2.1	Regional Training Centre in Range & Ranch Management - Tanzania	2.80	2.40	0.40	0.40 (TAN)	-	2.40	Funding sought.
ZAM.2.1	Regional Tsetse & Trypanosomiasis Training Centre - Zambia	3.03	3.03	-	3.03 (CAN, NOR, UNDP, ZAM)	-	-	Completed December 1990. Extension recommended for 2 years
ZIM.2.1	Animal Disease Reference Laboratory	-	-	-	-	-	-	Project completed and the facility available to all member States
ZIM.2.2	Regional Tsetse and Trypanosomiasis Control	9.94	9.94	-	9.94 (EEC)	-	-	Phase 3 will commence soon.
ZIM.2.3	Training of Laboratory Technicians for the Maintenance of Scientific and Technical Equipment in Veterinary Laboratories	1.18	1.18	-	-	-	1.18	Funding sought

Project	Project Title	Estimated Cost US\$ Million		Local	Funding Secured & Source US\$ Million	Funding under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foreign					
ZIM.2.4	Regional Artificial Insemination Service	6.90	3.40	3.50	3.50 (SADCC)	3.40 (FIV)	-	Draft project document has been produced.
ZIM.2.6	Support for Cooperative Production of Small Stock	1.83	1.21	0.62	0.62 (SADCC)	-	1.21	Funding sought
TOTAL		102.67	56.22	46.45	67.08	7.90	27.69	

Environment and Land Management

C O N T E N T S

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1. EXECUTIVE SUMMARY

- 1.1 The Sector for Environment and Land Management is implementing programmes within the framework of a five-year Phase II Programme of Work, initiated in January 1988, and approved by the Committee of Ministers of Agriculture and Natural Resources in October 1989. Funding for the Programme of Work has been secured from the Swedish International Development Authority (SIDA), for the period July 1991 - June 1992, and amounts to US\$2.99 million. During the 1991 evaluation by SIDA, it was agreed to extend the project to June 1992 while preparing Phase III.
- 1.2 The core activities in the Phase II Programme of Work, consist of 12 (twelve) sub-programmes, essentially Learning and Action Learning Projects, with training components in the form of workshops, seminars, and specific assignments. The Sector's activities during the reporting period have focused on policy-making, erosion hazard mapping, economic appraisal and evaluation of conservation projects, environmental monitoring, people's participation and integrated land use planning.
- 1.3 The production of erosion hazard maps made some progress with the completion of maps for Tanzania and Zambia to film stage. The maps for Malawi, Tanzania and Zambia are currently being printed. The maps for Angola, Botswana and Mozambique are being prepared for printing. A visit is planned to Namibia to initiate training on data collection for the map on Namibia.
- 1.4 Coordination with other Sectors and institutions has been intensified, and the basic activities of the Sector have continued and expanded. These include the newsletter SPLASH, the Report Series, the Documentation Service to member States and the Documentation Centre.
- 1.5 The Sector has thirteen (13) projects costed at US\$53.21 million, of which US\$18.31 million (34.4%) has been secured. ZACPLAN (ZACPRO'S 1 - 8) continues to be the central programme of the Sector.

2. REVIEW OF THE REGIONAL SITUATION

Sustainability - the backbone of development

- 2.1 The SADCC region comprises a variety of natural environments, which are susceptible to different processes of change resulting from:
 - a) population growth, which increases the pressure of cultivation and grazing on increasingly marginal lands;

- b) improper land husbandry, which causes erosion and decreased soil fertility;
 - c) deforestation, which results in shortages of fuelwood, building materials and further soil erosion;
 - d) overstocking and improper range management, which lead to overgrazing and land degradation;
 - e) neglect of soil conservation, which gives rise to high sediment loads in rivers and a rapid siltation in water reservoirs; and
 - f) insufficient institutional, organisational and manpower resources, and inadequate marketing incentives for agriculture-based activities in the rural areas, which limit the possibilities of undertaking widespread conservation measures.
- 2.2 The above are a few of the causes and effects which feature interactively in the complexity of bio-physical, socio-economic and cultural factors affecting land use in the SADCC region. When these various factors reinforce each other, the result is a vicious cycle of land degradation, regressing economies, constrained capacity to undertake remedial measures and accelerated land degradation.
- 2.3 Since the Sector was established in 1985, a comprehensive knowledge about environmental conditions in the SADCC region has enabled the Sector to evaluate the regional situation on land degradation and environmental status, and planning for the future.
- 2.4 Based on past experience, the Sector's programme emphasises sustainability and integrated approaches, in its efforts to support member States in developing improved local management practices.
- 2.5 In order to promote the sustainable management and utilisation of the renewable resources such as land, water and biomass in the SADCC region, the Sector will adopt the following approaches and guidelines in programme and project development and implementation:
- a) Truly sustainable management of the region's natural resources requires coordinated technical activities supported by appropriate population, economic and social policies.
 - b) Sustainable management of renewable resources should primarily be achieved through the revenues obtained from the productive utilisation of the resources under improved management. Sustainable development is thus not in conflict with economic development. Economic development is a precondition for a sustainable development.

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- c) In order to assure equity in the distribution of wealth from renewable resources, and that sufficient means are allocated for their sustainable management and utilisation, direct relationships between those who manage, utilise and benefit from the resources should be established.
- d) Soil erosion and land degradation are major problems confronting agricultural development in the SADCC region. Maintaining and improving the productivity of the soil resources is a prerequisite for a sustainable economic development of the region.
- e) Improving land management practices to achieve a sustainable utilisation of the soil resources requires coordinated efforts at the technical, economic and institutional levels. Government policies should aim at an integrated approach in land management, realising that soil erosion and land degradation are almost always caused by a multitude of interacting factors.
- f) Realising that good farming practices are often the most efficient means to achieve good soil conservation, a conservation farming approach should be adopted as a first consideration. Increased productivity from the land will create the economic means for improved land management.
- g) Experience has shown that mechanical protection works may have an important role in soil conservation, when integrated into existing or improved farming practices. Conservation structures should thus not be seen in isolation, but as one part of the farming system to increase productivity.
- h) Integrating conservation with land productivity requires coordinated inputs from the extension service. Special efforts should thus be made to assure that extension staff are well acquainted with conservation farming principles and techniques. At the same time conservation staff should be mindful of how recommended measures are being adopted to local farming systems.
- i) The responsibility for the sustainable utilisation of soil resources rests essentially with the land user. The role of the Government is mainly to support the land user by offering technical advice, marketing and other incentives, financial means and infrastructural development.
- j) Governments should, by means of creating awareness, enlightenment and research; develop strategies for improved land management, with due consideration to physical environment, existing farming systems and

practices, and institutional requirements, to match people's physical, economic and social needs in a sustainable development context.

These approaches will form the basis for future work within the sector. Given the large variations at member State level, in environmental conditions, existing farming systems and economic management approaches, the Sector's role will mainly be to assist member countries to develop systems that are appropriate and sustainable.

3. REVIEW OF THE PROGRAMME

- 3.1 There are thirteen (13) projects in this Sector, five are at different stage of implementation and one is completed. The rest still need donor funding and negotiations are at different stages.

Project AAA.7.1: Assistance to the Sector Coordinating Unit, which was to end in June 1991 has been extended to June 1992, following the agreement between the Government of Lesotho and SIDA. It has also been agreed that during this extension the Sector should prepare the programme of assistance to Sector Coordinating Units for Phase III.

Project AAA.7.2 has been completed and the study has identified some gaps and weaknesses in the region's hydrological networks, data processing, retrieval systems, and manpower resources especially at technical level. What is more worrying is that governments are not giving as much priority to hydrology as they give to meteorology. However, the sector has established a technical sub-committee of water resources so that this important activity can be given its due recognition.

Project AAA.7.3 (ZACPLAN) has three Category I projects under implementation, i.e. ZACPROS 1, 2 and 5. However, the position of the Liaison Officer has not been filled. Implementation of other projects has progressed well. Implementation of projects BOT.7.1 and AAA.7.5 will start as soon as funding has been secured.

- 3.2 The World Bank has expressed interest in financing a study on the potential of the Southern African Water Resources, following such big projects like the Lesotho Highlands Water Project which has shown that it is feasible to harness the waters of big rivers such as the Orange River, for the benefit of many countries. The water from these dams can be put to different uses like irrigation, hydro-power, etc. At present discussions are underway with the Bank on the Bank's proposal that the study be expanded to include South Africa and Zaire.

4. CURRENT STATUS OF PROJECTS

AAA.7.1 Assistance to the Coordinating Unit - Phase II

The objectives of the project are to provide assistance to the Coordinating Unit to enable it to discharge its regional coordination functions.

In particular, the project has the following objectives:

- (a) to bring about a purposeful sharing of data, information, knowledge and know-how relating to the Phase II Programme of work;
- (b) to bring about a rational sharing of training and other technical facilities among SADC member States;
- (c) to assist in setting up and running joint field programmes where they are necessary and desirable;
- (d) to assist member States in preparing projects.

The project is supported by SIDA (US\$5.8 million) for three years. The support covers material, financial and technical assistance. There are, at the moment, four external experts attached to the Unit in Maseru. It is expected that reliance on external assistance will be gradually reduced as more regional experts are recruited by the Unit.

During the past six years of the operations of the Unit, there has been a considerable change in perception of the meaning of conservation. The Unit has taken an active role to promote this conceptual change, emphasising a land husbandry/ conservation farming approach. The basic idea is to integrate conservation aspects in the farming systems to achieve sustainable production. Experience has shown that this requires adaption to local farming practices. The main task of the Unit now is to work closely with member States in developing such locally adapted land management systems for sustained land use.

The Phase II Programme of Work consists of the following core programme activities:

- Programme 1: Basic Activities
- Programme 2: Completion of Phase I Programme of Work
- Programme 3: Development of Training Facilities in the Region
- Programme 4: Development of Monitoring Systems
- Programme 5: Economics of Conservation
- Programme 6: Strategies for Popular Participation
- Programme 7: Applied Research and Knowledge Development
- Programme 8: Impact of Soil Erosion on Crop Yields
- Programme 9: Water Resources Relating to Soil Conservation

- Programme 10: Legal Context of Conservation
Programme 11: Sustainable Productive Land Management Systems
Programme 12: Popular Participation Fund

Core Programme Activities

Programme 1, Basic Activities:

Three issues of the Sector's newsletter, SPLASH, has been published within the reporting period. Its Portuguese and English editions are sent to a combined total of over 2,000 addresses, in about 75 countries. The Report series published by the Coordination Unit now comprises 27 titles, with more to be published in the near future. Distribution of the Report series has continued to expand. The Coordination Unit's Documentation Service has ordered about 200 books and subscriptions for four member states. Deliveries of previous orders have continued throughout the period. The Documentation Centre is expanding steadily, now containing over 2,000 volumes.

Programme 3, Training:

The Training Officer attended the meeting in Mbabane, October 1990 where the role of Human Resources Development Sector was clarified. In future most training activities for the Sector will be merged into programme 11, Sustainably Productive Land management Systems.

Programme 4, Development of Monitoring Systems:

Consultations with member countries for the development of the SADCC Environmental Monitoring Project, AAA.7.8, have been finalized. Manuals for Environmental Monitoring are under development. Those for Interpretation of Satellite Imagery and Aerial Photography have been finalized, while new ones, e.g. for Water Quality and Sediment Monitoring are under production. Already existing guidelines and manuals are considered. The Water Quality Manual for example, will build upon the one published by UNEP-GEMS.

Programme 5, Economics of Conservation:

Proposals for new Economics of Conservation programmes were prepared and discussed with resource management professionals in a number of SADCC countries. Comments were incorporated into a final draft report and implementation is underway. A fourth workshop on the Economics of Conservation was held in Lilongwe, March 18 - 22, 1991. This workshop concluded that there was a need to focus on training of regional personnel in cost-benefit analysis of conservation projects. A detailed report is available at the Coordinating Unit Office, and all member States, except Angola and Mozambique, attended.

Programme 7, Applied Research and Knowledge Development:

The sharing of experiences between SADCC researchers will cover many fields of research, all important for soil and water conservation. The Annual Research Seminar on soil and water conservation preparatory meeting was held in Botswana in January 1991, and the first seminar to discuss research activities is planned to be held at the University of Botswana in mid-August, 1991 in collaboration with SACCAR.

Programme 8, Impact of Soil Erosion on Crop Yield:

In Botswana, the experiment went through its second year and the SACCAR staff produced an interim report. Preparations for the experiment were completed at the University of Lesotho, instruments and equipment were purchased and the experiment commenced with the onset of the rains, in November 1990. Although instruments were delivered to Mozambique's Eduardo Mondlane University, it is understood that the experiment might not start until the 1991 rainy season. Site preparations were made at the Sokoine University of Agriculture in Morogoro, Tanzania and instruments have been ordered. The experiment should have started during March, 1991 rainy season.

Programme 9, Water Resources Relating to Soil and Water Conservation:

This programme was formulated to address specific small scale water resources issues as they relate to soil conservation (e.g. small dams and irrigation projects, boreholes etc.). It was proposed that some activities under this programme should be implemented in cooperation with SACCAR. No activities have taken place under this programme during the reporting period simply because water resources have been adequately covered under ZACPLAN, Sub-Saharan Hydrological project, Erosion Impact on crop yield etc.

Programme 10, Legal Context of Conservation:

Consultancies on Lesotho and Zimbabwe have been completed and the outcome will be assessed in consultations with the countries studied.

Programme 11, Sustainable Productive Land Management Systems:

The programme has been elaborated to establish and implement an integrated approach to soil and water management in an agricultural, production-oriented context. The programme will include activities drawn from:

1. People's participation
2. Land husbandry and management

3. Economics of conservation
4. Land use planning.

These topics will be merged into one programme consisting basically of training courses and short studies. The strategy will be to work through existing institutions within the region, as well as to build up a cadre of trainers in the different member countries.

Programme 12, Popular Participation Facility:

In order for local communities to develop improved and more sustainable land management practices, the Sector has decided to establish this facility to defray costs associated with the implementation of such activities.

AAA.7.2 Regional Hydrological Assessment Project

The main objective of this project is to evaluate the status of existing hydrological data networks and collection systems, and to make recommendations for the filling of important gaps, up-grading of the quality of data collection and the general enhancement of the ability to measure, retrieve, process and publish hydrological data and information in the SADCC region.

The final draft report has been submitted to member States with proposals for national and regional projects. The sector is formulating project proposals according to guidelines and criteria for project selection.

AAA.7.3 ZACPLAN, Zambezi River System Action Plan

The basic rationale behind ZACPLAN is to ensure that the shared resources of the Zambezi River Basin are utilized in such a manner that they guarantee maximum, long-term advantage to the participating member States. This means that the policies of the riparian countries are harmonised in order to ensure that the physical environment is protected from degradation.

The Sector has elaborated the individual ZACPLAN projects (ZACPROS) into eight (8) distinct projects. Implementation of ZACPROS 1, 2, and 5 has started and funding is being sought on the remainder.

AAA.7.4 SADCC Annual Research Seminar on Soil and Water Conservation and Land Utilization

This project aims to establish a forum for research workers at different levels, in both basic and applied research, and to facilitate and strengthen channels for intra-SADCC exchange of knowledge about on-going research and research results within the field of soil and water conservation and land utilisation. The project also seeks to establish adequate links with regional and overseas universities and

research institutions. The project will be implemented in collaboration with SACCAR and the University of Botswana.

A brain storming session was held in mid-January 1991 in Botswana attended by researchers from universities and government institutions, and a seminar is proposed to take place in October 1991 at the University of Botswana.

AAA.7.5 Range Inventory, Monitoring and Rehabilitation Trials - Mozambique, Tanzania and Zimbabwe

The objective of the project is to develop an effective and efficient system for the monitoring of changes in the region's rangelands, and to establish trials both on and off research stations. The results of the trials will enable the establishment of procedures that would facilitate full participation of smallholders in the planning and implementation of pasture management systems for communal grazing lands, in order to rehabilitate degraded rangelands, and to preserve environmental conditions in the SADCC region. In addition, the project aims at increasing year-round forage supply by increasing botanical composition and soil and water conservation through range inventory and rehabilitation.

Funding is sought (US\$1.24 million).

AAA.7.6 Development of Environmental Impact Assessment (EIA)

The broad objective of this project is to create and develop a SADCC capability, and to develop and strengthen national capabilities, to apply Environmental Impact Assessment to projects and programmes, including the formulation of principles, criteria, guidelines and techniques.

Funding sought (US\$0.72 million).

AAA.7.7 Plan of Action for the Kalahari-Namib Region

The main objectives of this project are:

- a) to gain a better understanding of existing practices and evaluate the capability of recommended activities/practices from the point of view of the local community;
- b) to evaluate environmental suitability of existing and recommended practices and analyse the replicability of suitable ones to areas with similar conditions; and
- c) to strengthen the role of local institutions as managers of communal natural resources and assist the community in developing sustainable resource management systems.

Funding sought.

AAA.7.8 SADCC Environmental Monitoring Project

The objectives of this project are to:

- a) develop and establish robust and cost-effective methods of monitoring and evaluating the state of the region's environment;
- b) apply and adapt methods so developed to regional conditions;
- c) train regional nationals in the application of methods developed in the evaluation and assessment of the state of the region's environment;
- d) assess the results obtained from the evaluation of the state of the region's environment;
- e) conduct relevant seminars and workshops on the status of the region's environment;
- f) promote cooperation among member States through exchange of information and joint assessment of the regional environment;
- g) identify regional water and air pollution problems and coordinate implementation of remedial measures.

The project will, through data exchange and joint assessments, promote cooperation between member countries concerning environmental matters. The identification of regional water and air pollution problems will be facilitated through the project; including joint monitoring of the major rivers in the region and long-range transportation of air pollution.

The data and findings from the monitoring activities should carefully be linked to identified pressures on the environment (land degradation through agricultural practices, cattle ranching, forestry or pollution discharge).

Funding sought.

BOT.7.1 Professional Training Centre for Drillers in Water Supply and Minerals - Botswana

The main objective of this project is to train SADCC technicians employed in the water supply sectors in order to enable the region to achieve self-reliance in technical drilling skills for member States.

Funding is sought.

LES.7.2 Rainfall Simulator Tests and Purchase of Rainfall Simulator - Lesotho

The objective of this project is to encourage correct cropping practices and soil management so that soil loss is reduced and food production increased on arable land. The project seeks to obtain estimates of soil erodibility (K-factor) for various soils; and a data bank of K-factors for various benchmark soils in different locations is being compiled.

The project is funded to the tune of US\$0.49 million by USAID, and implementation is underway, and in close collaboration with programmes of project 7.0.1.

LES.7.3 Range Conservation Pilot Project - Lesotho

The main objective of this pilot project is to reduce overstocking on deteriorated ranges, - the main contributor to land degradation particularly in Botswana, Lesotho, Swaziland and Tanzania. The ranges in Lesotho are seriously overstocked - significantly contributing to land degradation and eventually desertification. This is more prevalent in the Southern Districts of Mafeteng, Mohale's Hoek and Quthing. This project is designed to introduce intensive fodder production and well-trained staff at both local and national levels. The information and practices arising from this pilot project will be replicated elsewhere in the SADCC region.

The project has received funding in the sum of US\$5.0 million from U.S.A., and implementation has started.

LES.7.5 Watershed Management Pilot Project

The objective of this project is to meet a wide range of needs of the region, and the communities associated with the Pilot project and, in particular, to test and demonstrate approaches to conservation-based land use management practices in which the local communities can participate. Under the project, seminars, workshops and meetings will be organised to examine and promote the activities associated with Watershed Management.

The philosophy of bottom-up approach or people's participation in the development process is now an accepted policy, encouraging self-help, because it encourages self-help at village level by allowing the community to initiate its own plans for development and to carry them out with only catalytic assistance. This is highly desirable and to be encouraged.

Funding sought.

ZIM.7.2 Extension Education Programme: Pilot Demonstration for Consolidated Gardens as an Answer to Problems Posed by Stream Bank Cultivation - Zimbabwe

The objective of this project is to help smallholder farmers to relocate their gardens so as to avoid ploughing in river banks. Village Committees have been elected and trained so that they can run the project. The project focuses on training on land degradation and stream bank cultivation at Farmers Training Institutions in different provinces.

Phase I is under implementation at a cost of US\$0.02 million provided by Sweden through the Sector Coordinating Unit. Evaluation of Phase I will be done in 1991 to determine whether Phase II is necessary.

Descriptions

Project Descriptions

AAA.7.1 ASSISTANCE TO COORDINATION UNIT (PHASE II)

Estimated Cost

Total: US\$2.99m
Foreign: US\$2.86m
Local: US\$0.13m

Financing Gap: -

Executing Agency:
Coordination Unit

Funding Secured (Phase II)

Total: US\$2.99m
Foreign: US\$2.86m (SWE)
Local: US\$0.13m (LES)

Start: July, 1991

Duration: 1 year

OBJECTIVES: Based on experiences gained during Phase I of this programme, it has been decided that a second phase should be implemented. The main objective of Phase II is to provide assistance to the Coordinating Unit to enable it to discharge its regional coordination of the Sectoral programme; and in particular to carry out the following:

- Linking conservation measures to farming systems which favour sustained and increased production, preferably developed from existing farming practices.
- Implementing conservation activities with obvious, immediate and sustained benefits to the land users.
- Considering the need to complement the programme with administrative/legal aspects on conservation, monitoring activities and applied research.
- Assisting SADCC member countries in project preparation and development.

DESCRIPTION: The activities in this sector started in January 1985 under a three year programme. An evaluation of this programme has been undertaken, which found the progress satisfactory and recommended that the programme be continued incorporating the recommendations from Phase I, while at the same time retaining the original aims and objectives.

This second phase of the programme of work has also incorporated the aims and objectives as formulated in Natural Resources and the Environment: Policies and Development Strategy. The programme involves coordination of the activities in sub-programmes, AAA.7.1/01 through AAA.7.1/12, as described in the sub-projects. Support to the Coordination Unit covers materials, financial and technical assistance.

STATUS: SIDA has agreed to continue its assistance to the Unit until June 1992 while making preparations for Phase III.

AAA.7.1/12 **POPULAR PARTICIPATION FUND FACILITY**

Estimated Cost

Total: US\$0.05m
Foreign: US\$0.05m
Local: -

Funding Secured

Total: US\$0.05m
Foreign: US\$0.05m (SWE)
Local:

Financing Gap:

US\$0.36m

Executing Agency:
Coordination Unit

Start: July 1991

Duration: 1 year

-
- OBJECTIVES:**
- to stimulate village communities to perform popular participation activities,
 - to fund capital costs incurred in popular participation activities,
 - to develop monitoring and evaluation instruments for popular participation activities.

ACTIVITIES: The creation of a small facility which would be available for the support of local initiatives in this sector. Such initiatives, by definition should be of a small enough scale (e.g. up to US\$ 10,000) that they can be based at the village level. This facility should enable initiatives to proceed without the delays often incurred when funding is sought from external cooperating partners.

STATUS: The facility is available to SADCC member States; General Guidelines for the use of the facility were adopted by the Technical Committee of the Sector.

AAA.7.3 ZAMBEZI RIVER SYSTEM ACTION PLAN (ZACPLAN)

<u>Estimated Costs</u>	<u>Financing Gap:</u>
Total: US\$ 8.54m	US\$6.33m
Foreign: US\$ 7.04m	
Local: US\$ 1.50m	<u>Executing Agency:</u>
	Coordination Unit
	(Lesotho)
<u>Funding Secured</u>	<u>Start:</u> 1990
Total: US\$ 2.21m	
Foreign: US\$ 0.67m	
Local: US\$ 1.54m (SADCC)	<u>Duration:</u> Approx. 7 years
	(category I projects)

OBJECTIVES: The main objectives of this multi-component programme are to:

- encourage integrated river basin planning and management;
- define specific environmental problems and their impacts and to help the countries of the Zambezi river basin and other states that do not fall within the basin to provide ongoing programmes for the incorporation of environmental concerns into the management of water resources, including drinking water supply and sanitation;
- strengthen the awareness of the various governmental institutions involved in socio-economic development activities as to the potential impact of these activities on the water environment within the river basin; and the importance of their active participation in the adoption and implementation of the Zambezi River Action Plan;

DESCRIPTION: The Zambezi River Basin is located between latitude 8S and 20S and longitude 16,30'E and 36,4'E. The Zambezi River, together with its tributaries forms the fourth largest river basin of Africa and drains

almost the entire south central region of the continent. It flows eastwards for about 3000 km draining an area of about 1,300,000 sq.km. The river's lower course provided an historically significant trade artery to the African interior for Arabs in the tenth century and for the Portuguese from the sixteenth century. The Action Plan has the following components:

- * Environmental Assessment: which provides for the continuing and systematic assessment of the main factors influencing water management and water-related environmental quality.
- * Environmental Management: a wide range of activities are envisaged in order to ensure sustainable, environmentally sound development of the resource base.
- * Environmental Legislation: efforts will be made to review, and, where necessary, expand, update or strengthen national legislation to support the objectives of the plan; and to ensure compatibility among the participating states.

The collection and, as necessary, the development of comparable data and information on the basin region is of importance. This will include information related to:

- a. Water resources assessment.
- b. Socio-economic development that may adversely affect the environment.
- c. Institutions, experts and facilities available in the region for the implementation of the Action Plan.
- d. The identification of human activities and eco-systems that could be affected by environmental degradation.

STATUS:

ZACPROs 1, 2, and 5 are under implementation with financial assistance from UNEP.

AAA.7.3/03-4 ZACPRO 3/4:

**DEVELOPMENT OF HUMAN RESOURCES,
ADMINISTRATIVE AND INSTITUTIONAL
STRUCTURES AND TECHNICAL
CAPABILITIES**

Estimated Cost

Total: US\$ 0.39m

Foreign: US\$ 0.34m

Local: US\$ 0.05m

Financing Gap: US\$0.34m

Executing Agency: Coordination Unit
(Lesotho)

Funding Secured

Total: US\$0.05m

Foreign: -

Local: US\$0.05m

Start: January 1991

Duration: 6 months plus annual up-
dating

OBJECTIVES: ZACPRO 3

The survey of national capabilities and means to respond to environmental problems including scientific and administrative institutions, manpower requirements, research facilities and equipment and the need for human resources development.

ZACPRO 4

The development or strengthening of relevant national research institutes, laboratories and institutions in order to enable them to develop water-related environmental research and training policies and priorities in collaboration with INFOTERRA and to carry out the analysis and research.

DESCRIPTION: ZACPROS 3 and 4 of the Final Act (Harare, May 1987) are concerned with different aspects of the same subject: ZACPRO 3 with the identification of national capabilities in environmental matters and the need for human resources development; ZACPRO 4 with the development of national capabilities and human resources. They are considered together for the purposes of project development.

ACTIVITIES: ZACPRO 3

- Nationwide surveys of national capabilities and means to respond to the implementation of ZACPLAN will be carried out in each country, and will cover the following:

- a) Analysis of manpower situations in all the sectors related to ZACPLAN.
 - b) Analysis of all research facilities available, including equipment and future requirements.
 - c) Analysis of all national institutions involved in ZACPLAN including scientific and administrative institutions.
- National human resources development strategies and plans will be recommended based on national capabilities.
 - Review all relevant institutions, including educational institutions, in terms of their capabilities and their needs for improvement and development.
 - Assess the demand for training outside the region as a short term solution.

ZACPRO 4

- Review the experience and capabilities of the relevant institutions, as well as their needs for improvements and strengthening.
- List equipment requirements.
- Determine priorities as to which equipment is most urgently required to improve the capabilities of the institutions.
- Review the development of regional institutions to cover specific sectors regionally until national institutions are developed.
- Assess the demand for training outside the region as a short term solution.
- Two workshops on training and research activities in the region should be planned as part of ZACPRO 4 to strengthen the capabilities of research institutions for present and future development programmes.

STATUS: Funding sought.

**DEVELOPMENT OF AN INTEGRATED WATER
MANAGEMENT PLAN FOR THE ZAMBEZI BASIN**Estimated Cost

Total: US\$ 5.44m
 Foreign: US\$ 4.41m
 Local: US\$ 1.03m

Financing Gap: US\$4.41mExecuting Agency:
Coordination Unit
(Lesotho)Funding Secured

Total: US\$1.03m
 Foreign: -
 Local: US\$1.03m

Start: January 1991Duration: 5 years 6
months

OBJECTIVES: The overall objective of this project is to develop an integrated water resource management plan which will provide the river countries with recommendations for the immediate and long term development of water resources of the Zambezi river basin.

DESCRIPTION: It is very important when considering measures for the development of the water resources of the Zambezi river basin, to assemble and organise all data on water resources. It is necessary to have an integrated water resource management plan to develop the environment in the Zambezi river basin and to ensure smooth implementation of ZACPLAN. Due to the magnitude of the river basin (1,300,000 km²) and the fact that the river flows through eight countries, it is necessary to divide this project into sub-basins within national borders; each sub-basin study will be a component of the comprehensive Zambezi integrated water resource management plan.

ACTIVITIES:

- collection and examination of all existing maps, photographs, hydrological, geomorphological and geological data, information and records;
- survey of the present distribution of both human and livestock populations, assessments of growth rates, the location of villages and ranching associations including proposed plans for their development;

- assessment in collaboration with governments, of the domestic and livestock water requirements, both immediate and long term. Also of the present water needs for agriculture, industries, fisheries etc, and investigations into how these are likely to develop in the future with optimum benefits;
- examination of all on-going and scheduled hydro-power development programmes undertaken by the relevant authorities;
- assessment of the present sanitation methods, general health conditions and incidence of water-borne diseases.

STATUS: Funding sought.

AAA.7.3/07 ZACPRO 7: ENVIRONMENTAL EDUCATION AND PUBLIC PARTICIPATION

Estimated Cost

Total: US\$1.83m
 Foreign: US\$1.60m
 Local: US\$0.23m

Financing Gap: US\$1.60m

Executing Agency: Coordination Unit (Lesotho)

Funding Secured

Total: US\$0.23m
 Foreign: -
 Local: US\$0.23m

Start: Mid 1992

Duration: 1 year 6 months for study plus annual up-dating

OBJECTIVES: An important step in the implementation of any development programme is a well designed campaign programme. The campaign material plays a major role in introducing the objectives of any project to the public. Community participation is very important in environmentally development. To assure successful implementation of ZACPLAN, community participation and the population's awareness of environmentally sound management is a pre-requisite to the achievement of sustainable development.

Promotion campaigns have to be designed and implemented in order to persuade communities and individuals to play key roles in development. The

campaigns should be a follow-up of the Cairo African Ministerial Conference on Environment of 1985, which called for pilot and promotion projects in each African country.

- ACTIVITIES:**
- To review relevant campaigns which have taken place or are under implementation in the riparian countries and in other African regions. Details of successful campaigns shall be provided, showing costs, material used, field of campaign and organisation involved.
 - To develop a programme for national seminars to discuss the results and future promotion of such campaigns.
 - To prepare written and audio-visual material in English and Portuguese for distribution and demonstration to the public and schools.
 - To train a small number of personnel to ensure the successful implementation of the first phase of ZACPLAN.

STATUS: Funding sought.

**MINIMUM STANDARDS FOR WATER SUPPLY AND
WASTE WATER DISPOSAL**Estimated Cost

Total: US\$ 0.22m
 Foreign: US\$ 0.16m
 Local: US\$ 0.06m

Financing Gap: US\$0.16m

Executing Agency:
 Coordination Unit
 (Lesotho)

Funding Secured

Total: US\$0.06m
 Foreign: -
 Local: US\$0.057 m

Start: April 1990

Duration: 3 months

OBJECTIVES: The development of unified water engineering planning and design criteria and manuals for major elements of non-piped and piped drinking water supply and sanitation schemes including appropriate treatment when required will assist in the implementation of ZACPLAN.

DESCRIPTION: Some of the riparian countries have developed water engineering planning and design criteria for major elements included in non-piped and piped drinking water supply and sanitation schemes including appropriate treatment when required. Standards and type drawings have also been developed. This development is based on experience and to some extent on research. However, the quality of the criteria varies from one country to another.

- ACTIVITIES:**
- To review the sanitation in the riparian countries with regard to the planning and design criteria including standards and type drawings for non-piped and piped water supplies and sanitation facilities.
 - Based on the above review, to recommend unified criteria and standards to the involved riparian countries.
 - Review the present situation of using computerised data processing used in some riparian countries as a planning and design tool in order to increase their planning and design capacities.

- Carry out a feasibility study for the computerised data processing requirements within the water supply and sanitation sectors covering the following points:
 - a) Analyse the need for computerised data processing as related to water supply and sanitation development
 - b) Evaluation of relevant hardware and software
 - c) System and programme development requirements
 - d) Training requirements
 - e) Plan of action for introducing computerised data processing as a planning and design tool.

STATUS: Funding sought.

AAA.7.5 RANGE INVENTORY, MONITORING AND REHABILITATION TRIAL-MOZAMBIQUE, TANZANIA AND ZIMBABWE

Estimated Costs

Total: US\$2.04m
 Foreign: US\$1.24m
 Local: US\$0.80m

Financial Gap: US\$1.24m

Executing Agency:
 Governments of Mozambique,
 Tanzania and Zimbabwe

Funding Secured

Total: US\$0.8m
 Foreign: -
 Local: US\$0.8m (SADCC)

Start: 1989

Duration: 5 years

OBJECTIVES: To develop an effective system for monitoring changes in rangeland condition, and establish trials for the evaluation of improved practices in rehabilitation of degraded range and appropriate utilization of feed resources.

(4)

ACTIVITIES: The activities of the project will be to:

- study the livestock production systems, and identify major constraints to production;
- determine the current status of forage availability, quality and quantity, and environmental factors affecting supply;
- determine the most promising grasses and legumes suitable for rangeland rehabilitation;
- establish trials, both on and off research stations to attempt rehabilitation of degraded rangelands.

In Zimbabwe, trials will be conducted at a research station, and in two communal areas in agro-ecological zones III, IV, and V. The trials will entail detailed inventory of the rangeland resources of the communal areas project sites, including detailed measurements of soils, soil erosion, vegetation, animals, and land use factors. Once the initial inventory is complete the area will continue to be monitored regularly, in order to detect changes in the resource base.

Several monitoring techniques current and new, will be used, both at the research stations and communal area sites. Methods that are simple to apply, low in cost, and suited to the socio-cultural practices of the project communities will be preferred. Those methods which are found to be the most effective will be applied to other countries in the region.

STATUS: Funding sought.

AAA.7.6 DEVELOPMENT OF ENVIRONMENTAL IMPACT ASSESSMENT (E.I.A.)

Estimated Cost

Total: US\$1.10m
Foreign: US\$0.70m
Local: US\$0.38m

Financing Gap:

US\$0.72m

Executing Agency:
Coordination Unit

Funding Secured

Total: US\$0.38m
Foreign: -
Local: US\$0.38m (SADCC)

Start: 1990

Duration: 4 years

OBJECTIVE: To develop appropriate regional and national institutional setups and to strengthen the capacity of specialised SADCC and national bodies to apply Environmental Impact Assessment, including the training of personnel at the required levels and in the appropriate skills.

ACTIVITIES: The following activities will be conducted during Phase I:

- A regional Workshop on Environmental Impact Assessment.
- The formulation of principles, guidelines and techniques for EIA application in the SADCC region.
- Regional consultation on application of E.I.A.
- The review and development of proposed methodologies.
- Mounting a regional training course in Environmental Impact Assessment.
- Conducting a seminar on Incorporation of E.I.A. in Project and Programme Design and Development Planning in SADCC member States.

STATUS: Funding sought.

AAA.7.7 PLAN OF ACTION FOR KALAHARI-NAMIB REGION

Estimated Cost

Total Cost: US\$12.59m
Foreign: US\$ 9.14m
Local: US\$ 3.45m

Financing Gap:

US\$9.14m

Executing Agency:

SADCC Coordination Unit

Funding Secured

Total: US\$ 3.45m
Foreign:-
Local: US\$ 3.45m

Start: 1990

Duration: 5 years

-
- OBJECTIVES:** The main objectives of the Plan of Action are to:
- achieve sustainable exploitation of natural resources in the Kalahari-Namib region
 - halt man-made land degradation and desertification processes
 - improve the welfare of population in the area and thus contribute to break the vicious circle of poverty, land degradation and over grazing.

DESCRIPTION: In this project the Kalahari-Namib region comprises areas of Angola, Botswana, Namibia, Zambia and Zimbabwe. This region is composed of semi-arid areas although some sub-humid patches can be found. The Kalahari-Namib region is characterised by single rainy season, cold or hot dry seasons. The rural populations in this region depend mostly on livestock in particular on cattle as their main source of income. They also use cattle for draft power, manure, food and in some cases even dung for fuel. It is, therefore, important to sustain or improve the standard of living for these people without harming the environment in which they live.

- ACTIVITIES:** This project is divided in two phases and the second phase will be developed from the experiences gained in the first phase, whose activities are to:
- develop improved land use planning systems with emphasis on rangelands
 - promote and develop ecologically sound resource management practices

- improve the living standards of involved populations by setting marketing outlets for their livestock
- set up and develop a monitoring system of the pilot areas to be coordinated with project AAA.7.8 (Environmental Monitoring in the SADCC Region).

STATUS: Funding sought.

AAA.7.8 SADCC ENVIRONMENTAL MONITORING PROJECT

Estimated Cost

Total: US\$10.67m
 Foreign: US\$10.04m
 Local: US\$ 0.63m

Financing Gap: US\$10.04m

Executing Agency:

SWCLU with affected agencies

Funding Secured

Total: US\$0.63m
 Foreign: -
 Local: US\$0.63m (SADCC)

Start: 1991

Duration: 4 years

OBJECTIVES: The SADCC Environmental Monitoring Project should:

- monitor long-term changes and trends of environmental conditions, making use of reliable, robust and cost-effective methods
- make quantitative assessments of the present degree of degradation in selected geographical areas and link the results to the pressures on land, water and natural resources
- develop monitoring and assessment capabilities in the member countries
- provide a basis for the development of a long-term SADCC environmental monitoring programme in geographical areas of joint interest to member countries and concerning issues of high priority.

DESCRIPTION: The largest "Monitoring Unit" in the Pilot Programme on Environmental Monitoring is the Sample

area (covering 3600 sq. km). A guideline used for the selection of the area sample areas has been used one area for every 100,000 sq. kms, except for the smallest countries which will participate with one sample area each.

The next level which will produce monitoring data at a much higher special resolution will be the ground control stations and the catchment studies. The catchment approach is an important feature of the SADCC Pilot Programme on Environmental Monitoring.

Then links might be established between the SADCC Programme, which focusses on land degradation, soil erosion and the like and water pollution-oriented programmes belonging to the national networks.

ACTIVITIES:

- Pilot Programme, site and sample area selection. This can be done by the Coordination Unit with member States.
- Formulating monitoring techniques, guidelines and manuals. They will serve as recommendations for how the monitoring, sampling and analysis should be done.
- A special study on the assessment and reporting activities needed both at the national and regional level. SADCC member States will prepare annual reports for their own clients, but also with a view to make regional assessment feasible channeled through the Coordination Unit.
- Quality Assurance, QA
A quality assurance project is needed in order to ensure reliable assessment of the outcome of the SADCC pilot programme on Environmental Monitoring. The QA project will start with an evaluation of the methods to be used for sampling and analysis.
- Field tests and regional seminars.
- Pilot Programme Operations
This activity is planned to start to be implemented in the first half of 1991 provided funding is available. The monitoring operations will start with a workshop at which

the results from the previous development phase will be discussed and the final adjustments in the programme will be made. Further meetings might be needed when the outcome of the monitoring activities should be evaluated.

- Annual Reporting

Member States will make an annual report on their monitoring activities including a report on the data and statistics..

STATUS: Funding sought.

BOT.7.1 PROFESSIONAL TRAINING CENTRE FOR DRILLERS IN WATER SUPPLY AND MINERALS - BOTSWANA

Estimated Cost

Total: US\$4.80m
Foreign: US\$4.80m
Local: -

Financing Gap: US\$4.80m

Executing Agency:
Coordination Unit and
Government of Botswana

Funding Secured

Total: -
Foreign: -
Local: -

Start: 1989/90

Duration: 5 years

OBJECTIVES: The objectives of this project are to:

- train SADCC technicians employed or to be employed by the water supply sectors of member States;
- train drilling personnel employed or to be employed in exploration for water, primarily, but also for minerals;
- learn different drilling skills and technologies applicable to different geological conditions present in the area; and,
- try and attain self sufficiency for every SADCC member State in professional drillers so

that drilling projects can be implemented independently.

DESCRIPTION: A large percentage of the water supply to the rural and urban population (approx. 90% of the water used for domestic, agricultural and industrial purposes) in the SADCC region comes from ground water. The availability of this vital resource in most arid parts of the region is the only way to ensure development and better living standards for the people. The construction activities in the region are also developing very fast and the use of drilling techniques to build dams, bridges, piles and better civil engineering works is increasing in demand and calling for professional drillers. The Professional Centre for Drillers project will be playing a major role in satisfying the above mentioned needs.

ACTIVITIES: In the context of this project the following activities will be undertaken:

- the erection of buildings to accommodate forty to sixty students from all SADCC member States and to satisfy their requirements;
- teaching of theory to participants in different disciplines connected to drilling; and,
- practical on-the-job training on water and mineral exploration, investigation projects, stability and drillability of the rocks, etc.

This programme will cooperate very closely with the rural water supply operations of the host country.

STATUS: Funding sought.

LES.7.5 WATERSHED MANAGEMENT PILOT PROJECT - LESOTHO

Estimated Cost

Total: US\$2.60m

Foreign: US\$1.36m

Local: US\$1.24m

Financing Gap: US\$1.36m

Executing Agency:

Ministry of Agriculture
Lesotho

Funding Secured

Total: US\$1.24m

Foreign:

Local: US\$1.24m (SADCC)

Start: 1991

Duration: 5 years

OBJECTIVE:

Involving the local people, "people's participation", is the underlying theme of the project. Its principal aim is to introduce conservation-based land use practices with the consent and participation of the people. Essentially this means creating the social and economic environment where people can see the advantage of this approach. Also it means acquiring an accurate knowledge of the physical resource base of the area, and a thorough understanding of the people, their farming systems, how they view the resources at their disposal, and what they see as their most immediate problems. Some of these can be attained by interventions like:

- to help in diversifying agricultural activities, particularly through agroforestry and fodder production leading to more intensive livestock management.
- to help in reducing degradation of the land through better management of the arable land and rangeland.
- to widen the local people's knowledge about what can be done, through a training programme, visits, and demonstrations.
- to increase the cash income from farming and from off-farm activities.

DESCRIPTION:

This is a SADCC pilot project which is located in a rural area of Lesotho. The project area is fairly

representative of many such areas in the region. It falls under a local chief who is the chairman of a Village Development Council. The project being a pilot project will start slowly but if successful will expand into other areas and, indeed, hopefully to other SADCC member States.

It will aim to win the confidence of the village community and will try to implement their plans rather than impose project ideas. This project will adopt and develop where appropriate ideas which have been successful in similar projects. Training will be an underlying theme throughout the project for SADCC citizens engaged in similar projects.

ACTIVITIES:

- The training at various levels, community leaders in managing development, farmers in various technologies and government and project staff as facilitators of development. The focus for training would be a Training and Demonstration Center to be established at the project location.
- The promotion of fodder production and agro-forestry by procuring and building up stocks of suitable material and by supplying to individuals or to communal groups.
- The repair and maintenance of existing conservation structures such as contour bunds, graded terraces, grassed waterways or diversion channels. The project would provide technical advice and financial support for materials and part of the labour.
- Liaison with the SADCC member states and organisation of the seminars, workshops and meetings to examine and promote the activities of the project throughout the region will be given the highest priority.

STATUS:

Funding sought.

ZIM.7.2 EXTENSION EDUCATION PROGRAMME: PILOT DEMONSTRATION FOR CONSOLIDATED GARDENS AS AN ANSWER TO PROBLEMS POSED BY STREAM BANK COULTIVATION - ZIMBABWE

<u>Estimated Cost</u>		<u>Financing Gap</u>	
Total:	US\$0.07m	US\$0.05m	
Foreign	US\$0.07m		
Local:	-	<u>Executing Agency</u>	
		Ministry of	Natural
		Resources and	Tourism
		(Zimbabwe)	
<u>Funding Secured</u>		<u>Start</u>	1988
Foreign:	US\$0.02m (SWE)	<u>Duration</u>	1 year
Local:	-		

OBJECTIVE: To help smallholder farmers to relocate their gardens so as to avoid ploughing in the banks of rivers.

DESCRIPTION: Many smallholder farmers in Zimbabwe have established gardens along river banks for the sake of proximity to water for their gardens. The smallholder farmers are willing to move away from the banks provided they can be helped. These gardens will be run in a cooperative manner and vegetables and other horticultural products will be sold to create a revolving fund so as to run the cooperatives.

STATUS Village Committees have been elected and trained so that they can be able to run the project.

To be funded under Project AAA.7.1

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Funding

Funding Status of Projects

Project	Project Title	Estimated Cost US\$ Million		Local	Funding Secured & Source US\$ Million	Funding under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foreign					
ENVIRONMENT AND LAND MANAGEMENT								
AAA.7.1	Assistance to Coordination Unit	2.99	2.86	0.13	2.86 (SWE) 0.13 (LES)	-	-	Phase II extended to 1992. (July 1991 - June 1992)
AAA.7.2	Regional Hydrological Assessment	1.00	1.00	-	1.00 (UNDP)	-	-	Project completed and recommendations available.
AAA.7.3	Zambezi River System Action Plan	8.54	7.04	1.50	0.67 1.54 (SADCC)	-	6.33	ZACPROS 1,2 & 5 have funding; Funding sought for ZACPROS 3/4 6,7 and 8.
AAA.7.4	SADCC Annual Research Seminar in Soil and Water Conservation and Land Utilization.	0.77	0.77	-	0.77 (SWE)	-	-	Funded and implemented by SACCAR, ELM and University of Botswana.
AAA.7.5	Range Inventory, Monitory and Rehabilitation Trials	2.04	1.24	0.80	0.80 (SADCC)	-	1.24	Funding sought.
AAA.7.6	Development of Environment Impact Assessment	1.10	0.72	0.38	0.38 (SADCC)	-	0.72	Funding sought.
AAA.7.7	Plan of Action for the Kalahari- Namb Region	12.59	9.14	3.45	3.45 (SADCC)	-	9.14	Funding sought.
AAA.7.8	Environmental Monitoring in the SADCC Region	10.67	10.04	0.63	0.63 (SADCC)	-	10.04	Funding sought.
BOT.7.1	Professional Training Centre for Drillers in Water Supply and Minerals.	4.80	4.80	-	-	-	4.80	Funding sought.
LES.7.2	Rainfall Simulator Tests and Purchase of Rainfall Simulator	0.49	0.37	0.12	0.37 (USA) 0.12 (LES)	-	-	Under implementation.
LES.7.3	Range Conservation Pilot Project	5.10	5.00	0.10	5.00 (USA) 0.10 (LES)	-	-	Under implementation.
LES.7.5	Watershed Management Pilot	2.60	1.36	1.24	1.24 (SADCC)	-	1.36	Funding sought.
ZIM.7.2	Extension Education Programme	-	-	-	-	-	-	Funding sought for Phase II. Under project AAA.7.1
TOTAL		52.69	44.34	8.35	19.06	0.00	33.63	

Part I

Fisheries, Forestry and Wildlife

FISHERIES, FORESTRY AND WILDLIFE

1. EXECUTIVE SUMMARY

1.1 Fisheries

- 1.1.1 The Fisheries sub-sector programme focuses on the development of marine and fresh water fisheries and aquaculture. The potential for raising the catch tonnage for marine fisheries beyond the present 500,000 has been made possible by Namibia's accession to SADCC. The 900,000 sq. km of inland water surface produces over 400,000 tonnes of fish, and the unexploited potential is the focus for future development action. A number of programmes and projects are being developed in aquaculture, which offers great scope for integration with various rural community projects.
- 1.1.2 The Fisheries programme will continue efforts, in collaboration with other Sectors, to meet ever growing demand for protein in a manner that guarantees the resources sustainability. To this end, fishing technologies capable of harvesting stocks at a sustainable level and minimising negative environmental effects, would need to be introduced as tools for the management and planning of the resource base.
- 1.1.3 The Fisheries Sub-Sector has 19 projects, seven of which have received funding and are at various stages of implementation; negotiations are underway for the funding of three more projects, and funding for nine projects is being sought. The funding status is contained in the annex table.
- 1.1.4 All Nordic countries (except Finland) and EEC have shown interest in supporting Project MOZ.4.2: Assessment of Marine Fisheries Resources of the SADCC Region. It is proposed to hold a project planning workshop (involving Fisheries Directors and potential donors) which will develop the project further, work out modalities of implementation and produce a detailed working document. NORAD and CFTC have shown interest in assisting the financing of the project planning workshop.
- 1.1.5 NORAD has decided to suspend their funding for project TAN.4.1: Catch Assessment Study in Lake Tanganyika, because they feel that there exists some degree of overlap between the SADCC project and a proposed FAO/FINNIDA Lake Tanganyika project and is waiting for the finalisation of the FAO/FINNIDA project document, and consultation between Tanzania, Zambia and the

Coordinator, in order to decide on the appropriate course of action.

- 1.1.6 Under Project AAA.4.7(1) Aquaculture for Local Community Development (ALCOM), a workshop on the role of women in Aquaculture was held at Victoria Falls, Zimbabwe from 4 - 7 December 1990. The workshop was attended by Fisheries officers from all SADCC countries.
- 1.1.7 The Fisheries Coordinating Unit has informed Namibia about the Marine Fisheries development activities being envisaged within the SADCC Fisheries Programme of Action. Visits by SADCC FCU made to Angola and Namibia indicated that there are areas requiring joint efforts of the two countries, such as stock assessment.
- 1.1.8 The EEC have pledged to fund a consultancy to review Project AAA.4.8: Provision of Fisheries Extension Services, and set aside 60,000 ECUs for the purpose. The Fisheries Coordinating Unit has prepared the Terms of Reference for the consultancy, with a view to preparing an amended project dossier in the format suitable for presentation to EEC.
- 1.1.9 Discussions are underway with the African Development Bank (ADB), with respect to the provision of technical assistance through project MAL.4.4 Support to Fisheries Development Planning.
- 1.1.10 A new sector on Marine Fisheries and Resources has been established and will be coordinated by Namibia.
- 1.1.11 Within the framework of the Action Programme for the Development of Marine Fisheries in SADCC, a new project titled Establishment of Marine Fisheries Inspectorates in SADCC Region was approved by Council in August 1991. The objective of the project is:
 - to establish and train staff for a designated inspectorate unit within the Fisheries Ministry/ Department of each SADCC coastal State which will be capable of undertaking effective measures to control and monitor marine fisheries activities within the country's Extended Economic Zone (EEZ).

The estimated cost of the project is US\$3,587,300.

1.2 Forestry

- 1.2.1 The Forestry sub-sector continues to promote reforestation efforts in the face of the dwindling natural woodland forests. Plantations that are being put in place to address the requirements of woodfuel,

and commercial timber conservation, are failing to keep pace with the very high rate of tree felling.

- 1.2.2 Wood supplies 80 per cent of the total energy consumed in the region, mostly by rural households and rural industries such as brick-making, tobacco-curing and smoking of fish. The sustainable supply of fuelwood is, therefore, critical to millions of rural households.
- 1.2.3 The potential for forest industry development and intra-regional trade in forest products remains under-developed.
- 1.2.4 SADCC continues to give high priority to the development of forestry, and to urge member States to come up with serious conservation measures and appropriate policies that would move the consumers away from total reliance on fire wood towards other alternative sources of energy. Such fuelswitch policies remain the long-term objective, while in the more immediate future, the development of plantations and tree planting should be pursued vigorously.
- 1.2.5 The Forestry Sub-Sector has 19 approved projects. Thirteen projects are unfunded. Four are under implementation and three projects were reviewed in July -September, 1990. Results of the reviews were discussed during a Forestry Project Technical Workshop in Ndola, Zambia, in April, 1991. The funding status of the sectoral programme is contained in the Annex table.
- 1.2.6 During the year under review, the Sub-Sector, achieved important developments on four projects, namely: Regional Tree Seed Centres (funding has been secured from CIDA); Improvement and Strengthening of Forestry and Forest Research Institutions in the SADCC Region (1st phase is under implementation with funding from FINNIDA); Urban Fuelwood Project (funding for the 2nd phase of Blantyre City Fuelwood Project has been secured from NORAD); and Centre for Advanced Practical Forestry Training (funding has been secured from NORAD).
- 1.2.7 A workshop and a study tour for tree breeders from all SADCC Countries on Regional Tree Seed Centres Project took place. The workshop was held in Ndola, Zambia in June, 1990 and the study tour which covered Malawi and Zimbabwe took place in December, 1990. Both events were sponsored by CIDA through Project AAA.6.1, Special Facility for SADCC Forestry Project Development.
- 1.2.8 Three Advisory Board Meetings on Improvement and Strengthening of Forestry Colleges, in the SADCC

Region were held in Lilongwe, Malawi (July, 1990), Maseru, Lesotho (December, 1990) and Gaborone, Botswana (May, 1991). The Board met to review the progress of the project.

- 1.2.9 The Project Steering Committee on Blantyre City Fuelwood Project, a component of Project MAL.5.3 met in Blantyre, Malawi in December, 1990 to review the progress of the project and to also approve the document for the extension of the project. The Committee decided to expand itself in order to include SADCC TAU for Energy in Angola.
- 1.2.10 A three-week meeting was held between FSTCU and ODA consultants to review unfunded SADCC Forestry projects. Follow-up consultation are being pursued with ODA with respect to the funding of five projects.

1.3 Wildlife

- 1.3.1 Four consultancies for projects AAA.6.5 - Regional Wildlife Training Programme, AAA.6.6 - Wetlands Conservation Programme, AAA.6.8 - Wildlife Based Tourism and AAA.6.2 - Seminar and Study Tour on Wildlife Resources Use, have been completed.
- 1.3.2 Elephant Conservation and the Ivory Trade are crucial issues in the Wildlife Sub-Sector. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) elevated the status of the African elephant to appendix I from II. CITES appendix I contains endangered fauna and flora species, that are protected against any form of trade. Five member States (Botswana, Malawi, Namibia, Zambia and Zimbabwe) entered reservations, and would like their elephant populations to be in appendix II. CITES Appendix II listing allows for controlled trade. In this case, ivory from the five member States can be traded. As a result of this, project BOT.6.1 - Southern African Centre for Ivory Marketing (SACIM) in Botswana was approved by the Council of Ministers in January 1990. The agreement for the establishment of SACIM was finalised, and signed on 20th June, 1991 in Malawi by the founding members (Botswana, Malawi, Namibia, Zambia and Zimbabwe).
- 1.3.3 A meeting took place in August 1991 in Zimbabwe to discuss the African Elephant listing in Appendix I and was attended by Heads of Wildlife Departments.
- 1.3.4 The Wildlife Sub-Sector held one seminar, one workshop and one conference:

* Training Seminar/tour on Integrated Wildlife Resources Use in the SADCC region

- This seminar held in Zambia, Botswana, Malawi and Zimbabwe, has looked into integrated wildlife utilisation as a tool for rural development through people's participation. It highlighted the approach of integrated resource utilisation as a means of expanding the economic base of local people and ploughing back the benefits of wildlife utilisation into the rural communities who are custodians of natural resources.

* The Wildlife-Based Tourism Workshop

- The workshop was held in Kafue National Park, Zambia in August 1990. This workshop discussed the development of infrastructure in National Parks in the framework of the regional tourism development as identified in the SADCC Regional Tourism Demand Study. The workshop was attended by officials from both Tourism and Wildlife Sectors. Follow-up action on the workshop's recommendations is being developed by the Wildlife Coordinating Unit in collaboration with the Tourism Sector.

* The Wetlands Conservation Programme Conference

- The conference that was held in May, 1991 in Botswana formed phase II of the Wetlands Conservation Programme. The project was aimed at surveying Wetlands and creating greater awareness on the need to conserve wetlands in the SADCC region in terms of the international convention on wetlands (RAMSAR).
- The conference was attended by the 10 member States, selected resource persons and representatives of international organisations. A final report of the conference is being prepared. Follow-up projects will be formulated from the conference recommendations.

2. REVIEW OF THE REGIONAL SITUATION

2.1 Fisheries

- 2.1.1 The SADCC Region is endowed with abundant and diverse fish resources. Three of the member countries, Angola, Mozambique and Tanzania, produce over 500,000 tonnes of fish annually. Fish stocks of Namibia, the

fourth coastal member State, will raise the production tonnage considerably above this figure.

- 2.1.2 In any event, the production potential is much greater than this yield. In addition to these marine resources, the region has about 900,000 square kilometres of inland water surface, such as lakes, rivers, swamps and man-made water reservoirs from which about 400,000 tonnes of fish are harvested annually. Even in this area, the potential is much higher than the present output.
- 2.1.3 Because of its relatively low price, fish constitutes a major source of animal protein, particularly in the diet of the rural populations. However, the rapid population growth in the region in relation to the production rate of the fish resource, is causing grave concern that fish production will not keep pace with population increase. Should the demand for fish continue to grow at the present rate, then an additional production of 550,000 tonnes of fish per annum will be required to meet the demand by the year 2000.
- 2.1.4 It is, therefore, essential that the region increases fish production in order to meet the ever growing demand for fish. However, it will also be essential to ensure that the tapping of this resource to meet the demand also guarantees sustainability of the resource. To ensure that the resource is utilised on a sustainable basis, it will be necessary to introduce technologies capable of monitoring carefully fish stocks for sustainability and environmental effects, and also of developing better processing and marketing methods in order to reduce post-harvest losses and ensure better distribution of fish products from coastal, river and lake production areas, to deficit inland consumption areas.
- 2.1.5 Another important area which could contribute greatly towards meeting demand for fish is aquaculture. Although aquaculture is still in its early stages of development in the region, it offers great scope for increased fish production. Aquaculture also has a viable possibility for integration with various rural land use systems which would, in turn, result in increased overall productivity of these systems.
- 2.1.6 Considering that the fisheries industry in the region is generally labour-intensive, its development could create employment opportunities, particularly in low-income communities. The sector also has great potential for earning foreign exchange for the region. The development of the fisheries sector therefore, has socio-economic importance for the overall development of the region, apart from the nutritional aspect.

2.2 Forestry

- 2.2.1 The natural vegetation of the SADCC countries is predominantly open woodland, relatively dry savanna and dry wooded steppes. About 67% of the total area is made up of woody vegetation, of which 41% consists of open and closed forests and only 9% of the total woody area is made up of relatively productive forests. The unproductive forests, classified in terms of low level of wood supply for commercial purposes, accounts for 30% of the total woody area; with remaining 15% of the woody area being shrubland and about 5% fallow. The remaining 33% of the total area is made up of water, mountains and deserts.
- 2.2.2 Forest plantations have been established largely on grasslands, higher elevation and moist locations, and cover about 610,000 ha., of which 73% are industrial plantations; and about 23% fuelwood plantations.
- 2.2.3 Because commercially productive natural forests are quite limited, considerable industrial output comes from portions of natural woodland areas and plantations. Total forest harvest per annum is in the order of 83 million cubic metres of fuelwood, and 7.7 million cubic metres of industrial roundwood (sawlogs, wood panels pulpwood, pit props, poles and posts).
- 2.2.4 Output of processed forest products in the region is not substantial, accounting for only 7% of Africa's sawn wood production, 9% of the panels, 12% of the wood pulp and only 4% of the paper and paper board. Two-thirds of the paper consumed in the region is imported.
- 2.2.5 Wood supplies 70% of the energy consumed in the region. In Malawi and Tanzania, wood supplies about 90% of the energy consumed. Sustainable supply of fuelwood is, therefore, critical to millions of rural households. Per capita fuelwood consumption in the region is amongst the highest in the world. For the bulk of the rural population, wood is the most affordable household energy source.
- 2.2.6 The region is more than self-sufficient in industrial wood products. With the exception of two-thirds of the paper consumption, sawn wood and wood pulp which is imported, the region has a substantial export balance for sawn wood products. However, some member States are still importers of forest products.
- 2.2.7 Generally there is great potential for forest industry development, and intra-regional trade in forest products from the region's own forest resources.

- 2.2.8 Forest authorities and industrial enterprises employ some 30,000 people, excluding the labour in activities related to the household wood collection and utilisation.
- 2.2.9 Annual investment opportunities in plantation establishment and in industry rehabilitation, improvement and expansion could be in excess of US\$100 million.
- 2.2.10 SADCC has, in recent years, given high priority to the development of forestry, and to the serious issues of fuelwood supply and environmental degradation. Although the results have been significant, economic, environmental and political issues, especially bandit activity, have caused deterioration in or slowed down, forest industry development in some member states.

2.3 Wildlife

- 2.3.1 The Wildlife of the SADCC region is of particular diversity. Of Africa's 84 species of the large herbivores more than half occur in the region; some of them in spectacular numbers and others in less conspicuous populations. Many of these species have direct economic value. Others have scientific, medicinal or ritual significance. The arid Savanna Zone, in particular, contains important populations of game animals.
- 2.3.2 Through evolution these have become particularly well adapted to the arid and often agriculturally marginal environment. They have traditionally provided the rural population with meat, skins and other raw materials. As agricultural development has progressed, animal populations have come more and more into conflict with man's endeavour.
- 2.3.3 It is now recognised that the controlled and sustainable utilisation of the wildlife resource is a desirable and feasible alternative form of land use, and that it would be economically beneficial to integrate it into agricultural production systems. Further, it is also accepted that utilization of Wildlife would contribute to the maintenance of ecological balance and long-term resource conservation.
- 2.3.4 The greater part of the semi-arid savanna woodlands of Angola, Mozambique, Tanzania, Zambia and Zimbabwe; and the arid thorn bush steppe of Botswana and Namibia, still support significant game populations. These provide some of the animal protein for nutrition of the rural human population, through subsistence hunting.

- 2.3.5 As increased demand for wildlife products leads to high prices, the original subsistence hunting is being replaced by unlawful and commercialised poaching for monetary gain. Poaching has, therefore, now become one of the major headaches of the region, entailing wanton slaughter of species such as the rhinoceros, elephants, etc.; with poachers using very sophisticated weapons. Human life has also been lost in anti-poaching operations.
- 2.3.6 Unless the wildlife resource is subjected to control and sustainable forms of utilization, it is likely to be destroyed within the next few decades. This will deprive the region of one of its most productive natural resources. There is, therefore, an absolute need to support anti-poaching programmes and projects.
- 2.3.7 Apart from its importance for nutrition, wildlife is the backbone of the region's tourist industry, which generates important incomes both in local and foreign currency. Almost 15% of the regions's land surface is set aside as National Parks or Game Reserves. Wildlife-based tourism is of particular economic importance to the region. The area set aside for this purpose by member states is as follows: Botswana 37%, Malawi 11.3%, Tanzania 23.4%, Zambia 30% and Zimbabwe 12.9% of total land.
- 2.3.8 Many of the conservation areas of the region like the Okavango Delta in Botswana, Lake Malawi/Nyasa in Malawi and Tanzania, Gorongosa in Mozambique, the Serengeti Steppe and Ngorongoro Crater in Tanzania, the Luangwa Valley in Zambia and Hwange in Zimbabwe are not only of economic importance in terms of tourism but also have great scientific and educational value for the entire international community.
- 2.3.9 The sub-sector has, therefore, developed programmes and projects aimed at taking an inventory of the region's wildlife resource and developing better methods of utilisation of the resource. Appropriate programmes are being developed to combat poaching, through the involvement of the local communities in the affected areas.

3. REVIEW OF THE PROGRAMME

3.1 Fisheries

- 3.1.1 The policy framework and objectives for the development of fisheries in the SADCC Region may be summed up as follows:

- (a) Fish is recognised as a natural resource that has great importance for the production of protein food;
- (b) The supporting water systems have significant environmental functions which shall be considered in the management of the fish resource;
- (c) Management and utilization of the fish resource aim at maximising sustainable yield from natural waters with a view to promoting self-sufficiency in the supply of fish for the nutrition of the people of the region.
- (d) Self-sufficiency in fish production will be attained by:
 - development of marine fisheries;
 - increase of the productivity of inland fisheries by improvement of fishing techniques;
 - integration of aquaculture in rural development;
 - utilisation of under-exploited fish species;
 - improvement of distribution and marketing of fish and fish products within the region.
- (e) Fisheries industries will be developed and expanded wherever opportunities exist for the processing of fish and by-catch into fish products for local and export demands.
- (f) Research into fisheries biology and ecology will be promoted as an important prerequisite for fisheries development within the region.

3.1.2 SADCC's fisheries development programme, therefore, generally aims at optimum sustainable exploitation of the great potential of both marine and inland fisheries, and thus at making a significant contribution to the overall socio-economic development of the region.

3.1.3 The Sector has secured support for a number of key projects, which are basic to the development of fisheries in the region. Some have been completed and others are at various stages of implementation. These include: Joint Research on Pelagic Fisheries Resources of Lake Malawi/Nyasa; Fisheries Research on Lake Kariba; a Regional Survey of Fish Production, Processing and Marketing; Production and Commercialisation of Fishing and Fish Processing

Materials and Equipment; Regional Fisheries Training Programme; Fisheries Investigations in Botswana; and Integrated Fish - Cum - Duck Farming Development in Lesotho. Negotiations are underway for the funding of three more projects, namely, Catch Assessment study in Lake Tanganyika, Pilot Integrated Fish/Pig Farming Development and Research Project at Kasinthula, Malawi, and Provision of Fisheries Extension Services.

3.1.4 Under Project No. 4.0.7(1), Aquaculture for Local Community Development, a workshop for fisheries officers on the Role of Women in Aquaculture Development was organised at Victoria Falls, Zimbabwe, from 4th to 7th December, 1990. The workshop agreed to facilitate participation of women in the sector, particularly on fish processing. The Fisheries sector is intending to organise a similar workshop in 1991 or 1992. Among others, the workshop will address the following aspects:

- a) the degree of involvement of women in fisheries and aquaculture development and any constraints that might hinder full participation of women in the fisheries, and
- b) ways in which women's participation in fisheries and aquaculture production could be improved.

3.2 Forestry

3.2.1 The framework and objectives for the development of forestry in the SADCC Region are presented in SADCC's Natural Resources Policy and Development Strategy Document. These are as follows:

- (a) Forests are recognised as a natural resource that has great productive value as well as important environmental functions for water, soil and wildlife conservation and for social and recreational activities. Management of forest land shall be geared to these different functions, giving always consideration to protecting it as one of man's most important environment.
- (b) Management and use of the forest resources aim at maximizing productivity with a view to promoting regional self-sufficiency in the supplies of all forest and wood products to households, commerce and industry.
- (c) Trade in forest products shall be developed and promoted within the region to reduce dependence on imports.

- (d) Public awareness of the importance of forestry to society in its broadest sense shall be improved through extension, training and educational programmes and publicity campaigns.
- (e) Forestry research capabilities shall be enhanced as an important prerequisite for environmental management of the forest resources and for the development and introduction of improved forestry technologies within the region.

3.2.2 The SADCC Programme of Action on Forestry is being developed in this framework. In collaboration with the Energy Sector, the Sub-Sector aims particularly at increased production of fuelwood as the region's most important source of energy. To this end, efforts continued to implement funded projects such as the Urban Fuelwood projects of which only the Malawi component is funded, and the Village Fuelwood Plantations Project in Lesotho. These efforts will continue in order to mobilise the other necessary resources for implementation of the funded projects.

3.2.3 Projects which were under implementation include:

- (a) Special Facility for SADCC Forestry Project Development. This Project has incorporated two other projects and all aim at strengthening the SADCC Forestry Sub-Sector Technical Co-ordination Unit in project development, information collection and dissemination and other coordination work.
- (b) Improvement and Strengthening of Forestry Colleges in the SADCC Region started in 1989 with the arrival in post of the Project Manager. Forestry Education and Training Specialists for some national Project components have also been deployed. The Project Advisory Board held its first meeting in July, 1990, in Lilongwe Malawi. Two other meetings of the Project Advisory Boards have been convened so far.
- (c) Blantyre City Fuelwood Project is approaching the end of Phase I, and Phase II, covering harvesting, transportation and marketing, is scheduled to start soon.

3.2.4 Unfunded Projects were reviewed and six of them were reformulated so that they could adequately address the forestry problems in the SADCC region.

3.2.5 The Sector also undertook the following activities:

- (a) A Workshop on Project AAA.5.5, "Regional Tree Seed Centres Network" was held from 12th to 14th

June, 1990, in Ndola, Zambia. The Workshop discussed technical aspects of the Project as based on the end-of-mission feasibility report which was released in January, 1990.

- (b) A study tour to Malawi and Zimbabwe for Tree Seed Specialists from all SADCC member states was organised from 10th to 19th December, 1990. The tour was part of the activities aimed at promoting networking among the Tree Seed Centres in the region.

3.3 Wildlife

3.3.1 The Wildlife Sub-Sector has made some progress since the last meeting. Out of eighteen approved projects, eight are either completed or under implementation, and five under negotiation and the remaining five are not funded.

3.3.2 SADCC strategy on the development of Wildlife sector is based on the following important factors:

- (a) Wildlife is a complex natural resource that has both positive and negative effects in relation to human needs, and requires to be managed in a scientific manner for the benefit of the people of the region.
- (b) Management of wildlife encompasses conservation, utilization and control of activities aimed at providing sustained utilization and benefits such as food, hides and other wildlife products; creation of employment opportunities in low income rural areas, ensuring optimum productivity of agriculturally marginal land and enhancement of environment stability.
- (c) Conservation of wildlife shall also be effected by setting aside protected areas to preserve selected samples of the region's ecosystems, to protect areas of aesthetic beauty and special interest and preserve populations of endangered species etc; and
- (d) Research into wildlife biology and ecology shall be promoted as an important pre-requisite for management and sustainable utilization of the wildlife resource.

3.3.3 Following the adoption of the Natural Resources and the Environment Policies and Development Strategy, the wildlife sector has gained increased recognition by both member States and cooperating partners, as an important area in the overall economic development of

the region. The ecological inter-relationships between different natural resources, and the need for their long term conservation and sustainable utilization are also now fully appreciated and understood.

- 3.3.4. Among the priorities of the sector, is the generation of knowledge and understanding of the potential of the wildlife resources, as a basis for meaningful economic development. In this regard, specific initiatives have been taken to develop programmes and projects which will enable the region to optimise the utilization of its wildlife resources. A major highlight in this sector is the signing, in June 1991, of the agreement establishing SACIM by five member States (Botswana, Malawi, Namibia, Zambia and Zimbabwe).
- 3.3.5 The sector is also giving priority to manpower training and development, law enforcement and the assessment of the impact of wildlife on the environment.

4. CURRENT STATUS OF PROJECTS

4.1 Fisheries

4.1.1 Project AAA.4.3 Support to SADCC Coordination of Fisheries, Forestry and Wildlife.

This project aims at providing technical assistance to the Ministry of Forestry and Natural Resources in Malawi, to enable it to discharge its regional coordination responsibility effectively. The project covers costs of technical assistance experts, consultancies, workshops, procurement of equipment, etc; and is supported by EEC.

4.1.2 Project AAA.4.5 Regional Fisheries Training Programme

This project aims at the promotion of training in the different fisheries sub-sectors at various levels. A fact-finding consultancy mission financed under Project AAA.4.4 was undertaken to investigate training needs and priorities, and produced a project document. This document describes in detail the Regional Fisheries Training Programme estimated to cost US\$5.95 million. Currently, the project is in its preparatory phase, estimated to cost NOK 1,500,000 (US\$0.2 million). A Consultant has been in the region since February, 1990 and has visited all ten SADCC member States to update information on fisheries training needs and facilities, prepare and make recommendations for the main phase. A report on the findings and recommendations has just been completed. The report

will be distributed to cooperating partners to consider co-financing the programme.

Icelandic International Development Agency, ICEIDA is interested in the programme and have pledged US\$60,000 for 1991 as technical assistance for the establishment of the Training Coordinating Unit as part of the proposed programme. Additional funding for the next two years is being sought.

4.1.3 Project No. AAA.4.6 Regional Fisheries Documentation and Information System

The project aims at the establishment of a regional documentation and information system for fisheries, which will serve to collect, compile and disseminate information on fisheries and related fields, in the region. A fact-finding consultancy mission, financed under Project AAA.4.4, was carried out to investigate and establish the status of fisheries documentation at both national and regional levels.

The consultancy, which has been completed, has confirmed what requires to be done to establish the regional documentation and information system at an estimated cost of US\$7.26 million. Funding is being sought.

4.1.4 Project AAA.4.7 Development of Aquaculture

The objective of the project is to assist member States to increase farmed fish production in areas which are currently unable to engage in fish farming, in order to increase the income and protein in the diet of rural communities, generate and increase employment in the region. The project has the following four components:

4.1.5 AAA.4.7(1) - Aquaculture for Local Communities (ALCOM) - Phase II

The objective of this component of the project is to promote fish culture methods and systems, which have been tested in a pilot project in Mozambique during Phase I 1989/90 which has demonstrated that Aquaculture for Local Communities is economically viable and socially acceptable. Phase II of the project will continue in Botswana, Lesotho Mozambique. The activities involved in Phase I included the following:

- a) extension/training in Mozambique;
- b) utilisation of small water bodies in Lesotho, Botswana and Zambia;

- c) extension methodology development in Zambia; and
- d) aquaculture and farming systems in Zambia.

The cost of Phase I is estimated at US\$ 1.9 million. Under Phase II, the following activities will be carried out:

- a) development of aquaculture methods and practices in integrated farming systems;
- b) the design of extension methods for small water bodies;
- c) the design of models for small-scale fishing techniques;
- d) generation of data for planning purposes;
- e) training of women and youth in aquaculture fish production;
- f) Dissemination of extension methods to the local communities; and
- g) the actual implementation of the aquaculture programme itself in the region.

Phase II of the project is estimated to cost at US\$7.07 million. Funding is being sought.

4.1.6 AAA.4.7(2) - Development of Aquaculture in Angola

The objective of this project is to establish an aquaculture centre in Angola to support the planned aquaculture development. The project activities will include construction of the centre, manpower training research in specific aspects of aquaculture, and provision of extension services on breeding techniques and distribution of fish products. The project cost is estimated at US\$2.83 million. Funding is being sought.

4.1.7 AAA.4.7(3) - Regional Trout Management Project

The objectives of this project is to promote the development of a viable trout industry in the region through provision of trout hatcheries and other facilities and promotion of regional collaboration in all aspects of trout management. The activities to be carried out under the project include consultancy on the demand for trout, provision of dietary based on local feeds to trout stock and provision of extension services to trout centres. The estimated cost is US\$8.52 million. Funding is being sought.

4.1.8 AAA.4.7(4) - Development of Fish Farming in Cool Water Areas in the SADC Region

The objective of this project is to select suitable varieties of marketable fish capable of good growth rates in cool water areas of the region. The activities to be carried out under the project include provision of improved technologies, establishment of fish farming systems for cool water areas and selection of suitable fish stock varieties in the SADC member States with these climatic conditions. The estimated cost of the project is US\$1.32m. Funding is being sought.

4.1.9 Project No. AAA.4.8 - Provision of Fisheries Extension Services

The objective of this project is to increase fish production in the member States. Activities include provision of extension services at both national and regional levels and the creation of awareness at the decision making level of the importance of fish as a source of protein and income. Funding is being sought.

4.1.10 Project No. AAA.4.9 - Establishment of Region Computer Based Marine Fisheries Catch Data System

The objective of the project is to provide a regional computer-based catch data system capable of utilising information from reports on catch, landings and transshipment, and with capabilities to present information on total marine fish catch by species, area, vessel and time. Estimated cost is US\$0.14 million. Funding is being sought.

4.1.11 Project No. AAA.4.10 - Support to SADC Fisheries Coordination Unit

The project aims at supporting the planning and administrative work of the SADC Fisheries Coordinating Unit. Under the Project ICEIDA is providing US\$50,000 a year to finance an Fisheries expert.

4.1.12 Project No. AAA.4.11 - Computerisation of Inland Fisheries Production

The Project which is scheduled to last for 3 years, at an estimated cost of US\$ 322,000, has the following objectives:

- (a) Computerisation of inland national fisheries production statistics from member states.

- (b) Creation of a regional database which summarises national statistics from member SADCC countries.
- (c) to finance an expert on fisheries statistics to establish a fisheries database for incorporation into the Regional Documentation Centre. The Expert shall:
 - train staff in the proper management and use of the database system; and
 - conduct a workshop, subsequent to the establishment of the system and staff training, to discuss the practical experience gained from the system and resolve any problems encountered

4.1.13 Project No. - ANG.4.2 Promotion of Export Marketing of Marine Fish Products

The objective of this project is to promote exports of marine fisheries and increase export revenue earnings of the member states concerned. The following activities are to be carried out under the project:

- a) supporting common marketing strategies in order to meet specific needs of the export market.
- b) establishing a regional export marketing expertise for marine fish products especially frozen and canned, and,
- c) establishing on-the-job and institutional training for nationals of the SADCC coastal states.

The project is estimated to cost US\$1.67 Million. Funding is being sought

4.1.14 Project BOT.4.1 - Fisheries Investigation in Eotswana

The first phase of the project which aimed at an assessment of the fisheries potential of Botswana with a view to formulating a national fisheries development plan for the country's untapped fisheries resources was implemented between 1985 and 1987.

The project is in its second phase whose activities include the development of boat- building, fish processing/ marketing, fishing gear technology and training of staff. However, there have been problems in recruiting suitable candidate even regionally for the 3 posts of fish processing/ marketing, fishing gear technology and boat- building. It has therefore been proposed that technical assistance from UN Volunteer Service should be sought.

4.1.15 Project LES.4.1 - Integrated Fish-Cum-Duck Farming in Lesotho

The objective of the project is to increase fish production integrated with duck husbandry. The first phase the cost of which was estimated at US\$0.31m has been completed. During the first phase, the only facility which was not yet funded was the Fish Production Unit which has now been financed by the government of Lesotho at a cost of US\$0.65 million. The project is now in phase 2 which is looking at integrating aquaculture with livestock farming systems in Lesotho. Phase 2 is wider in scope and integrates aquaculture and livestock farming systems.

4.1.16 Project MAL.4.1 - Joint Research of Pelagic Fisheries Resources of Lake Malawi/Nyasa

The project, located in Malawi (Salima), is aimed at carrying out research on offshore fish stocks of Lake Malawi/Nyasa as a basis for their improved exploitation on a sustainable basis. A feasibility study for this project has been carried out. Letters of agreement have been signed by the three member States involved in this project. The premises for headquarters of the project have been acquired. Construction of extra accommodation and renovation of an existing building as a laboratory is nearly completed. The research vessel is now being reassembled in Malawi with the hope of starting actual research work as soon as the vessel is completed. The estimated cost of the project is US\$2.51 million.

4.1.17 Project MAL.4.3 - Pilot Integrated Fish/Pig Farming Research and Development Project at Kasinthula, Malawi.

The project aims at increasing fish production by integrating fish farming with pig and duck husbandry. A feasibility study has been carried out and completed. Due to lack of progress the project is under review.

4.1.18 Project No. MAL.4.4 - Support to Fisheries Development Planning

The objective of the project is to improve fisheries development planning capabilities in member States. The project will finance qualified fisheries economics, planners to be attached to Fisheries Coordinating Units in member States, to assist in project development, implementation and monitoring. The cost of the project is estimated at US\$4.10 million. Funding is being sought.

4.1.19 Project No. MOZ.4.1 - Assistance to Quality Control and Standardisation of Marine Fisheries Products

The objective of the project is to assist Angola, Mozambique, Namibia, and Tanzania to utilise their fish resources efficiently and cost effectively. The activities of the project will include:

- a) establishment of a quality control and inspection system for fishery products in each of these member states, and
- b) to train project staff in quality control and inspection procedures in order to enhance the quality of fish products.

The project is estimated to cost US\$1,80 million. Funding is being sought.

4.1.20 Project No. MOZ.4.2 Establishment of Research and Resource Evaluation Programme in the Marine Waters of the SADCC Region

The objective of this project is to establish fisheries research institution capable of formulating and implementing a marine fish resources evaluation programme for coastal member States. The project will entail:

- a) acquisition of necessary research vessels and equipment in order to effectively implement national and regional marine research programmes.
- b) provision of adequate training of SADCC nationals in various relevant disciplines to enable them to conduct appropriate and long term resource evaluation of the commercially important fish stocks.
- c) formulation and implementation of appropriate surveillance and control measures in order to protect the marine resources and the environment as a whole.

All Nordic countries (except Finland) and EEC , have shown interest in supporting this project. It is proposed to hold a project planning workshop (involving Fisheries Directors and potential donors) which will develop the project further, work out modalities of implementation and produce a detailed working document.

Project cost is estimated at US\$115,78 million. Funding is being sought.

4.1.21 Project No. TAN.4.1 - Catch Assessment Study in Lake Tanganyika.

The project, costed at US\$1.51 million is intended to assist in establishing a long-term monitoring system on Lake Tanganyika, which will highlight the effects of various fishing methods on fish stocks, and facilitate joint management and exploitation of the fish resources. Norway had pledged support for this project and allocated 12.5 Million NOK (US\$2.14 million) for the project.

The decision of funding awaits the resolution of the existing overlap with a similar project being developed by FAO which involves Burundi, Tanzania, Zaire and Zambia. The Ministers of Agriculture and Natural Resources have, however, decided to proceed with the SADCC project, and requested the sector coordinator to solicit funds from other donors.

4.1.22 Project ZAM.4.1 - Lake Kariba Fisheries Research and Development

The project aims at carrying out multi-disciplinary research into various aspects of the fisheries on Lake Kariba, with a view to recommending the most appropriate management of the fishery resource for its sustainable utilisation. The pre-implementation phase lasted from April, 1988 to December, 1989 at a cost of US\$0.77 million (NOK5,070,000,).

The project is to be implemented over a period of five years from 1990 to 1994 at an estimated cost of US\$ 7.57 Million (NOK 50 million). Implementation of the project commenced with a planning workshop in March 1990. Research work is in progress, a new research vessel is under construction and will be ready later this year.

NEW PROJECT

4.1.23 Project AAA.4.12 - Establishment of Marine Fisheries Inspectorates in the SADCC Region

A new marine fisheries project has been approved by the SADCC Ministers for Food, Agriculture and Natural Resources. The project aims:-

"To establish and train staff for a designated unit within the Fisheries Ministry/Department of each SADCC coastal State, capable of undertaking effective measures to control and monitor the marine fisheries within the country's EEZ. The project is estimated to cost US\$3.59 million.

4.2 Forestry

4.2.1 Project AAA.5.1 - Special Facility for SADCC Forestry Project Development

The objective of this project is to strengthen Malawi's capability in coordinating forestry development in the SADCC Region through training, communication and information exchange and development and analysis of forestry project proposals.

The Canadian Government, through CIDA, has made available a total of US\$3 million to Malawi for 5 years for this project.

The Memorandum of Understanding (MOU) governing the Malawi/CIDA Technical Forestry Services Fund Project expired in June, 1990. Malawi, acting on behalf of SADCC, exchanged letters with CIDA to extend the MOU for a further period of 5 years.

Project AAA.5.1 is due to expire in September, 1991. CIDA and Malawi undertook an Operational Review of this Project in January, 1991, with a view to evaluating its impact and its possible extension.

The development of a Regional Forestry Action Plan is one of the ideas to be pursued during a possible Phase II.

4.2.2 Project AAA.5.2 - Establishment of a Regional Herbarium and Conservation of Endangered Species

This project, the cost of which is estimated at US\$1.7 million is aimed at collecting information on herbaria and botanical collections for conservation, endangered species, with a view to establishing a regional herbarium. This project was reformulated so that it provides for strengthening and improving of national herbaria and networking in information exchange between existing herbaria in the SADCC Region.

4.2.3 Project AAA.5.3 - Urban Fuelwood Project

This project is aimed at supplying fuelwood to urban areas in four countries: Lesotho, Malawi, Mozambique and Tanzania. At present only the Malawi Component is funded. The unfunded components of the project were reviewed and funding of these is being sought.

The first phase of the Malawi component, funded by NORAD, will expire in 1991. Proposals for extending the Project into a second phase has been drawn up. The cost of the second phase is estimated at about US\$10 million (31.5 million Norwegian Kroner).

4.2.4 Project AAA.5.5 - Regional Tree Seed Centre

The objective of this project is to identify problems in the collation of information, and storage of seeds for specific regions. On the basis of this information, solutions will be identified and a work programme developed.

In 1989, a technical feasibility study to develop the project proposal was prepared. The feasibility report recommended the creation of a SADCC Regional Tree Seed Centre Network encompassing all member states. The estimated cost of the project is US\$8.6 million. It will be implemented over three five-year phases. Funding for the first phase has been secured from CIDA.

4.2.5 Project AAA.5.6 - Dry Zone and High Altitude Fuelwood Research

The aim of this project is to help solve the problem of fuelwood availability, especially in those countries with arid, semi-arid and high altitude ecological zones. This project has been made an integral component of Project AAA.5.23.

4.2.6 Project AAA.5.9 - Improvement and Strengthening of Forestry Colleges in the SADCC Region

The aim of this project is to improve and strengthen some of the existing forestry training colleges in the SADCC Region. The project is estimated to cost US\$38 million over a 12 year period.

The project became operational in 1989 with the arrival of the Project Manager, based in Lilongwe, Malawi and the Forestry Education and Training Specialists for the five regional components of the project, namely:

* **Human Resources Development**

Fourteen scholarships have been provided to SADCC nationals for a variable length of time from 6 months to two years at different institution, within the region and outside SADCC, for different levels (M.Sc, B.Sc Diploma and Certificate). There are plans to provide more scholarships during the 1991/1992 period.

* **Forestry Teachers Training**

The first Forestry Teachers Training course was conducted from 19th February 1990 to 21st December, 1991. Fourteen participants from SADCC member states successfully completed the

training. A further training course for guiding teachers was implemented in January 1991 in Harare, Zimbabwe, involving 16 participants and 1 observer. Courses on Forestry Teacher Training are planned for the 1991/1992 period.

*** Forestry Further Training**

A workshop on Training Nurseries and Training Forests was held in Botswana in November 1990 for forestry officers and a training course on Forest Economics and Costing was held in Malawi in January - February, 1991 for forestry planners. Preparations for the next courses and workshops are underway.

A survey on the textbooks used at the colleges is underway.

*** Forestry Extension Training**

Workshops on Forestry Extension Training which formulated guidelines for forestry extension training to be utilized both at regional and national levels were held in Botswana and Swaziland. Similar workshops are planned for the other SADCC member states.

*** Forestry Curriculum Development**

Two Curriculum Development workshops were held in Mozambique and Zambia. And five new curricula have been completed for Malawi, Mozambique, Zambia and Zimbabwe.

Components of the Project involve strengthening of Forestry Colleges, or their equivalent, in member states through bilateral agreements implemented under the overall SADCC project agreement. Bilateral agreements have been signed by Lesotho, Malawi, Mozambique, Tanzania and Zambia. Implementation of the Project in these countries is at various stages.

4.2.7 Project AAA.5.11 - Pilot Project on the Rehabilitation of Mining Areas

The aim of this project is to establish fuelwood and pole plantations to provide wood for coal mining and domestic use in Karonga, Malawi. The estimated cost of the project is US\$696,000.

The project has been revised to include other degraded areas, such as along newly constructed roads, in order to more effectively address the role of forestry in rehabilitating these roads. Funding is being sought.

4.2.8 Project AAA.5.12 - Community Forestry Development

This project is intended to assist in the development of Community Forestry for fuelwood production, environmental conservation and reclamation of degraded lands in SADCC member states. The total estimated cost of the project is US\$9.4 million. Funding for the project is being sought.

It has been observed that there are a number of community forestry development projects already taking place in SADCC member states. In addition, it is known that some forestry institutions have included community forestry issues in their curriculum.

This project will, therefore, take the following approach:

- (a) undertake a "needs assessment" to identify priority areas in community forestry development for each member state in the SADCC region;
- (b) draw up relevant community forestry development projects; and
- (c) organise study tours for Community Forestry Planners and implementers in the region to observe, study and learn from the experiences of on-going community forestry undertakings.

4.2.9 Project AAA.5.17 - Optimal Management of Watershed Areas

The aim of this project is to develop experimental watersheds which could be used as nuclei for the development and management of watersheds in general. The estimated costs of the project is US\$0.9 million. Funding for the project is being sought.

4.2.10 Project AAA.5.18 - Edible Mushroom Farming

The aim of the project is to assess the feasibility of cultivation and production of edible mushrooms in order to supplement the dietary intake and income of the rural people and to increase the species' diversity of edible mushrooms by introducing exotic species. The estimated cost of the project is US\$ 47,000 and funding is being sought.

The project will be carried out as part of programme for development of non-wood forest products in the region. Following a consultancy study in September, 1990, the project has been reformulated so as to effectively address the following specific aspects:

- a) Involvement of women in mushroom production;
- b) Investigations into mushroom preservation;
- c) Promotional activities in mushroom production through the establishment of demonstration projects in selected areas;
- d) Training of trainers and forestry extension workers in mushroom production; and
- e) Organisation of study tours as a practical means of information exchange on mushroom production.

It is proposed that several countries be involved simultaneously in the implementation of this project, through the establishment of a network for information exchange coordinated by the Coordinating Unit. Funding is being sought.

4.2.11 Project AAA.5.20 - Management of Indigenous Forests

This project is intended to address the problem of management of natural forests, including forest inventory, regeneration trials, multiple land-use and forest conservation.

It is proposed to organise a study tour for a selected number of forestry officers from member States. The tour would aim at up-dating participants on methods which can be applied in managing indigenous forest resources. The cost of the project is estimated at US\$ 1.22 million. Funding is being sought.

4.2.12 Project AAA.5.21 - Beekeeping Development

This project is intended to assist in the development of the beekeeping industry in the region. The project will entail agricultural research, training and beeswax production.

This project will be carried out as part of a programme for the development of non-wood forest products in the region. Following a consultancy study in September 1990, the project has been reformulated so as to effectively address the following aspects:

- a) promotional activities on beekeeping in indigenous and exotic plantation forests through the establishment of demonstration projects in selected areas;
- b) training of trainers and forestry extension workers in beekeeping practices;

- c) provision of capital equipment and technical assistance for demonstration projects;
- d) local field research on beekeeping and beeswax production; and
- e) organisation of study tours as a practical means of information exchange on beekeeping in the forestry sector.

It is proposed that several countries be involved simultaneously in the implementation of this project, through the establishment of a network for information exchange.

The estimated cost of the project is US\$1.76 million, the funding of which is being sought.

4.2.13 Project AAA.5.22 - Rural Plantations and Timber Processing

The purpose of this project is to establish and/or expand existing plantations to provide raw materials for rural sawmills, and pole and post treatment plants for the furniture and related industries for regional and export markets. The total estimated cost of the project is US\$8.45 million, the funding of which is being sought.

4.2.14 Project AAA.5.23 - Strengthening of Forestry and Forest Products Research Institutions

The objective of the project is to develop national forest research action plans for each of the member states and a regional forest research action plan for the region as a whole. Work began in February 1991 with the appointment of a consulting firm, to help implement the project. Member States have established national forest research task forces; and a regional forest research task force has been formed. The project's first regional workshop was held in Maseru from 28-30 May, 1991, to discuss and agree on the methodologies for preparation of national and regional plans, as well as the project workplan.

4.2.15 Project LES.5.1 - Village Fuelwood Plantations (Lesotho)

The project is intended to assist in the harvesting, tending and regeneration of the plantations already established under the Lesotho Woodlot Project. Another plantation of 9,700 ha is to be established over a five-year period. The project whose cost is US\$5.4 million, is under implementation.

4.2.16 Project LES.5.2 - Agroforestry in Arable and Pastoral Farming (Lesotho)

This project is intended to assist in the improvement of soil fertility by introducing certain tree species in arable and pastoral farming areas; in order to provide fodder and shelter belts to protect arable land from desiccating winds.

This project is likely to be incorporated into the Lesotho Tropical Forestry Action Plan where it will probably be funded on a bilateral basis as a national project.

4.2.17 Project MAL.5.1 - Development of Montane Forest Resources

The objective of this project is to develop montane forest resources of Mulanje Mountain in Southern Malawi. This area has the valuable Mulanje cedar species (Widdringtonia nodiflora) distributed in an area of about 300 square kilometres.

The emphasis of the project has been changed from road construction and industrial plantation management to management of Mt. Mulanje forest resources for multiple use, conservation and public environmental education.

This entails developing an integrated resource management plan for the Mt. Mulanje Forest Resource. The project will have a demonstration effect in integrated resources management planning, for the benefit of member States.

Following a consultancy study in September 1990, the project has been reformulated so as to effectively achieve its objective. The cost of the project is estimated at US\$ 4.0 million and funding is being sought.

4.2.18 Project MOZ.5.1 - Regional Forest Inventory

The project is intended to facilitate the provision of information and production of maps to enable member states to monitor the rate of deforestation in the region on a regular basis. In January 1991, a 5-person feasibility study was initiated by PSTCU. The mission visited all member states to undertake a needs assessment for the proposed regional forest inventory project, examine available forest inventory data and mapping, and the integration of other resource values into the proposed forest inventory, and the capability of member states in forest inventory remote sensing

techniques. The mission also discussed the needs of member states in forest inventory manpower training, equipment and other facilities with respect to the proposed regional forest inventory.

A final report of the mission is being awaited.

4.2.19 Project TAN.5.1 - Centre for Advanced Practical Forestry Training

The project is aimed at improving and developing facilities at Sokoine University of Agriculture and Olmtonyi Forestry College, in Tanzania, in order to cater for refresher courses for foresters. The cost of the project is estimated at US\$4.1 million. Funding has been secured and implementation is scheduled to start soon.

4.3 Wildlife

4.3.1 Project AAA.6.2 - Support to Wildlife Technical Coordination Unit

This Project gives technical assistance to the Wildlife Coordination Unit in Malawi, in discharging its responsibility of coordinating the SADCC Wildlife Action Programme. The project is under implementation. An advisor to the Sub-Sector has been in post since July 1990. He is funded by CFTC and WWF.

4.3.2 Project AAA.6.3 - Relief for Drought-Stricken Wildlife Areas

The Wildlife Sub-Committee urged Botswana to take the lead in the reformulation of this project using information provided by Zambia and Zimbabwe. The project should now also include Angola and Namibia.

4.3.3 Project AAA.6.4 - Processing and Marketing of Durable Wildlife Products

The project has been implemented through a workshop that took place in 1989 in Bulawayo, Zimbabwe. Projects are now being formulated from workshop recommendations, e.g. the Project on capture, cropping and culling techniques. Other proposals are at formulation stage.

4.3.4 Project AAA.6.5 - Regional Wildlife Training Programme

The old Projects AAA.6.5 Strengthening of Mweka College and Project AAA.6.0.9 Manpower Requirements in the SADCC region, were merged to form one project AAA.6.5 - The Regional Wildlife Training Programme. This project aims at supporting Mweka College in

Tanzania for middle level professional training, and the University of Zimbabwe for post-graduate training in Wildlife Management. The primary objective of this project is to strengthen and improve the capacity of regional training facilities for medium and upper level wildlife personnel.

Consultants have prepared a detailed project dossier which has now been presented to EEC for funding consideration.

4.3.5 Project AAA.6.6 - Wetlands Conservation Programme

The project is completed. The survey phase report was produced and the subsequent conference was held in Botswana from 3rd - 5th June, 1991. The final documentation is under preparation.

4.3.6 Project AAA.6.7 - Conservation Education in the SADCC Region

This project aims at increasing public awareness of the need to conserve wildlife resources in the SADCC region. It will establish a regional conservation education unit in Lilongwe from where information will be disseminated to other member states. The project is estimated to cost US Dollars .65m. Funding is being sought.

4.3.7 Project AAA.6.8 - Infrastructure Development in Conservation Areas

This project aims at developing infrastructure in national parks in the framework of the regional tourism development as identified in the SADCC Regional Tourism Demand Study. Priority regional tourism packages will be incorporated, for which funds will then be sought. These packages will be developed in collaboration with the Tourism Sector. A preliminary workshop attended by the two sectors and funded by GTZ was held in August 1990 in Kafue National Park, Zambia.

The recommendations of the workshop are being developed into project proposals.

4.3.8 Project AAA.6.10 - Research and Monitoring Development

The project was deleted because its objectives are being addressed by other projects, e.g. Project AAA.6.15.

4.3.9 Project AAA.6.11 - Environmental Impact Assessment Workshop

The project is aimed at introducing concepts and methods which will facilitate assessment of the environmental impact of development projects at

national and regional levels, particularly projects affecting environmental and wildlife habitat alterations.

It is now agreed that when the project is funded, it should be implemented by the Wildlife Sector in collaboration with the Soil and Water Conservation and Land Utilisation Sector, in order to ensure that wildlife interests are included during the implementation of the project. Funding is being sought.

4.3.10 Project AAA.6.12 - Seminar and Study Tour on Wildlife Utilisation

The project looked into integrated wildlife utilisation as a tool for rural development through people's participation. It highlighted the approach of integrated resource utilisation as a means of expanding the economic base of local people and ploughing back the benefits into the coffers of rural communities who are custodians of the natural resources.

The Seminar and Study Tour on Wildlife Utilisation took place on June 6 to 28th, 1990 and was attended by participants from SADCC member States who visited Botswana, Zambia and Zimbabwe. These countries have successful projects on wildlife utilisation with involvement of rural communities.

The project was funded by the Food and Agriculture Organisation (FAO).

4.3.11 Project AAA.6.13 Law Enforcement in Wildlife Management and Utilization

The project's objective is to assist in law enforcement for protection of wildlife in strategic border areas in Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe to assist managers with the control and monitoring of intra-regional trade in wildlife products.

After realising that the problems of poaching and trafficking are common to all SADCC member States, it is now agreed that the project be reformulated to cover all SADCC countries. The project comprises

consultancy services and logistical support at an estimated cost of US\$1.8m.

4.3.12 Project AAA.6.14 - Crocodile Management and Utilisation

The pre-feasibility study is intended to examine the possibilities of developing crocodile farms in the region for the production of crocodile hides, as a special export commodity. The cost of the study is estimated at US\$0.10 million.

A workshop on Crocodile Management in 1987 at Kariba, Zimbabwe, comprised the first phase of this project; resulting in the formulation and adoption of a common SADCC policy. This common policy has been presented to the Conference of Parties to the Convention of International Trade in Endangered Species of Fauna and Flora (CITES), with a view to obtaining crocodile export quotas for SADCC member States, as a pre-requisite for the development of crocodile farming. CITES compiled a report which was received in October 1989, and discussed at a CITES meeting in Sweden the same month. The report was presented to Ministers of Agriculture and Natural Resources in Maseru.

Projects are being developed based on the recommendations of the workshop.

4.3.13 Project AAA.6.15 Co-ordination of Regional Tsetse-Fly Eradication with Wildlife Management Programme

The objective of the project is to investigate the economic potential of wildlife in areas scheduled for tsetse-fly eradication.

This project is now planned to start with pilot studies in conjunction with the EEC Tsetse eradication/control project in Kasungu National Park and Nkhotakota Game reserve in Malawi. The studies will be followed by a regional workshop to discuss the results of the pilot studies. The project will be implemented in cooperation with the Livestock Production and Animal Disease Control Sector. The project is estimated to cost US\$40,000. Funding is being sought.

4.3.14 Project AAA.6.16 Regional Development of Community-Based Management and Utilization of Wildlife

The project aims at developing a community based concept of wildlife utilisation with the active involvement of rural communities to organise income generating schemes and at the same time provide a sound conservation programme for the wildlife resource.

The project has four components:

- In Botswana - the Game Harvesting Project under the Remote Area Dwellers Programme (RADS);
- In Zambia - the Administrative Management Design (ADMADE); Luangwa Integrated Resource Development Project (LIRDP) and the Wetlands Programme;
- In Zimbabwe - the Communal Area Management Programme for Indigenous Resources (CAMPFIRE);
- In Malawi - the Coordinator will coordinate information flow from the pilot areas of the project, and disseminate the information to all SADCC member States. The Coordinator is expected to start work in early August 1991.

4.3.15 Project AAA.6.17 - Regional Wildlife Resource Inventory

The project is aimed at compiling an inventory of wildlife resources in the region to assist wildlife administrations to determine distribution and status of wildlife species for purposes of management, research and utilization. The project has two components:

- (a) development of a special regional wildlife inventory and monitoring service in Malawi through training and institutional building; and
- (b) planning and executing wildlife development and management programmes and institution of subsequent monitoring in specific selected areas of the region.

The project is estimated to cost US\$2.1m. EEC have agreed to fund the investigative consultancy which will produce a project dossier for consideration by SADCC and the EEC. A consultancy has been commissioned to carry out the inventory.

4.3.16 Project AAA.6.18 - Regional Survey of Wildlife Utilization and the Economic Potential of Wildlife Resource

The project is to survey and recommend controlled and sustainable forms of use of wildlife resources for rural development. The consultancy will collect and analyse data to determine:

- forms and volume of wildlife use;
- current utilisation techniques, including harvesting and processing methods and marketing channels used;
- the importance of wildlife to national economies and the region as a whole.

A team leader has been recruited and is being assisted by one Veterinary Officer and one Wildlife Resource Economist. The consultancy started in November 1990. It is progressing well.

4.3.17 Project BOT.6.1 - Establishment of Southern African Centre for Ivory Marketing (SACIM)

The objective of this project is to establish, market monitor and control a single system for the marketing of ivory and other elephant products from Southern Africa. The project is estimated to cost US\$750,000 to establish. Funding has been pledged by the involved SADC member states. Once established, SACIM will be self-funding through the levy of a small commission on all ivory sales. The agreement to establish SACIM has been signed. The founding members Botswana, Malawi, Namibia, Zambia and Zimbabwe, signed the agreement on 20th June, 1991 in Malawi.

4.3.18 Project ZIM.6.1 - Development of Ostrich Production Systems

The project seeks to assess the potential for bolstering the development of ostrich production systems as a source of foreign exchange through sale of feathers, hides and meat from semi-domesticated ostriches. The cost of establishment and operation of the Breeding and Extension Centre for an initial period of three years is estimated at US Dollars 2.00m.

The Wildlife Sub-Committee has reviewed this project and agreed that the emphasis of the project should now be changed from chick production to research and extension services. The Sub-Sector will encourage farmers to start ostrich farming using the knowledge and skills gained from the project. Funding is being sought.

4.3.19 Project ZIM.6.2 - Regional Rhino Conservation Programme

The project is intended to re-inforce the efforts of the member states to conserve the black Rhino which is a unique but endangered species of the SADC region. The population of this species has declined from an

estimated 65,000 in 1970 to less than 4,000 of which more than 50% occur in Tanzania, Zambia and Zimbabwe. In the other SADCC countries, the species is on the verge of extinction. The project is estimated to cost US\$3.5m. Funding is being sought.

NEW PROJECTS

4.3.20 Project AAA.6.19 - Satellite Tracking of Elephant Movement Across National Borders

This project aims at enumerating and monitoring the seasonal movements of the elephant populations in conservation areas near the national borders in the region and the extent to which these elephants migrate across national borders.

The project is estimated to cost US\$1.0 million. Funding is being sought.

4.3.21 Project AAA.6.20 - Study of Wildlife Capture, Cropping and Culling Techniques

The objective of this project is to improve the region's ability to conduct an efficient wildlife utilisation programme that involves live capture, cropping or culling. Improvements in the methods, procedures and technologies in wildlife utilisation will greatly enhance the profitability of wildlife enterprises. The project is budgeted at US\$550,000 m. Funding is being sought.

5. PROJECT DESCRIPTIONS

AAA.4.6 REGIONAL FISHERIES INFORMATION AND DOCUMENTATION SYSTEM

<u>Estimated Costs</u>	<u>Financing Gap</u>
Total: US\$ 7.26m	US\$ 6.09m
Foreign: US\$ 6.09m	
Local: US\$ 1.17m	
<u>Funding Secured</u>	<u>Executing Agency</u>
Foreign:	
Local: US\$ 1.17m(Malawi)	To be determined
<u>Start</u>	<u>Duration</u>
Not Specified	7 Years

OBJECTIVES

The objectives of the project are to create and put into operation a SADCC Fisheries Documentation and Information System through:

- a) the establishment of a regional fisheries documentation and information centre;
- b) the strengthening of national fisheries documentation and information services;
- c) the standardisation of the regional system in order to attain full compatibility between the national and regional centres;
- d) the training of documentalists and information specialists required for the system.

The project will assist member States in developing their fisheries to increase production of food and employment opportunities. Population growth rates alone require that food production, including fish, be doubled by the year 2000. In order to alleviate malnutrition, where it exists, the rate of fish production should be accelerated. Information is a key factor to development as it may accelerate research, transfer of technology and thus, the overall development process.

Descriptions

Project Descriptions

Sharing of information among the member States and easy access to information available internationally would be facilitated through this project.

DESCRIPTION

A regional fisheries documentation and information system would be composed of a Regional Fisheries Documentation Centre (the Regional Centre) and ten national fisheries documentation and information centres (National Centres). The role of a regional centre would be:

- a) gathering, storage, retrieval and dissemination of fisheries management and development information generated in the region, especially on: development projects, published results of fisheries management measures introduced by individual countries or groups of countries; development affecting the state of national fish stocks, especially shared stocks both in marine and inland waters; catalogues of fisheries documentation available at the national level; national and regional bibliographies; directories; an adequately designed capture system for grey literature and computerised databases and information retrieval systems;
- b) acting as a regional focal point for accessing, on behalf of member States, global information systems of relevance to fisheries and at the same time functioning as regional input centre to such global databases.

STATUS

Funding is being sought.

AAA.4.7 (1) AQUACULTURE FOR LOCAL COMMUNITIES (ALCOM) - PHASE II

<u>Estimated Costs</u>	<u>Financing Gap</u>
Total: US\$ 7.07m	US\$ 5.88m
Foreign: US\$ 7.07m	
Local: -	
<u>Funding Secured</u>	<u>Executing Agency</u>
Foreign: US\$ 1.19m	FAO/SIDA
Local: -	
<u>Start</u>	<u>Duration</u>
October, 1990	5 years

OBJECTIVES

The objective of the project is to increase cash income and/or animal protein component in the diet of rural communities, achieved through increased production of fish from small-scale aquaculture integrated with mixed systems or as a complement or an alternative to traditional small-scale fishing.

The target communities are those which depend for a living on small scale mixed farming systems or subsistence and partly on the local market economy. Often the rural household in Southern Africa are headed by females and the children share significantly in the labour requirement.

The intermediate objective is the adoption in such communities of appropriate fishculture practices, introduced, promoted and supported through other nationally and internationally funded projects concerned with rural development and integrated into the local farming systems.

The objective of the second phase of the programme is to provide from 1991 through 1994 for fishculture methods and systems, which have been tested in pilot projects and demonstrated to be technically, economically and socially appropriate for the target communities identified.

DESCRIPTION

The activities to achieve these objectives, involve the identification and detailed analysis, through pilot projects, of the practical application of:

- a) aquaculture methods and practices, which utilize the benefits of a high level of integrating with major farming systems;
- b) practices for the utilization of small water bodies benefiting local community(ies);
- c) cost effective extension systems developed in collaboration with other existing systems;
- d) the involvement of women and youth in aquaculture development;
- e) application of fish culture techniques designed to minimize risk of spreading waterborne human diseases and methods for integration of fish production with soil conservation programmes;
- f) cost effective methods for gathering of information and data for national planning and project design.

Furthermore, a system for the dissemination of findings and results from the programme among participating countries in rural aquaculture development will be established.

STATUS

Funds for first year (1990/91) amounting US\$1,186,000 have been provided by SIDA. Funding for the remaining four years is being sought.

AAA.4.7 (2) DEVELOPMENT OF AQUACULTURE IN ANGOLA

<u>Estimated Costs</u>	<u>Financing Gap</u>
Total: US\$ 2.83m	US\$ 2.37m
Foreign: US\$ 2.37m	
Local: US\$ 0.46m	
<u>Funding Secured</u>	<u>Executing Agency</u>
Foreign: -	
Local: US\$ 0.46m(ANG)	
<u>Start</u>	<u>Duration</u>
Not specified	Phase I (2 years) Phase II (5 years)

OBJECTIVES

The project seeks to create employment opportunities and to produce animal protein in rural areas of Angola through the promotion of aquaculture. The project seeks to achieve this through two phases:

- (1) Assistance in planning of aquaculture development.
- (2) Establishment of an Aquaculture Development System.

The objectives of phase 1 will be:

- to investigate the economics, i.e. the expected national costs and benefits of different forms of aquaculture development;
- to identify research training and extension needs;
- to investigate the socio-economic and institutional framework for aquaculture development;
- to plan the establishment of an aquaculture centre as the focal point for aquaculture development.

The objectives of phase II will be to establish and render operational an Aquaculture Centre with the following tasks:

- training of local manpower to be engaged in aquaculture;

- research into specific aspects of aquaculture;
- provision of extension services;
- development of appropriate breeding techniques;
- production and distribution of fingerling.

DESCRIPTION

The project consists of two distinct phases:

Phase 1 - will render assistance in the areas of basic investigations into possibilities, justification and problems of aquaculture development. The Angolan Government will be assisted in developing appropriate policies and in planning the most beneficial aquaculture development systems and in putting up a research training centre, as the focal point for aquaculture development. Phase I therefore plays an advisory role to the Instituto de Desenvolvimento Florestal (IDF).

Phase II - will be based on the results of phase I activities. It will involve the establishment and operation of a national aquaculture centre.

The Centre will be attached to the IDF Department assumes responsibility for aquaculture development, in order to ensure its effectiveness.

However the organisational and technical concept for the Centre will have to be investigated and determined during phase I.

STATUS

Funding is being sought.

AAA.4.7 (3) REGIONAL TROUT MANAGEMENT PROJECT

<u>Estimated Costs</u>	<u>Financing Gap</u>
Total: US\$ 8.52m	US\$ 8.52m
Foreign: US\$ 8.52m	
Local: -	
<u>Funding Secured</u>	<u>Executing Agency</u>
Foreign: -	
Local: -	
<u>Start</u>	<u>Duration</u>
Not Specified	7 1/2 years

OBJECTIVES The aim of the project is to establish and develop a SADCC Regional Trout management programme in order to promote the development of a viable trout industry in the region.

Specifically, the project aims to:

- develop and promote high volume commercial trout production to meet local, regional and international requirements and hence act to save valuable foreign exchange spent in importing this fish by the Region.
- establish in each country, trout hatcheries with the capacity to produce enough seeds to meet local, regional and probably international demand, and
- bring about regional collaboration and cooperation in all aspects of trout management. To achieve these it is proposed that National Trout Management Programmes be strengthened.

DESCRIPTION An initial three years Project Development Phase (Pilot Phase) is proposed. Activities during this phase will include deployment of Consultancy Teams to work with local experts from the SADCC participating countries in formulating strategies, identifying individual country requirements and presenting recommendations on how best the projects shall be executed. This work shall take about 6 months to complete. The last two and half years will involve setting up basic structures such as hatcheries and ponds (raceways) from which the first breeding and production trials will be conducted. Results from these trials will reveal major problem areas

requiring more inputs in terms of technology, expertise, funding and infrastructural development. Based on the results from this first phase, funding will be sought for the implementation phase of the project.

The Implementation Phase is proposed to last for five (5) years and will undertake the following main activities.

- Construction of main infrastructure requirements of Trout Management Centres alongside already built hatcheries and ponds e.g. access roads, centre offices, staff houses and probably expansion of the hatcheries and pond areas if necessary.
- Formation and testing of trout diets based on locally available food materials in the participating countries. It will be necessary to engage fish nutritionists to work with local experts on this exercise on a consultancy basis. This is a very important prerequisite for successful trout farming.
- Provision of an active extension support service such as transport, running expenses and emoluments for projects staff.
- Training of local staff on trout management either by attachment arrangements in the region or abroad. Trout management technicians will mainly be trained on the job but it is recommended that they be given at least 3 months attachment training at the Regional Trout Research and Development Centre in order to be exposed to what technology exists in the other countries.

STATUS

Funding is being sought.

**AAA.4.7 (4) DEVELOPMENT OF FISH FARMING IN COOL WATER AREAS
IN THE SADCC REGION**

<u>Estimated Costs</u>	<u>Financing Gap</u>
Total: US\$ 1.32m	US\$ 1.32m
Foreign: US\$ 1.32m	
Local: -	
<u>Funding Secured</u>	<u>Executing Agency</u>
Foreign: -	
Local: -	
<u>Start</u>	<u>Duration</u>
Not Specified	3 years

OBJECTIVE: The objective of the project is to assist SADCC member countries individually and collectively to increase farmed fish production from areas which are currently unable to engage in fish farming through:

- a) provision of new improved technologies and opportunities to national fish farming staff in order to broaden their skills and experience.
- b) establishment of fish farming system whereby existing species technologies may be extended into cooler areas.
- c) Selection of suitable varieties of marketable fish found to be capable of good growth rates in cool areas:
- d) Demonstration of suitable technologies for their propagation and culture in small rural ponds.

DESCRIPTION The project will investigate possibilities of extending existing technologies on fish farming in hot areas into cooler areas. Research is underway on low temperature tolerance of fish species suitable for cultivation. There are two approaches to be undertaken concurrently: a programme of field trials to investigate the effects of different pond designs on their water temperature, with the particular aim of minimising heat loss during hot weather periods; and secondly a programme of laboratory based research to establish the temperature related growth coefficients (the effects of a range of different water temperatures on growth and

condition for many different species and strains)
of tilapia and other fish species as can be
managed.

STATUS

Funding is being sought.

OK

AAA.4.8 PROVISION OF EXTENSION AIDS AND SERVICES

<u>Estimated Costs</u>	<u>Financing Gap</u>
Total: US\$ 3.33m	US\$ 3.33m
Foreign: US\$ 3.33m	
Local: -	
<u>Funding Secured</u>	<u>Executing Agency</u>
Foreign: -	
Local: -	
<u>Start</u>	<u>Duration</u>
Not Specified	Phase 1 (1 year)
	Phase 2 (4 years)

OBJECTIVES The aim of the project is to assist SADCC member countries individually and collectively in increasing their fish production, in a co-ordinated and economically justified manner, and to accelerate fisheries development process. Specifically, the project aims:

- a) to raise awareness among top level decision makers regarding both the fish production potential, and the requirements for its realisation.
- b) to improve the functioning of national extension services which constitute an integral part of the programme for fish production growth.
- c) to provide the national extension services in the region with the necessary tools to improve their operations in order to stimulate development in small-scale fish farming and in both marine and inland water capture fisheries.

DESCRIPTION Member states are expected to provide necessary extension support to fish farmers through appropriately organised, staffed and financed extension services.

Extension officers will focus on such activities as how to stock and crop smallfish, how to make ponds; how to rig, use and repair nets, care of catch, simple sail propulsion, the need for and methods of resource management, etc. the use of posters, visual aids. The extension messages will be translated into major vernacular languages and made available to extension services. Such materials will reinforce the

discussions between the extension works and the recipients of the information.

STATUS

Funding is being sought.

AAA.4.9 ESTABLISHMENT OF REGIONAL COMPUTER-BASED MARINE FISHERIES CATCH DATA SYSTEM

Estimated Costs

Total: US\$ 0.14m
Foreign: US\$ 0.14m
Local: -

Financing Gap

US\$ 0.14m

Funding Secured

Foreign: -
Local: -

Executing Agency

Start

Duration

34 weeks with possible Extension

OBJECTIVES

The project's aims is to

- establish a "uniform" computer-based catch data system on catch and landings by species, areas, vessels type, and transhipments of marine fish catch.
- facilitate the utilization of information within the SADCC member states for sustainable fisheries planning, development and management.

DESCRIPTION

Following the Programme of Action for the Development of Marine Fisheries in the SADCC region, this project will have three phases, with a possible extension into a fourth phase depending on the results of previous phases.

In phase I a computer consultant will be engaged to conduct an initial study in each member State in order to assess the present data collection system and the data requirements of each member State. The results of this study will be reviewed in order to agree on the common components of the new computer system. Subject to the agreement, a SADCC fishing book initially for foreign fishing vessels and later adapted for the naval fleets will need to be designed.

Phase 2 - the consultant will design and test software needed to meet the criteria specified by the SADCC coastal states. On completion, the consultant would be required to complete and deliver easy-to-understand user manuals to each member State.

In Phase 3, the consultant would visit each member state to install the software and provide training to operators of the system. The establishment of a "UNIFORM" computer-based catch-data system in collaboration with a well managed marine fisheries research programme would be an effective future tool for marine fisheries planning for development. Total allowable catches (TACs) could be established for the benefit of the states concerned both as food for the local population as well as an important foreign exchange earner.

STATUS

Funding is being sought.

AAA.4.11 COMPUTERISATION OF INLAND FISHERIES PRODUCTION
STATISTICS THROUGHOUT THE REGION

<u>Estimated Costs</u>	<u>Financing Gap</u>
Total: US\$ 0.32m	US\$ 0.32m
Foreign: US\$ 0.32m	
Local: -	
<u>Funding Secured</u>	<u>Executing Agency</u>
Foreign: -	
Local: -	
<u>Start</u>	<u>Duration</u>
	3 years

OBJECTIVES a) Overall

Computerisation of inland fisheries production statistics will allow SADCC countries to better manage the valuable natural resource of their fish stocks. This will be critical in the years to come as human pressures on the land and human nutritional needs become ever more difficult to satisfy. Accurate, timely, comparable fisheries statistics will assist SADCC to deal with these issues in an informed, unified, and coordinated fashion.

b) Specific

There are two major specific objectives to this project:

- 1) Computerisation of inland national fisheries production statistics in member SADCC countries;
- 2) Creation of a regional database which summarises nation statistics from SADCC member countries.

DESCRIPTION: In examining the problems with inland fisheries statistics facing SADCC member nations a Fisheries Statistics Workshop held in 1988 produced specific recommendations for improving existing systems of data collection, processing and management.

This project addresses the workshop's recommendation that an expert on fisheries

statistics establish a database to be incorporated into the proposed regional Documentation Centre.

The expert will:

- design and install a uniform database system which can incorporate data from all SADCC countries;
- examine each country's existing and/or proposed data collection system to identify and if possible eliminate all possible sources of bias;
- train staff in the proper management and use of database system; and
- conduct a workshop, subsequent to the establishment of the system and staff training, to discuss the implemented systems and resolve any problems encountered.

STATUS

Computerisation of inland fisheries statistics were started in Malawi using funds from the completed USAID supported Project No. AAA.4.4. Funds are, therefore, being sought so that the Malawi model should be developed throughout the SADCC countries, over the course of the next several years.

AAA.4.12 ESTABLISHMENT OF THE MARINE FISHERIES INSPECTORATES IN THE SADCC REGION

Estimated Costs

Total: US\$ 3.59m
Foreign: US\$ 3.59m
Local: -

Financing Gap

US\$ 3.59m

Funding Secured

Foreign: NIL
Local: NIL

Executing Agency

Start

Duration

18 - 20 months with possible continuation after evaluation

OBJECTIVES

The objective of this project is to establish and train staff for a designated inspectorate unit within the Fisheries Ministry/Department of each SADCC member State which will be responsible for undertaking effective measures to control and monitor marine fisheries activities within the country's Economic Exclusive Zone (EEZ).

DESCRIPTION

The project will be carried out in three phases using a company with expertise in monitoring, control and surveillance of marine fisheries.

Phase 1

This is a training phase which will be undertaken separately in each of the four SADCC coastal states by the company personnel.

This will involve a four week training course at a fisheries school and two to three weeks training at sea.

Phase 2

a) Establishment of a regional surveillance unit consisting of a patrolship and an aircraft both specially equipped. This phase will start not later than 3 weeks after Phase 1 so that training both in the air and at sea can continue immediately after the onshore training has been completed.

b) Establishment of radio control centres with HF radios. These will facilitate good

coordination and communication since the ship and aircraft will be required to operate up to 200 nautical miles from the coast.

Phase 3

Depending on the success of Phase 1 and 2, funding will be sought for the purchase of aircraft and patrol ships to form a long term regional maritime surveillance Unit.

STATUS

Funding is being sought.

ANG.4.2 PROMOTION OF EXPORT MARKETING OF MARINE FISH PRODUCTS

Estimated Costs

Total: US\$ 1.67m
Foreign: US\$ 1.67m
Local: -

Financing Gap

US\$ 1.67m

Funding Secured

Foreign: -
Local: -

Executing Agency

Start

Duration

2 years

OBJECTIVES

The objective of the project is to increase foreign revenue from export marketing of high quality marine fish products from the SADCC states of Angola, Mozambique, Tanzania and Namibia.

Specific objectives will be to:

- support common marketing strategies for the countries concerned in order to meet specific needs of the export markets.
- establish a regional export marketing expertise for marine fish products with emphasis on frozen and canned fish products.
- establish on-the-job and institutional training for nationals of the SADCC coastal states.

DESCRIPTION

This project would be implemented within the framework of the action programme for Marine Fisheries in the SADCC region. A highly qualified foreign expert in frozen fish handling and marketing would head the project assisted by an experienced fisheries economist and other experienced specialist staff in canned fish marketing with appropriate counterparts from the SADCC states concerned. Within the project organization, a "Frozen and Canned-Fish marketing Unit" should be located in Angola which has frozen and canning facilities supported by a high catch potential.

For sustainable benefits for the project and appropriate training programme within the states and outside should be provided to the nationals engaged in the implementation of the project.

STATUS

Funding is sought.

W

MAL.4.3 PILOT INTEGRATED FISH/PIG FARMING RESEARCH AND DEVELOPMENT AT KASINTHULA

Estimated Costs

Total: US\$ 0.73m
Foreign: US\$ 0.73m
Local: -

Financing Gap

US\$ 0.73m

Funding Secured

Foreign: -
Local: -

Executing Agency

Start

Not specified

Duration

5 years

OBJECTIVE The project aims at increasing fish production as a source of animal protein and income derived from fish farming associated with other livestock husbandry.

DESCRIPTION The project will demonstrate techniques of integrating fish and pig farming to subsistence and commercial farming for possible adoption on other irrigation schemes in the region. The project will also establish criteria for collecting basic economic and farm data of fish/pig farming to demonstrate the least-cost production methods through farm budget analysis techniques in assessing variations of inputs in the farm production mix. The practical techniques learned from this project could then be extended to other areas in the SADCC region.

STATUS Funding is being sought.

MAL.4.4 SUPPORT TO FISHERIES DEVELOPMENT PLANNING

<u>Estimated Costs</u>	<u>Financing Gap</u>
Total: US\$ 4.10m	US\$ 4.10m
Foreign: US\$ 4.10m	
Local: -	
<u>Funding Secured</u>	<u>Executing Agency</u>
Foreign: -	
Local: -	
<u>Start</u>	<u>Duration</u>
Not specified	5 years

OBJECTIVES The objective of the project is to improve fisheries development planning in member States. The project will also attach fisheries economists and planners to fisheries departments of member states.

The project will have the following immediate objectives.

- i) assist in the assessment of fisheries development potential at the national level, and in the Region as a whole.
- ii) assist individual countries in drawing up their long term fisheries development plans;
- iii) define for each country, and for SADCC the requirement for realisation of the fisheries development potential with a view to facilitating specific investments and taking decisions in an orderly manner including but not necessarily limited to:-
 - a) infrastructure requirements
 - b) institutional requirement
 - c) development of human resources
 - d) capital investment requirements
 - e) needs for technical assistance; and
 - f) research and attendant support requirements

DESCRIPTION The project is primarily of a technical assistance nature; it involves the employment of a small group of qualified fisheries economists/planners. The projects's staff would be primarily concerned with assisting the countries to assess their fisheries development potential on the basis of existing knowledge and, if needed, stimulate projects aimed at the

assessment of the potential.

Applying a uniform methodology, the staff would help national fisheries administrators and planners, in drafting their respective long-term plans. Training on-the-job would be a regular feature of the project.

Institutional training in the SADCC Region and abroad will be organised and sponsored by the project for national fisheries economists and planners.

The foregoing means that fisheries development planning shall remain a national responsibility. Assistance is however needed in the establishment of planning capabilities within fisheries administrations.

STATUS

Funding is being sought.

MOZ.4.1 QUALITY CONTROL AND STANDARDIZATION OF FISHERY PRODUCTS

<u>Estimated Costs</u>	<u>Financing Gap</u>
Total: US\$ 1.80m	US\$ 1.80m
Foreign: US\$ 1.80m	
Local: -	
<u>Funding Secured</u>	<u>Executing Agency</u>
Foreign: -	
Local: -	
<u>Start</u>	<u>Duration</u>
	4 years

OBJECTIVES The objective of the project is to assist the SADCC coastal States of Angola, Mozambique, Namibia and Tanzania in the proper utilization of the fishery resources available in their EEZ.

The project's specific objectives are:

- to set-up a Quality Control (QC) and inspection of fishery products unit in each State;
- to train national project staff on QC and inspection procedures;
- to increase the quantity of fisheries products reaching the consumer through the reduction of post-harvest losses, thus ensure high nutritive and market values of the products.

DESCRIPTION This is a technical assistance project which will be associated with an important component of technical cooperation among the SADCC countries involved. The proposed unit will provide services as an independent entity incorporated in the organizational structure of the Fisheries Division in the host country.

The project is proposed to extend over a four year period and will be divided into two phases.

The first year of Phase I will be spent carrying out the preparatory work for the project centred on the detailed assessment of the needs and obstacles for an effective fish QC and inspection programme.

During Phase 2 lasting for three years the project will proceed in accordance with the agreed plan of operation based on phase 1.

The project is expected to employ specialists in the organization and operation of QC's and fish inspection systems with short term consultancy services in specific fields such as extension, international trade and socio-economic evaluation.

Funding will be required for the purchase of equipment needed, upgrading of working facilities and specialized training of the technical staff in one of the existing QC laboratories which is to become the regional QC institution where special and more sophisticated analytical and microbiological tests may be performed.

STATUS

Funding is sought.

MOZ.4.2 ESTABLISHMENT OF A RESEARCH AND RESOURCE EVALUATION PROGRAMME IN THE MARINE WATERS OF THE SADCC REGION

Estimated Costs

Total: US\$ 115.78m
Foreign: US\$ 115.78m
Local: -

Financing Gap

US\$ 115,78m

Funding Secured

Foreign: -
Local: -

Executing Agency

Start

Duration

14 years with extension
if necessary

OBJECTIVES

The main objective of the project is to establish an effective research institution capable of formulating and implementing a marine fish resources evaluation programme for the SADCC coastal States. Specific objectives will be:

- to acquire necessary research vessels and equipment in order to effectively implement national and regional marine research programmes.
- to provide adequate training to SADCC nationals in appropriate disciplines to enable them conduct long term resource evaluation of the commercially important fish stocks.
- to formulate and implement appropriate surveillance and control measures in order to protect the marine resources and the marine environment as a whole in the fishing zones of the SADCC coastal States.

DESCRIPTION

The concept of this project was initiated at the Seminar on Marine Fisheries Development held in Luanda, in May, 1989. The evaluation of the marine resources in the SADCC Region identified the following weaknesses.

- a) the current incomplete knowledge of the state of commercially important marine resources and the future potential of unexploited fish stocks.
- b) lack of necessary vessels and equipment for effective stock assessment.

- c) lack of scientifically trained local manpower to conduct fisheries research and recommended management measures.

The planning and coordination of the programme will be administered by a committee consisting of two representatives from each SADCC coastal State, the donor(s) involved and representatives of the SADCC Fisheries Co-ordinating Unit who will participate in meetings as observers; implementation will be conducted in four phases.

Phase 1 - Will commence with a one year programme of an immediate evaluation of the state of resources in the marine waters of SADCC States with the assistance of reputable research institutions. Based on the evaluation, a systematic research programme will then be carried out including strengthening the SADCC research institutions associated with the programme.

Phase 2 - Based on the findings and recommendations from phase 1, phases 2 through 4 will involve the following: a long term resource evaluation with intensive on board and on-shore training of personnel so that by the end of the programme period, the SADCC coastal states will effectively conduct research and manage their resources for long term socio-economic benefits.

STATUS

Funding is being sought.

TAN.4.1 CATCH ASSESSMENTS STUDY IN LAKE TANGANYIKA

<u>Estimated Costs</u>		<u>Financing Gap</u>
Total:	US\$ 1.51m	US\$ 1.08m
Foreign:	US\$ 1.08m	
Local:	US\$ 0.43m	
<u>Funding Secured</u>		<u>Executing Agency</u>
Foreign:	-	
Local:	US\$0.43m (TAN)	
<u>Start</u>	<u>Duration</u>	
Not specified	2 years	

OBJECTIVES The objective of the project is to establish a long term integrated research programme under which fish catch and available stocks can be ascertained and maintained permanently. Thus surveys would be carried out to obtain reliable estimates of:

- a) the quantity of fish harvested by fisherman by weight and for each fishery.
- b) Catch composition by species and effect used.
- c) Size of stocks and levels of their exploitations as to establish a rational system of resources utilisation and management.

STATUS Funding is being sought.

AAA.5.2 REGIONAL HERBARIUM AND CONSERVATION OF ENDANGERED SPECIES

Estimated Costs

Financing Gap

Total : US\$ 1.7m
Foreign :
Local :

US\$ 1.7m

Funding Secured

Executing Agency

Foreign :
Local :

Start

Duration

Project proposals approved
in 1984

OBJECTIVES

The objectives of this project were revised in 1990, and are as follows:

- a) To report on the status of national herbaria in the SADCC region and formulate a plan to strengthen and coordinate these in a regional context.
- b) To improve the facilities and botanical collections of national herbaria, undertake taxonomic research and training, and establish a network for information exchange with emphasis on the protection and conservation of endangered plant species in the SADCC region.

DESCRIPTION

The project will be implemented in each of the member States.

The project will provide technical assistance to member States in documenting and reviewing their botanical collections. Technical assistance and funding will also be provided to update and expand these collections for research, education and public information. Emphasis will be given to the preservation of endangered species. The project will establish a network, and possibly a regional centre, for the exchange of information and specimens among member States.

A detailed project description has been prepared for the project to be carried out in two phases; I - Appraisal Mission, II - Implementation.

STATUS

Funding is being sought.

AAA.5.3 URBAN FUELWOOD PROJECT

Estimated Costs

Total : US\$14.32m
LES Component : US\$ 0.28m
MAL Component : US\$ 8.9 m
MOZ Component : US\$ 4.2 m
TAN Component : US\$ 0.94m

Financing Gap

US\$ 6.42m

Funding Secured

Foreign : US\$ 6.5m (NOR)
Local : US\$ 1.3m (MAL)
US\$ 0.1m (MOZ)

Executing Agency

Each component by
respective govt.

Start

MAL only 1986

Duration

6 years

OBJECTIVES The objective of this project is to increase the supply of fuelwood to urban centres: in particular to Blantyre and Zomba in Malawi, to Beira and Nampula in Mozambique, to Dar-es-Salaam in Tanzania and to Leribe in Lesotho.

DESCRIPTION Large-scale sustained yield plantations of fast growing tree species will be established adjacent to urban centres which face a critical shortage of fuelwood.

These operations will be put within the context of rural development, in order to sustain the programmes.

Each component of the project will address mechanisms for harvesting and marketing the output to achieve maximum socio-economic returns.

STATUS The Malawi component of this project is fully funded by NORAD and is being implemented by the Norwegian executing agency, Forest Industries Development and Consulting Company (FORINDECO). NORAD has agreed to fund Phase II of the project where the emphasis will be on harvesting, transportation and marketing aspects.

Funding is sought for the Lesotho, Mozambique, and Tanzania components.

AAA.5.5 REGIONAL TREE SEED CENTRE

Estimated Costs

Total : US\$10.85m
Foreign : US\$10.85m
Local : -

Financing Gap

US\$10.65m

Funding Secured

Foreign : US\$ 0.2m (CIDA)
Local :

Executing Agency

ZIM Government for Local regional centre, member states governments for national centres

Start

Duration

5 years

OBJECTIVES

The objectives of this project were revised in 1990 and are as follows:

- a) to identify problems in the gathering of information and the collecting and storing of tree seeds in the SADCC region;
- b) to establish (where they do not exist) and strengthen seed centres, in each of the SADCC member States;
- c) to establish a network for the exchange of information and tree seeds among SADCC member States.

In addition, it is envisaged that the project will at a later stage incorporate the establishment of satellite seed centres in the SADCC member states.

DESCRIPTION

This project will be implemented in each of the member States.

The project will review the status of tree seed collections, processing and storage facilities in the member States and identify requirements with a view to providing capital investment and training to strengthen these facilities. The project will assist in the design and establishment of a network of tree seed centres in the SADCC region.

STATUS

Funding sought for the implementation of the project.

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CIDA funded a feasibility study mission in April-June 1989. The recommendations from this report and a proposed management plan for the project were reviewed by the Technical Sub-Committee for Forestry in April 1990. CIDA is preparing a revised project Management Plan for implementation of the project.

AAA.5.11 PILOT PROJECT ON REHABILITATION OF MINING AREAS

Estimated Costs

Total : US\$ 0.70m
Foreign : US\$ 0.70m
Local : -

Financing Gap

US\$ 0.70m

Funding Secured

Foreign :
Local :

Executing Agency

Start

Project proposal approved
in 1986

Duration

5 Years

OBJECTIVE The objective of this project is to establish fuelwood and pole plantations, and to preserve the existing indigenous forests for water catchment in coal mining areas.

DESCRIPTION This pilot project will establish and manage plantations, as well as control measures on indigenous forests in a coal mining area, as a rehabilitation and conservation measure. Successful management practices will be replicated throughout the region.

STATUS Funding sought.

AAA.5.12 COMMUNITY FORESTRY DEVELOPMENT

<u>Estimated Costs</u>		<u>Financing Gap</u>
Total	: US\$ 9.84m	US\$ 9.84m
Foreign	: US\$9.84	
Local	: -	
<u>Funding Secured</u>		<u>Executing Agency</u>
Foreign	:	
Local	:	
<u>Start</u>		<u>Duration</u>

OBJECTIVES The objectives of this project were revised in 1990 and are as follows:

- a) To report on the status of community forestry development programmes in the SADCC region, country by country, and outline regional initiatives to improve and expand community forestry development programmes.
- b) To strengthen and expand community forestry development in the SADCC region through establishment of an information network, a regional training programme, research, and incentives to increase the participation of women in community forestry development.

DESCRIPTION The project will examine community forestry development programmes in each of the member States in order to identify major constraints and solutions adopted. On the basis of this information the project will develop regional initiatives to improve and expand existing programmes in the region, including study tours, research and regional training programmes.

A detailed project description has been prepared for the project to be carried out in two phases: I - Appraisal Mission, and II - Implementation.

STATUS Funding sought.

AAA.5.17 OPTIMAL MANAGEMENT OF WATERSHED AREAS

Estimated Costs:

Total : US\$0.91m
Foreign: US\$0.74m
Local : US\$0.17m

Financing Gap

US\$0.74m

Executing Agency

Malawi

Funding Secured

Foreign:
Local : US\$0.17m (Mal)

Start

Duration: Ten Years

Start

Project proposal approved in 1987.

OBJECTIVES

The objectives of this project are:

- a) to develop appropriate management techniques for the optimization of outputs from forested watersheds in Malawi;
- b) to select and construct experimental watersheds for collection of data on various forest management and land use practises;
- c) to study and evaluate physical conditions of experimental watersheds.

DESCRIPTION

In order to advise government on management policy in watersheds, which has a number of shortfalls, it is necessary to obtain quantified data on the impact of the proposed changes. It is, therefore, proposed to initiate research projects in three small catchment areas in which various management prescriptions, or a combination of these, would be done and data properly collected, analysed and interpreted. On the basis of the findings, a set of recommendations would then be made to the government for consideration and approval.

STATUS

Funding sought.

AAA.5.18 EDIBLE MUSHROOM FARMING

Estimated Costs

Total : US\$ 0.25m
Foreign : US\$ 0.25m
Local : -

Financing Gap

US\$ 0.25m

Funding Secured

Foreign : -
Local : -

Executing Agency

Tanzania and Zimbabwe
Governments

Start

Project proposal approved
in 1987

Duration

5 years

OBJECTIVES

The objective of this project is to supplement the diet and income of rural people through mushroom cultivation; to perpetuate the existence of edible indigenous mushrooms and to increase the species diversity of edible mushrooms through the introduction of exotic species.

DESCRIPTION

This project will investigate ways of improving methods of production processing, storage and marketing of indigenous mushrooms in order to increase the level of mushroom production.

It is proposed that this project be carried out in conjunction with SADCC Project AAA.5.21, Beek-Keeping Development in the SADCC region, as part of a programme for Development of Non-Wood Forest Products in the SADCC region.

A detailed programme description for Development of Non-Wood Forest Products in the SADCC region has been prepared.

STATUS

Funding sought.

AAA.5.20 MANAGEMENT OF INDIGENOUS FORESTS

Estimated Costs

Total : US\$ 1.22m
Foreign : US\$ 1.22m
Local : -

Financing Gap

US\$ 1.22m

Funding Secured

Foreign : -
Local : -

Executing Agency

Tanzania and Zimbabwe

Start

Duration

5 years

OBJECTIVES

The objectives of this project are:

- a) to institute proper forest management practices for the indigenous forests of Tanzania and Zimbabwe;
- b) to undertake forest resource inventories, regeneration trials and other research activities for the indigenous forests;
- c) to develop multiple land use, including controlled grazing and wildlife management, for the conservation of indigenous forest systems.

DESCRIPTION

The project will include the following activities:

- update the previous forest inventory reports;
- determine the sustainable supply of industrial wood and non commercial biomass;
- compile data on existing regeneration trials and establish new trials;
- identify measures for the protection and conservation of the indigenous forests;
- develop multi-use plans for management of the indigenous forests.

STATUS

Funding is being sought.

AAA.5.21 BEE KEEPING DEVELOPMENT IN THE SADCC REGION

Estimated Costs

Total : US\$ 1.77m
Foreign : US\$ 1.77m
Local : -

Financing Gap

US\$ 1.77m

Funding Sourced

Foreign :
Local :

Executing Agency

Lesotho and Zambia

Start

Duration

5 years

OBJECTIVES

The objective of this project is to support the development of the bee-keeping industry in the SADCC Forestry sector.

DESCRIPTION

Under this project the Sector will undertake research and extension work on bee-keeping techniques, bee breeding, effects of crop pesticides on bees, pollen analysis, honey storage, production, processing and marketing methods. The project will also include technical training and the establishment of demonstration pilot projects.

It is proposed that this project be carried out in conjunction with SADCC Project AAA.5.18, Edible Mushroom Farming, as part of a programme for Development of Non-Wood Forest Products in the SADCC region.

A detailed programme description for the development of Non-Wood Forest Products in the SADCC region has been prepared.

STATUS

Funding sought.

AAA.5.22 RURAL PLANTATIONS AND TIMBER PROCESSING IN THE SADCC REGION

Estimated Costs

Total : US\$ 8.45m
Foreign : US\$ 8.45m
Local : -

Financing Gap

US\$ 8.45m

Funding Secured

Foreign :
Local :

Executing Agency

Lesotho, Tanzania and
Zambia

Start

Duration

5 years

OBJECTIVES

The objectives of this project are:

- a) to establish and/or expand the existing planted forest resource in order to provide raw material for saw-mills, and pole and post treatment plants;
- b) to provide portable saw-mills, logging and back-up service facilities;
- c) to provide suitable low pressure mobile CCA plants suitable for the treatment of poles and posts in rural areas;
- d) to provide a furniture factory in order to utilize timber products processed by sawmills for local markets.

DESCRIPTION

The implementation of this project, which at present has three components, one in Lesotho (costing US\$ 1.06m), one in Zambia (costing US\$ 4.12m) and one in Tanzania (costing US\$3.26m). principally comprises: establishment and/or operation of rural forest plantations in Lesotho, Tanzania and Zambia; establishment and management of sawmilling, pole/post treatment, and furniture manufacturing enterprises; and provision of support infrastructure and services i.e. buildings, transport, communication facilities, etc.

STATUS

Funding sought.

AAA.5.23 STRENGTHENING OF FORESTRY RESEARCH INSTITUTIONS IN HIGH ALTITUDE AND DRY ZONE AREAS

<u>Estimated Costs</u>		<u>Financing Gap</u>
Total	: US\$14.87m	US\$14.49m
Foreign	: US\$14.87m	
Local	: -	
<u>Funding Secured</u>		<u>Executing Agency</u>
Foreign	: US\$ 0.34m (FIN)	FINNIDA
Local	:	SADCC member States
<u>Start</u>		<u>Duration</u>

-
- OBJECTIVES** The objective of this project are:
- a) to develop an institutional framework for effective management and use of research capabilities in forestry and forest products, for the improvement of forest resources;
 - b) to investigate the problem of fuelwood supply in those countries with arid and semi-arid and high altitude ecological zones.

- DESCRIPTION** The project involves:
- conducting a comprehensive review, evaluation and analysis of the current situation in forestry and forest products research institutions and programmes;
 - identifying all existing institutions in each SADCC country; studying the structure of research organizations, research policies, priorities, programmes;
 - dissemination and implementation of research results;
 - identifying the types of research institutions, organizations which need improvement, strengthening or establishment; and
 - prioritizing the necessary interventions necessary.

The outcome of the survey should be a project proposal including project objectives, scope, activities, costs and implementation arrangements.

In addition, the project will identify appropriate research sites for fuelwood trials, including species selection, tending practices and growth and yield studies under various management regimes.

STATUS

Project AAA.5.6 Fuelwood Research and Development in the High Altitude and Dry Zone Areas of the SADCC region has been integrated with this project.

LES.5.2 AGRO-FORESTRY IN ARABLE AND PASTORAL FARMING

Estimated Costs

Total : US\$ 0.37m
Foreign : US\$ 0.37m
Local : -

Financing Gap

US\$ 0.37m

Funding Secured

Foreign : -
Local : -

Executing Agency

Lesotho

Start

Project proposal approved
in 1987

Duration

5 years

OBJECTIVES

The objective of this project is to promote the use of appropriate deep-rooted and nitrogen-fixing trees in arable and pastoral farming systems;

- to produce nutritious stock-feed.
- to protect arable land from desiccating winds and thus reduce evapo-transpiration.
- to reduce erosion of organic content of agricultural soils and thus improve their water-holding capabilities.

DESCRIPTION

The agro-forestry trees will be raised for direct use by farmers who are already convinced of their benefits. Initially the major effort will be to establish demonstration centres throughout the country where standard practices can be modified to suit local conditions. This will involve the establishment of centres, purchase of hand tools and equipment, recruitment of staff and labourers, and the raising of tree seedlings.

STATUS

Funding sought.

MAL.5.1 DEVELOPMENT OF MONTANE FOREST RESOURCES

<u>Estimated Costs</u>		<u>Financing Gap</u>
Total	: US\$ 4.0m	US\$ 4.0m
Foreign	: US\$ 4.0m	
Local	: -	
<u>Funding Secured</u>		<u>Executing Agency</u>
Foreign	: -	Malawi
Local	: -	
<u>Start</u>		<u>Duration</u>
Project proposal approved in 1986		5 years

OBJECTIVES The objectives of this project were revised in 1990 and are as follows:

- a) to identify and institute appropriate forest management systems and prepare an Integrated Resource Management Plan for the Mulanje Mountain forest resource;
- b) to train resource managers from SADCC countries in Integrated Resource management Planning;
- c) to identify other sites in the SADCC region where such an Integrated Resource Management approach would be appropriate, and assist resource managers from those countries concerned in preparing such plans.

DESCRIPTION This project will be based in Malawi with applications to other SADCC countries.

The project will identify constraints to rational development and management of Mulanje Mountain, document forest and other resource values involved, and institute an Integrated Resource Management Planning approach involving all potential users of the mountain's resources. The project will serve as a pilot demonstration and training opportunity for resource managers from all SADCC member States.

The project will be carried out in two phases: Phase I - Feasibility Study, and Phase II - Implementation.

STATUS Funding sought.

REGIONAL FOREST INVENTORY

Estimated Costs

Total : US\$ 6.1m
 Foreign : US\$ 6.2m
 Local : -

Financing Gap

US\$ 6.1m

Funding Secured

Foreign :
 Local :

Executing Agency

Mozambique, Tanzania
 and Zambia

Start

1991
 Project proposal approved
 in 1987.

Duration

5 years

OBJECTIVE

The objectives of this project were revised in 1990, and are as follows:

- a) To undertake an extensive forest inventory of the SADCC region, suitable for macro-planning and for monitoring and evaluation of the regional forest resource base.
- b) To assist member States in developing appropriate national forest management inventories and to strengthen their forest inventory capabilities, with respect to the proposed SADCC regional forest inventory.
- c) To establish a network for the exchange of forest inventory information and expertise among SADCC member States.

DESCRIPTION

The project will be based in Mozambique with sub-components in Tanzania and Zambia.

This project will develop an extensive regional forest inventory based on maps and data available in all member States plus information obtained from remote sensing facilities. The technical capability of member States to maintain the regional forest inventory will be strengthened, and a network will be established for the exchange of forest inventory information. Emphasis will be placed on training.

An appraisal of the stocking, species composition and size distribution of forest stands is the

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basis for planning the proper management and utilisation of existing forest resources. Most of the SADCC countries do not have sufficient information of this nature, particularly with respect to the indigenous forest resources. This project aims to solve these problems.

In addition to the main project proposal, it has been agreed to examine the possibility of undertaking a satellite imagery-based forest inventory of all SADCC member States; in order to obtain a clearer picture of the present state of the region's forest resources. A consultancy is underway, in consultation with the Energy Sector, to define such a project and to draw-up terms of reference.

STATUS

Funding sought for the main project. A feasibility study will be funded through SADCC Project AAA.5.1 in 1991.

TAN.5.1 CENTRE OF ADVANCED PRACTICAL FORESTRY TRAINING

<u>Estimated Costs</u>		<u>Financing Gap</u>
Total	: US\$ 4.14m	US\$ 3.30m
Foreign	: US\$ 3.30m	
Local	: US\$ 0.83m	
<u>Funding Secured</u>		<u>Executing Agency</u>
Foreign	: -	Sokoine University of
Local	: US\$0.83m (TAN)	Agriculture
<u>Start</u>		<u>Duration</u>
Project proposal approved in 1986		4 years

- OBJECTIVES** The objectives of this project are:
- to enable foresters and scientists in related fields in the SADCC region to meet regularly and exchange experiences through conferences, seminars, workshops, etc;
 - to conduct refresher courses for practising foresters as well as non-foresters;
 - to assemble and disseminate forestry related information; and,
 - to promote the practice of forestry by farmers and other land users.

DESCRIPTION The faculty of Forestry of the Sokoine University of Agriculture has developed limited facilities for advanced practical forestry training at Olmotonyi campus in Arusha.

The proposed project would involve the following work:

- Erection of a conference building to accommodate up to 70 conference participants.
- Installation of communication facilities i.e. 4 direct telephone lines, telex facility.
- Purchase and installation of office equipment, secretarial, audio-visual and computing facilities.

- Construction of 200 sq.m. store and purchase of forestry equipment.
- Engagement of short-term technical support.
- Construction of staff housing.
- Building of hostel and cafeteria facilities.
- Purchase of motor vehicles (2 mini buses, and 2 cars).

NORAD commissioned a pre-feasibility study of this project and circulated the report to member States for comment. NORAD is now preparing a Project Document to be used as a basis for funding.

STATUS

Funding sought.

AAA.6.8 INFRASTRUCTURE DEVELOPMENT IN CONSERVATION AREAS

<u>Estimated Costs</u>		<u>Financing Gap</u>
Total	: US\$ 2.92m	US\$ 2.4m
Foreign	: US\$ 2.41m	
Local	: US\$ 0.51M	
<u>Funding Secured</u>		<u>Executing Agency</u>
Foreign	: -	
Local	: US\$ 0.51m (ANG)	
<u>Start</u>		<u>Duration</u>
		5 years

OBJECTIVES The project aims at the development of infrastructure in National Parks within the framework of regional tourism development as identified in the SADCC Regional Tourism Demand Study. Priority regional tourism packages and specific feasibility studies are presently being developed in collaboration with the SADCC Tourism Sector.

DESCRIPTION To facilitate development of specific programmes/projects, a workshop entitled Wildlife-Based Tourism was held at Kafue, Zambia in August 1990. The workshop drew experts from the Tourism and Wildlife Sectors, to discuss the implementation of the project.

In order to relate the project to the SADCC Regional Tourism Demand Study, the technical sub-committee decided to narrow the project scope to focus on specific feasibility studies relating to only those National Parks which formed part of the identified regional tourism packages. Angola, Lesotho and Swaziland were identified as priority countries. Separate project proposals are therefore being formulated.

STATUS Funding sought.

AAA.6.11 ENVIRONMENTAL IMPACT ASSESSMENT WORKSHOP

Estimated Costs

Total : US\$80,000
Foreign : US\$80,000
Local :

Financing Gap

US\$80,000

Funding Secured

Foreign : -
Local :

Executing Agency

Sector Coordinating Unit

Start

Duration

1 Week

OBJECTIVES

To introduce the concepts and methods of Environmental Impact Assessment (EIA) at national and regional levels to planners and resource managers.

To demonstrate these EIA concepts and methods through case studies conducted on projects within the region.

To assess the role and scope of EIA in the region and to prepare guidelines of the kind of projects that need EIA.

To discuss ways of introducing EIA in each country in the region.

DESCRIPTION

The workshop aims at introducing concepts and methods of Environmental Impact Assessment (EIA) into national and regional development planning on wildlands and wildlife resources. The workshop will be multidisciplinary involving all other relevant sectors. It will be organised jointly with the SADCC Coordination Unit for Environment and Land Management as soon as funding is secured.

STATUS

Funding sought.

AAA.6.13 LAW ENFORCEMENT IN WILDLIFE MANAGEMENT AND UTILISATION

Estimated Costs

Total : US\$1,5m
Foreign : US\$1,5m
Local :

Financing Gap

US\$1,5m

Funding Secured

Foreign : -
Local :

Executing Agency

Sector Coordinating Unit

Start

Duration

OBJECTIVES To strengthen and better equip anti-poaching units to combat poaching and illegal trafficking in wildlife products in the region.

To develop a regional communication network and to encourage exchange of information on poaching and trafficking in wildlife products.

DESCRIPTION The project seeks to enhance the law enforcement capabilities of wildlife protection units in strategic border areas and to assist wildlife administration in the control and monitoring of the intra-regional trade in wildlife products. The project is being reformulated so that it covers all SADCC countries. The project comprises consultancy services, a training element and logistical support.

STATUS Funding sought. Funding for the training element will be through AAA.6.5.

AAA.6.15 ASSISTANCE IN THE COORDINATION OF REGIONAL TSETSE FLY ERADICATION WITH WILDLIFE MANAGEMENT PROGRAMMES

Estimated Costs

Total : US\$40,000
Foreign : US\$40,000
Local :

Financing Gap

US\$40,000

Funding Secured

Foreign : -
Local :

Executing Agency

Sector Coordinating Unit

Start

Duration

3 months

OBJECTIVES

In order to assist in the coordination of regional tsetse fly control with wildlife management, the project aims at:

- a) investigating the wildlife potential in areas scheduled for tsetse fly eradication under the SADCC Regional Tsetse Fly Control Programme;
- b) determining the impact of tsetse fly control on wildlife as one of the most important environmental elements; and
- c) assessing the possibilities of promoting controlled and sustainable utilisation of the wildlife resource in some of the concerned areas.

DESCRIPTION

The project consists of a fact-finding consultancy mission to study the areas scheduled for tsetse fly eradication. Recommendations are to be made on how tsetse fly control can be coordinated and harmonised with the conservation and sustained utilisation of wildlife. These recommendations will then form the basis for the development of concrete projects aimed at securing the protection of wildlife resources from tsetse fly attacks in those areas cleared of tsetse fly; and the development of specific follow-up projects on rural wildlife utilisation.

STATUS

Funding sought. The project will be developed in cooperation with the Livestock Production and Animal Disease Control Sector.

AAA.6.17 REGIONAL WILDLIFE RESOURCES INVENTORY

Estimated Costs

Total : US\$2.1m
Foreign : US\$2.1m
Local :

Financing Gap

US\$2.1m

Funding Secured

Foreign : -
Local :

Executing Agency

Sector Coordinating Unit

Start

Duration

3 Years (with possible extension)

OBJECTIVES

In order to ensure conservation and sustainable use of the wildlife resources, the project aims at:

- a) improving the capabilities of wildlife departments to determine the distribution and status of wildlife species, populations and communities;
- b) carrying out wildlife resource inventories in specific areas;
- c) evaluating the survey data for application in land use planning and wildlife conservation and management; and
- d) instituting standardised monitoring methods in a regional framework.

DESCRIPTION

The project comprises two components:

- development of a special wildlife inventory and monitoring service in one of the SADCC member States through training and institution building; and
- planning and execution of wildlife resource surveys and introduction of subsequent monitoring in specific areas in the region.

Within this scope the following project activities are planned:

- establishment and survey unit and general planning of work;

- identification of specific inventory activities, in collaboration with member States;
- training of unit personnel and compilation of data on wildlife distribution and abundance in the region;
- carrying out inventory surveys and supervision of these surveys;
- evaluating the inventory survey results to ascertain their national or regional application;
- monitoring in specific surveyed areas.

Training, regional advisory work, building up and disseminating data on wildlife species in a regional framework will be a continuous process.

STATUS

Funding for project implementation is sought. EEC has agreed to fund the investigative consultancy which will produce a project dossier. A consultant has been appointed to carry out the work.

AAA.6.19 SATELITE TRACKING OF ELEPHANT MOVEMENTS ACROSS NATIONAL BORDERS

Estimated Costs

Total : US\$ 1.0m
Foreign : US\$ 1.0m
Local : -

Financing Gap

US\$ 1.0m

Funding Secured

Foreign :

Local :

Executing Agency

Start

Duration

6 months

OBJECTIVE

The objectives of this project are to enumerate and monitor the seasonal movements of the elephant populations in conservation areas near the national borders in the region and the extent to which these elephants migrate across national borders.

DESCRIPTION

Elephants will be collared in conservation areas near the national borders of eight SADCC countries. Specific areas for project implementation are South Eastern Angola, Northern Botswana, Caprivi Strip - Namibia, South-Western Zambia, North-Western Zimbabwe, Southern Tanzania, Northern Mozambique and Malawi. The information gathered from this project will be used for proper planning, management, conservation and sustainable utilisation of elephants.

A detailed project description has been prepared for the project to be carried out in five phases. These are: Research and Development, Collar Production, Field Operation to Fit Collars, Data Capture and and Data Processing.

STATUS

Funding is being sought.

AAA.6.20 STUDY OF WILDLIFE CAPTURE, CROPPING AND CULLING TECHNIQUES

Estimated Costs

Total : US\$ 0.55m
Foreign : US\$ 0.55m
Local : -

Financing Gap

US\$ 0.55m

Funding Secured

Foreign :
Local :

Executing Agency

Start

Duration

OBJECTIVE The objective of this project is to improve the region's ability to conduct an efficient wildlife utilisation programme that involves live capture, cropping and culling. Improvements in the methods, procedures and technologies in wildlife utilisation will greatly enhance the profitability of wildlife enterprises.

DESCRIPTION The main activities of the project will be:

- i) To collect and collate information on existing techniques on wildlife capture, cropping and culling.
- ii) To produce a practical handbook on the above techniques and also techniques on skinning, drying, smoking and packaging of meat.
- iii) To train local communities in the efficient methods of cropping, culling and marketing strategies of the products.

The project will be carried out from three centres in three phases as follows:

Phase 1

Survey work to collate information on existing techniques and methods of wildlife utilisation in the region and produce a draft handbook.

Phase 2

Hold a workshop to discuss the results of the consultant's survey and produce a final draft of the handbook. The workshop will be attended by senior country representatives and resource persons.

Phase 3

Planning and implementation of wildlife utilisation scheme.

STATUS

Funding is being sought.

BOT.6.1 ESTABLISHMENT OF SOUTHERN AFRICAN CENTRE FOR IVORY MARKETING (SACIM)

Estimated Costs

Total : US\$0.75m
Foreign : US\$0.25m
Local : US\$0.50m

Financing Gap

US\$0.25m

Funding Secured

Foreign :
Local : US\$0.5m (SADCC)

Executing Agency

Start

Duration

2 years

OBJECTIVES To establish a regional facility for the marketing of raw ivory.

To provide an efficient and effective mechanism to control the trade in ivory.

DESCRIPTION The revenue accruing from the sale of ivory and other elephant products provides a powerful economic argument for the conservation and effective management of elephants. The decline of elephant populations in some African countries has been brought about by various factors, including illegal trade in ivory. SACIM will be designed to maximise revenues from the sale of ivory and to control the trade as strictly as possible. It will consist of a large, secure warehouse and auction floor to be built in Gaborone, Botswana. It will have a permanent staff and once established will be self-financing through the levying of a fee on all sales. Surplus funds will be used to support elephant conservation projects in the region.

Botswana, Malawi, Namibia, Zambia and Zimbabwe have reached agreement to establish SACIM under an international treaty.

STATUS Funding sought.

250

ZIM.6.1 DEVELOPMENT OF OSTRICH PRODUCTION SYSTEM

Estimated Costs

Total : US\$ 2.0m
Foreign : US\$ 2.26M
Local : US\$ 0.74M

Financing Gap

US\$ 1.26M

Funding Secured

Foreign :
Local : US\$ 0.74m (ZIM)

Executing Agency

Sector Coordinator

Start

Duration

3 years (with possible extension)

OBJECTIVES

The project will foster the development of ostrich production in the SADCC Region as a supplementary wildlife based industry, capable of earning considerable foreign exchange. To this end it will establish and operate an Ostrich Breeding and Extension Centre:

- a) to assist SADCC member States concerned with the survey and sustainable utilisation of wild ostrich resources;
- b) to collect and hatch ostrich eggs and breed ostrich chicks;
- c) to provide interested farmers and private enterprises in member States with initial breeding stock on a quota basis; and
- d) to accumulate and disseminate knowledge and information on ostrich farming, wild ostrich resources, and markets for ostrich products.

DESCRIPTION

The production of birds, feathers and meat from semi-domesticated ostriches is a well established industry in South Africa, which earns considerable foreign exchange, apart from its contribution to the nutrition of humans. The technical know-how and markets are carefully guarded by South Africa although several SADCC member States, notably Botswana and Zimbabwe, have abundant wild ostriches. These could serve as a basis for the development of ostrich production systems in the SADCC Region which would compete with South Africa on the international markets.

The project intends to establish an Ostrich Breeding and Extension Centre in Zimbabwe as a focal point for the promotion of ostrich production system in the region which will:

- a) survey and monitor wild ostrich populations in specific areas of the region with a view to collecting eggs from them on a sustainable basis and transporting them to the Centre;
- b) hatch ostrich eggs and produce chicks as breeding stock for farmers; and
- c) provide specialised extension services for individuals and technical departments of member countries and research into international markets for ostrich products;

STATUS

Funding sought.

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ZIM.6.2 RHINO CONSERVATION PROGRAMME

<u>Estimated Costs</u>		<u>Financing Gap</u>
Total	: US\$ 3.54m	US\$ 3.0m
Foreign	: US\$ 3.0m	
Local	: US\$ 3.0m	
<u>Funding Secured</u>		<u>Executing Agency</u>
Foreign	: -	Zimbabwe Government/
Local	: US\$0.54 (ZIM)	Sector Coordinating
		Unit
<u>Start</u>		<u>Duration</u>
		3 years

-
- OBJECTIVES** The project will establish a Regional Rhino Conservation Centre which will:
- a) identify areas in which survival of rhino is particularly threatened and plan their translocation to safer localities;
 - b) identify areas in which, and methods by which, survival of viable herds of rhino could be ensured;
 - c) assist in translocating rhino from insecure to secure areas;
 - d) monitor all conservation activities and translocation operations; and
 - e) advise on the development and implementation of national conservation strategies aiming at the preservation of existing genetic stocks of rhino.

DESCRIPTION Once game species like the Black Rhino have been diminished to very low levels, it becomes necessary to change the normal conservation strategy. Instead of trying to protect the widely scattered relic populations of surviving animals, remaining stocks have to be concentrated into absolutely safe areas, thus creating controlled breeding nuclei from which restocking of the wild may become possible at a later stage.

The project will assist SADCC member States in the formulation and implementation of such active forward looking policies. To this end, a Rhino Conservation Centre will be established in

Zimbabwe, the last of the SADCC member States holding a viable wild rhino population, as a focal point for specific conservation activities.

The centre will pursue these objectives through the establishment and operation of:

- a) an Advisory and Research Unit;
- b) a Capture and Translocation Unit; and
- c) a Holding and Breeding Unit.

STATUS

Funding sought.

Funding

Funding Status of Projects

Project	Project Title	Estimated Cost US\$ Million		Funding Secured & Source US\$ Million		Funding under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foreign	Local				
FISHERIES, FORESTRY AND WILDLIFE								
FISHERIES								
AAA.4.3	Support to Forestry, Fisheries Wildlife Coordination	0.40	0.40	-	0.40 (EEC)	-	-	Under implementation
AAA.4.5	Regional Fisheries Training Programme	5.95	5.95	-	0.20 (MOR)	0.06 (ICE)	5.69	Preparatory phase completed under NORAD funding
AAA.4.6	Regional Fisheries Documentation Centre	7.26	6.09	1.17	1.17 (MAL)	-	6.09	Feasibility study done. Funding required.
AAA.4.7	Development of Aquaculture in SADCC	19.74	19.28	0.46	7.07 (SWE) 0.46 (ANG)	-	12.21	Additional funding sought
AAA.4.8	Provision of Extension Aid and Services	3.33	3.33	-	-	3.33 (EEC)	-	Funding under negotiation with EEC
AAA.4.9	Regional Computer-Based Catch Data System	0.14	0.14	-	-	-	0.14	Funding sought.
AAA.4.10	Support to SADCC Fisheries Coordination Unit	0.15	0.15	-	0.15 (ICE)	-	-	Under implementation.
AAA.4.11	Computerisation of Inland Fisheries Statistics	0.32	0.32	-	-	-	0.32	Funding sought.
AAA.4.12	Establishment of Marine Fisheries Inspectorates	3.59	3.59	-	-	-	3.59	New project, funding sought.
ANG.4.2	Promotion of Export Marketing of Marine Fisheries Products	1.67	1.67	-	-	-	1.67	Funding sought.
BOT.4.1	Fisheries Investigation in Botswana	0.75	0.75	-	0.75 (NOR/DEN)	-	-	Under implementation
LES.4.1	Integrated Fish-cum-Duck Farming Development, Lesotho	0.31	0.31	-	0.31 (FAO)	-	-	Under implementation.
MAL.4.1	Joint Research of Pelagic Fishery Resources of Lake Malawi/Niassa	2.51	2.51	-	2.51 (UK)	-	-	Under implementation
MAL.4.3	Pilot Integrated Fish/Pig Farming Development and Research Project at Kasinthula, Malawi	0.73	0.73	-	-	-	0.73	Feasibility study done. Funding sought.
MAL.4.4	Support to Fisheries Development Planning	4.10	4.10	-	-	-	4.10	Funding sought
MOZ.4.1	Assistance to Quality Control and Standardisation of Marine Products	1.79	1.79	-	-	-	1.79	Funding sought

Project	Project Title	Estimated Cost US\$ Million		Funding Secured & Source US\$ Million	Funding under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status	
		Total	Foreign					
MOZ.4.2	Assessment of Marine Fisheries Resources of the SADCC Region	115.78	115.78	-	-	-	115.78	Funding sought
TAN.4.1	Catch Assessment Study in Lake Tanganyika	1.51	1.08	0.43	0.43 (TAN)	-	1.08	Funding sought
ZAM.4.1	Zambia/Zimbabwe SADCC Fisheries Project Development, Zambia/Zimbabwe	3.34	8.34	-	0.77 (DEN) 7.57 (NOR)	-	-	Pre-project phase complete. Project under implementation.
Sub-Total		178.37	176.31	2.06	21.79	3.39	153.19	
FORESTRY								
AAA.5.1	Special Facility for SADCC Forestry Project Development Phase II	3.00	2.40	0.60	2.40 (CAN) 0.60 (MAL)	-	-	Under implementation
AAA.5.2	Establishment of a SADCC Regional Herbarium and Conservation of Endangered Species.	1.70	1.70	-	-	-	1.70	Funding sought.
AAA.5.3	Urban Fuelwood Project							
	- Lesotho	0.28	0.28	-	-	-	0.28	Malawi component under implementation. Funding being sought for other components.
	- Malawi	8.90	7.60	1.30	6.50 (NOR) 1.30 (MAL)	-	1.10	
	- Mozambique	4.20	4.10	0.10	0.10 (MOZ)	-	4.10	
	- Tanzania	0.94	0.94	-	-	-	0.94	
AAA.5.5	Regional Tree Seed Centre	10.85	10.85	-	0.20 (CAN)	10.65 (CAN)	-	Feasibility study funded by CIDA. Funding under negotiation with Canada.
AAA.5.8	Forest Industries Training Centre	28.59	27.39	1.20	27.39 (ITA) 1.20 (ZIM)	-	-	Under implementation.
AAA.5.9	Improvement and Strengthening of Forestry Colleges	38.34	38.34	-	38.34 (FIN)	-	-	Under implementation.
AAA.5.11	Pilot Project on Rehabilitation and Reforestation of Mining Areas	0.70	0.70	-	-	-	0.70	Funding sought
AAA.5.12	Community Forestry Development							
	- Lesotho	1.95	1.95	-	-	-	1.95	Funding sought
	- Mozambique	2.85	2.85	-	-	-	2.85	Funding sought
	- Tanzania	3.84	3.84	-	-	-	3.84	Funding sought
	- Zambia	1.20	1.20	-	-	-	1.20	Funding sought

Project	Project Title	Estimated Cost US\$ Million		Funding Secured & Source US\$ Million		Funding under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foreign	Local				
AAA.6.5	Regional Wildlife Training Programme	5.41	5.41	-	-	-	5.41	Funding sought
AAA.6.6	Wetlands Conservation	0.29	0.29	-	0.29 (NOR)	-	-	Project completed.
AAA.6.7	Conservation Education	0.65	0.65	-	-	-	0.65	Funding sought.
AAA.6.8	Infrastructure Development in Conservation areas							
	Angola	2.92	2.41	0.51	0.51 (ANG)	-	2.41	Funding sought
	Lesotho	-	-	-	-	-	-	
	Swaziland	-	-	-	-	-	-	
AAA.6.11	Environmental Impact Assessment Workshop	0.08	0.08	-	-	-	0.08	Funding sought
AAA.6.12	Training on Wildlife Utilisation Techniques for Food Production	-	-	-	-	-	-	Project completed
AAA.6.13	Law Enforcement in Wildlife Management and Utilisation	1.50	1.50	-	-	-	1.50	Funding sought.
AAA.6.14	Crocodile Management and Utilisation	-	-	-	-	-	-	Project completed
AAA.6.15	Coordination of Isetse Fly Eradication and Wildlife Programmes	0.04	0.04	-	-	0.04 (CFTC)	-	Funding under negotiation with CFTC.
AAA.6.16	Regional Development of Community-Based Management and Utilisation of Wildlife	-	-	-	19.50 (USA) 12.60 (BOT,MAL, ZAM,ZIM)	-	-	Under implementation.
AAA.6.17	Regional Wildlife Resource Inventory	2.10	2.10	-	-	-	2.10	Funding sought.
AAA.6.18	Regional Survey of Wildlife Utilisation and the Economic Potential of the Wildlife Programmes	0.23	0.23	-	0.23 (FAO)	-	-	Project under implementation
AAA.6.19	Satellite Tracking of Elephants	1.00	1.00	-	-	-	1.00	Funding sought, new project
AAA.6.20	Wildlife Capture, Cropping & Culling	0.55	0.55	-	-	-	0.55	Funding sought, new project
BOT.6.1	Southern African Centre for Ivory Marketing	0.75	0.25	0.50	0.50 (SADCC)	-	0.25	Additional funding sought.
ZIM.6.1	Development of Ostrich Production	2.00	1.26	0.74	0.74 (ZIM)	-	1.26	Funding sought.

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Project	Project Title	Estimated Cost US\$ Million		Local	Funding Secured & Source US\$ Million	Funding under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foreign					
Systems								
ZIM.6.2	Regional Rhino Conservation Programme	3.54	3.00	0.54	0.54 (ZIM)	-	3.00	Funding sought

	Sub-total	53.28	38.39	14.89	35.03	0.04	18.21	

	GRAND TOTAL	386.45	361.93	24.52	141.62	14.08	230.75	
=====								