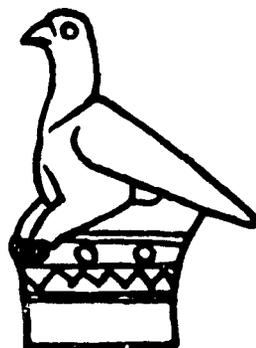


83557  
**FOOD, AGRICULTURE  
& NATURAL RESOURCES**

**SOUTHERN AFRICAN  
DEVELOPMENT COMMUNITY**



---

**Harare, Republic of Zimbabwe  
27th — 29th January 1993**

# **FOOD, AGRICULTURE AND NATURAL RESOURCES**

**SECTION ONE:**

OVERVIEW

**SECTION TWO:**

FOOD AND AGRICULTURE

- Agricultural Research
- Food Security
- Livestock Production and Animal Disease Control

**SECTION THREE:**

NATURAL RESOURCES AND ENVIRONMENT

- Environment and Land Management
- Inland Fisheries, Forestry and Wildlife
- Marine Fisheries and Resources

**PROJECT NUMBERING SYSTEM**

Projects are identified using an alphanumeric numbering system:

1. The first three letters indicate the member State:

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

2. The first digit 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 digit is 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 Promotor. 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
SPA	=	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 drought that has ravaged the ten SADC countries during the 1991/92 farming season has no parallel within living memory. All countries face large cereal import needs to ensure satisfactory food security up to 1993 harvest. Countries facing the largest cereal import requirements are Zimbabwe, Mozambique, Malawi and Angola.
  
- 1.2 In view of the magnitude of the food crisis, SADC convened a Ministerial meeting in Lusaka on 16 April, 1992, to discuss the region's response to drought. At that meeting, it was agreed that the Food Security Sector would take responsibility for providing a mechanism to coordinate information flows on food availability and requirements and on the transport of food throughout the region, including South Africa. In addition, the meeting endorsed the formation of a regional task force, comprising officials from each member State representing food requirements and food transport interests, to ensure that the response to the drought is coordinated on a regional basis. The taskforce has met at regular intervals and has been instrumental in enabling the region to adopt a coordinated response to drought. The meeting also endorsed the decision to set up six corridor groups which would have the operational responsibility of moving the food. Members of these corridor groups comprise the port and rail authorities, users of the transport corridors, hauliers and freight forwarders.
  
- 1.3 A small logistics advisory centre has been set up within the Food Security Technical and Administrative Unit in conjunction with the World Food Programme with the functions of:
  - . continuously receiving information on member States' food availability and food needs on a national and sub-national level through the Regional Early Warning System, including member States' grain purchases and schedules for their shipment;
  - . monitoring the movement of food and other goods from port of loading to final destination;
  - . providing information on individual shipments of grain to corridor groups and to member States, together with advice concerning potential bottlenecks; and
  - . mobilising assistance to overcome any bottlenecks and to ensure that quality and phytosanitary standards are maintained.

The Centre has already been successful in coordinating information flows on cereal shipments, grain handling at port and inland transshipment to some of the landlocked SADC countries.

- 1.4 Logistical constraints, particularly internal distribution of imported grain have, however, remained problematic in most countries. The internal security situation in Mozambique has continued to disrupt movement of distribution convoys. In Angola, Malawi, Zambia and Zimbabwe, limited railway motive power and lack of road transport trucks has constrained grain movement to the vulnerable population groups in remote areas.
- 1.5 Farmers in SADC member States are being urged by both national and international agricultural policy research institutes to adopt sustainable agricultural production systems involving 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. 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.

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.

## 2. REVIEW OF THE REGIONAL SITUATION

### 2.1 Outlook for the 1992/93 Marketing Year

- 2.1.1 Acute cereal shortages have characterized the 1992/93 marketing year as a consequence of the combined effects of the severe region-wide drought, continuing civil unrest in Mozambique, as well as unfavourable agricultural marketing and price policies in some of the other countries. The SADCC region urgently needs to import an unprecedented 7.2 million tonnes of cereals, including 5.77 million tonnes of maize, during the 1992/93 marketing year as total requirements of 14.26 million tonnes exceed domestic availability (opening stocks and production) of 7.02 million tonnes. However, by mid August, the 10 SADC

countries combined had arranged to import only 6.14 million tonnes of cereals (2.81 million commercial and 3.33 million tonnes food aid). Import needs of 1.06 million tonnes, therefore, remain uncovered which might necessitate another emergency appeal for donor assistance.

- 2.1.2 With the South African cereal harvest at an all time low and that country requiring cereal imports of up to 5 million tonnes, SADC countries have had to import cereals from more distant and expensive sources.
- 2.1.3 Although 3.33 million tonnes of cereals have been pledged as food aid to SADC, serious concerns are expressed regarding poor delivery rates of these pledges in a number of SADC countries. By mid-August, SADC countries had received 1.56 million tonnes of cereals, equivalent to 22 per cent of perceived import needs. Of this, food aid deliveries amounted to 494.000 tonnes, or only 15 percent of current food aid pledges. SADC cereal stocks remain precariously low; equivalent to less than one month's requirements.
- 2.1.4 Unprecedented food shortages are already being experienced in Malawi and Mozambique and famine conditions will develop if adequate imports are not brought in early. In Malawi, the food security situation has assumed crisis proportions as import deliveries to date have been extremely slow while stocks are depleting rapidly. Delays in converting food aid pledges into confirmed shipments have become critical. In Mozambique, the drought and continued unrest has plunged the country into its worst humanitarian disaster since independence as death from starvation continues to be reported among the 3.1 million drought affected and war-displaced population.
- 2.1.5 An estimated 18 million people within the SADC region are threatened with starvation unless massive food relief is provided without delay. Most countries have already initiated drought relief and supplementary feeding programmes among the most vulnerable groups. Internal distribution problems and shortages of finance are, however, seriously hampering food relief operations in many countries. In Zimbabwe, where up to 4 million people are eligible for drought relief, monthly per caput rations have been cut by two thirds to only 5 kg. In Mozambique, continuing civil unrest and internal distribution problems hamper relief operations for the 3.1 million displaced and drought-affected people, particularly in the southern half of the country.

## 2.2 Perspective for the 1992/93 Crop Season

Prospects for recovery in cereal production will depend on the performance of the forthcoming rainy season. However, in a number of SADC countries such prospects are seriously hampered by shortages of seed and draft power. In Zimbabwe, while commercial farmers are expected to respond positively to an 80 per cent increase in the maize producer price, communal farmers' ability to respond is seriously constrained by a shortage of oxen power, seed and other inputs. Government plans to provide crop packs to 800.000 small scale producers have been delayed due to seed shortage. In addition, shortages of transport make it doubtful if the Government's target will be reached before the rains commence. In Zambia, Angola, Malawi, Tanzania and Namibia, shortages of seed and fertilizers are expected due to inadequate credit facilities pledged for financing input procurement.

## **Section Two**

# **Food and Agriculture**

# **Agricultural Research and Training**

## C O N T E N T S

	P A G E
EXECUTIVE SUMMARY	1
REVIEW OF THE REGIONAL SITUATION	4
REVIEW OF THE PROGRAMME	6
CURRENT STATUS OF PROJECTS	11
PROJECT DESCRIPTIONS	25
FUNDING STATUS OF PROJECTS	40

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. Through the regular meetings of the Board of SACCAR problems and constraints to increased agricultural productivity are discussed and solutions identified. Projects or Programmes to generate improved germplasm, discover new technologies, generate and disseminate new knowledge and train staff are being designed.
- 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. SADC 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. During the year under review the sector organised in Gaborone the first meeting of Vice Chancellors of Universities in the region, as part of the effort to involve the region's training institutions into SADC's planning and implementation of programmes and project on human resources development.
- 1.3 Progress has been realised in the establishment of the Gene Bank for long term storage of crops and forest seeds. The construction of the building is in an advanced stage and it is expected to be completed in September, 1992.
- 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. Funding is still 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 Silkmoth. The project on Biological Control of Pests of Maize and Cassava has been restructured and replaced by the Root Crops (Cassava, Sweet Potatoes and Potatoes) Research Network.

- 1.5 The Review of SACCAR carried out during the period under review observed that SACCAR had carried out its present mandate well. It, however, cautioned against the broadening of the mandate and of SACCAR engaging in the running or managing projects. It recommended that SACCAR should engage Executing Agencies to manage projects and it should stick to its coordination role.

**Other recommendations were:**

- A. Because of good progress, funding to SACCAR by SADC and Donors be continued for another five years.
- B. Further expansion of mandate of SACCAR into Agricultural Extension and Agricultural Policy Analysis should not be added to SACCAR but should go to other SADC Units.
- C. There is need for greater clarification on the powers of the Board of SACCAR in view of the need also to harmonise institutions of SADC. There is need to refine membership of the board and note that the Board plays an important role and should continue to do so.
- D. SACCAR has prepared a blueprint on training and it is in the process of preparing one on agricultural research and natural resources. It is urged to complete this latter strategy before initiating new research projects.
- E. There is need for the training of Junior and senior staff members at SACCAR. A staff appraisal system is needed.
- F. Over the years SACCAR has improved its financial management and reporting. Further strengthening is recommended in this area.
- G. To ensure sustainability of regional research projects, SACCAR should start moving away from the regional research project focus to regional research Networks.
- H. For future sustainability, projects should address natural resources management issues and take a systems rather than commodity approach in project design and implementation.
- I. SACCAR should move away from directly managing projects as it has done on training and take on the coordination role only. Management should be left to Executing Agencies and the National Agricultural Research Systems (NARS).

- J. The Lusophone issue is particularly acute in the training area. A study is necessary to address the Portuguese/English language question and both SACCAR and SADC Member States should address the issue.
  - K. SACCAR's initiatives in database development have been welcome, but now require updating and consolidation.
  - L. Dissemination of information is an important part of SACCAR's mandate. The preparation and publication of documents, Newsletters, workshop proceedings etc. are essential but time consuming. SACCAR is encouraged to continue these activities, but maintain the practice of contracting out certain aspects such as printing, rather than attempt to develop an in-house capacity.
- 1.6 The SACCAR Management noted the recommendations and made its own response and recommended to the Board of SACCAR the acceptance of the Review. The Board in turn accepted the Review and is recommending that the Ministers of Agriculture and Natural Resources accept the report.
  - 1.7 Regarding the development of research to cover all the fields under the broad sector of Food, Agriculture and Natural Resources, the sectoral Ministers of Agriculture and Natural Resources, have re-examined the issue after the 1991 review of SACCAR recommended that the mandate of SACCAR should not be broadened into policy analysis and extension if the centre has to remain effective. The Sectoral Ministers felt that broadening SACCAR's mandate to coordinate research in all fields including Natural Resources should not be changed.
  - 1.8 SACCAR will, therefore, continue to coordinate cooperation in research in food and cash crops including horticulture, livestock production, forage including agroforestry, agricultural mechanisation, draft animal power, agricultural resource base of soil (land) and water management, forestry, fisheries, wildlife, environment irrigation and will cover related training and information exchange.

At the same time, it is being reported that the following SADC Member States have ratified the Charter Establishing SACCAR.

- |             |               |
|-------------|---------------|
| 1. Angola   | 5. Mozambique |
| 2. Botswana | 6. Zambia     |
| 3. Lesotho  | 7. Zimbabwe   |
| 4. Malawi   |               |

The remaining SADC Member States should be urged to ratify the Memorandum.

- 1.9 The Sorghum and Millet Project was also reviewed. Although it was recommended that it should move into Phase III a serious study to reaffirm the importance of these crops in the drier parts of SADC needs to be undertaken. Improved hybrids and varieties have been produced. However, seeds are not reaching farmers. The Sector is examining mechanisms for the involvement of the region's seed producing firms and farmers in the production and distribution of new varieties of seeds.
- 1.10 Progress continued to be realised in the implementation of the Cowpea Project based in Maputo, Mozambique. The report of the Cowpea Market Study will be finalised by consultants during the second half of 1992.
- 1.11 Research to generate improved germplasm, new technologies, and new scientific information was continued during the year. The serious drought ravaging the region has resulted in the realisation that more effort is needed to develop drought resistant germplasm.
- 1.12 The Sector organised, during the year, in addition to the on-going Regional Projects, a workshop on the use of micro-computers for agricultural information acquisition and dissemination. In addition, the Sector organised two meetings of the Board of SACCAR one in April-May and another in November. Representatives of the cooperating partners attended these meetings.

## 2. REVIEW OF THE REGIONAL SITUATION

- 2.1 The region is rich in renewable natural resources of land, water, livestock, forests, wildlife and fish. Unfortunately, drought occurred during the year under review and it is continuing. Rainfall has been less than 45 percent in some parts of the region and less than 20 percent in others. This situation has led to poor harvests of some food crops such as maize, sorghum, and some cash crops such as sugar cane, tea, cotton, tobacco and others. Livestock and wildlife have been dying due to lack of water and grazing. The Food Security Sector and SATCC continue to coordinate the regional response to the drought and the management of the drought relief efforts. There is, however, need to set up strong agroclimatological institutions that will assist the drought prone regions to take measures to predict and avert drought in the long term. This sector's work in future will focus on investment in water harvesting techniques, irrigation and growing of drought resistant crops.
- 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. SADC has established a Regional Gene Bank for crops and forest seeds as part of the long term plan to preserve the region's crop germ-plasm. There are several Game Parks that should be networked in an effort to protect the wildlife heritage from disappearing. There is also need to preserve animal germplasm of livestock. The Sector will be proposing programmes in these areas during the next two years.
- 2.5 Given that the region's 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 over the past twelve years of regional cooperation, 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 SADC Member States to encourage the development of a conducive work environment for all research and University personnel, including 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 ended in March 1992 - four years after it started. Phase II will operate on a decentralised mode and address location specific problems. The project on Black Cotton Soils has been developed and it is under implementation at Pandamatenga in Botswana using local resources. The technical assistance part will await a consultancy appraisal report which will be launched during 1992-93. Other components such as water harvesting techniques, management of acid soils, etc are being developed and will be located in different SADC member States. The in-service training of the Land and Water Management Research Programme involving officials from all SADC member States and funded by the Commission of European Communities is being run at Sebele, Botswana.
- 3.3 The Sector and the cooperating partners funding the Sorghum and Millet Improvement Programme (SMIP) undertook a review of Phase II of the Programme. The findings of the review were very positive. The recommended continuation of funding for Phase III. It, however, observed that the focus to develop germplasm and technologies to serve farmers in the marginal areas of SADC should continue to be sharpened. The related activities such as Experiment Station Development and Management, Degree Training and Development of Forage Sorghums and Millets, though important, should not be part of the programme. The Board

of SACCAR has accepted this recommendation but advised that a scaled down involvement on degree training covering areas such as post-harvest technologies, food science and socio-economic activities be undertaken.

The Executing Agency (ICRISAT) has, with effect from 1st June, 1992, replaced the Executive Director of the Programme with an ICRISAT employee who comes from the SADC region.

Similarly, ICRISAT has with effect from June, 1992, replaced the Team Leader of the Groundnut Research Project based at Chitedze, Malawi with an ICRISAT employee from the SADC region.

- 3.4 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. Out of fifteen Management Development Institutes invited to tender for the course, the Eastern and Southern African Management Institute (ESAMI) was selected by the Board of SACCAR. USAID has agreed to fund the project during the next three years at a cost of US\$1.5 Million. ISNAR will work with ESAMI to implement the project.
- 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 Development, 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, Forage Production and Draught Animal Power and other farm machinery and equipment research, require further development. A consultation workshop involving livestock specialists in the region met in July 1992 to discuss plans on how to run projects in these areas.
- 3.7 In order to ensure that there will be enough seeds of sorghum and millet for the 1992-93 cropping season, the Sector and ICRISAT working together with a number of cooperating partners, will consult with seed producers in the region in order to assess if they could multiply sorghum and millet seeds during the winter of 1992. The hybrids and varieties to be multiplied at a cost of about US \$ 1.8 million will be as follows:

Country	Variety/Hybrid	Hectare	Tonnes Expected
Malawi	Kayuma	150	450
	PNV-2	65	75
Namibia	Okashana-1	80	90
Zambia	Kayuma	210	630
	Kaufela	50	65
Zimbabwe	SV-2	200	600
	PNV-2	375	950
<b>Total</b>		<b>1130</b>	<b>2360</b>

The Board of SACCAR welcomed the assistance by donors to produce seed on an emergency basis using the SMIP facilities.

3.8 The Sector continued to conduct 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 amalgamated into the database of the region which is kept at SACCAR, and it will be used in the planning of regional projects and programmes. The Sector has initiated the updating of the ARRA database by collecting fresh information on agricultural research, training and extension from all SADC Member States.

### 3.9 Research Grants

3.9.1 Five research grants were awarded to SADC Scientists during 1991-92 and the comparison with other years is as follows:

Country	No of Research Grants							Total
	1985/ 86	1986/ 87	1987/ 88	1988/ 89	1989/9 0	1990/9 1	1991/9 2	
Angola	0	1	0	0	0	0	-	1
Botswana	0	1	0	1	1	1	-	4
Lesotho	1	0	0	0	0	1	-	2
Malawi	0	3	1	1	1	1	1	8
Mozambique	2	1	0	0	1	1	-	5
Namibia	0	0	0	0	0	0	-	0
Swaziland	1	1	1	0	1	1	1	6
Tanzania	2	3	2	1	1	0	2	11
Zambia	2	1	0	2	2	0	1	8
Zimbabwe	1	2	2	2	2	1	-	10
	9	13	6	7	9	6	5	55

3.9.2 Considering that the grant is expected to be awarded to ten researchers per year, the above awards averaging 8 per year for the past seven 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. Some grants are slightly below US\$ 10,000 and that therefore, the total grant could be stretched to cover 12 to 15 scientists. The impact is that some scientists have published the results of their work on livestock marketing, effect of micro-nutrients on crops, characterisation of indigenous sheep and reproductive performance of sheep and goats. The grants have enabled young scientists to carry out investigations on the problems SADC member states face in agriculture and some solutions have been found and published. The grants have also enhanced the research capacities and experiences of scientists in the fields of agriculture.

3.9.3 The review of SACCAR noted the good progress in the area of research and the use of grants but advised that in future the grant recipients should be working on priority areas that will be contained in SACCAR's blueprint for agricultural research.

### 3.10 Travel Grants

The Sector continues to use these grants to enable agricultural researchers, trainers, extension workers, policy makers and farmer groups in the region to exchange visits. Scientists learn from each other and form scientific collegiate relationships. Farmer groups also get opportunity to travel with policy makers and learn from other farmers. Recipients have used the opportunity to analyse research data. Furthermore, these grants have been used by scientists to exchange information on how to set up research projects. The recipients have been able to borrow knowledge on curricula development, faculty establishment and practical training techniques from other institutions.

Again, some recipients have used travel grants for data collection for their research work. 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**

Country	1986/ 87	1987/ 88	1988/8 9	1989/9 0	1990/9 1	1991/9 2	Total
Angola	-	-	-	-	-	-	-
Botswana	1	2	6	6	7	3	21
Lesotho	-	-	2	2	-	3	7
Malawi	-	3	4	4	-	1	12
Mozambique	-	-	1	1	-	-	6
Namibia	-	-	-	-	-	-	-
Swaziland	-	-	1	1	-	7	9
Tanzania	-	1	11	11	1	5	21
Zambia	-	-	7	7	7	4	19
Zimbabwe	-	3	6	6	4	1	18
	1	9	2	38	20	24	113

**3.11 Publications**

**3.11.1 SACCAR Newsletter**

The Centre published four issues, (numbers 15, 16, 17, 18) of the SACCAR Newsletter during the year under review. There is an increased demand by scientists to send articles for publication in the Newsletter. SACCAR is publishing on average two articles from scientists per issue. SACCAR will try hard to solicit articles from natural resources and environment areas.

**3.11.2 SADC/Zimbabwe Journal of Agricultural Research**

This is a joint venture between the Sector and the Department of Research and Specialist Services of the Government of The Republic of Zimbabwe. Normally two issues are printed per year. However to clear the back log, three to four issues have in recent years been printed. Three issues were printed during 1991-92. It is gratifying to note that the backlog of printing has been cleared.

**3.11.3 Workshop Proceedings**

During the year under review the Sector published the proceedings of the SACCAR/IDRC Consultation of Agricultural Information Network for Southern Africa, and on the use of Micro-Computers for Agricultural

Information. It also produced a SACCAR brochure. Bibliographies on agricultural development in SADC have been produced jointly between SACCAR and the Technical Centre for Agricultural and Rural Cooperation (CTA) of the Commission of European Communities for the following countries: Angola, Lesotho, Swaziland, Tanzania and Zimbabwe. Bibliographies for the remaining SADCC Member States

are under preparation.

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. It also addresses soil and water management problems in general.

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 ended in March 1992. The end of phase report and previous progress reports were used in designing Phase II of the programme. The Phase II of the Programme will operate on a decentralised structure i.e. run location specific sub-projects on a network basis. Already the following Sub-project components have been designed:

- I Management of Black Cotton Soils (Vertisols), Botswana.
- II Integrated water harvesting, Malawi.
- III Improvement of soil water availability, Zambia.
- IV Socio-economic studies.
- V Utilisation of vleis/wetlands, Zimbabwe.
- IV Agrometeorological data analysis.
- VII Agronomy/crop physiology.

The Associated Sub-Projects i.e. projects run at national level under the domain of the regional programme include:

- A. Improving soil water availability and efficiency of utilisation by crops in the rainfed semi-arid zones of Tanzania.
- B. The assessment of the loss of rainwater and techniques for its utilisation in Musikavantu, Zimbabwe.

The cost of running of Sub-Project I above which mainly comprises a technical assistance component is US\$3.10 million for four years. The total cost of running Sub-projects II to VII is US \$1.6 million for three years. Implementation is awaiting funding. The programme requires coordination and networking at US \$1.5 million for three years. This will finance organising Steering Committee and Technical Advisory Panel Meetings, arranging an Annual Scientific Conference on the whole programme, organising monitoring tours, compiling literature on the subject, identifying and developing additional research subjects on Land and Water Management. The total cost of the whole project is therefore US\$6.20.

#### **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. A Research Station is being established at Pandamatenga Northern Botswana using local funds of US \$0.40 million. A foreign component to support technical assistance personnel and regional activities such as travel within the region, workshops and scientific conferences is estimated at US \$3.10 million. A consultancy comprising three soil management experts supported by the International Board for Soil Research and Management (IBSRAM) based in Bangkok, Thailand visited Pandamatenga in June-July, 1992 and advised how the research should be run and what it should address. Funding is 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 year under review, the Sector and SMIP launched a consultancy comprising two SMIP and two SACCAR appointees to prepare a report on how the region will start to take over the running of the programme. This report was used by

both the SADC-Cooperating Partners Review of Phase II of the Programme and the Technical Advisory Panel of the Programme. The Review concluded that the Programme had made very valuable contributions to SADC. It has generated improved hybrids and varieties, by 1993 it will have trained about 111 of which 20 will be women at B.Sc. M.Sc. and Ph.D SADC nationals in fields relating to sorghum and millet improvement. It will have trained over 206 technicians in different fields and it will have generated scientific information on sorghum and millet breeding, agronomy, entomology, pathology, food science and technology and socio-economic aspects including marketing and pricing of these commodities.

The review has recommended that the project/programme be allowed to move into Phase III after 1993. It is, however, observed that the focus on development of improved germplasm and new technologies for use by farmers in the marginal areas of SADCC should continue to be the main focus of the program. The related activities of training and assisting the National Research Systems in Experiment Station Development, Degree Training and Development of Forage Sorghum and Millet, though important, should be scaled down. The Board of SACCAR has accepted that these activities be scaled down but not stopped.

Because of drought during the reporting period, the programme is contributing seed to be multiplied for the 1992-93 cropping season. A total of 1130 hectares will be planted on farms with irrigation facilities and about 2360 tonnes of seed of various sorghum and millet hybrids and varieties are expected to be available for distribution to farmers ready for 1992-93 planting season in Malawi, Namibia, Zambia and Zimbabwe. The other SADCC member States have made individual country preparations to ensure that seed will be available to farmers for planting during the coming season. The production of good quality seed of hybrids and varieties, their packaging, storage, and marketing though very important in agriculture do not seem to have been given the priority they deserve. A project on production, training, documentation and information exchange of seed is being developed by the Food Security Sector. It is expected that improved seeds coming out of research will be taken up by seed companies/institutions for multiplication and marketing.

**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.

The traits/characteristics the project is looking into are milling and malting/brewing qualities as major utilisation areas. Descriptors of grain quality traits are also being developed for incorporation in a manual for breeders, agronomists and other users. A Second International Small Millets Workshop was held during the reporting period in order to define their role in food and agro-industry fields in SADCC. A regional workshop on Sorghum for Brewing will be organised in collaboration with the Brewing Industry of Zimbabwe and the British Institute of Brewing in 1992.

### **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.

The Bean Project is headquartered in Arusha, Tanzania and is executed by the International Centre for Tropical Agriculture (CIAT) on behalf of SACCAR. CIAT is located in Cali, Colombia and it has a global mandate for the improvement of tropical crops one of which is beans. From its inception, The Bean Project in SADCC is supported by

Canada. Canada has indicated that although the review of the project has recommended continued support, due to budgetary constraints it might not be possible to continue funding the project beyond 1993. Two women scholars one from Botswana and one from Zimbabwe completed their Ph.D. degrees and were the first scholars to complete their studies under this project.

The Groundnut Project funded by the Federal Republic of Germany and executed by ICRISAT is located at Chitedze, Malawi. It moved into Phase II and it continues to perform well. The Principal researchers in the project participated in an International Congress for Groundnuts held at ICRISAT Headquarters at Patancheru near Hyderabad, India. It is anticipated that the proceedings of the congress will be useful in informing groundnut researchers, extension workers and farmers on the latest knowledge on varieties, pests, diseases and techniques of producing and selling groundnuts.

The Cowpea Improvement Project is based in Maputo, Mozambique and is financed by the EEC. The project has had some administrative problems. This has been related to slow rate of utilisation of funds due to lengthy routing of claims for reimbursement of funds involving Maputo, IITA in Ibadan, SACCAR, Regional Authorising Officer and Delegate of Commission of European Communities in Gaborone and Brussels. Negotiations between Botswana and Mozambique with CEC are underway so that the chain of reporting may be shortened and thus reimbursement for expenditure incurred may be faster. The Report on Cowpea Market Study in SADCC which was expected to have been completed during the reporting period was delayed. The consultants have been given a three months deadline during 1992-93 to finalise and submit the report to SACCAR and CEC.

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

The project which was initiated in October, 1984 with the appointment of an Interim Director, gained momentum after August 1985 when a Director from SADCC and other staff of the Centre were recruited. It was reviewed in 1988 and in 1991. The review in 1991 stated:

"The overall conclusion is that SACCAR is an efficient organisation within the SADCC system, it has support of Member Country governments and it is attaining its objectives. This conclusion is grounded in the review of existing documents, interviews with a large number of scientists and other informed persons in the region, and visits to a sample of regional project sites. Based on this conclusion the Review Team recommends that donor funding be extended for another 5-year phase".

The Council of Ministers of SADCC has directed that Memoranda of Understanding, Establishing SADCC Institutions (SADCC Secretariat, SACCAR and SATCC) including Terms and Condition of Service of Employees of these institutions be harmonised, and start to function as institutions of one organisation.

Furthermore, SADCC has as in January, 1992 decided that its contribution to the budget of SACCAR will, from that time on, be higher than that of cooperating partners.

**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 ended in December, 1991. Plans were instituted during the year to institutionalise the project in the region. Fifteen Management Development Institutes in the region were visited and inspected based on a criteria of staffing, track record, accommodation facilities, etc. and about five Institutes namely, IDM (Botswana, Lesotho and Swaziland), Mananga, Pan-African Institute of Development - Eastern and Southern Africa (PAID-ESA), East and Southern Africa Management Institute (ESAMI), the Management Resource Unit were identified and invited to tender for running the inservice courses in research management. IDM and PAID-ESA declined to tender due to other commitments. The Steering Committee for the project selected and recommended to the Board of SACCAR the choice of ESAMI. The Board has accepted the recommendation after studying the capacity of the institution to mount the desired courses. USAID has agreed to fund the project for the next three years at a cost of about US\$ 1.5 million. ISNAR will fund an Advisor for the year and ESAMI will identify a Project Coordinator and support staff for the project.

**Project AAA.3.6 Agroforestry Research Programme**

The project aims at developing technologies related to sound management of the Savannah Grass and Woodlands of SADCC. For the time being component projects have been initiated in Malawi, Tanzania, Zambia and Zimbabwe. The component in the latter SADCC Member State started during the present reporting period. The project includes: multipurpose tree screening and testing for adaptation, soil fertility enhancement, and fuel wood, fodder and timber provision. Canada has pledged to continue funding Phase II of the project. The International Centre for

Research in Agroforestry (ICRAF) is executing the project and the Coordinator moved from Makoka Research Station near Zomba to Lilongwe in order to be able to move faster to visit other sites in other SADCC Member States.

The project was reviewed in 1991 and the recommendation was that it was being implemented well. Considering the length it takes to establish trees, the project needs to be given more time in order to show impact. CIDA agreed to fund the project for Phase III 1992-97 at US \$6.2 million (or Canadian \$ 7.5 Million).

**Project AAA.3.7 SADCC Crops and Forest Seeds 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 is being served by a satellite of national seed storage facilities. The latter hold working collections for the plant breeders. All the SADC 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. The project underwent a review and an appraisal during the year under review. The Review Mission noted that the targets set for the first phase of the project 1989 - 1993 had partially been met. It observed that some had been too ambitious. It noted, however, with encouragement that there is in all SADCC Member States a great appreciation of the value of regional genetic diversity of crops and forests. The SRGB can enhance plant breeding programmes. The Review says that this is an essential condition for sustainable support for plant genetic conservation. Regarding the Annual Work plans and Budget for the various programmes, the Review recommended that these be prepared in more detail in order to translate strategies into actual activities and expected outputs based on established priorities. The final recommendation of the review was that the project is very worthwhile and support for it by the NORDICs and SADC should continue. The Board of SRGB appreciated the views of the Review Mission and Appraisal Team and recommended that they be used by the staff of SRGB to improve the contribution of the project to SADC.

The Board of SRGB has drafted a Memorandum of Understanding Establishing the project. The draft of this was earlier circulated to all SADCC Member States and the comments received were used in improving the draft. Its consideration will be done during the next meeting of the Ministers of Agriculture and Natural Resources.

### **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 project to establish a research network for these important cereals could not start during the year under review due to lack of funds. A Network Coordinator has been identified and is based in Harare, Zimbabwe.

The aims of the network are: (a) to ensure that the benefits of research from the region and elsewhere are shared as widely as possible in the region; (b) to develop varieties and hybrids that are high yielding and adapted to various ecologies of SADCC by funding support for research on the two crops; (c) provide a conduit for the exchange of germplasm; (d) promote the training of research professionals; (e) provide a forum for communication and exchange of information among research workers and (f) to organise workshops and seminars as well as to inform through a SACCAR Newsletter, those working on these crops, the regional and international developments affecting these two crops.

It is strongly felt that research on maize (the highest provider of calories in the region) and on wheat (the highest food crop drainer of foreign currency reserves in the region) should be given strong support. These are, therefore, strategic crops and they require special consideration in the allocation of resources for research, extension, and production including marketing, processing, storage and award of attractive prices to farmers who produce them.

The programme for the first five years will support two professional staff, seven support staff, operating expenses, publications, workshops and conferences, training, direct assistance to national research systems in conducting research and project management including reviews and is estimated to cost US\$5.82 million for the first five year period. Funding is being sought.

### **Project AAA.3.9      Strengthening Faculties of Agriculture, Forestry and Veterinary Medicine in SADCC**

The project involves strengthening the following two-year Master of Science (M.Sc.) programmes, so that they can admit students from the whole region:

1. Animal Science - Bunda College, Malawi
2. Crop Production - University of Zambia
3. Agricultural Economics - University of Zimbabwe
4. Agricultural Engineering/  
Irrigation Management - Sokoine University of  
Agriculture, Tanzania.

Following the Project Review in May and June 1991, a Joint Meeting of SACCAR, GTZ and Deans of the Faculties of Agriculture discussed the recommendations of the report. One of the major recommendations adopted was that planning workshops for each programme be carried out individually instead of lumping them together be undertaken using Zopp methodology in order to determine the needs for successful implementation of the programme at each location. The following programme of workshops was approved.

M.Sc. Agric. Economics, Zimbabwe	- June 8 - 12
M.Sc. Crop Science, Zambia	- June 15 - 19
M.Sc. Land-Water Management, Tanzania	- June 23 - 26
M.Sc. Animal Science, Malawi	- July 7 - 14
SACCAR, Botswana (for coordination of the programmes)	- Aug. 24 - 28

The programmes at the University of Zambia and Sokoine University of Agriculture are running relatively well. The M.Sc. programme at the University of Zimbabwe has not been initiated as planned while the programme at Bunda College is expected to start soon after a temporary break due to accommodation problems.

In the meantime the project has produced the first M.Sc. graduates at Bunda College (6) and the University of Zambia (6). Current enrolments at the four Universities are as follows:

1991/92

M.Sc. Crop Science:	5
M.Sc. Land & Water Management	5
M.Sc. Agricultural Economics:	3
M.Sc. Animal Science:	* (One year's intake had to be postponed)

For 1992/93 academic year acceptance of admissions are going on.

Funding of this regional programme is likely to improve considerably. Germany continues to provide support for scholarships to Universities and SACCAR. The British Government, is providing 3 additional scholarships to each programme.

The Belgian government has pledged US\$ 13.2 million to the project, but final agreement will await an appraisal mission which will identify components of the blueprint on human resources development for which funds will be used.

**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 will send a mission in 1991-92 to SACCAR to discuss the project.

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 SADC 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 SADC.

A meeting of Vice Chancellors in the region was convened by SACCAR in Gaborone Botswana in September, 1991 and they applauded SADCC's decision to accord the highest priority to human resources development. Regarding the establishment of a centre in Swaziland to coordinate future developments in training at professional level in food, agriculture and natural resources areas, the Vice Chancellors requested SACCAR to delay the decision on where to locate the coordinating unit until developments on regional cooperation in other fields of higher learning have been worked out. In the meantime SACCAR will continue to manage the programme.

**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.

A consultation workshop involving livestock specialists in the region met in July 1992 in Harare to discuss plans on how to run projects in these fields. The Pan-African Networks reported on last year, work well at Continental level. At, regional and national levels, however, concrete and grassroot type activities have to be developed if impact has to be achieved. This is the experience that has been learnt in these livestock development activities.

### **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.

Initially there will be a project on vegetable development in the following areas:

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 the other three will be spread among the remaining lead countries namely, Malawi, Zambia and Zimbabwe.

The project which is estimated to cost US\$ 8.5 million has been started in a small way by the executing agency, the Asian Vegetable Research and Development Centre (AVRDC). In service training of eight scientists and technicians from SADCC lasting four months took place at AVRDC in Taiwan. A similar activity will take place at Tengeru, Tanzania from November 1992.

**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 these areas.

Approaches to develop the network starting at grassroot level in the region were discussed at a consultation workshop in Harare, Zimbabwe in July, 1992.

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

It was reported last year that this project would be restructured into two separate projects namely,

**Project AAA.3.8      Maize and Wheat Improvement Network,  
and**

**Project AAA.3.13      A Southern African Root and Tubers  
Crops Research Network (SARNET).**

Rationale: Some SADC states namely Malawi, Mozambique, Tanzania and Zambia belonged to the Eastern and Southern Africa Root Crops Network with a Coordinating Unit in Malawi. In November, 1992 the Board of SACCAR agreed with the International Institute for Tropical Agriculture (IITA) and the International Institute for Potato Research (CIP) to split the Network into Eastern (to be based in Uganda) and the SADCC Roots and Tubers Research Network to continue to be coordinated from Malawi. The Networks are not new but the SADC one will be expanded to cover all countries of SADCC. The SADC Roots and Tubers Research Network will include Cassava, sweet potatoes, and the round potatoes.

Goal: The overall goal of the Root and Tubers Crops Research Network is to increase Cassava, sweet potatoes and potatoes productivity of the resource poor farmers through improvement of germplasm that is adapted to all ecologies of SADC. Processing and development of integrated pest management technologies will be part of the goal.

**Objectives of the Networks are:**

- a) Originate and introduce improved root crops populations with high frequency of desirable genes to evaluate for resistance to diseases and pests and adaptability to the agro-ecologies of the region.

- b) Conduct surveys in the other cassava/sweet potato producing member countries in order to establish a base-line data on root crops production, processing, marketing and consumption trend in the region.
- c) Develop the post-harvest technology sector through the establishment of pilot plants to evaluate and demonstrate interventions to post-harvest constraints and other root crops products in order to encourage the diversification of their use in the region.
- d) Establish effective national biological control activities within existing plant protection units of root crops programs.
- e) Establish multiplication, distribution, survey and monitoring systems in all collaborating countries in order to hasten the distribution and adoption of improved technology by farmers.

The project will also undertake training of manpower for the region. It is expected to cost US\$7.74 million over the next five years. Funding is being sought.

**Project AAA.3.14 Wool and Mohair Improvement Programme**

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 SADC member States. Zambia and Zimbabwe have started to rear Angora goats for the mohair production. With the collaboration of Winrock International, The Sector has finalised plans to implement the project. Phase I, costing about US\$28,000 came from the Sector's studies funds, and it involves a study to ascertain the market for the fibres.

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

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

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 SADC; 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. The Sector at the request of the Board of SACCAR, convened a workshop comprising entomologists from SADC 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 Acacia 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 SADC 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 the Sector that it would consider helping SADC 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 SADC and in any institutes overseas wishing to collaborate with SADC.

The EEC has extended the contract of the expert for six months starting 1st April, 1992 in order for him to work with entomologists in the region to prepare the research agenda.

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

Executing 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:

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

Financing Gap

US\$2.48m

Executing Agency:

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

Funding Secured:

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

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

---

**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 Cots:

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

42

veterinary medicine that are able to take leading roles in national research and extension 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 clienteles, 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.3.13 A SOUTHERN AFRICAN ROOT AND TUBERS CROPS RESEARCH NETWORK (SARNET)**

Estimated Costs:

Total : US\$8.61  
Foreign : US\$7.74 Million  
Local : US\$0.87 Million

Financing Gap:

US\$7.74 Million

Executing Agencies:

- 1) International Institute for Tropical Agriculture (IITA) for Cassava.
- 2) International Crop Institute for Potatoes (CIP) for Potatoes and Sweet Potatoes.

Funding Secured:

Foreign NIL  
Local US\$0.87 Million

Expected Start:

1992 - 93  
Duration 5 years for 1st Phase and expected to continue.

**GOAL:** To increase productivity of cassava, sweet potatoes and round potatoes through improvement of germplasm that is adapted to various ecologies of SADC.

- OBJECTIVES:**
- a) Originate and introduce improved root crops populations with high frequency of desirable genes to evaluate for resistance to diseases and pests and adaptability to the agro-ecologies of the region.
  - b) Conduct surveys in the other cassava/sweet potato producing member countries in order to establish a base-line data on root crops production, processing, marketing and consumption trend in the region.
  - c) Develop the post-harvest technology sector through the establishment of pilot plants to evaluate and demonstrate interventions to post-harvest constraints and other root

crops products in order to encourage the diversification of their use in the region.

- d) Establish effective national biological control activities within existing plant protection units of root crops programs.
- e) Establish multiplication, distribution, survey and monitoring systems in all collaborating countries in order to hasten the distribution and adoption of improved technology by farmers.

**DESCRIPTION:** Root crops play a significant role in meeting the daily energy and other nutritional requirements of a large number of people in SADC. Both the production and consumption of these crops, particularly cassava, sweet potatoes and potatoes are increasing. Fortunately, these crops are well accepted and are suited to various environments in SADCC and they lend themselves to the farming systems including compound gardening. There is need, however, to continue to provide the national research systems with improved, high yielding, disease and pest resistant germplasm, along with new production technologies and to train more professionals and technicians to undertake research on these crops.

Inputs from SADCC member States will comprise allocation of personnel and provision of their salaries, land for research, office space, transport, stationery and other resources needed to establish and maintain national root and tubers research programmes.

Inputs from the Executing Agencies will be in the form of backstopping of the coordinator and regional scientists as well as general administration to the Network.

Inputs from the donor(s) will be in the form of foreign contribution to cover the cost of the Network activities and to participate in monitoring and evaluation.

The project will have a Coordinator, a breeder/agronomist, an economist and an entomologist, a Monitoring Evaluation/Documentation Specialist, a Secretary, two drivers and two general office staff. The Principal Scientists will be based in the national research programmes.

## EXPECTED OUTPUTS

1. Increased supply of preferred (acceptable) germplasm. The germplasm will have palatability, disease and pest resistance, easy processing and good storability characteristics.
2. Increased training in order to give National Agricultural Research Systems capability to conduct on their own research on these crops.
3. Increased generation of technologies on how to grow, process, market and store these crops.
4. Increased information exchange on the production, marketing, processing and storage of these crops.

## SUSTAINABILITY OF RESEARCH ON THESE CROPS

Because the work will be based in the National Agricultural Research Systems, it is expected that the trained nationals will continue to conduct research using resources from their national governments and marketing and processing boards after donor funding has come to an end.

## 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	Total	Estimated Cost US\$ Million Foreign	Local	Funding Secured & Source US\$ Million	Funding Under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
AGRICULTURAL	RESEARCH							
AAA.3.1	Land and Water Management Programme Phase I - Training Component	2.75	2.75	-	2.75 (EEC)	-	-	under implementation.
	Phase II	3.09	3.09	-		-	-	Funding sought.
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.3.3	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, 1987. Additional funding sought.
AAA.3.4	Establishment of SACCAR	5.30	5.10	0.20	1.50 (CAN) 1.50 (CAN) 1.50 (USA) 1.50 (NOR) 0.60 (SAREC) 0.20 (SADCC)	-	-	Establishment completed.
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. Phase I ended Dec. 1991. Phase II under negotiation.
AAA.3.6	Agroforestry Research Programme	5.20	5.20	-	5.20 (CAN)	-	-	Under implementation and 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)	-	-	Under implementation.

Project	Project Title	Total	Estimated Cost US\$ Million Foreign	Local	Funding Secured & Source US\$ Million	Funding Under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
AAA.3.8	Maize and Wheat Improvement Network.	0.23 5.82	0.23 5.82	- -	0.23 (UNDP) -	-	5.82	Funds being sought for Programme Development.
AAA.3.9	Strengthening Faculties of Agriculture, Forestry & Veterinary Medicine.	13.20	13.20	-	1.20 (FRG)	-	12.00	Four M.Sc. programmes underway. Additional funding sought.
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 SADCC	0.10	0.10	-	0.10 (UNDP)	-	-	Feasibility study to commence after consultation in July 1992.
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 & Other Farm Power Equipment.	-	-	-	-	-	-	Funding included in project AAA.3.10.
AAA.3.13	Root and Tubers Crops Research Network.	8.61	7.74	0.87	0.87(SADC)	-	7.74	Re-formulated into Root Crops Research Network. Funding sought.
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 Gonometia silk moth in SADCC.	2.40	2.40	-	-	-	2.40	Funding sought.
	TOTAL	272.00	258.30	13.70	80.39	0.00	190.91	

# Food Security

## C O N T E N T S

### PAGES

EXECUTIVE SUMMARY	1
REVIEW OF THE REGIONAL SITUATION	2
OVERALL COORDINATION	3
REGIONAL RESPONSE TO THE DROUGHT	5
REVIEW OF THE FOOD SECURITY PROGRAMME	6
CURRENT STATUS OF PROJECTS	7
PROJECT DESCRIPTION	20
FUNDING STATUS OF PROJECTS	31

## 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\$199.94 million of which US\$54.09 million has been secured. Of the 30 projects, only 11 are regional, and the rest are national projects with a regional impact.
- (b) Consultants have completed the work on the integration of the Strategies for Food, Agriculture and Natural Resources and a revised document has been prepared. However, a further refinement of the proposal is still to be done by a small committee comprising Malawi and Zimbabwe before it is submitted to Ministers for Food Agriculture and Natural Resources for approval.
- (c) The Regional Food Reserve Project was re-drafted by a SADCC team of experts and was approved in principle by Council in Arusha, Tanzania in 1991.

Further work in reformulating the project is to be undertaken as matter of urgency and the recommendations of a mission that went to Malaysia to discuss the ASEAN Food Security Project will be incorporated as appropriate.

- (d) The Regional Early Warning System has continued to provide valuable information about the food security situation in the member States. This information was especially useful in enabling member States facing food deficits to take appropriate steps in advance, to ameliorate cereal shortages and possible famine as a result of the current drought.

Slow progress has been made in obtaining signatures for the MOU for funding the Regional Early Warning System. Nine member States have now signed the MOU, only one has not signed, and is urged to do so as well. It is imperative that all other member States that have signed the MOU should proceed to release the agreed budgetary resources to the project.

- (e) The latest food security assessment for the SADCC region, shows that the food security situation during the 1992/93 marketing year is worsening following the severest drought to hit the Southern African sub-continent for decades. Total domestic cereal availability is assessed at 6.99 million

tonnes against requirements estimated at 14.24 million tonnes.

A regional cereal deficit of 7.20 million tonnes, about 50% of annual requirements, is therefore, anticipated compared with a regional deficit of 3.25 million tonnes during the previous year (1991/92). Overall, the region will require cereal imports of the order of 7.20 million tonnes to ensure satisfactory food security up to the 1993 harvest. Of the total needs, 4.88 million tonnes have been covered. In addition 1.8 million tonnes has also been pledged at the Geneva Conference in June 1992.

- (f) In view of the very large volumes of grain that will have to be procured and moved, a regional taskforce has been formed comprising representatives from Ministers responsible for Agriculture and Transport of each member State. Its mandate is to ascertain the region's food requirements and transport capacities, facilitate the procurement and scheduling of food, coordinate food movements through the region's main transport corridors, and liaise with the donor agencies to ensure that adequate supplies are made available and that optimal scheduling of imports is put in place with minimal dislocation.
- (g) Following the Geneva Conference, a small team has been formed in the Department of Humanitarian Affairs to monitor pledges and to follow up with donors. The Livestock, ELMS, Wildlife and Food Security Sectors are to collaborate with FAO in an assessment of the impact of the drought on water supplies, livestock and wildlife.

## 2. REVIEW OF THE REGIONAL SITUATION

### 2.1 Outlook for the 1992/93 Marketing Year

- 2.1.1 Acute cereal shortages will characterize the 1992/93 marketing year as a consequence of the combined effects of the severe region-wide drought, continuing civil unrest in Mozambique, as well as unfavourable agricultural marketing and price policies in some of the other countries. The SADCC region urgently needs to import an unprecedented 7.20 million tonnes of food including 6,07 million tonnes of maize, during the 1992/93 marketing year as total requirements of 14.24 million metric tonnes exceed domestic availability (opening stocks and production) of 6.99 million tonnes.

- 2.1.2 With the South African cereal harvest at an all time low and that country requiring cereal imports of up to 5 million tonnes, SADCC countries will be unable to import food from this traditional source, but will have to import from more distant and most probably expensive sources. Imports for the region, including South Africa would, therefore, be of a magnitude of 12 million tonnes.
- 2.1.3 Cereal stocks are already seriously depleted in most countries. Zimbabwe has the largest cereal deficit and, therefore, the largest import need in the region. The country will require 2.08 million tonnes of cereal imports during the course of the 1992/93 marketing year, with maize accounting for 1.92 million tonnes.
- 2.1.4 Mozambique requires cereal imports of 1.31 million tonnes, including 1.1 million tonnes of maize. Malawi requires cereal import of 1.05 million tonnes, including 1.0 million tonnes of maize. Zambia's cereal import needs amount to 1.08 million tonnes, with maize accounting for the bulk this.
- 2.1.5 Unprecedented food shortages are already being experienced in these countries and famine conditions will develop if adequate imports are not brought in early. Other substantial cereal importers will be Tanzania (0.3 million tonnes) and Angola 0.5 million. The remaining countries (Botswana, Lesotho, Namibia and Swaziland), who are all members of SACU, require 0.8 million tonnes of cereal imports during the course of their 1992/93 marketing years.
- 2.1.6 An estimated 18 million people within the SADCC region are threatened with starvation unless massive food relief is provided without delay. Most countries have already initiated drought relief and supplementary feeding programmes among the most vulnerable groups. Water supplies are also dwindling and livestock deaths are mounting.
- 2.1.7 To meet these immediate needs, SADCC, in conjunction with the UN, launched a world-wide appeal for assistance. A conference in Geneva in June elicited substantial support, especially in the form of targeted and programmed food aid.

### **3. OVERALL COORDINATION**

- 3.1 The Food Security Sector continued to perform the function of coordinating the overall programme of Food, Agriculture and Natural Resources. The regular annual meeting of sector

coordinators and of Ministers of Food, Agriculture and Natural Resources was held in Mbabane, Swaziland, in June. The FSTAU convened the meeting and provided secretarial services to the meeting.

3.2 Other major cross-sectoral coordinating activities performed by the Food Security sector include:

- (a) Overseeing the integration of the SADCC Food Security and the Natural Resources policy documents. This involved close coordination with the consultants, the sector coordinators of individual sectors and the donor agency funding the study. Two workshops on the Study were held during the study, one to ensure the study covered the appropriate topics and one to review the initial draft.
- (b) The combined policy document is being reviewed by a committee comprising Malawi and Zimbabwe.  
Major elements of the new combined FANR policy are:
  - the adoption of a programme based approach for achieving overall FANR objectives, the three programmes being Agricultural Development, Food Security, and Natural Resource Development;
  - strengthening the overall coordinating unit to allow it fulfill its function adequately;
  - splitting the Food Security programme into four sub-programmes, namely information bases and exchange, food availability, food access, and policy analysis and research.
- (c) Preparing the region's appeal to the international donor community for aid for the region to help ameliorate the impact of the drought. This additional set of activities has meant that FSTAU is providing the secretariat for the work of the regional task force concerned with the regional response to the drought. In this regard, a small logistics advisory centre, has been set up. The Food Security Sector continues to monitor and update food requirements of the region through the Early Warning System.
- (d) Coordinating workshops for participants from all FANR sectors to increase the understanding of women's issues.

#### 4. REGIONAL RESPONSE TO THE DROUGHT

- 4.1 At a Ministerial meeting convened in Lusaka on 16 April, 1992, it was agreed, inter alia that a regional task force, comprising officials from each member State representing food requirement and transport interest, be set up. It was also agreed that a donors' conference be convened since the physical and financial resources required to meet the immediate needs for food and material assistance, as well as those required to promote post-drought recovery and sustain the momentum of economic reform, were clearly more than were available to individual member States.
- 4.2 A combined SADCC/UN Appeal for aid estimated at US\$854 million was prepared during May 1992, and presented to donors at the beginning of June. Pledges of aid to individual States and to the region amounted to US\$571 million (see Table 1). This implies that aid needs amounting to US\$284 million remained uncovered. Additional food aid needs yet to be covered amount to 2 277 thousand tonnes.
- 4.3 There are a number of points which need to be emphasised. The first is that the Appeal dealt only with the barest minimum needs to meet the emergency and to avert tragedy. Second, requirements of 2.54 million tonnes of programme food aid were not costed. At current CIF prices, this could have added about another US\$500 million to the appeal. Third, the Appeal did not cover financial needs to keep structural adjustment policies in place. Fourth, the Appeal was only for the 1992/93 season. Continuing drought or even a poor season in 1993/94 will impose a further dramatic burden on the region. Finally, the Appeal did not include any request for finance to meet normal economic development needs, nor did it make an assessment of post-drought needs. Although the total value of the Appeal seems large, therefore, it was by no means exhaustive and should be regarded as no more than the minimum necessary to cover the survival needs of the region (see Table I).
- 4.4 At a meeting of the Regional Task Force on 21 and 22 July, it was agreed that the principle of allocating aid that had been pledged to the region as a whole would be on the basis of a member States' uncovered aid needs as a proportion of total uncovered aid needs. Targeted food aid pledges to the region, amounting at that time to 147 000 tonnes, were allocated on that basis.
- 4.5 Member States also agreed to update their food and non-food aid needs on a regular basis and provide data to the Food Security Sector. These requirements will then be aggregated to derive continuous updates of the region's needs. The dynamics of the drought emergency requires these regular

assessments to ensure that the region and the international community are kept apprised of emerging needs.

- 4.6 The Regional Task Force will work with the UN system to coordinate regional and international response to the drought. Follow-up action is to be undertaken by a monitoring group situated in the Department of Humanitarian Affairs of the UN in Geneva. A SADCC representative is to be selected as a member of the group which will report on a monthly basis to SADCC and all UN agencies involved in the drought emergency.

## 5. REVIEW OF THE FOOD SECURITY PROGRAMME

- 5.1 The sector has eleven regional projects. The total cost of the programme is US\$198.16 million of which US\$54.09 million has been secured and US\$137.26 million is the funding gap.
- 5.2 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. Current funding for the RIARB project is due to end soon and further funding is being sought.
- 5.3 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, the recommendations from which included proceeding to a second phase to focus on improving the spread of small-scale processing and storage.
- 5.4 Following the approval, in principle, by Ministers of Agriculture and Natural Resources, of the Regional Food Reserve Project, work on implementation mechanisms was started. A study tour was undertaken by SADCC officials to draw on the experience of the Asean Region who had set up such a facility successfully. A comprehensive report has been prepared, some recommendations from which will be used to finalise the Project.
- 5.5 The pre-implementation phase of the Food Security Training project has been completed. Funding is now being sought for the first phase, through Project AAA.1.14.
- 5.6 Feasibility studies of the Regional Food Marketing Infrastructure and the Regional Seed Production and Supply Projects have been completed. Several specific regional and national project proposals have been identified from these two studies including a feasibility study of a regional seed technology centre and seed training courses. Detailed

formulation of projects identified under the marketing study can now proceed. The Namibian component was completed in 1991 and the report is being finalised.

- 5.7 A detailed work-plan for implementing the Regional Information System for Food Security was completed in September, 1988. The project has now been revised to concentrate on the national elements of the project.
- 5.8 In order to ensure that vulnerable groups can be identified and benefit from appropriately formulated intervention at the regional level, a component to monitor nutritional status that formed part of the original project proposal has now been developed. Negotiations for funding the component (\$1.78m) are underway with the Netherlands Government.
- 5.9 A regional expert, funded by UNDP, was appointed to the FSTAU, initially for two years, to ensure that issues relating to women in development and nutrition received appropriate recognition in the Food Security Programme. Negotiations are under way for a one year extension. In the past year, a regional workshop, attended by representatives from each member State concerned with women's issues, was held in Harare to discuss strategies to improve food processing technology at the grass roots level.
- 5.10 In view of the need to ensure a coordinated response to the regional drought, a Logistics Advisory Centre has been established by the Food Security Sector. Part of the funds to support the regional staff and the operation of the LAC have been obtained through the SADCC Secretariat. Additional technical assistance and funds from CIDA and other donors is being sought through WFP.

## 6. 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 Sector established links with the University of Zimbabwe's Food Security policy research programme which terminated at the end of 1991. A further provision of \$0.3m has been granted by USAID to finance annual policy research conferences.

Australia, which provided support for the project during Phase 1, has agreed to provide a grant of A\$2m (US\$1.6 million) for a further 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. Additional assistance has been provided this year by the Australian Government to help defray the costs of the extra work associated with coordinating the region's response to the drought.

**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 Windhoek, Namibia, during late February, 1992 to prepare and agree on a work plan for 1992 as well as to decide on future training needs for NEWU staff (September 1992) and related project activities.

Since Phase 2 became operational, the REWU has provided technical back-stopping to all 10 SADCC countries in the areas of agro-economics, statistics and agro-meteorology. Professional consultancies have also been provided to NEWU in Lesotho, Mozambique, Botswana, Namibia and Tanzania. The same assistance will be provided to the other 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, particularly use of food balance sheets.

The distribution list for the SADCC Food Security Bulletin has continued to grow due to the increasing demand especially during the current drought crisis, and the bulletin has received well-deserved praise and wide coverage in the national press and the electronic news media of several member States and overseas.

The Project has successfully recruited a senior agricultural economist and an agricultural economist/statistician, both of whom are expected to assume duty in mid-June/early July, 1992.

A Memorandum of Understanding to provide a mechanism and legal framework for the long-term financing of REWU was approved by the Council of Ministers in Arusha in August, 1991. Nine

countries have now signed the MOU. To date only one country has contributed financially to the project. Donor funds amounting to US\$309 087 have already been promised for the 1991/92 year. Member States have yet to start contributing. In the meantime bridging finance of US\$30 000 is expected from SADCC Secretariat shortly to cover SADCC contributions which will be reimbursed as soon as member States contributions are received. Ministers of Agriculture and Natural Resources agreed in Mbabane in June, that it was imperative, that member States send their contributions as agreed.

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

The strengthening of the remote sensing component of REWS continued in 1991 on several fronts: training workshops, distribution and utilization of the remote sensing products, expansion of contacts between the regional unit and NEWU users, and technical backstopping visits by regional unit to NEWUs to assist in interpretation. In 1991, one regional calibration workshop was held in Harare and one national training workshop was held in Lusaka. As a result of the latter, a "Zambia Remote Sensing Applications Group (ZARESA" has been formed, spearheaded by the workshop participants. The regional calibration workshop in Harare was attended by 14 participants from seven member States: Botswana, Lesotho, Malawi, Swaziland, Tanzania, Zambia and Zimbabwe. A four-day group training session was also conducted for 5 NEWU staff in Namibia in December 1991, followed by a further one-week session in February 1992. Remote sensing information covering cold clouds (for rainfall) continued to be distributed every ten days to all NEWUs, and specialized products were also distributed aimed at assisting NEWUs to assess the expansion of drought-affected areas. Software for manipulating of meteorological and remotely-sensed data (SUIVI) was developed and training in its use will soon be initiated.

The "front end" of a Primary Data User Station (PDUS) for the reception of METEOSAT satellite data was installed in January 1992, and a satellite telecommunication station for data transfer is due to be installed in June. A project document for phase II of the project is being prepared.

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

During the pre-implementation phase of this project, a regional information system for food security was designed and a project proposal was formulated, which included monitoring household food security and nutritional status. The project has been reviewed to focus on national components, but coordinated regionally.

Following a regional seminar in Malawi in April, 1992, on Nutrition Monitoring, the component aimed at setting up a capacity to monitor regional food security and nutrition has now been developed. This component is to be supported by the Netherlands Government.

**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 came to an end in December, 1991. By that time, the following tasks had 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 had been convened and attended by RIARB Technical Liaison Officers and representatives from USAID, FAO and ISRIC.
- approval by SADCC of two regional proposals aimed directly at increasing agricultural production;
- 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). Information for Botswana and Zambia would increase this to 34%. These data are still awaited from member States. Once available, this would enable agro-ecological determinations to be made for the whole region at a scale of 1:1 million.

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 in map form and according to the preferred mapping projections of individual member States.

A second, four year, phase is proposed, at an estimated cost of \$1.9m covering the salaries and travel costs of technical assistance staff, equipment, consultancies, subsistence and documentation.

**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 analysis services, so as to maximise crop yields by prudent use of fertiliser. The project would consist of two main components;

- (a) a small regional component located in the FSTAU, with short term consultants and support services; and
- (b) officially recognised contact persons or technical liaison officers within each member State to assist develop and implement national projects and programmes.

The total estimated cost of the project is US\$750,000. Funding is being 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) one regional expert, support staff and equipment; and
- (b) national staff in each member State (see Section B of project document) to undertake the inventory and management improvement activities.

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

	US\$
Malawi	2 127 000
Swaziland	1 930 000
Tanzania	8 930 840
Zambia (Kagoro)	622 000
(Macha)	1 338 000
Zimbabwe	439 200

There will be close collaboration with the HRD Sector in relation to the training programme, with Agricultural Research - in relation to research activities; with the Environment and Land Management Sector in view of a similar project on Range Inventory Monitoring and Rehabilitation Trial being implemented by that Sector; and with the Livestock Production and Animal Disease Control Sector.

Implementation of each of the project's components are to be carried out by the member States concerned.

**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. A SADCC team visited Malaysia to discuss the ASEAN food security project in May.

The Food Reserve Project is being reformulated as a matter of urgency in the light of the current drought. In particular, the financing facility component is to be prepared with technical assistance provided through the Commonwealth Secretariat. Recommendations from the SADCC mission to ASEAN countries will also be taken into account. The output increasing aspects of the project are to be encompassed in a programme of macro and micro policy coordination, marketing improvements and credit systems. Analysis of regional reserve needs has been undertaken and will be further refined in the light of changing trading and production environments. Increased stockholdings will also be a feature of the project, such stocks being located strategically in areas which frequently experience food scarcity.



**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 of the project, completed in February, 1989, 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.

The Sector and the Agricultural Research Sector 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 developing a programme within which these projects would be implemented.

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

**Project AAA.1.11 (1): Regional Seed Technology Network**

The project is concerned with the establishment of a network coordinated preferably by 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 network and assess its cost, is estimated at US\$0.21 million.

A full-scale joint feasibility study of the Regional Technology network and Advanced Training Courses in Plant and Seed Production was undertaken between January 27 and February 15, 1992. The draft report was circulated to member States and discussed by the Food Security Technical Sub-Committee. Comments were sent back to the consultants. Major

recommendations included the provision of limited technical support to act as a focus for technological information exchange and to arrange courses for ten years and that the centre be sited in Zambia. A final report is awaited.

**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 the 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.

A workshop will be held in October, 1992, to plan a SADCC Technical Cooperation Network for Plant Quarantine. Funds to support the workshop have been secured through FAO.

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

The project's primary objective is to establish vegetable seed production and breeding at two existing institutions, one for temperate vegetables, and the other for tropical vegetables. These activities will be linked to existing national production/breeding programmes to meet the requirements for improved vegetable seed in the region. The Food Security Sector will work very closely with SACCAR in the development of this project.

The cost of the pre-implementation phase, to determine suitable locations, set out programmes and to prepare costed implementation plans 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.

A full-scale joint feasibility study of this project and of the Seed Technology Network proposal was undertaken between January 27 - February 15, 1992. The study has now been

completed and a draft report has been circulated to member States for comments.

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

The aim of this study is to determine the feasibility of up-grading or establishing national seed quality laboratories and, subsequently, of establishing 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 feasibility for up-grading or establishing national units is estimated at US\$0.06 million.

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

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)**

The Food Security Sector organised a training course for Seed Inspectors on Seed Quality Control from March 10 to 24, 1992, at the Seed Control and Certification Institute (SCCI) of Zambia. The course was run by SCCI. Funding for the course (US\$41,170) was secured from Canada (CIDA). Representatives from all ten SADCC member States participated in the training course.

A similar course on Seed Testing for Seed Analysts will be run at SCCI, with the assistance of appropriately qualified regional experts in October, 1992. CIDA will provide funding (US\$41,170) for this second phase. CIDA has also agreed to fund two similar courses to be run next year.

It is anticipated that future short courses of this nature will be organised by the proposed Regional Seed Technology Network once it is operational.

**Project AAA.1.12: Improved Irrigation in SADCC**

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 irrigation activities which can be implemented through the SADCC Programme of Action.

The second phase of the study has now been undertaken. An interim technical workshop was held in Zimbabwe from 23 to 27 March, 1992 to review the individual draft country reports and the main Study Interim Report. Representatives involved with irrigation in all member States attended. Final country reports have been prepared and a draft final regional strategy was reviewed at a workshop in July, 1992. A final report has been prepared. The regional strategy is being finalised.

**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 so as to reduce crop losses. By developing a coordinated approach, 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 and improve the region's capacity to mount counter measures against such pests.

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\$1.2m) to implement these proposals. 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.

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 a second phase of the project.

The first working phase of the project finished at the end of 1991. The project has been extended for three years from January, 1992 to allow the regional communication and data exchange system concerning migrant pests to be completed.

Training and installing the necessary communication equipment in SADCC countries will be undertaken in this phase.

**Project AAA.1.14: Regional Food Security Training**

The project aims at meeting the training requirements in the overall Food, Agriculture and Natural Resources 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.

Three areas of concentration, in English and in 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; and
- 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 projects, which are the responsibility of individual member States, are generally directed towards enhancing production activities which have the potential to improve food supply.

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

Start: 1991

Duration 5 years

---

**OBJECTIVES**

The objectives of the project are to provide financial and technical support to the Food Security Technical and Administrative Unit to aid the process of cooperation within SADCC so as 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) developing and implementing SADCC's regional food security projects; and
- (c) undertaking overall coordination of SADCC's programmes covering food, agriculture and natural resources.

**DESCRIPTION**

This project provides support for the core operations of the SADCC Food Security Technical and Administrative Unit (FSTAU). The Unit is responsible for managing SADCC's regional food security programme. It 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, and funding short-term consultancies, 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 a technical adviser.

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 (A\$2m) for the extended 5 year period. AIDAB has also provided services of a Technical Advisor (Planning Economist). The A\$2m will support salary for Technical Advisor, workshops and seminars, exchange visits, travel by Technical Advisor, vehicles and equipment. The Government of Zimbabwe has also increased its contribution to the project by providing for additional staff to FSTAU.

**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 and enhance food security in the SADCC region through assisting appropriate policy 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 of 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 and nutrition monitoring and planning. A system comprising a regional component in the 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**

Following a regional seminar in Malawi in April 1992, on Nutrition Monitoring, the component aimed at setting up a capacity to monitor nutrition and food security in the region has now been developed. This is to be supported by the Netherlands Government. The objectives of the project as a whole remain the same.

Funding is being sought for implementation of the project.

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

Estimated Cost

Total : US\$1.9m  
Foreign: US\$1.9m  
Local : -

Financing Gap: US\$1.9m

Executing Agency : FSTAU

Start: 1992

Funding Secured

Foreign: -  
Local : -

Duration: 4 years

**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 came to an end in December 1991. During Phase 1, 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, including economic and climatic data, have been made to NARISA following member States' 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.

Funding is sought to implement Phase II of the project.

**AAA.1.4(1) SADCC SOIL FERTILITY ANALYSIS PROJECT**

Estimated Costs		Financing Gap: US\$0.75m
Total	: US\$0.75m	Executing Agency:
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**

Estimated Cost

Total : US\$16.33m  
 Foreign : US\$15.63m  
 Local : US\$ 0.70m

Financing Gap: US\$15.63

Executing Agency:

Start: As soon as funding is secured

Funding Secured

Foreign : -  
 Local : US\$0.7m (SADC)

Duration: 4 years

**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
Food Security Sector	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\$3.60
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 Food Security Sector. 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, ended in June 1988 at which time an evaluation report recommended the project be continued 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 TECHNOLOGY NETWORK (SEED PROJECT)

Estimated Cost  
Total : US\$0.21m  
Foreign : US\$0.21m  
Local :

Financing Gap: US\$0.21m

Executing Agency: FSTAU

Start: As soon as funding is secured

Funding Secured  
Foreign : -  
Local : -

Duration:  
10 years (begining  
1st July 1993)

-----  
**OBJECTIVES**

The long term developmental objective of the project is to increase the use of high quality seeds by farmers of the region, thereby increasing production and farmers' incomes and substantially improving the food security situation in the region.

The intermediate objective is to assist in the development of national capacities to produce high quality seed through training personnel, supporting to national programmes and establishing an information exchange system.

**DESCRIPTION**

The project activities include a scholarship programme for advance training in Seed Science and Technology. The aim of the scholarship programme is to raise and improve the national as well as regional, capacity for teaching seed technology.

A series of short crop/subject specific courses/workshops, all related to improving seed production and supply situation in the region for relevant personnel will be implemented by the project. The project will provide resources and services to strengthen national programmes in specific areas identified by the member States.

The project will also provide resources to national programmes to increase their capacity to acquire seed information both regionally and internationally. Implementation of project activities will draw heavily on existing national capacities.

**STATUS**

Funding is being sought to implement the project.

**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 of upgrading of quarantine facilities in member States, a 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.

**AAA1.11(3) PRODUCTION AND BREEDING OF VEGETABLE SEED**

Estimated Cost:

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

Financing 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 seed production and breeding temperate and tropical vegetables. It will 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 activities and costs.

**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**

<u>Estimated Cost:</u>		<u>Financing Gap:</u> US\$0.30m
Total	: US\$0.30m	<u>Executing Agency:</u> FSTAU
Foreign	: US\$0.30m	
Local	: -	<u>Start:</u> As soon as funding is secured
<u>Funding Secured:</u>		
Foreign	: -	
Local	: -	

---

**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:** A 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.

AAA1.11(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 of national units where they do not exist, and the feasibility of establishing a regional laboratory.

**STATUS**

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

AAA1.11(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 the 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**

<u>Estimated Cost:</u>	<u>Financing Gap:</u> US\$4.3
Total : US\$4.3m	<u>Executing Agency:</u> FSTAU
Foreign : US\$4.3m	<u>Start:</u> As soon as possible
Local : -	
<u>Funding Secured:</u>	<u>Duration:</u> 3 years
Foreign : -	

-----

**OBJECTIVES** The overall objective of this project, is to enhance the efficiency of personnel 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 mainly of 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.

**STATUS** Funding is sought.

# Funding Status of Projects

Project	Project Title	Estimated Cost US\$ Million		Funding Secured & Source Local US\$ Million	Funding under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status
		Total	Foreign				
<b>FOOD SECURITY</b>							
AAA.1.1	Tecincial 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 (SADC) 4.40 (DEN)	-	Under Implementation.
AAA.1.3	Regional Resources Information System	1.95	1.95	-	-	-	1.95 Funding sought.
AAA.1.4	Regional Inventory of Agricultural 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	16.33	15.63	0.70	0.70 (SADC)	-	15.63 Funding sought.
AAA.1.5	Regional Food Reserve Project	-	-	-	-	-	- Under review.
AAA.1.6	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 completed.
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.
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.

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	US\$ Million			
AAA.1.12	Improved Irrigation in the SADCC Region	0.50	0.48	0.02	0.48 (AUS) 0.02 (SADC)	-	-	Workshop to review Study met in July 1992.
AAA.1.13	Strengthening & Coordination of Migrant Pest Control	1.40	1.12	0.28	1.12 (FRG) 0.28 (SADC)	-	-	Under implementation.
AAA.1.4	Regional Food Security Training	4.30	4.30	-	-	-	4.30	Funding sought.
----- Sub total		45.77	41.73	4.04	12.03	-	33.74	
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 (EC) 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.
AAA.1.4(2)	SADCC Rangeland Development, MALAWI	2.13	1.95	0.18	0.18 (MAL)	-	1.95	Funding sought.
MOZ.1.5	Establishment of Network Quarantine, MOZAMBIQUE	0.73	0.50	0.23	0.50 (DEN) 0.23 (MOZ)	-	-	Quarantine Stations set up in Maputo, Beira and Macala, training commenced in Maputo.
MOZ.1.6	Storage Facilities, MOZAMBIQUE	20.60	15.20	5.40	3.60 (NET) 5.40 (MOZ)	-	11.60	Logistic problems hampered implementation of Macala silos.
SWA.1.1	Rehabilitation of Irrigation Schemes, SWAZILAND	9.20	6.40	2.80	2.80 (SWA) 6.40 (IFAD)	-	-	Under implementation.
AAA.1.4(2)	SADCC Rangeland Dev. SWAZILAND	2.13	1.95	0.18	0.18 (SWA)	-	1.95	Funding sought.
TAN.1.1	Kapungu 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.

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					
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/EC/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		203.05	163.18	39.87	64.53	1.47	137.05	

# Livestock Production and Animal Disease Control

## C O N T E N T S

	<u>PAGE</u>
1. EXECUTIVE SUMMARY	1
2. REVIEW OF THE REGIONAL SITUATION	2
3. REVIEW OF THE PROGRAMME	4
4. CURRENT STATUS OF PROJECTS	7
5. PROJECT DESCRIPTIONS	17

## LIVESTOCK PRODUCTION AND ANIMAL DISEASE CONTROL

### 1. EXECUTIVE SUMMARY

- 1.1 The region is experiencing a severe drought which is affecting all aspects of livestock production. The immediate effect of the drought is unparalleled livestock deaths due to lack of grazing and water. These effects will result in increased disease outbreaks as livestock immune status is lowered due to nutritional stress.
- 1.2 Outbreaks of Foot and Mouth Disease have been reported in Namibia and Zimbabwe during the year under review. The outbreaks have been contained and they did not necessitate the loss of lucrative external markets. Vaccinations against the disease continue to be done in seven of the ten member countries.
- 1.3 Other diseases which have flared up are contagious bovine pleuropneumonia, lumpy skin disease and rabies. Shortage of vaccine in member countries sometimes hampers control efforts. A programme approach to increase the capacity of national veterinary services in the region is planned for. A new study to assess the requirement to build the capacity of the national veterinary services so that they are able to deal with all types of disease has been approved by the SADC Council of Ministers, as a long-term solution to combating animal diseases.
- 1.4 Large animal sell-offs because of the drought has resulted in a glut of meat in the region. Slaughterhouses especially in Botswana and Zimbabwe are working full time to try and accommodate farmers who want to de-stock. Even then, there are often waiting periods of months before animals can be accepted for slaughter. The glut is however short lived and meat scarcity is expected later on. In the medium to long-term there will be problems of restocking most livestock producing areas.
- 1.5 The sector has sixteen projects on its programme. Two new projects were added during the year under review. One project, "Construction of the Animal Disease Reference Laboratory" in Harare is completed and is now operational. Of the sixteen projects five are under implementation, 8 are seeking financial support while negotiations for funding for three are ongoing.
- 1.6 An International Advisory group has recommended that the Heartwater Vaccine component of the East Coast Fever and Heartwater vaccine production project be extended by a further 3 to 5 years. The Livestock Sector Technical Committee has discussed and recommended the draft project document for the second phase of the project. Approval for the project to proceed to phase 2 has been given by the Council of Ministers.

- 1.7 A new study to look at the Manpower needs of the Sector has been approved. The results of the study will complement those from the capacity building of National Veterinary Services to help the sector improve both its manpower and infrastructure.
- 1.8 The Belgian supported bilateral project with Zambia, which has both a Tsetse control and an East Coast Fever control component is to be technically integrated with the already existing SADC projects on East Coast Fever in Malawi and Tsetse control in Zimbabwe.
- 1.9 The second phase of the SADC Regional Training Centre for Tsetse and Trypanosomiasis control got under way February 9th 1992 in Lusaka, Zambia. The first 4 months course on Tsetse control for 22 participants from all SADC member States has already started and is due to end October 1992.

## 2.0 REVIEW OF THE REGIONAL SITUATION

- 2.1 The 1991/92 rainy season was very poor resulting in the most severe drought that is the worst the region has experienced in a very long time. The region is now experiencing a lot of livestock deaths due to lack of both grazing and water.

The worst hit areas are the communal areas where there is over stocking and grazing is haphazard and uncontrolled. The Midlands and Masvingo Provinces of Zimbabwe are hard hit with cattle deaths reaching 42474 and 20,616 respectively as of April this year. More deaths are anticipated.

- 2.2 Grazing in the southern parts of Namibia as well as the Owambo - speaking region in the north is extremely poor. The problem is exacerbated by lack of water, with animals having to trek long distances to find water.

In Mozambique the most affected areas are the provinces of Maputo, Gaza, Inhambane, Manica and Tete in which 82% of the country's livestock are found. Over 90,000 cattle deaths are expected.

The Southern Province of Zambia which holds 47% of the national herd is also severely hit. The same applies to the Northern parts of Botswana where cattle mortality, even though not quantified, is high.

- 2.3 One impact of the drought will be an increase in livestock diseases. A lot of animals will concentrate around the few available watering and grazing areas making it easy for them to spread and succumb to disease pathogens. Outbreaks of Blackquarter, Anthrax and Haemorrhagic Septicemia are to be expected. Lack of adequate water supplies in Zimbabwe Mozambique and Zambia have made it

difficult to fill dip tanks with water to control ticks, so tick-borne diseases as a group can be expected to increase.

- 2.4 There has been outbreaks of the economically crippling Foot and Mouth Disease reported in the Caprivi Strip of Namibia and Zimbabwe. The Caprivi Strip outbreak occurred during September 1991 and involved about 3000 animals. The outbreak in Zimbabwe occurred in a farm in Mvururu during October 1991 with a total of 210 cattle out of 1348 in the area involved. The usual zoo-sanitary measures to contain and eliminate the outbreak were taken in both cases. Another outbreak was reported in the eastern part of the Okavango District of Namibia in April, 1992.

Six animals out of a total population of 95411 animals in the region were affected. It is thought that the disease could be originally from buffaloes which roam the area.

Movement controls have been effected in the area and vaccination in the whole Kavango District has been done. Meat exports remain unaffected. The disease is endemic in Tanzania with a total of 13 outbreaks reported last year. The high cost of the FMD vaccine limits control measures through vaccination.

Over 12 000, and 69281 herd of cattle were vaccinated against the disease along the northern and southern borders of Zambia respectively. In Swaziland 57542 cattle and 17454 goats along the border with Mozambique were vaccinated. 304941 and 332574 cattle in zones 1,2,3a, 3b and 4a in northern Botswana were vaccinated in September 1991 and April, 1992 respectively. Vaccinations were also carried out in the Southern Provinces of Maputo and Gaza as well as the Zambezi Provinces of Mozambique along the Beira corridor. Routine vaccinations were done in Malawi and Namibia.

- 2.5 Contagious bovine pleuropneumonia has been reported in the eastern Owambo/Kavango area of Namibia and the Kagera region of Tanzania. Vaccination and quarantine are the control measures used.

Lumpy Skin Disease continues to make its presence felt with outbreaks continuing to spread and reported from Botswana and Mozambique(10040 cases, 100 deaths) Zambia (14,500 cases, 1950 deaths) Zimbabwe(8,274 cases, 1229 deaths), Tanzania (4310 cases, 885 deaths), Swaziland and Malawi. The control of the disease through vaccination and movement control continue to be practised. Control is sometimes hampered by the non-availability of vaccine.

Malawi and Zambia have discontinued vaccinating against Rinderpest in 1987 and 1991 respectively. Only in Tanzania do vaccinations continue and only in those areas bordering Uganda and Kenya where outbreaks of the disease are still reported. Over 1.5 million cattle were vaccinated last year. The country aims at eradicating the diseases under the Pan African Rinderpest Campaign project.

- 2.7 Tick-borne diseases are still a worrisome group of diseases in the region. East Coast Fever, Babesiosis, Anaplasmosis, Heartwater as well as Corridor Disease are controlled either through the infection and treatment method being perfected by the Malawi laboratory, or by vaccinations and through dipping.

A lot of animals however continue to be lost through these diseases and they pose a serious threat to the livestock industry in the region.

The zoonotic disease rabies is endemic in the region. Most cases are in the domestic canidae but the increasing occurrence of the disease in domestic ruminants has now made rabies an economic as well as a zoonotic disease. Control is mainly through vaccinations but of recent there has been an upsurge of the disease in wild life (jackals, mongoose etc.) where vaccinations by conventional means is not possible.

- 2.8 Farmers have responded to the drought by sending a lot of their livestock for slaughter. This is taxing the capacity of the slaughterhouses as there are more animals than they can handle. This has resulted in an oversupply of meat in the short term. Botswana, Zimbabwe and Namibia continue to export reasonable quantities of beef with a large proportion of the latter going on the hoof to South Africa.

The region continues to be a net importer of milk and milk products. The demand for dairy heifers is generally bigger than the supply and the sector has a two prong strategy to increase the production of milk. This is in the form of the dairy heifer multiplication project as well as the supply of legumes and pasture seeds project already in the programme.

### 3.0 REVIEW OF THE PROGRAMME

- 3.1 The Sector has sixteen projects on its programme. Two studies, one to look at strengthening the capacities of national veterinary systems and the other to look at the manpower needs of the sector were recently approved by Council. Of the sixteen projects five are operational either in their first or second phases, 8 are still seeking financial support while negotiations for funding for three

are ongoing. The project "Construction of the Animal Disease Reference Laboratory" in Harare is completed and now operational.

- 3.2 Negotiations for funding for the project Zim 2.3 "Training for the Maintenance and repair of Scientific and Technical Equipment in Veterinary Laboratories" is seeking funding.
- 3.3 Phase 2 of the SADC Regional Training Centre for Mid Level Personnel for the control of Tsetse and African Trypanosomiasis in Lusaka, Zambia got under way February 9th 1992. The Steering Committee for the project met May 12th and 13th to look at work plans for the year. A four month course for 22 participants started on June 23rd, 1992.

The objectives of the second phase of the project is to continue to train personnel from SADC countries in the skills of Tsetse fly and trypanosomiasis control and to prepare for a smooth handover of the project to SADC management.

- 3.4 No progress has been made in respect of funding from the EEC for the Regional Foot and Mouth Disease control Project. No compromise has been reached between the project SADC wants and the one EEC favours. The matter is being pursued at political level between SADC and the EEC.
- 3.5 A second SADC/FINNIDA appraisal mission for the Regional AI project has visited the region and has produced a report. The purpose of the mission was to assess what is on the ground and to come up with what is needed for the project. The mission visited countries which were not covered during the first mission. Member states have made their comments on the report and these have been forwarded to FINNIDA. It is hoped that FINNIDA will provide the funding for the project after taking into consideration the sector's comments.
- 3.6 Project AAA2.3 Regional East Coast Fever and Heartwater Vaccines Production and Immunization

Council at its meeting in Windhoek in August 1992, noted that phase 1 of the Heartwater vaccines component of this project was coming to an end. It has been evaluated by an International Advisory Group who commended the project for developing DNA clones now being used as diagnostic probes as well as providing a lot of information on the disease. In order for the project to reach its final objective of developing a commercially marketable vaccine, the group recommended that it be continued for a further 3 to 5 years.

### 3.7 Projects ZIM 2.2 and AAA2.3: Regional Tsetse and Trypanosomiasis Control and East Coast Fever Projects

Council also noted that the Belgian supported bilateral project with Zambia; the Integrated Programme on Animal Disease Control, which has both a Tsetse control component and an East Coast Fever component, is to be technically integrated with the already existing SADC regional projects on Tsetse Control in Zimbabwe and East Coast Fever in Malawi. The Tsetse Control part of the project is to be taken as part of the Zambian National Component of the Regional Tsetse and Trypanosomiasis Control project while the East Coast Fever part of the project becomes part of the Zambian component of the Regional East Coast Fever project.

The integration was agreed to by the Livestock Sector Technical Committee in order to reduce duplication of efforts and also to ensure that the project complement what the regional projects are doing. The integration agreement outlining reporting relationships was approved by Council.

### 3.8 Project AAA 2.8 Manpower Needs Assessment Study

In conjunction with the SADC Regional Training Council, the Livestock Sector is trying to address the shortage of qualified manpower at first degree and postgraduate degree levels throughout the sector. By increasing the ability of the SADC region to train its own Livestock Sector personnel, the SADC member countries will reduce their dependence on external training facilities, reap the benefits of economies of scale in utilising fully the regions high quality training institutions as well as establish institutions with a capacity for original research relevant to the regions problems in the field of Animal Production and Health.

The two sectors developed terms of reference (TOR) for a consultancy which is designed to address the regions's shortage of qualified manpower in this sector and to make recommendations for appropriate action which will enable these requirements to be met.

The consultancy is also to identify possible areas of regional co-operation in addressing this important matter and will prepare all the necessary documentation. The study is to cost US \$ 377,910.00. Council at its meeting in Windhoek in August 1992, approved the project.

### 3.9 AAA2.9 Study on Capacity Building of National Veterinary Services in SADC Countries

The Livestock Sector has a number of projects which address individual high priority diseases in the region. There is a host of other lower priority diseases which need to be addressed through the programme approach. Instead of coming up with projects on individual diseases, the Sector wishes to strengthen the capacity of the national veterinary services in the region to be able to cope with diseases in general.

The Sector has, therefore, developed terms of reference for a study which is designed to examine the existing disease control infrastructure/facilities and assess their usefulness as tools against diseases, as well as the capacities of National Veterinary Services to control diseases. The study, which is to cost US \$200,000 was also approved by Council.

## 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\$9.054 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 project is based in Lilongwe - Malawi. The project continues to produce a quality controlled stabilate vaccine for immunisation against ECF as required by the region. However, vaccine production at the centre is still at the formative stages and needs financial support from member states and donors before it becomes self supporting. The number of cattle initially envisaged by the project to receive vaccine will be at least four times larger because of a much larger involvement of cattle in Zambia, as well as the indication of willingness by non-SADC countries to purchase vaccines from the Malawi vaccine factory.

The project implementor, in collaboration with OAU/IBAR ILRAD and the SADC Livestock Sector, held a meeting in Kampala, Uganda in September 1991 in which the future needs of the programme were summarised as follows:-

- continued support for the regional vaccine production in Malawi.
- a series of national delivery systems projects to design and support delivery systems to get vaccines to farmers who wish to buy them.
- a regional umbrella delivery project to give technical support to national delivery projects.
- product marketing, management and feedback on field problems, and technical assistance with tick control aspects of the national projects.

There was also consensus that the draft project document which was prepared in 1989, needs to be revised and updated to be in line with recent developments.

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 to train SADC 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.

Two Courses on advanced tissue culture were held August 5th to September 14 and October 7th to November 14th 1991. They were attended by one participant each from Botswana, Malawi, Tanzania, Mozambique, Swaziland, Kenya, Mali, Kenya and the Gambia.

The project has been evaluated by an International Technical Advisory Group which strongly recommended that the project be extended by another 3 to 5 years. A draft project memorandum has been discussed by the Livestock Sector Technical Committee who have recommended that the project proceed into the second phase, which will be geared towards consolidating what has been achieved in the first phase as well as coming up with a vaccine that can be marketed in the region.

**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 SADC 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 SADC member states, on a rotating basis.

The fourth course took place at the Veterinary Training Institute in Mazowe, Zimbabwe from the 2nd September to 25th October 1991. The course was attended by 18 participants, 2 each from Botswana, Namibia, Mozambique, Lesotho, 3 each from Zambia and Tanzania and 4 from Zimbabwe.

The Sector's Technical Committee has recommended that a future course should be geared to the training of trainers so that staff from the region could continue to offer such courses. Support for these courses continue to be provided by Sweden at a cost of US \$0.11 million.

**4.3 Project AAA.2.7 Study of the Production and Distribution of Pasture Seeds and Legumes to Smallholder Dairy Farmers in the SADC 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, Cunene, 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, Namibia 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 SADC 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.

The EEC had however rejected the report outright and went ahead and commissioned another consultancy whose report they have sent to member states. Discussions at a political level are underway between SADC and EEC to resolve differences in project scope and focus.

**4.7 Project BOT.2.3 SADC 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 this 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.

A tripartite review mission in April 1988 recommended that phase 2 of the project be considered. Phase 2 is to cost US \$4.8 million over five years with donor contribution amounting to US \$3,385,000.00.

Due to management disagreements between Botswana, FAO and DANIDA with respect to availability of counterpart staff for the project, DANIDA has decided not to go ahead with the funding of the project.

The Sector co-ordinator has put in a request to the Botswana Government to fund the centre. As soon as the request is approved, regional staff will be recruited to run the centre with member states paying school fees for their participants. It is hoped that regional staff will be in place before the end of the year depending on when the Government approves funding for the centre.

#### 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 SADC 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 SADC 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, which is to cost US \$3.03, million over two years got under way in February 1992. A major concern since the restart of activities has been to bring the project into full commission after being dormant from December 1990 to February 1992.

The Steering Committee for the project met on May 12th and 13th 1992 to, among others, agree on work plans as well as select regional counterpart staff. A four month course for 22 participants started June 23, 1992 and two one month long country specific courses are to start later in the year. It was however not possible to select counterpart staff (Team leader, 2 entomologists and 1 administrative officer) with the time available. A on day meeting is to be convened to do that in the near future.

**4.11 Project ZIM.2.2 Regional Tsetse and Trypanosomiasis Control Phase 2**

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

As a result of a regional research conducted under the project, new attractant odours for Tsetse have been identified. Furthermore, progress has been made in reducing the cost of odour -baited, insecticide - treated targets used to control tsetse. The efficiency of tsetse survey techniques has also been increased. The extensive aerial spraying operations conducted in Zimbabwe and Zambia provided opportunities to develop and perfect aerial insecticide application techniques.

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.

It is proposed that a comprehensive strategic plan which will link tsetse control in various parts of the common fly-belt with development requirements based upon economically advantageous and sustainable land-user schemes, be prepared.

Other key activities during the second phase will include the launching of a part-time, modular post-graduate training scheme in the region, the continuation of research and development of tsetse and trypanosomiasis control, completion of surveys, and the establishment of infrastructure needed for a possible eradication phase. A study of the regional tsetse and trypanosomiasis problem affecting Angola, Zambia, Botswana and Namibia will also be undertaken.

A total of US \$28,595,190.00 (ECU 22 700,000.00) will be provided by the European Community for the three year extension period.

#### **4.12 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 SADC nationals are expected to be trained during this period. Funding is being sought.

#### **4.13 Project ZIM.2.4 Support for Establishment of a Regional Artificial Insemination Centre**

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/SADC fact-finding mission visited five member states in April, 1991. A draft report from the mission have been studied and commented on by member states.

Before a final report could be produced, another FINNIDA/SADC appraisal mission re-visited member states in November/December 1991. The report from this mission has been sent to FINNIDA with comments from member states.

#### 4.14 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.

#### 4.15 New Projects

The following projects have been approved.

##### **Project AAA 2.8 Manpower Needs Assessment Study in the Livestock Sector**

This project aims at assessing the current and projected future supply and demand for manpower with either first degree or postgraduate degree qualifications in the Livestock Production and Disease Control Sector. It is also to assess the relevance and appropriateness of the training available at tertiary institutions within the region to meet the needs of the Sector, and review the facilities presently available in the region for the inservice training of professional staff.

The consultancy shall be of 29 weeks duration of which a maximum of 22 weeks shall be spent by the consultants in the region with 3 weeks being available for initial preparation and 4 weeks being available for writing the final report. The study which is to cost US \$377,000.00 is to be financed by the EEC.

#### 4.16 Project AAA2.9 Study on Capacity Building of National Veterinary Services in the SADC Region

The objectives of the study is to evaluate national livestock policies, and to assess the capacities of the National Veterinary Departments to meet their objectives on disease control. It is also to examine disease control infrastructure and determine whether they are adequate to control livestock diseases, in general, as well as make recommendations necessary for National Veterinary Services to have the capacity to handle animal diseases.

The consultants are to visit all 10 member states and have discussions with relevant livestock authorities, compile relevant basic data on disease control, survey existing disease control facilities and assess/determine their suitability. Stemming from the study, the consultants are to develop one or more costed project proposals designed to enhance the capacity of the national veterinary services to control animal diseases.

The study is to cost US \$200,000.00.

# Project Descriptions

AAA.2.3 REGIONAL EAST COAST FEVER AND HEARTWATER VACCINES  
PRODUCTION AND IMMUNIZATION.

<u>Estimated Costs.</u>	<u>Financing Gap:</u> US\$6.63
Total : US\$13.05m	<u>Executing Agency</u>
Foreign: US\$10.63m	<u>FAO/UNIVEFLOR/ZW</u>
Local : US2.42m	
<u>Funding Secured:</u>	
Foreign	<u>Start:</u> 1989/1990
: US\$4.00m (USA)	
Local : US\$2.42m (SADC)	<u>Duration:</u> 5 years

-----  
OBJECTIVES: In the long-term, the project aims at:-

- i) creating a self-supporting Regional Centre for East Coast Fever (ECF) vaccine production, to eliminate a major disease obstacle for the improvement of dairy and beef production, and an increase in living standard of small holder in the region; and
- ii) creating a capacity within the Regional Centre, to coordinate the control of ticks and tick-borne diseases, and related applied research and training in Southern Africa.

In the short-term, the project has six main objectives:-

- i) application and evaluation of the ECF immunisation technique under field conditions on an expanding scale in Malawi, Mozambique, Tanzania and Zambia;
- ii) improvement of the immunization technique with regard to economy, safety and applicability;
- iii) isolation of breakthrough strains for cross-matching studies in vitro and in vivo, for possible inclusions in the cocktail where necessary;
- iv) to conduct wider field immunisation programmes against ECF in the four countries;

- v) to field-test the heartwater vaccine in a wider context in other SADC 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 SADC 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 SADC nationals in the field of immunization against ECF and heartwater and monitoring immunised animals. Training of SADC nationals at post-graduate levels within or outside the region will also take place.

STATUS : Dutch funding ended December 31st 1991. The UNDP, has enough funds for the first six months of the year only. Funding is being sought.

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

Estimated Costs

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

Financing Gap: US\$00.18m

Executing Agency:SADC

Funding Secured

Foreign: NIL  
Local    : NIL

Start: 1989

Duration: 16 months

- 
- OBJECTIVES:
- i) To identify important pasture and legumes in the major agro ecological zones of the SADC 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 SADC 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 SADC 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

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

Financing Gap: US\$ 0.15m

Executing Agency: Angola

Funding Secured

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

Start: 1986

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

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

Financing Gap: US\$2.4m

Executing Agency:

Funding Secured:

Foreign: NIL  
Local : US\$2.8 million

Start:

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:

SADC member States

Funding Secured:

Start: 1990

Foreign: NIL

Local : US\$18.30 million (SADC)

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-SADC 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 double fence 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 Flats 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

Discussions are underway between EEC and SADC at a political level to resolve differences on this project.

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

Estimated Costs

Total : US\$4.80 million

Local : US\$4.8 million

Funding Secured

Foreign: Nil

Local : Nil

Financial Gap: US\$4.8m

Executing Agency:  
SADC

Start:

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 SADC.

**PROGRESS :** Differences between the donor and SADC on staffing the centre led to the donor pulling out. The centre is not operating and has been handed over to the Botswana Government on behalf of SADC.

**STATUS :** Funding is being sought from the Botswana Government

**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 Domboshwa 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 Siratiro 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 be 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

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

Financing Gap: US\$2.4m

Executing Agency:

Funding Secured

Foreign: NIL  
Local : US\$0.4 m (TAN)

Start:

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 SADC countries.

DESCRIPTION: Following the persistent drought in a number of SADC 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 SADC 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

Total : US\$1,18m  
Foreign: US\$1,18m  
Local : NIL

Financing Gap: US\$1,18m

Executing Agency:

Funding Secured:

Foreign: NIL  
Local : NIL

Start: 1990

Duration: 5 years

-----  
**OBJECTIVES:** The objectives of this project are:

- 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 SADC 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 SADC 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 SADC 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** : Funding sought

ZIM.2.4 ARTIFICIAL INSEMINATION SERVICES

Estimated Costs

Total : US\$6.9m  
Foreign: US\$3.4m  
Local : US\$3.5m

Financing Gap: US\$3.4m

Executing Agency: SADC

Funding Secured

Foreign: NIL  
Local : US\$3.5 Million  
(SADC)

Start: 1989

Duration: 5 years

-----  
OBJECTIVES

The objectives of this project are:

- i) to establish a Regional Artificial Insemination Centre for the production and distribution of semen to SADC member States;
- ii) to rehabilitate/consolidate SADC 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 SADC 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 SADC and Animal Breeders Company Ltd of Harare. In order for the Centre to meet the demands of SADC, 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 second FINNIDA/SADC appraisal mission visited member states and produced a draft report which member states have commented on. A final report and decision on funding is expected from FINNIDA.

ZIM.2.6      SUPPORT FOR COOPERATIVE PRODUCTION OF  
SMALL STOCK.

Estimated Costs

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

Financing Gap US\$1.21m

Executing Agency: SADC

Funding Secured

Foreign: NIL  
Local :US\$0.62m  
(BOT,ZAM, ZW)

Start:

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 : 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.

**AAA2.9      STUDY ON CAPACITY BUILDING OF NATIONAL VETERINARY SERVICES**

Estimated Costs

Total:      US\$0.2m  
Foreign:    US\$0.2m  
Local:      Nil

Financing Gap US\$0.2m

Executing Agency

Start:

Funding Secured:

Foreign:    NIL  
Local:      NIL

Duration: 8 weeks

-----  
**OBJECTIVES:**      The study aims at identifying constraints which limit the capacity of national veterinary services to effectively control all animal diseases. It is also to examine existing disease control facilities/infrastructure and assess their usefulness as tools used against diseases, and to make recommendations on how each member country can build up its capacity to handle animal diseases.

**DESCRIPTION:**    The study will be undertaken in all the 10 SADC countries and will last 8 weeks. The consultants will:

- i)    Compile relevant basic data on livestock paying particular attention to disease control
- ii)   survey existing disease control facilities and determine their suitability and sustainability
- iii) assess the constraints to an effective national animal disease control programmes
- iv)   examine current animal disease control legislation and regulation with the possibility of reviewing them.
- v)    Make suggestions on strengthening existing institutions and disease control facilities.
- vi)   Formulate a costed project proposal which will enhance member countries capacities to control livestock disease.

**STATUS:**    Funding is being sought.

# 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	US\$ Million			
LIVESTOCK PRODUCTION AND ANIMAL DISEASE CONTROL								
AAA.2.3	Regional ECF & Heartwater Vaccine Production and Immunisation	13.05	10.63	2.42	2.42 (SADC) 4.00 (USA)	-	6.63	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.
AAA.2.8	Manpower Needs Assessment Study	0.38	0.38	-	0.38 (EC)	-	-	A tender dossier is being prepared.
AAA.2.9	Study on Capacity Building of National Veterinary Services	0.20	0.20	-	-	-	0.20	Funding is being sought.
ANG.2.1	Veterinary Assistance to South West Angola	18.90	2.40	16.50	2.25 (UNDP/FAO/SPAIN) 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	Additional Funding Sought.
BOT.2.2	Regional Foot and Mouth Disease Control Phase II	34.00	15.70	18.30	18.30 (SADC)	-	15.70	Funding sought.
BOT.2.3	Regional Training Centre for Meat Inspection and Meat Technology - Phase II	4.80	-	4.80	4.80 (BOT)	-	-	Botswana to fund phase II.
BOT.2.4	Strengthening of Dairy Heifer Multiplication Units	1.55	1.10	0.45	0.45 (SADC)	-	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)	-	-	The second phase started in February 1992.

38

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				
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.
ZIM.2.4	Regional Artificial Insemination Service	6.90	3.40	3.50	3.50 (SADC)	3.40 (FIN)	-	Negotiations underway with FINNIDA.
ZIM.2.6	Support for Cooperative Production of Small Stock	1.83	1.21	0.62	0.62 (SAUC)	-	1.21	Funding sought.
TOTAL		104.05	54.26	49.79	69.50	3.40	31.15	

## **Section Three**

# **Natural Resources and Environment**

# **Environment and Land Management**

C O N T E N T S

	P A G E
EXECUTIVE SUMMARY	1
REVIEW OF THE REGIONAL SITUATION	2
REVIEW OF THE PROGRAMME	4
CURRENT STATUS OF PROJECTS	5
PROJECT DESCRIPTIONS	22
FUNDING STATUS OF PROJECTS	37

## 1. EXECUTIVE SUMMARY

- 1.1 The Environment and Land Management Sector (ELMS) has been implementing programmes within the framework of Phase II core programme. As reported in previous year, this phase is coming to an end in June, 1992. A Phase III programme has been prepared, this is a five year programme June, 1992 - June 1997 costed at US\$30 million. An agreement has been signed with SIDA to finance Phase III programme for the first three years, June, 1992 - June 1995 to the tune of US\$ 3.25 million annually.
- 1.2 Unlike core activities in Phase II Programme of Work which consisted of twelve (12) sub-programmes, Phase III as approved by Council in August, 1991 consists of nine (9) sub-programmes. These are a consolidation of some of the activities in Phase II and new ones. Phase III still addresses capacity building and knowledge development of our professionals in the field of Land Management through workshops, seminars and courses. Phase III concentrates more on institution building for sustainability. This departure has also been followed in Phase II. The activities of the Sector focused on identification of institutions in the Region which share the responsibility for implementation of the sector programme. Some of the Phase III sub-programmes are directly addressing these objectives and concerns. The Economics of Sustainable Resource Management (formerly Economics of Conservation) sub-programme goes beyond economics, to policy analysis; Sustainable Productive Land Management Systems (formerly sub-programmes 9, 11 and 12) have been consolidated into Phase III sub-programme 8. This sub-programme will address institution building at local and professional levels.
- 1.3 The erosion hazard maps for Malawi, Tanzania, Zambia, Angola, Botswana and Mozambique have been printed. Preparations are underway for Namibia to be included. The production of the regional map and seminar will be done in 1993.
- 1.4 The Sector has played a major role in preparing the regional position for the United Nations Conference on Environment and Development which took place in Brazil in June, 1992. The Sector participated in the negotiations for the Earth Charter, and Agenda 21. The Newsletter SPLASH has continued to be a medium of information exchange on environmental issues in the region. The Documentation Service and Centre have been functioning as planned in the reporting period.

- 1.5 The Sector has one project completed and twelve other projects at different stages of implementation. The total cost of the programme is US\$79.8 million, this jump is caused by the new phase III which aims at institution building for the longterm sustainability of the programme of action. Out of this cost the sector has mobilised US\$27.07 million or approximately 34% of the total cost.

## 2. REVIEW OF THE REGIONAL SITUATION

Sustainability - the backbone of development

- 2.1 The SADC 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 rapid siltation in water reservoirs; and
  - f) insufficient institutional, organizational 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 SADC region. When these various factors reinforce each other, the result is a vicious circle 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 SADC 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 emphasizes 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 utilization of the renewable resources such as land, water and biomass in the SADC 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 utilization 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.
  - 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 utilization, direct relationships between those who manage, utilize and benefit from the resources should be established.
  - d) Soil erosion and land degradation are major problems confronting agricultural development in the SADC 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 sustainable utilization 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, realizing that soil erosion and land degradation are almost always caused by a multitude of interacting factors.

- f) Realizing 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 utilization 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

There are fifteen projects in the Sector, two are new projects and five are at different stages of implementation while project AAA.7.2 is completed, but recommended to go into several phases. Project AAA.7.1 came to an end in June, 1992 but the Government of Lesotho has signed an agreement of Phase

III which extends to June, 1995 to the amount of US\$9.6 million. In spite of this agreement, there is still a big financing gap. The sector will continue to have discussions with other cooperating partners on this issue.

The need for Water Resources development in the SADC region has become a priority if the region has to reach sustainable food production and economic development. As a result the Sector has been holding discussion with many cooperating partners to try and forge strategies of how to develop this resource. A lot of interest has been shown to assist the region in this endeavor.

The 1990s are a decade of a sound environmental management of the natural resources for any sustained development that the countries and indeed the region may want to follow. As a result the Sector is working on specific strategies to assist member States as well as other SADC Sectors to find ways and means of achieving healthy environmental development.

#### 4. CURRENT STATUS OF PROJECTS

##### AAA.7.1 Assistance to the Coordinating Unit - Phase III

The objectives of the project are to provide assistance to the Coordinating Unit to enable it to discharge its regional coordination functions and also assist member States by providing training in the field of land management through workshops, seminars and courses.

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 aims of the programme;
- (b) to bring about a rational sharing of training and other technical facilities among member states;
- (c) to assist member States to strengthen and build up relevant institutions and expertise;
- (d) to assist member States in preparing Environmental Impact Assessments.

The project is supported by SIDA (US\$9.6 million) for three years. The support covers material, financial and technical assistance. Most activities in Phase II have been consolidated and incorporated into Phase III which unlike Phase II consists of nine (9) sub-programmes:

- Sub-Programme 1: Basic Activities
- Sub-Programme 2: Projects Carried over from Phase II
- Sub-Programme 3: Development of Manpower and Training Facilities
- Sub-Programme 4: Development of Environmental Monitoring and Assessment
- Sub-Programme 5: Economics of Sustainable Resource Management
- Sub-Programme 6: Applied Research - SACCAR
- Sub-Programme 7: Legal context of Natural Resource Management
- Sub-Programme 8: Sustainably Productive Land Management Systems
- Sub-Programme 9: Information and Publication

**Sub-Programme 1, Basic Activities:**

The sector has revitalised its computer network and trained the staff in basic computer understanding. A workshop of Water Resources Management committee was sponsored to review the draft reports for ZACPROs 1 and 5. A drafting committee meeting was held to work on the protocol for ZACPRO 2. Meetings were held to review SADC report to United Nations Conference on Environment and Development.

**Sub-Programme 2, Projects Carried over from Phase II:**

a. Erosion Hazard Mapping

In addition to the already available erosion hazard maps of Lesotho, Swaziland and Zimbabwe, maps for Malawi, Tanzania and Zambia were printed and are available for distribution. Maps for Angola, Botswana and Mozambique were prepared and are ready for printing. Data collection for preparation of the Namibia map started in the first quarter of 1992. Work on the regional map has been initiated and will incorporate the Namibia map as soon as it is completed.

b. Integrated Land Use Planning

The first practical workshop in integrated land use planning which was held in Arusha, Tanzania from 10 February to 2 March 1991 was attended by 35 participants from all SADC countries except Namibia. The objective of the practical workshop was to provide practical hands-on training in how to incorporate socio-economic concerns of land users and conservation measures in land use plans. The output was a series of land use maps and plan documents for Mareo and Likamba villages in Arusha. The workshop report has been edited and is being printed. A summary report was published in SPLASH, Vol. 7, No.2, 1991.

A second practical workshop, planned under programme 8, will be held in a semi-arid livestock raising area in the region.

c. IMPACT OF SOIL EROSION ON CROP YIELD

A consultancy was carried out in the four countries (Botswana, Lesotho, Mozambique and Tanzania) to evaluate the progress and constraints of the experiments. A report was submitted at the end of February. Recommendations made on how to speed up the implementation of the project are being followed both by the countries and by the Coordination Unit.

A site visit was undertaken to Sokoine University of Agriculture in Morogoro, Tanzania to assess experimental equipment.

**Sub-Programme 3, Development of Manpower and Training Facilities:**

During the reporting period, the sector has established contacts with the following institutions:

- Human Resources Development Sector
- Mananga Agriculture Management Centre (MAMC), Swaziland
- Eastern and Southern African Management Institute (ESAMI)
- Land Husbandry Training Centre (LHTC), Malawi
- Sokoine University of Agriculture, Tanzania
- Commonwealth Secretariat, U.K.

The contacts have mainly been aimed at exploring future possibilities to implement SADC-ELMS training programmes within these institutions.

A total of 44 scholarships were published and given to SADC professionals in the field of Land Management. Most of these fellowships came from the Regional Training Council, and were as follows:

- ten long-term scholarships, India (graduate and post-graduate) 1992.
- six O.D.A scholarships (3 M.sc in Land Management, SUAS; and 3 MSC in Resource Economics University of Zimbabwe.
- six SACCAR scholarships (M. sc Agronomy, Land Management).
- ten scholarships in Graz, Austria (groundwater tracing techniques).
- twelve scholarships for developing countries in Austria (Limnology).

**Sub-Programme 4, Development of Environmental Monitoring and Assessment systems:**

Two manuals on environmental monitoring have been produced, one on satellite imagery interpretation and one on Aerial Photo Analysis. A course for Angolans on remote and Environmental Monitoring was held in April, 1992. The sector is developing a monitoring programme for water quality and quantity for the shared Zambezi River Basin. There is now an agreement between ELMS and UNEP-GEMS that reference can be made to the UNEP manual for water quality sampling analysis. A climate change conference was held in Namibia in March, 1992, the report/proceedings are under preparations.

**Sub-Programme 5 Economics of sustainable Resource Management:**

The two main areas of activity of this programme were:

1. The development of the Integrating Conservation into the Farming System (ICFS) course with the Land Husbandry Training Centre, Zomba, Malawi for extension to the entire SADC region. One session of this course was held at Bvumbwe, Malawi in September for SADC region trainers of trainers in order to evaluate the course and get suggestions for further development. It was recommended that the popular participatory components of the course be strengthened and that an economics pre-course be developed to overcome the lack of socio-economic background of participants. Steps towards the former were undertaken with the Participatory Rural Appraisal training course in Mohale's Hoek in February, 1992. The material submitted by International Institute for Environmental and Development (IIED) for the resource policy analysis course manual is being adapted for the pre-course on economics.
2. The development of a short course on resource policy analysis for SADC region policy-makers is nearing completion. This will be offered in January (and then annually) by the Department of Agricultural Economics and Extension at the University of Zimbabwe. A workshop was held in November in Harare to plan and outline the manual for this course. Members of staff from UZ, the International Institute for Environment and Development (which has the contract for preparing the manual), and SADC regional experts were in attendance. A first draft of this manual was submitted on March 31, 1992 and has been sent out for review. Another workshop will be held in May to consider revisions and further items for inclusion, pending a final draft on June 30, 1992. In addition to this, a Memorandum of Understanding (MOU)

with the University of Zimbabwe has been prepared and awaits UZ signature. The MOU includes provision for a SADC ELMS - sponsored professor at UZ for a period of three years to get the course up and running and prepare UZ staff to take over full operation of the course at the end of the period.

**Sub-Programme 6, Applied Research**

The first SADC Applied Research Seminar was held in Botswana, 2 - 4 October, 1991. It was attended by 36 participants from 8 SADC member States (Angola and Tanzania did not attend, F.A.O. International Institute on Environment and Development (IIED). A brief summary of the course has been produced while the research papers presented are being edited for publication. A Memorandum of Understanding with the University of Botswana is under preparation

**Sub-Programme 7, Legal Context Natural Resources:**

No action was done on this sub-programme, however it has been decided to undertake more studies in other member States and then organise a seminar. Secondly the reports from Lesotho and Zimbabwe should be written into an executive summary for ease of use.

**Sub-Programme 8, Sustainable Productive Land Management Systems:**

This sub-programme has been consolidated into a firmer activity by joining former programmes 6 (Strategies for Popular Participation), 9 (Water Resources relating to Soil Conservation - Village level), 11 (Sustainably Productive Land Management Systems) and 12 (Popular Participation Facility).

Intensive collaboration with Sub-programme 5 (Economics of Sustainable Resource Management), especially concerning the ICFS Course, has taken place.

Two practical workshops on Participatory Rural Appraisal were held in Lesotho. Follow-up activities for production of training material has been initiated.

As a starting point for a technical course in Land Management Techniques consultations were held with Sokoine University of Agriculture, Tanzania. Experiences from the 8-week Soil and Water conservation course in Dehra Dun, India will serve as a good starting point for this course.

## **Sub-Programme 9, Information and Publication:**

This sub-programme which was under Basic activities in Programme 1 of Phase II has been elevated to a fully-fledged sub-programme because of its importance.

**SPLASH** - During the reporting period, volume 6, number 3/4 and volume 7, numbers 1 and 2 (both English and Portuguese language editions) were distributed. SPLASH is distributed to 2,639 subscribers in 79 countries worldwide (including all SADC member States) in its English and Portuguese Language editions. Subscription records are now handled through a data management computer programme.

**REPORTS** - During the reporting period the following reports were being prepared and reproduced.

NO.26: Promotion of people's participation in Land Utilization.

No.28: Hydrogeological Mapping.

No.29: Integrated Land Use Planning

### **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 SADC region.

The final draft report has been submitted to member States with proposals for national and regional projects. The Sector is formulating project proposals including one on advanced Hydrological Monitoring System.

### **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 harmonized in order to ensure that the physical environment is protected from degradation.

Funding for ZACPRO's 1,2, and 5 was secured from UNEP and the implementation of ZACPLAN moved some steps forward. In April 1991 two consultancies were initiated: the development of regional legislation for the management of the Zambezi river

(ZACPRO 2); and the development of basin-wide unified monitoring system for water quality and quantity (ZACPRO 5). In May 1991 the consultant who had been working on ZACPRO 1 showed a joint meeting of the Sector Technical Committee and ZACPLAN Steering Committee a demonstration of the model he had developed for basin-wide inventory of data on projects and environmental impacts. The meeting recommended revision to make the model more easily implementable.

A workshop of the ZACPLAN Steering Committee, international water lawyers, and legal experts from all the SADC member countries was held in Lusaka from 29 November to 6 December 1991 to evaluate the reports from the consultants on ZACPRO 1, 2, and 5 and relate these reports with ZACPRO 6.

The workshop recommendations included the following highlights:

- \* ZACPRO 1 will be concluded in March 1992 by holding a training workshop for SADC persons who are going to apply the data collection model;
- \* Water quality and quantity monitoring stations should be selected from among the existing SADC AAA.3.4 project stations and be spread within the whole Zambezi river basin;
- \* A committee of lawyers and water and natural resources experts will draft a protocol to cover all shared river basins of the region with enabling clauses to facilitate the continued development of the Zambezi river basin under ZACPLAN and also the development of other SADC shared river basins when the need arises;
- \* ZACPRO 6 should be implemented immediately because it is tied to the implementation of all the other ZACPRO's.
- \* The post of the ZACPLAN liaison officer should be filled immediately.

**AAA.7.4 SADC 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-SADC exchange of knowledge about on-going research and research results within the field of soil and water conservation and land utilization. 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. The first Annual Research Seminar was held in Gaborone 2nd - 4th October, 1991. The report is under preparation.

**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 SADC 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.

This project is undergoing a review in the light of other activities e.g. Kalahari-Namib programme.

**AAA.7.6 Development of Environmental Impact Assessment (EIA)**

The broad objective of this project is to create and develop a SADC 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 is being sought.

**AAA.7.7 Plan 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.

The implementation of the first phase has started while negotiations are underway with different cooperating partners e.g. G.E.F. and UNEP to fund the subsequent phases. UNEP is funding the national workshops under its African Ministerial Conference of Environment (AMCEN) Programme.

#### **AAA.7.8 SADC 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 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 identify pressures on the environment (land degradation through agricultural practices, cattle ranching, forestry or pollution discharge).

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

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

The project is being revised so as to establish its sustainability.

**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 AAA.7.1.

**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 decertification. 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 SADC region.

The project is under implementation.

**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 of this project is completed and the Sector is in process of undertaking an evaluation of the project.

**NEW PROJECTS**

**PROJECT AAA.7.9:**

ADVANCED MONITORING OF HYDROLOGICAL AND ENVIRONMENTAL DATA NETWORK PROJECT FOR AFRICA.

**INTRODUCTION:** Water Development and the monitoring of climate change and environmental conditions are dependant on the continuous collection of high quality hydrometeorological data. However, investigations under project AAA.7.2 (Sub-Saharan Africa Hydrological Assesment) during the past three years has shown a serious decline of hydrometeorological work in many Afica countries including SADC member States.

Data collection agencies face severe budget problems, shortages of qualified staff, vehicles and equipment for data collection and data processing.

Similarly, there are a severe problems in obtaining sufficient funds for field visits, fuel and maintainance. This has serious consequences given the problems SADC countries have in achieving socio-economic development

and self-sufficiency in food production and is also a concern because of potential climate change and deteriorating environmental conditions.

**OBJECTIVES:** The objectives of this proposal are:

1. To ensure a more reliable and continuous flow of hydrometeorological and environmental data.
2. To encourage the free exchange of environmental data along the lines of the World Weather Watch Programme, where meteorologists have for many years exchanged data across international frontiers.

**PROJECT DESCRIPTION:**

1. A number of locations for representative benchmark stations will be identified where a full instrumentation will be provided. The majority of the stations will be drawn from the existing networks. e.g. those of Project AAA.3.4. of Energy Sector, ZACPRO 5 and only a few completely new stations are envisaged especially in Lesotho and Swaziland so that the whole SADC network is complete.
2. The data will be measured and recorded automatically to avoid, as far as possible, human error. This data will be collected and transmitted to a regional or river basin control centre, and also to ground receiver stations in each participating country.
3. There will be support provided to the hydrometric authorities to ensure that benchmark stations are maintained to the required high standard.

**IMPLEMENTATION:**

In order to achieve the recommendations of projects AAA.7.2 - Sub-Saharan Afirca Hydrological Assessment Study, which is the development of a long-term, robust, sustainable and consistent data collection system, a project having a duration of at least fifteen to twenty years will be required. This is also envisaged by UNEP on Fresh Water Resource Chapter of Agenda 21 as per Dublin Conference of February, 1992.

## ACTIVITIES:

1. A minimum network of key stations should be selected to act as continuous operating, high quality benchmark stations against which data from the existing network may be tested and verified.
2. To reinforce, and in some cases, rehabilitate key parts of the data collection network of SADC. The ultimate aim must be the development of Advanced Hydrometeorological Monitoring Stations for the whole of SADC region.
3. The parameters to be monitored should include hydrological, meteorological, hydrogeological and environmental variables.
4. Data collected should be used for water resources and quality assessment and planning and to monitor climate change.
5. The stations should be fully instrumented to monitor a wide range of key environmental indicators such as rainfall, temperature, wind speed, net-radiation, humidity, river water level and selected water quality parameters.

To achieve these objectives, the sector has been negotiating with different cooperating partners and the responses seem to be positive. This project will be a direct follow-up to project AAA.7.2. which was funded by the World Bank and UNDP, it will use the outcome of Project AAA.3.4 of Energy Sector as well as reinforcing ZACPRO 5 of ZACPLAN.

## PROJECT AAA.7.10 WATER RESOURCES PLANNING FOR SOUTHERN AFRICAN (SADC)

### BACKGROUND

Southern Africa has a predominantly arid and semi-arid climate. In this climate, the net runoff that can be exploited by man and nature is affected greatly by small changes in land use that reduce or increase evaporation. Land Use and landscape characteristics, climatic conditions and soils, cause some of the rain that falls on arid land to escape any purposeful use. Changes in land use that affect the hydrologic cycle are reducing the availability of water.

Most rivers in the region are transboundary. In many cases, the integrated water resources development and management of transboundary water

resources will raise the need for international cooperation and mechanisms at regional levels to facilitate inter-country agreements on the coordinator of the management of such resources in an economically and environmentally sound manner.]

**OBJECTIVES:** The overall objectives of the study are:

- i. To identify key issues to be addressed and actions to be taken to promote the development of regional environmentally sound strategies for managing the water resources in the future;
- ii. To promote the awareness of issues relating to water development and management among decision makers and senior water management staff in the region;
- iii. to identify water development programmes to meet multi-purpose needs of the regional economy.

**PROJECT DESCRIPTION:**

Economic development is being driven by the need to catch up with the past and to prepare for the future. Issues in water planning for the future are the anticipated population growth rate, the changing demographic distribution of the human populations of Southern Africa, and the changes in land use that some areas are experiencing. Realising doubling times of less than twenty years in some areas, population pressures on water resources are bound to increase in intensity.

In view of the region's water scarcity two important factors must be taken into account. First, there is merit in attempting to adopt water project thinking to the specific climatological, hydrological and water demand/supply circumstances in the region, rather than mechanically using methodologies from temperate zones. Secondly, the important factor in future water planning will be the need for comprehensive strategies on trans-national integrated basis, including major river basins and countries in the region. This means that all players and geographical areas that are relevant politically, economically or hydrologically, should be included in the analytical framework for regional initiatives affecting water resources development.

### **ACTIVITIES:**

1. A report on the opportunities and limitations for integrated regional water development and management, the state of the current information, and the institutions, data, and facilities needed to strengthen the water sector will be prepared.
2. A framework, or methodology, for evaluating proposed water projects in the context of the long-term needs of the region..
3. A process of international and inter-sectoral communication about regional and national water development and management opportunities.

### **OTHER ACTIVITIES**

UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT  
(UNCED)

#### **A NOTE FROM SADC-ELMS**

The Environment and Land Management Sector has been participating in the UNCED process, in particular in PREPCOM 2, 3 and 4. The Sector submitted a report to this process entitled "SUSTAINING OUR COMMON FUTURE" which formed part of Agenda 21 with other national reports from different countries, intergovernmental organisations, N.G.Os etc.

According to United Nations General Assembly resolution 44/228 of December, 1989, the UNCED process culminated into a summit of Heads of Government and State in Rio de Janeiro, Brazil on 13th - 14th of June, 1992. The summit which was attended by 178 member States of U.N. and more than 100 Heads of Government and state agreed on five important points as follows:

1. Climate change convention.
2. Biodiversity Convention.
3. Rio Declaration
4. Forestry Principles
5. Agenda 21

The Sector would strongly recommend that member States should consult with relevant ministries so as to acquaint themselves with Rio decisions especially Agenda 21 which reflects a global consensus and political commitment at the highest level on development and environment cooperation. The programmes in Agenda 21 are intended as an action plan for the 1990s and beyond into 21st century aimed at establishing a new

global partnership for sustainable development and environmental protection.

#### FIRST SADC CONFERENCE ON CLIMATE CHANGE

The First SADC Conference on Climate Change was held in Windhoek, Namibia, March 2 - 6, 1992. Some 65 participants attended the conference, coming not only from the SADC region but also from other parts of Africa. Expert support was provided from UNEP, the WMO, University of East Anglia the UK, University of Virginia and Colorado in the USA, the British Antarctic Survey and the IIED. Several African speakers from Benin, Kenya, Mozambique, Tanzania and Zimbabwe provided the conference with the necessary scientific basis for the discussions and the recommendations.

The purpose of the Climate Change Conference had been formulated by a regional preparative committee and reads as follows:

- to create awareness among decision-makers and policy makers in the SADC region about climate change and it's possible effects in Southern Africa.
- to develop a basic framework for policy-formulation in the field of climate change and it's subsequent effects on sustainable development.
- to gather and establish a regional, multidisciplinary group of experts on climate change and identify needs for the development of adaptive policies, action programmes and research.

In brief the conference arrived at the following conclusions:

Scientific evidence at the global level leads to the conclusion of an impending global climate change. This change would come as a result of decades of emission of green-house gases, mainly from the industrialized countries. The main rate of global temperature rise will be about 0.3 degrees centigrade per decade.

It is not possible with available techniques to detect any climate change trends in the SADC region at this stage. Thus no precipitation trends can be detected towards reduced or increased rainfall. At the same time it is clear, that there are cyclical droughts. They relate to the El Nino and the Southern Oscillation phenomena. It is regarded to be possible several months prior to their occurrence.

**SADC REGIONAL WORKSHOP ON GEOGRAPHIC INFORMATION SYSTEMS (G.I.S).**

In response to the rapid development of the new technology of G.I.S for natural resources management throughout the region, the ELMS in cooperation with G.T.Z, UNEP, UNITAR and the IUCN convened a SADC Regional workshop in Harare - Zimbabwe on April, 22nd - 25th 1992.

**OBJECTIVES:** The objective was to bring together a broad cross section of those involved with G.I.S. and related technologies in the region; from government, donar and private sectors to:

- assess the development of G.I.S and the environment information systems in the region, and their current and potential roles in resource management.
- discuss the constraints to their wider acceptance and use within the region.
- develop and encourage networking between users of spatial datasets and operational environment information systems.

**RECOMMENDATIONS:**

After thorough discussions both in plenary and working groups the workshop had some recommendations, the highlights of which are:

- SADC-ELMS to catalyse national institutions and universities to acquire and develop the necessary facilities to offer training courses in G.I.S/E.I.S. informaties and technology.
- To catalyse in Coordination with other SADC institutions and international organisations a regional environment information network.
- To encourage the development of a distributed regional resources database; in which the various institutions should assume sectoral information responsibilities for creating and maintaining regional sectoral data bases from the more detailed data bases of member States.

# Project Descriptions

AAA.7.1 ASSISTANCE TO COORDINATION UNIT (PHASE III)

Estimated Cost

Total: US\$30.1m  
Foreign: US\$27.6m  
Local: US\$2.5m

Financing Gap: -

US\$18.00 m

Funding Secured (Phase III)

Total: US\$12.1m  
Foreign: US\$9.6m (SWE)  
Local: US\$2.5m (LES)

Start: July, 1992

Duration: 5 year

**OBJECTIVES:** The support to the Unit is to enable it to assist SADC member States to:

- improve their performance in carrying out sustainable management of natural resources, particularly soil and water;
- identify actual or potential conflicts of interest that may arise out of environmental degradation and to reconcile such conflict;
- develop policies and promote practices for sustainable productive management of natural resources based upon partnership between government and farmers and other land users;
- support institutions in their countries in the efforts to increase their competence in sustainable resource management and to integrate the various disciplines and contributions of such institutions.

**DESCRIPTION:** The activities in this project started in 1985 and ran for a period of three years. In 1988 a Phase II extension was made which ended in June, 1992. The present Phase III is a five year programme which aims at capacity and institution building so that sustainability can be achieved. Phase III Programme is a continuation of Phase II with more emphasis on institution building and encouraging popular participation so that SADC rural communities can have a direct responsibility for their natural resources management and the benefits thereof. There are nine sub-programmes.

**STATUS:** First three years are partially funded by SIDA. Additional funding is being sought.

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 updating.

-----

**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 institutional requirements of the project.

**STATUS:**

Most of the activities in this project will be absorbed in AAA.7.1. Sub-programme 8 and in ZACPRO 6 and newly Proposed Advanced Monitoring of Hydrological and Environment Data Network.

AAA.7.3./06 ZACPRO 6: 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\$4.41m

Executing Agency:  
Coordination Unit  
(Lesotho)

Funding Secured

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

Start: January 1991

Duration: 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 km<sup>2</sup>) 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:** Feasibility study has been undertaken by NORAD with the objective of financing the project.

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

1935, 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:** This project will also be implemented under project AAA.7.1.

AAA.7.3/08 ZACPRO 8: **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\$0.057m

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.

**DESCRIPTIONS:** 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:** ZACPRO 5 recommendations which cover both water quality and quantity coupled with AAA.3.4. of Energy Sector will cover this project.

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:

SADC Coordination Unit

Funding Secured

Total: US\$ 3.45m  
Foreign: -  
Local: US\$ 3.45m (SADC)

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 decertification 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 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 SADC Region).

**STATUS:** The first Phase is completed and an evaluation is underway to determine if it is viable to fund the second phase.

**AAA.7.8 SADC ENVIRONMENTAL MONITORING PROJECT**

<u>Estimated Cost</u>	<u>Financing Gap:</u> US\$10.04m
Total: US\$10.67m	
Foreign: US\$10.04m	
Local: US\$ 0.63m	

Executing Agency:  
ELMS with affected agencies

<u>Funding Secured</u>	<u>Start:</u> 1991
Total: US\$0.63m	
Foreign: -	
Local: US\$0.63m (SADC)	<u>Duration:</u> 4 years

- OBJECTIVES:** The SADC 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 SADC 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 SADC Pilot Programme on Environmental Monitoring.

Then links might be established between the SADC 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. SADC 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 SADC 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.

**LES.7.5 WATERSHED MANAGEMENT PILOT PROJECT - LESOTHO**

Estimated Cost

Total: US\$2.60m

Foreign: US\$1.36m

Local: US\$1.24m

Funding Secured

Total: US\$1.24m

Foreign: -

Local: US\$1.24m (SADC)

Financing Gap: US\$1.36m

Executing Agency:

Ministry of Agriculture  
Lesotho

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 SADC 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 SADC 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 SADC 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 facilitator 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 agroforestry 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 SADC 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 CULTIVATION - ZIMBABWE**

Estimated Cost

Total: US\$0.07m  
Foreign: US\$0.07m  
Local: -

Financing Gap

US\$0.05m

Executing Agency  
Ministry of Natural  
Resources and Tourism  
(Zimbabwe)

Funding Secured

Foreign: US\$0.02m (SWE)  
Local: -

Start 1988

Duration 1 year

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

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 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. Phase I is complete and evaluation will take place this year.



**PROJECT: AAA.7.10 WATER RESOURCES PLANNING FOR SOUTHERN AFRICA  
SADC (A STUDY)**

Estimated Cost

Total: US\$2.5m  
Foreign: US\$2.5m  
Local: -

Funding Gap: US\$2.5million

Funding Secured

Total: -  
Foreign: -  
Local: -

Executing Agency: SADC-ELMS

Start: 1992

Duration: 2 yrs

-----  
**OBJECTIVES:**

- To identify key issues to be addressed and actions to promote the development of regional environmentally sound strategies for managing the water resources in the future.
- To promote the awareness of issues relating to water development and management among decision makers.
- To examine how practical and economic it is to increase water supply in those water scarce areas of Southern Africa.
- To identify water development programmes to meet multi-purpose needs of the regional economy.

**ACTIVITIES:**

- To develop the requirements for data information.
- To carry out an assessment of the water potential of the region.
- To assemble the data and turn it into information and make suggestions to the Water Resources Sub-Committee for alternative project evaluation frameworks.
- There will be seminars and other activities to publicise the region wide strategic planning process and to encourage its adoption.

**STATUS:** Funding is sought.

# 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				
ENVIRONMENT AND LAND MANAGEMENT								
AAA.7.1	Assistance to Coordination Unit	30.10	27.60	2.50	9.60 (SWE) 2.50 (LES)	-	18.00	Additional funding sought.
AAA.7.2	Regional Hydrological Assessment	1.00	1.00	-	1.00 (UNDP)	-	-	Project completed. A new project proposal is being developed.
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)	-	-	Under implementation.
AAA.7.5	Range Inventory, Monitory and Rehabilitation Triats	-	-	-	-	-	-	Under review.
AAA.7.6	Development of Environment Impact Assessment	-	-	-	-	-	-	Under review.
AAA.7.7	Plan of Action for the Kalahari-Namib 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.
AAA.7.9	Advanced Hydrological Monitoring	0.8	0.7	0.1	0.1 (SADC)	-	0.7	Funding sought.
AAA.7.10	Water Resources Planning for SADC (Study)	2.5	2.5	-	-	-	2.5	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.

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				
ZIM.7.2	Extension Education Programme	-	-	-	-	-	-	Funded. Under project AAA.7.1
<b>TOTAL</b>		<b>79.96</b>	<b>70.32</b>	<b>9.64</b>	<b>27.09</b>	<b>0.00</b>	<b>52.87</b>	

# **Inland Fisheries, Forestry and Wildlife**

## C O N T E N T S

	<u>PAGE</u>
1. EXECUTIVE SUMMARY	1
2. REVIEW OF THE REGIONAL SITUATION	9
3. REVIEW OF THE PROGRAMME	13
4. CURRENT STATUS OF PROJECTS	19
5. PROJECT DESCRIPTIONS	43

## INLAND FISHERIES, FORESTRY AND WILDLIFE

### 1. EXECUTIVE SUMMARY

#### 1.1 INLAND FISHERIES

1.1.1 A delegation from Malaŵi visited the new Coordinator for Marine Fisheries and Resources in Namibia in September 1991 and handed over all documents relating to six projects which are purely marine, i.e.

- a) Project No. AAA.4.9, Establishment of Regional Computer Marine Fisheries Catchment Data System;
- b) Project No. ANG.4.2, Promotion of Export Marketing of Marine Fish Products;
- c) Project No. MOZ.4.1, Assistance to Quality Control and Standardisation of Marine Fisheries Products;
- d) Project No. MOZ.4.2, Assessment of the Marine Fisheries Resources of the SADC Region;
- e) Project No. AAA.4.10, Support to SADC Marine Fisheries Co-ordination Unit; and
- f) Project No. AAA.4.12, Establishment of Marine Fisheries Inspectorates in the SADC Region.

Projects touching both Marine and Inland Fisheries will for the time being be coordinated by Malaŵi.

1.1.2 The Inland Fisheries sub-sector programme focuses on the development of fresh water fisheries and aquaculture. The 900,000 Sq. km of inland water surface produces over 400,000 metric tons of fish, and the unexploited potential is the focus for future development action. A number of programmes and projects are being developed in aquaculture. Aquaculture offers great scope for integration with various rural community projects, for example, rice/fish production, fish/pig production, fish/rabbit/chicken or duck/vegetable production.

1.1.3 The inland fisheries programme will continue efforts, in collaboration with other sectors, to meet ever growing demand for protein in a manner that guarantees the resources's sustainability. To this end, fishing technologies capable of harvesting stocks at a sustainable level and minimising negative environmental effects, will need to be introduced, for example, use of legal mesh sizes of nets to avoid destruction of immature fish, use of recommended smoking kilns to minimize post-harvest losses, thus

increasing the harvested fish available for human consumption, use of wooden boats as opposed to dugout canoes which encourages deforestation.

- 1.1.4 The Inland Fisheries Sector has thirteen projects. These are project AA.4.1, AA.4.2, AA.4.4 and MAL.4.-4.2., valued at US\$67.53 million of which US\$25.54 million. Six projects valued at US\$34.14 million are seeking funding, and the rest are under implementation.

Collaboration with Namibia as coordinator for marine fisheries has been established and is maintained through adhoc and joint meetings during the technical sub-committee meetings.

At the seventeenth technical sub-committee meeting of fisheries and wildlife held in Windhoek Namibia 9 - 13 April, 1992, the Sub-Committee agreed that as a result of the noted overlap of SADC project Tan 4.1 and the FAO/FINNIDA Lake Tanga-nyika project, the SADC project should be removed from the list of SADC Fisheries Programme of Action. However, Sector Coordinator should ensure that Tanzania and Zambia are receiving benefits --- the FAO/FINNIDA project as stipulated in the SADC original proposals.

- 1.1.5 A workshop on the role of women in fisheries is expected to be held once funds for the workshop have been found. This will be a second workshop after the one held by Aquaculture for Local Communities (ALCOM) project at Victoria Falls, Zimbabwe from 4 - 7 December, 1990. One of the recommendations was gender issues have to be integrated in the overall development process and should not be considered in isolation.

- 1.1.6 The EEC agreed to fund a consultancy to review Project AAA.4.8: Provision of Fisheries Extension Services, and have set aside 60,000 ECU's for the purpose. The Inland Fisheries Coordinating Unit has prepared the Terms of Reference for the consultancy in collaboration with the EEC with a view to prepare an amended project dossier which, if acceptable will then be funded by the EEC under Lome III. A potential consultancy firm has been contacted. It is expected that the work will start before October 1992.

- 1.1.7 Encouraging development has been in Project AAA 4.5, Regional Fisheries Training Programme. NORAD has pledged US\$ 1.62 million to support the programme in the next 5 years, and ICEIDA has provided a training expert to coordinate the programme activities in addition to US\$ 260.000 to support some components of the programme. Since a total estimated cost of the entire programme is US\$ 9.67 million the remaining

funds are being sought. The programme has several components to be implemented by different institutions in the region as follows:

- Natural Resources College (NCR)/Mpwapwe Fisheries Training Institute, Malaŵi - Pre-service training for personnel at technical/fisheries assistant level.
- Maseru Fish and Duck Farm in Lesotho - Short courses in fish- and fish - cum - duck farming in collaboration with the Lesotho Agricultural College.
- Chilanga Fish farm in Zambia - Short courses in practical fish farming of warm water species.
- Mbegani Fisheries Development Centre in Tanzania
- Short and long term training for specialists and instructors.
- Helder Neto Training Centre in Angola - Medium level specialist training.
- Bunda College of Agriculture of the University of Malaŵi - Aquaculture training at diploma, B.Sc. and M.Sc. levels.
- University Lake Kariba Research Station in Zimbabwe - Fisheries diploma and short courses in limnology.
- University of Zimbabwe, Biological Science Department - M.Sc. courses in tropical fisheries and hydrobiology.

1.1.9 The ICEIDA funded Project AAA 4.10, Support to the SADC Fisheries Coordination Unit is mainly dealing with coordination of Marine Fisheries. Since Namibia is now coordinating Marine Fisheries ICEIDA's assistance has been expanded to include Inland Fisheries as well. Project AAA 4.10 therefore has two components, AAA 4.10 (1) Support to Inland Fisheries Coordination and AAA 4.10 (2) Support to Marine Fisheries. This is effective from 1st July 1992.

1.1.10 A workshop on post-harvest losses in fisheries was held in Liwonde, Malaŵi 21 - 25. October 1991. Fisheries Sector representatives from SADC countries attended the workshop except Namibia. The specific objectives were:

- to establish the magnitude and causes of losses of fish during on - board handling and storage, processing and distribution, and the extent to which exploited fisheries resources are not used effectively as human food;
- to consider what steps needed to be taken to reduce post - harvest losses;
- to consider the extent to which work on the identified needs could be undertaken on a regional or national basis with collaboration between the countries;
- to prepare, if appropriate, a plan for a regional collaborative programme to reduce post - harvest losses of fish, for submission to suitable donor;
- to identify activities which individual countries could undertake to reduce post - harvest losses.

The outcome of this workshop was a report written and distributed to the participating countries. A copy was also sent to Namibia for their records.

Follow-up actions include training of junior fisheries staff in post -harvest techniques and training of fisheries instructors in fisheries training schools. These activities will in the long term be part of the Regional Fisheries Training Programme, AAA 4.5.

#### 1.1.11 NEW PROJECT PROPOSAL

At the seventeenth technical sub-committee meeting of fisheries and wildlife held in Windhoek Namibia 9 - 13 April, 1992, at which all SADC countries were represented, a project proposal was presented, namely, Conservation of the Biodiversity of Lake Malawi/Niassa. This proposed project aims to develop and extend the knowledge base and the technical, institutional and economic mechanisms needed to conserve the biodiversity and ecological integrity of Lake Malawi/Niassa.

The Ministers further recommended that since conservation of biodiversity of living natural resources is an important issue in all SADC countries, this project should be expanded to reflect a biodiversity programme for all inland water bodies of the region. To express this regional interest, it is proposed to change the project's title to Conservation of Biodiversity of Inland Waters of the SADC Region. The activities stipulated in the current project proposal will affect Malawi, Mozambique and Tanzania. Council approved the project.

## 1.2 FORESTRY

1.2.1 The Forestry Sub-Sector has 18 projects, of which 6 are funded and under implementation. Two projects were funded during the reporting period:

- AAA.5.5, Tree Seed Centres Network;
- AAA.5.16, SADC Centre for Advanced Practical Forestry Training; and two projects received approvals for an extension of funding into phase II::
- AAA.5.1, Special Facility for Forestry Projects Development; and
- MAL.5.3, Blantyre City Fuelwood Project.

1.2.2 Eleven (11) unfunded projects, are seeking funding.

1.2.3 During the reporting period sub-Sector organised three forestry sector technical workshops on:

- Planning and Management of Tree Seed Centres.
- Final Report of Regional Forest Inventory Feasibility Study.
- Women in Forestry.

1.2.5 Three consultancies were undertaken during the reporting period:

- Regional Forest Inventory Feasibility Study.
- Women in Forestry in the SADC Forestry Programme of Action.
- Data Bank Development Follow-Up.

1.2.6 The eleventh technical subcommittee meeting for forestry was held in Namibia from 5th to 9th May, 1992. All SADC Member States attended the meeting, except Angola. Key areas discussed included forestry sector administration, forestry programme review, project monitoring, and implemented/planned workshops and consultancies.

The major outcomes of this meeting were:

- (a) recommendation for the sector to embark on a programme-based approach to regional forestry development;

- (b) seven adjustments to the SADC forestry sector project portfolio, which included a new project proposal.

1.2.7 During the reporting period, the forestry sector maintained contacts with representatives of Cooperating Partners. Visits were made to Cooperating Partners offices in Malawi, Mozambique, Canada, Germany, Belgium, Netherlands and Britain. The main aspects addressed during these visits were:

- a) funding of regional forestry projects; and
- b) interviewing of candidates for SADC Project No.AAA 5.1. Special Facility for Forestry Project Development.

1.2.8 Meetings were also held with the Energy and the Environment and Land-Use Management Sector Co-ordinating Units to discuss areas of mutual interest and overlaps in project proposals with the Forestry Sector. At a meeting in Harare, the three sectors agreed to form an informal consultative group to collaborate on development of the Community Forestry and Wood Energy (COFOPRO) initiative. Under COFOPRO SADC member states are developing projects in the area of community forestry woodfuel and environment. The projects in question will be presented at a Regional Workshop in November, 1992 in Tanzania. The discussions will include resource mobilisation for the project.

Contacts were made with the Energy Sector regarding extension of Project AAA.5.3, Blantyre City Fuelwood Project. Discussions were held with consultants for the Energy Sector on the development of national woodfuel strategies in the SADC region.

A meeting was also held with representatives of the Mining Sector to discuss cooperation in addressing the problem of rehabilitation of mining areas in the SADC region and also cooperation in the development of remote sensing applications for forestry and mining.

Consultations were also made with the Chief Technical Adviser and staff of PTA/FAO Project RAF/87/117, Plantation-Based Forest Industries, to consider cooperation in the development of SADC Project AAA.5.22.

Discussions were held with the Agricultural Research and Training Sector and the SADC Regional Gene Bank in Gaborone and Lusaka, respectively, to (i) understand each others' programmes in general and (ii)

to consider the transfer of SADC Forestry Project No. AAA.5.2, Regional Herbarium and Conservation of Endangered Species to the SADC Regional Gene Bank.

1.2.9 Adjustments to the SADC Forestry Programme of Action.

Council, at its meeting in Windhoek, in August 1992, approved the following changes to the SADC Forestry Programme of Action:

- (a) Project No. AAA.5.02, Regional Herbarium and Conservation of Endangered Species: this project will be transferred to the Agricultural Research and Training Sector because this project's objectives are being addressed as a logical extension of the on-going SADC Regional Gene Bank.
- (b) Project No. AAA.5.6, Dry Zone and High Altitude Fuelwood Research: this project will be formally amalgamated with project No. AAA.5.23, Improvement and Strengthening of Forestry and Forest Products Research Institutions in the SADC Region during the planning stage.
- (c) Project No. AAA 5.7, Forestry Technical Consultation and AAA.5.10, SADC Forestry Documentation Centre: these projects should be part of project No. AAA.5.1, Special Facility for SADC Forestry Project Development.
- (d) Project No. LES.5.15, Village Fuelwood Plantations, (Lesotho): this project will be transferred to national status because it is not regional in nature.
- (e) Project No. AAA.5.18, Edible Mushroom Farming: this project should be incorporated in project No. 5.20, Indigenous Forests Management since the former can best be developed in the context of forest management.
- (f) Project No. AAA.5.21, Bee Keeping Development in the SADC Region: this project will be incorporated into project No. 5.20, Indigenous Forests Management because the former project can best be developed in the context of forest management.
- (g) New Project: Project No. AAA.5.24, Development of Forestry Information Management Network System in the SADC Region, which is mainly aimed at strengthening capabilities of SADC Member States to develop national data bases was approved by Council at its meeting in Windhoek in August

1992. This project is estimated to cost US\$2.5 million.

### 1.3 WILDLIFE

1.3.1 Remarkable progress has been achieved in the implementation of the Wildlife Sub-sector programme of action. Out of 20 approved projects, six have been fully implemented, three are under implementation and two which were feasibility studies have been completed. Three projects have firm pledges, while funding is being sought for the rest of the projects. Project AAA.6.16 is currently the biggest project in the sub-sector, accounting almost for half (US\$32.2 million) of the total programme budget.

1.3.2 Conservation of the African elephant and the ivory trade remain a controversial issue in the wildlife sub-sector. In October, 1989 the 115 parties to CITES, banned ivory trade. Five SADC member states, Botswana, Malawi, Namibia, Zambia and Zimbabwe entered reservation against the trade ban but Zambia has since the 1992 CITES conference surrendered its reservations. The five member states, now reduced to four, therefore, founded the Southern African Centre for Ivory Marketing (SACIM). The agreement to establish SACIM was signed in Lilongwe, Malawi on 20th June, 1991 by the five founder member states.

1.3.3 In March 1992, the SADC and the SACIM member states attended the CITES conference of the parties in Kyoto in Japan. SACIM's proposal to down-list the elephant populations in the four member countries was turned down, SACIM states are determined to establish their centre in Botswana and eventually market ivory and other wildlife products. At the Committee of Food, Agriculture and Natural Resources Ministers which was held in Swaziland in June, 1992, the Chairman of the Committee was requested to make a strong representation to CITES on the plight of the African Elephant in the SACIM member states so that CITES can reconsider its position on the ban of ivory trade and other elephant products in the light of the current drought. Such a representation has been made, and a response is awaited from CITES. In the meantime, SADC has agreed that the project's mandate be broadened to cover conservation issues and not only marketing.

1.3.4 Project AAA.6.12 - Training Seminar and Study Tour on Integrated Wildlife Resource Use.

A follow-up study tour and seminar for policy and decision makers is being organized with FAO assistance. The idea behind the tour is to raise appreciation and provide exposure to policy/decision

makers on community participation projects and how local people have accepted them as contributing to rural development.

#### 1.3.5 Project AAA.6.16 - Survey of Wildlife Utilization.

The project was funded by FAO and a meeting to discuss its findings was held at Kudya Discovery Lodge in Machinga, Malawi from 9th to 12th October, 1991. Participants evaluated the report of the consultancy and examined the potential of the wildlife resource in the SADC region with a view to improving utilization schemes. The workshop recommended specific project proposal topics to be developed by member states and the Coordinating Unit.

## 2. REVIEW OF THE REGIONAL SITUATION

### 2.1 INLAND FISHERIES

2.1.1 The SADC Region is endowed with abundant and diverse fish 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. The potential is in fact believed to be much higher than the present output.

2.1.2 Because of its relatively low price, fish constitutes a major source of animal protein, particularly in the diet of the low income rural population.

However, the rapid increase in population in the region in relation to the fish production rate 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 from both inland and marine fisheries will be required to meet the demand by the year 2000. 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 recommended technologies arising from research so that most fishermen can use them in order to sustain the exploitation of the fish resources as well as minimize environmental damage, for example, legal mesh sizes that minimize damage of immature fish, use of wooden boats as opposed to dugout canoes manufacture of which

accelerate deforestation.

The use of recommended smoking kilns where appropriate results in better quality of processed fish which can be sold at reasonable prices. These smoking kilns if properly used result in less fuel wood per kg of fish smoked thus reducing the extent of deforestation.

Post - harvest losses are estimated at 20 to 30 percent in some cases due to poor processing techniques as well as poor road conditions. The reduction on post - harvest loss will ensure increased availability of fish products from coastal, river and lake production areas, to deficit consumption areas.

- 2.1.3 Another important area which can 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, including rice/fish, fish/chicken or duck, fish/pig or rabbit production systems.

Considering that the fisheries industry in the region is generally labour- intensive, its development can 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 SADC countries is predominantly open woodland, relatively dry savanna and dry wooded steppes. About sixty-seven percent (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 scrubland and about 5% fallow.

- 2.2.2 Forest plantations have been established largely on grasslands, higher elevation and moist locations and comprise about 61000 ha., of which 73% are industrial plantations; and about 23% fuelwood plantations.

- 2.2.3 Total forest harvest per annum is in the order of 83 million cubic metres of fuelwood, and 7.7 million cubic meters of industrial roundwood (sawlogs, 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 Generally there is a good potential for forest industry development, and intra-regional trade in forest products from the region's own forest resources.
- 2.2.7 Forest authorities and industrial enterprises employ some thirty thousand persons, excluding the labour in activities related to the household wood collection and utilisation.
- 2.2.8 Annual investment opportunities in plantation establishment and in industry rehabilitation, improvement and expansion could be in excess of US\$100 million.
- 2.2.9 SADC has, in recent years, given high priority to the development of Forestry, and to the serious issues of fuelwood supply and environmental degradation. Although in the past political issues, especially bandit activity, have hindered forestry sector development in some member states, this situation is improving.

### 2.3 WILDLIFE

- 2.3.1 The Wildlife of the SADC region is of particular diversity. Of Africa's 84 species of the large herbivores, more than half occur in the SADC region; some of them in large numbers, and others in less conspicuous populations. Many of these species have direct economic value. Others have aesthetic, scientific, recreational or cultural significance. The arid Savanna Zone, in particular, contains important populations of game animals.

- 2.3.2 Through evolution, these species have become particularly well adapted to the arid and often agriculturally marginal environments. They have traditionally provided the rural population with meat, skins and other raw materials. However, as agricultural development has progressed, animal populations have come more and more into conflict with human endeavours.
- 2.3.3 It is now recognized that the controlled and sustainable utilization 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 cannot be used for agricultural or livestock production, and the arid thorn bush steppe of Botswana, still support significant game populations. These provide some of the animal protein for nutrition of the rural human population, through subsistence hunting and other carefully planned utilization schemes.
- 2.3.5 As increased demand for wildlife 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 the region's rare species, such as the rhinoceros, elephants and other species. Poachers have not limited their sophisticated weapons to poaching wildlife; human life has also been lost in anti-poaching operations.
- 2.3.6 Unless the wildlife resource is afforded greater protection and subjected to 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 resource. 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 tourism industry, which also generates important income, both in local and foreign exchange. Almost 15% of the region'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 28.4%, Zambia 30% and Zimbabwe 12.9% of the total land area.

- 2.3.8 Many of the conservation areas of the region, like the Okavango Delta in Botswana, Lake Malawi National Park in Malawi, 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 managing and utilising the resource.

### 3. REVIEW OF THE PROGRAMME

#### 3.1 INLAND FISHERIES

- 3.1.1 The policy framework and objectives for the development of inland fisheries in the SADC 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:
    - 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 processing, 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 SADC's inland fisheries development programme, therefore, generally aims at optimum sustainable exploitation of the great potential of both capture fisheries and aquaculture, 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 inland fisheries in the region. Some have been completed and some are now at various stages of implementation. These include: Joint Research on Pelagic Fisheries Resources of Lake Malaŵi/Nyasa; Fisheries Research on Lake Kariba; a Regional Survey of Fish Production, Processing and Marketing as well as the Production and Commercialisation of Fishing and Fish Processing Materials and Equipment; Regional Fisheries Training Programme; Fisheries Investigations in Botswana; Integrated Fish - Cum - Duck Farming Development in Lesotho, ALCOM - Phase 2, and Provision of Fisheries Extension Services. Negotiations are underway for the funding of three more projects, namely, Pilot Integrated Fish/Pig Farming Development, Research Project at Kasinthula, Malaŵi and Computeration of Inland Fisheries Production throughout the SADC Region

## 3.2 FORESTRY

### 3.2.1 Sectoral Policy

The framework and objectives for the development of forestry in the SADC Region are presented in SADC'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 consideration always to protecting it as a most important part of the 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 pre-requisite for management of the forest resources and for the development and introduction of improved forestry technologies within the region.

### 3.2.2 Programme of Action

The SADC Forestry Programme of Action is being developed within this policy framework and involves a total of 23 projects approved by the Council of Ministers. These projects cover six main areas of interest in forestry sector development, which are forestry research, education and training, resource management, forest inventory, forest products utilisation and environment. Twelve project proposals have been funded and are under implementation.

Of the 11 unfunded project proposals, two are at an advanced stage of development:

Project AAA.5.13, Development of Montane Forests, and

Project AAA.5.4, Regional Forest Inventory, has recently had a feasibility study completed, followed by a workshop on a preliminary project document.

The remaining nine unfunded projects were reviewed and proposals made for future action and development.

The FSTCU's strategy in developing this programme includes special attention to the role of women in forestry development and to forest management and conservation for environmental protection. It also includes cooperation with other sectors where there are mutual benefits in project development.

### 3.2.3 Project Monitoring

The Sector is responsible for monitoring the progress of implementation of on-going funded projects. Members and/or representatives of the FSTCU attended the following Advisory Board or Project Steering Committee meetings for on-going funded projects, during the reporting period:

#### Project AAA.5.3, Blantyre City Fuelwood Project

- Blantyre, Malawi, 25-28 November, 1991
- Blantyre, Malawi, 22-23 April, 1992

#### Project AAA.5.9, Strengthening and improvement of Forestry Colleges

- Windohoeck, Namibia, December, 1991.
- Luanda, Angola 8-12 June 1992

#### Project TAN.5.16, Centre for Advanced Practical Forestry Training

- Arusha, Tanzania, 11-13 November, 1991.
- Lilongwe, Malawi, 23 March, 1992.
- Dar-es-Salaam, 2-3rd June 1992

Two of the funded projects are considered as national projects for which the Sector no longer plays an active role in monitoring. These two projects are:

Project MOZ.5.14, Erosion Control at Nacala Port. A much bigger programme on erosion control will be developed in collaboration with the Environmental and Land Management Sector.

Project LES.5.15, Village Woodlot Plantations (Lesotho)

An inception mission of Project, AAA.5.5, Tree Seed Centres Network was undertaken between March and April, 1992 and a technical committee meeting took place in Harare.

### 3.2.4 Workshops

Three workshops were organised by the Forestry Sector during the reporting period:

#### Workshop on Planning and Management of Tree Seed Centres.

- Morogoro, Tanzania, 2-6 December, 1991.

This Workshop was aimed at facilitating tree seed specialists in the region to exchange information and experiences in the management of tree seed centres.

The workshop was attended by eight member states, except Namibia and Angola. A total of seven papers were discussed on various technical aspects of planning and management of tree seed centres, and experiences in individual countries. The workshop concluded with a field tour of tree seed facilities at Sokoine University of Agriculture and the National Tree Seed Centre. The workshop was funded by CIDA.

Workshop on Final Report of Regional Forest Inventory Study.

- Maputo, Mozambique, 4-7 February, 1992.

This Workshop was aimed at obtaining member states' views and comments on the final report of the consultants on the Regional Forest Inventory Study.

The workshop was attended by nine member states, except Angola. The team leader of the consultants who carried out the study presented the report.

The Report of the Feasibility Study, entitled A Preliminary Project Document for SADC Regional Forest Inventory was reviewed and discussed by the workshop. The Workshop re-confirmed the study objectives which include:

- the mapping of the vegetation and forest cover of the SADC region and provision of basic quantitative information;
- carrying out field inventory to provide detailed data and fill gaps in information provided during the first stage.

The workshop also recommended that efforts be intensified to identify sources of funding for the Project.

Workshop on Women in the SADC Forestry Programme of Action.

This Workshop was held on 5th May, 1992, in Etosha Pan, Namibia, and was aimed at obtaining member states' views and comments on a consultancy report which was charged with the task of reviewing the extent to which the role of women was taken into account in the SADC Forestry programme of action.

The Workshop confirmed the findings of the consultancy and, inter alia, agreed that a strategy paper on women in forestry should be drawn up to provide guidance in the development of SADC Forestry projects.

### 3.3 WILDLIFE

3.3.1 The Wildlife Sub-Sector has made considerable progress in implementing its programme of action. Out of twenty approved projects nine projects are either completed or under implementation and six are under negotiation for funding. Most of the completed projects were either workshops, seminars or feasibility studies that were meant to facilitate information or data gathering for development of projects. Already, some project proposals have been developed to address pertinent resource conservation issues.

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

- 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.
- 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 environmental stability.
- 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
- research on biological and ecological values shall be promoted as an important prerequisite 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 Sub Sector has gained increased recognition by both member states and cooperating partners as an important area in the overall economic development of the region.

- 3.3.4 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.
- 3.3.5 Among the priorities of the Sub 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 respect is the approval by Council of Ministers of the regional project on the Development of Community-Based Management and Utilization of Natural Resources in Rural Areas involving initially three member states of Botswana, Zambia and Zimbabwe.
- 3.3.6 The Sub-Sector is also giving priority to manpower training and development of law enforcement, and assessment of the impact of wildlife on the environment.

#### 4. CURRENT STATUS OF PROJECTS

##### 4.1 INLAND FISHERIES

###### 4.1.1 Project No. AAA.4.3 Support to SADC Coordination of Inland 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. This Project which was supposed to end in October 1991, has now been extended for a further two years from 1st January, 1992. A counterpart to the present technical adviser has been identified and is in post.

###### 4.1.2 Project No. 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 the 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.

The preparatory phase, funded by NORAD, was implemented from February, 1990 to July 1991. The purpose of the preparatory phase was to update the training needs as stipulated in the initial survey of 1987.

A report on the findings and recommendations has been completed. The report has been distributed to potential cooperating partners to consider co-financing the programme which has components in Angola, Lesotho, Malawi, Tanzania, Zambia and Zimbabwe. Revised cost estimate after the preparatory phase is US\$ 9.67 - million.

A Memorandum of Understanding is being drafted for the selected institutions to study and confirm commitment to sustaining the intended activities at each institution once external funding phases out. These institutions were selected on the strength of already existing national needs but have accepted to include regional training requirements.

Icelandic International Development Agency (ICEIDA) has supported the programme with US\$260,000 for the years 1991 - 1993 together with technical assistance for the establishment of the Training Coordinating Unit as part of the proposed programme. A Fisheries Training Adviser arrived in September 1991 and has started working on the pre- implementation phase.

4.1.3 Project No. AAA.4.6 Regional Fisheries Information and Documentation 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\$7.25 million. Funding is being sought.

4.1.4 Project No. AAA.4.6(1) Computerisation of Inland Fisheries Production Statistics throughout the SADC Region

This Project is a component of project AAA 4.6. It is scheduled to last for 3 years, at an estimated cost of US\$ 322,000, and 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 SADC 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

Funding is being sought.

4.1.5 Project No. 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:

4.1.6 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 Zambia during Phase I in 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, Malawi, Zimbabwe and Mozambique.

Under Phase II, the following activities will be carried out:

- a) development of aquaculture methods and practices in integrated farming systems;
- b) the utilisation of 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;
- g) the actual implementation of the aquaculture programme itself in the region.

Phase II of the project is estimated to cost US\$7.07 million. SIDA has provided funding until 1995. The Government of Belgium has offered US\$ 2,2 million to support utilisation of small water bodies.

4.1.7 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 upgrading of the aquaculture 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.

4.1.8 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 for trout stock and provision of extension services to trout centres. The estimated cost is US\$8.52 million. Funding is being sought.

4.1.9 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. These areas have been identified in Lesotho, Malawi, Swaziland and Zimbabwe. 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.

4.1.10 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. The EEC is funding a consultancy to prepare a detailed project dossier which, if acceptable will then be funded by the EEC under Lome III. A consultancy firm has been identified. Work is expected to start by August, 1992.

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\$5 000 a year and a Fisheries Adviser.

Since this project is mainly meant to assist SADC in the coordination of Marine Fisheries, and Namibia now coordinates this sub-sector ICEIDA has expanded its assistance to include further assistance to Inland Fisheries Coordination from July, 1992.

4.1.12 Project No. Bot.4.1 Fisheries Investigation in Botswana

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.

The technical sub-committee recommended that the project should be scaled down to national project.

4.1.13 Project No. 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 cost 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. Phase 2 concentrated at the development of aquaculture integrated with other small livestock in the rural households in Lesotho.

This project has now been completed and a terminal report is awaited.

4.1.14 Project No. Mal.4.1 Joint Research of Pelagic Fisheries Resources of Lake Malaŵi/Niassa

The project is aimed at carrying out research on offshore fish stocks of Lake Malaŵi/Niassa as a basis for their improved exploitation on a sustainable basis. Despite previous delays, including recruitment of staff and construction of research vessel, the "Usipa", the progress to date on this project is quite encouraging. Construction of extra accommodation and renovation of an existing building as a laboratory is now completed. The research vessel which has been reassembled in Malaŵi is now afloat. It was inspected by the Surveyor of Ships from the Malaŵi Ministry of Transport and Communications on 30th December, 1991, and has been duly registered for research work throughout the lake.

In January 1992, a series of short trial cruises to shake down the ships equipment and expose any logistical problems of living aboard the vessel was undertaken. So far, no major problems have emerged.

All required staff are now in place, and all paperwork including research program has been prepared.

The Project's first steering committee meeting was held in the last week of April 1992, at the project site, Senga Bay, Salima. The committee was briefed on the status of the project. All equipment for the vessel and laboratory is in place and functional. The remote sensing system has been installed and image capture started. One full fifteen day lake cruise was successfully undertaken. Subsequent cruises for the project's research programme are underway.

The estimated cost of the project is now 3.7 million Pounds Sterling (US\$ 6.3 million) against the original estimate of US\$2.51 million. Funds have already been secured.

4.1.15 Project No. 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.

4.1.16 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 and planners to be attached to Inland Fisheries Coordinating Units, to assist in project development, implementation and monitoring. The cost of the project is estimated at US\$4.10 million. Funding is being sought.

4.1.17 Project No. Zam.4.1 Zambia/Zimbabwe SADC Fisheries Project (Lake Kariba)

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.

Implementation of the project commenced with a planning workshop in March 1990 and will continue until October, 1995. The estimated cost is US\$ 7.57 million.

## 4.2 FORESTRY

4.2.1 Project AAA.5.1, Special Facility for SADC Forestry Project Development

The objective of this project is to strengthen Malawi's capability in co-ordinating forestry development in the SADC region through training, communication and information exchange, and development and analysis of forestry project proposals.

The Memorandum of Understanding for this project between SADC/Malawi and CIDA expired 31 March, 1992, and is in the process of being extended, to cover a 5-year Phase II for which funding has been committed by CIDA.

The contract governing the provision of consulting services to Malawi expired in September, 1991, and was extended to March, 1992, through a contract amendment. Bridge financing amounting to 99,000 Canadian dollars has been provided until 31 August, 1992, pending formal approval by CIDA of funding amounting to US\$4 million for Phase II.

4.2.2 Project AAA.5.2. Establishment of a Regional Herbarium and Conservation of Endangered Species.

The objective of this project is to strengthen national herbaria and botanical collections for scientific research, education, and conservation of endangered species; and to establish a network for the exchange of information between national herbaria in the SADC region.

Council, at its meeting in Windhoek in August 1992, approved the Ministers of Food, Agriculture and Natural Resources recommendation to transfer this project to the SADC Regional Gene Bank Project (SRGB) and agreed that the SRGB should be approached through SACCAR to provide for forestry sector representation at the regional and national SRGB boards.

4.2.3 Project AAA.5.3. Urban Fuelwood Project

This project is aimed at supplying fuelwood to urban areas in Lesotho, Malawi, Mozambique and Tanzania. At present only the Malawi component is funded. The unfunded components of this project were reviewed and funding for these is being sought.

The first phase of the Malawi component, funded by NORAD, expired in November, 1991. Proposals for extending the project were drawn up and discussed with NORAD who agreed to provide funding of US\$4.6 million for a 5-year Phase II.

4.2.4 Project AAA.5.4. Regional Forest Inventory

The objective of this project is to develop a regional forest inventory encompassing the ten countries of SADC, suitable for resource planning at a macro level.

Funding for this project is being sought.

The Final Report of a feasibility study on the project, entitled Preliminary Project Document for SADC Regional Forest Inventory, was completed in December, 1991, and distributed to member states, other SADC sectors and donor representatives.

A workshop was held in Maputo, Mozambique, 4-7 February, 1992, to discuss the Final Report recommendations and to consider options for possible multi-donor funding of the project.

Funding is being sought.

4.2.5 Project AAA.5.5, Tree Seed Centres Network

The objective of this project is to strengthen national tree seed operations and facilities and to establish a network of tree seed centres in the SADC region.

CIDA has agreed to fund this project at an estimated cost of US\$12 million for the first 6-year phase.

In November 1991, Malawi, on behalf of SADC, signed a MOU with CIDA for the implementation of the project, and separate MOUs will be signed between CIDA and individual member states.

As a continuation of activities in developing this project, the Sector organised a workshop on Planning and Management of Tree Seed Centres from 2-6 December, 1991, in Morogoro, Tanzania, funded through the CIDA/SADC Small Projects Fund. The objective of Workshop was to facilitate the exchange of information and experiences among tree seed specialists in the region in the management of tree seed centres.

A CIDA Inception Mission ( with the aim of verifying member states' requirements in Strengthening their tree seed centres through this project) was fielded at the beginning of March, 1992, as a first step in project implementation.

This was followed by a Project Technical Committee meeting which was held in Harare, Zimbabwe between 12-14th May 1992 which was attended by all member states except Zambia.

A project advisory board met in August 1992.

4.2.6 Project AAA.5.9, Improvement and Strengthening of Forestry Colleges in the SADC Region

The objective of this project is to improve and strengthen existing forestry training colleges in the SADC Region.

The project is funded by FINNIDA at an estimated cost of US\$38 million, over a 12 year period. Phase I of the project ends this year and a FINNIDA evaluation mission was fielded in April, 1992 to review the progress made during the first phase of the project;

the Missions report is still being awaited.

During the reporting period planned activities were carried out under the project's five regional components:

- Human Resources Development
- Forestry Teachers Training
- Forestry Further Training
- Forestry Extension Training
- Forestry Curriculum Development

National sub-projects are running at Forestry and Agricultural colleges in seven SADC countries. The sub-project in Namibia started in July, 1992, and plans are being formulated to start proposed sub-projects in Angola and Botswana in 1993.

#### 4.2.7 Project AAA.5.11, Rehabilitation of Mining Areas

The aim of this pilot project is to establish fuelwood and pole plantations to provide wood for coal mining and domestic use in Karonga, Malawi.

Funding for the project is being sought.

This project proposal was discussed with the SADC Mining Sector Coordination Unit (MSTCU) and it was decided that further action should await the outcome of a review by the MSTCU of environmental problems in the mining sector. The 11th meeting of the Technical Committee for Forestry agreed that Malawi should participate in the forthcoming MSTCU Workshop scheduled for the later part of 1992, following which a decision can be made on the Forestry Sector's future contribution to the rehabilitation of mining areas.

#### 4.2.8 Project AAA.5.12, Community Forestry Development for Fuelwood Production, Environmental Conservation and Rehabilitation of Degraded Lands

This project is intended to assist in the development of community forestry for fuelwood production, environmental conservation and reclamation of degraded lands in SADC member states.

FINNIDA has undertaken to fund preparatory activities leading to the identification of national projects in community forestry, under an initiative called Community Forestry and Wood Energy Programme (COFOPRO). A regional planning workshop on COFOPRO was held in Harare, 7-11 October, 1991. National working groups have been formed to identify project proposals in community forestry. These proposals will be presented at a second regional COFOPRO workshop in

September, 1992, in Arusha, when it is expected that appropriate regional projects will be identified for implementation under AAA.5.12.

COFOPRO involves a joint approach to community forestry project proposals between Forestry, Energy, and Environment and Land-Use Management Sectors.

4.2.9 Project AAA.5.17. Optimal Management of Watershed Areas

The aim of this project is to develop experimental watersheds which can be used as demonstration projects for improved management of watersheds in the SADC region. The Ministers of Food, Agriculture and Natural Resources directed that consultations be held with the ELM Sector regarding transfer of this Project proposal to ELMS while at the same time offering to provide forestry inputs to ELMS through the Forestry Sector.

4.2.10 Project AAA.5.19. Agroforestry in Arable and Pastoral Farming

The objective of this project is to improve soil fertility in arable and pastoral farming areas and to provide fodder and shelter belts to protect arable land from desiccating winds, through the application of agroforestry techniques.

A Forestry Sector project planning meeting was held in Windhoek, Namibia, in July, 1991, to develop a plan of action. ICRAF was approached for assistance in undertaking a "diagnostic and design" (D&D) exercise but would be unable to make any commitments this year. SACCAR has agreed to work with the Forestry Sector in developing the project.

In June, 1992, the Ministers of Food, Agriculture and Natural Resources in Mbabane Swaziland approved the recommendation to engage consultants to undertake a Diagnosis and Design (D&D) study, prepare a project document and identify potential sources of funding for this project.

The Sector has also received draft terms of reference for a proposed D&D study, prepared by a specialist from ICRAF, to form the basis for a possible consultancy.

Funding for the project is being sought.

4.2.11 Project AAA.5.20. Management of Indigenous Forests

The objective of this project is to improve the management and conservation of indigenous forests in the SADC region.

The Ministers of Food, Agriculture and Natural Resources approved that this Project should incorporate projects No. AAA.5.18 and AAA5.21.

4.2.12 Project AAA.5.22. Rural Plantations and Timber Processing

The purpose of this project is to establish or expand rural plantations to provide raw materials for rural sawmills, and pole and post treatment plants.

Discussions were held with the Chief Technical Advisor and staff for FAO/PTA Project RAF/87/117, Plantation-Based Forest Industries, in Lusaka. This project concentrates on the development of medium to large scale forest industry, and indications are that small scale operations are best assisted on a national basis.

It was agreed during the discussions in question that:

- (a) the "PTA" forestry project is well placed to address matters of medium to large-scale forest industry development by virtue of the work already done in the PTA region;
- (b) the SADC Forestry Sector would play a supportive role in this area until such time, and in those areas, that the "PTA" project is inactive; and
- (c) close collaboration would be pursued between the SADC Forestry Sector and the "PTA" forestry industry project in the area of forest industry statistics and other documentation.

4.2.13 Project AAA.5.23. Strengthening of Forestry and Forest products research institutions in the SADC Region

This is a two year planning project funded by FINNIDA in response to the widely recognised need for strengthening of research in forestry and forest products. Technical assistance is provided by FINNIDA through INDUFOR Ky.

All member states except Zimbabwe are participating in this project, and the following progress has been made.

- All participating member states have prepared draft national plans. The plans have been widely

distributed within respective countries and discussed at national workshops. The draft plans have also been circulated to several international organisations and donor agencies for comments.

- Six countries have prepared draft project documents on strengthening of national forestry research; ie Angola, Lesotho, Malawi, Namibia, Tanzania, and Zambia.
- All the countries have held their second national workshops where national forestry research plans have been discussed.

The national forestry research action plans will be discussed at a second regional forestry research workshop in September, 1992 in Gaborone, Botswana. At the workshop regional forestry research projects will be identified and developed. Funding is being sought.

#### 4.2.14 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 which contains valuable Mulanje cedar species (*Widdringtonia nodiflora*) distributed over an area of about 300 square kilometres.

The emphasis of the project has been changed from road construction and industrial plantation management to development of an integrated resource management plan for management of Mt. Mulanje forest resources for multiple use, conservation and public environmental education. The project will have a demonstration component in integrated resource management planning, for the benefit of member states.

#### 4.2.15 Project TAN.5.1, Advanced Practical Forestry Training

This project is aimed at improving and developing facilities at Olmontonyi Training College of the Sokoine University of Agriculture in Tanzania, in order to cater for refresher courses for foresters.

The project is funded by NORAD at an estimated cost of US\$4.6 million over a 4 year period.

The Project Planning Committee held its first meeting in August, 1991, to launch the project. A Project Agreement between Tanzania and NORAD was signed in January, 1992. Project planning meetings were held in Lilongwe in March, 1992, and in Dar-es-Salaam in June 1992 to consider tenders for the construction of

project facilities and terms of employment for the Course Coordinator.

#### 4.3 WILDLIFE

##### 4.3.1 Project AAA 6.2, Support to Wildlife Coordinating Unit

This project gives technical assistance to the Wildlife Coordinating Unit in Malawi, in discharging its responsibility of coordinating the SADC Wildlife Programme of Action. The project is under implementation. An Advisor to the Technical Coordinator has been in post since July, 1990. He is funded by Commonwealth Fund for Technical Cooperation (CFTC) and World Wide Fund for Nature (WWF). A second term is being negotiated, after which the Coordinating Unit will have secured a local officer to take over the duties of the Technical Advisor.

##### 4.3.2 Project AAA.6.3, Relief Programme for Drought Stricken Wildlife Areas

The Sector is to reformulate this project proposal using information being provided by all drought affected countries. The Project should now also include all member countries. Information is awaited from concerned countries for the reformulation of the project. This project is now a priority project in the light of the drought affecting the region. Funding is being sought.

##### 4.3.3 Project AAA.6.4, Processing and Marketing of Wildlife Products in the SADC Region

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 AAA.6.20 - Project on Capture, Cropping and Culling Techniques which has recently been approved by Council. Other project proposals are being formulated.

##### 4.3.4 Project AAA.6.5, Regional Wildlife Training Programme

This project aims at supporting Mweka College in Tanzania for middle level 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 institutions for middle and upper level wildlife personnel training.

Funding is being sought.

4.3.5 Project AAA.6.6, Wetlands Conservation

This project is completed. The survey phase report was produced and the subsequent conference was held in Botswana from 3rd -5th June 1991. The project is being extended into phase II. The objectives of Phase II of the project are to promote sustainable use of wetland resources and to conserve the ecological and hydrological process of wetlands.

The project will be implemented in close collaboration with the Environment and Land Management Sector.

The estimated cost is US\$1.3 million.

4.3.6 Project AAA.6.7, Conservation Education in the SADC Region

This project aims at increasing public awareness of the need to conserve wildlife resources in the SADC region. It will establish a regional conservation education unit in Lilongwe from where information will be disseminated to other member states. It is estimated to cost US\$ 0.65m. 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 SADC 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 funded by GTZ was held in August, 1990 in Kafue National Park, Zambia.

The workshop made recommendations on Projects to be developed. Consultations are underway between the Sectors of Tourism and Wildlife to develop project proposals that address Wildlife Based Tourism.

4.3.8 Project AAA.6.11, Environmental Impact Assessment Workshop

The project is aimed at introducing concepts and methods which will facilitate assessment of environmental impact of development projects at national and regional levels, particularly projects affecting the environment, and causing alterations to wildlife habitat.

It is now agreed that when the project is funded, it should be implemented by the Wildlife Sector in collaboration with the Environment and Land Management

Sector. This arrangement will ensure that wildlife interests are included during the implementation of the project. Funding is being sought.

4.3.9 Project AAA.6.12, Seminar and Study Tour on Wildlife Resource use

The project looked into integrated wildlife resource use as a tool for rural development through people's participation. It highlighted the approach of integrated resource utilization as a means of expanding the economic base of local people and ploughing back the benefits of utilization projects into the coffers of rural communities who are custodians of the resource.

The Seminar and Study Tour on Wildlife Resource use took place from June 6th to 28th 1990 and was attended by participants from SADC member states who visited Botswana, Zambia and Zimbabwe. These countries have successful projects on wildlife utilization with involvement of rural communities.

The project was funded by the Food and Agriculture Organization of the United Nations (FAO). Following that tour FAO now wish to fund a follow-up tour for decision makers. Arrangements are underway to implement the second phase.

4.3.10 Project AAA.6.13, Law Enforcement in Wildlife Management and Utilization

The project's objective is to strengthen law enforcement for protection of wildlife in strategic border areas in Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe and to assist managers with the control and monitoring of intra-regional trade in wildlife products. The project comprises a consultancy and logistical support at an estimated cost of US\$ 1.5m.

After realizing that the problems of poaching and trafficking are common to all SADC member states it is now agreed that the project be reformulated to cover all SADC countries so as to address poaching problems occurring in the SADC region. CFTC has agreed to send an expert to reformulate the project. Terms of reference have been drawn by the Sector and sent to CFTC.

4.3.11 Project AAA.6.14, Crocodile Management and Utilization

The project was aimed at setting up a consultancy to survey Crocodile Management and Utilization in the SADC region. The consultancy was carried out by CITES and the workshop held at Kariba in Zimbabwe in 1987,

to which SADC member states were invited. The Cites workshop fulfilled the SADC objectives of formulating and adopting a common SADC policy on development of crocodile farming, marketing and export quotas. Projects were to be developed based on the recommendations of the workshop. However, the Consultancy and workshop on project AAA.6.18 - Survey of Wildlife Utilization and its Economic Potential in the SADC region recommended that the private sector should be encouraged to develop the industry. Based on the recommendation, the Technical Sub-Committee on Wildlife has recommended that the project should be considered completed.

4.3.12 Project AAA.6.17, Regional Wildlife Resources 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 institution building and
- b) planning and executing wildlife development and management programmes and institution of subsequent monitoring in selected areas of the region.

The project is estimated to cost US\$ 5.6m. EEC has funded the investigative consultancy which has produced a project dossier. The project dossier is yet to be submitted by the consultant.

4.3.13 Project AAA.6.18, Regional Survey of Wildlife Utilization and the Economic Potential of the Wildlife Resources

The project's consultancy studied and recommended sustainable but controlled forms of use of wildlife resources for rural development. The consultancy collected and analyzed data to determine:-

- i) forms and volume of wildlife use,
- ii) current utilization technique, including harvesting and processing methods and marketing channels used,
- iii) the importance of wildlife to national economies and the region as a whole.

FAO recruited a Team Leader to lead and coordinate the consultancy, who was assisted by one Veterinary Officer and one Wildlife Resource Economist. The workshop which took place at Kudya Discovery Lodge, Malawi, in October 1991 evaluated the findings of the consultancy. The workshop was attended by delegates from all the ten member states. Project outlines were agreed for further formulation and development by member countries, which will be presented to the Technical Sub-Committee on Wildlife as part of project development.

4.3.14 Project AAA.6.15, Coordination of Regional Tsetsefly Eradication with Wildlife Management Programme

The objective of the project is to investigate the economic potential of wildlife in areas scheduled for tsetsefly eradication.

This project is now planned to start with pilot studies in conjunction with the EEC Tsetsefly Eradication/Control Project in Kasungu National Park and Nkhotakota Game Reserve in Malawi. The project is estimated to cost US\$ 40,000. The studies will be followed by a regional workshop to discuss the results of the pilot studies. Funding is being sought.

4.3.15 Project AAA.6.16, Regional Development of Community Based Management and Utilization of Wildlife

There has been significant progress in each of the four components over the past year:

- 1) In Botswana, the component was slow to get started but is now very active. The Chobe Enclave has been selected as a project site, initial contacts with communities have been made and baseline socio-economic data is being collected. Community based NGOs have been identified and registered with USAID so that they can participate in project implementation. An environmental education assessment has been completed and terms of reference finalized for management plans for Southern, Ghanzi and Kgalagadi WMA. Activities in the project area are scheduled to begin in late 1992.
- 2) In Zambia, USAID support through ADMADE has focused on strengthening the program. Training in computer skills, finance and bookkeeping has been planned for ADMADE GMAs and for employees of the Revolving Fund. Funding was directed to the Nyamaluma Training Centre for the village scout program. A community development officer assumed post in January, and has completed a baseline socio-economic assessment, and a new project

officer began work in early 1992. All equipment, including trucks and tractors, have been received.

- 3) In Zimbabwe, funding for four additional CAMPFIRE areas was provided through the project. Tsholotsho, Hwange, Binga and Bulalima Mangwe communal lands have initiated project activities. District Councils and communities have received training in community development, record keeping, and finance from Zimbabwe Trust. The Department of National Parks and Wildlife Management has introduced village scout training sessions and has started sessions in the setting of sustainable quotas.
- 4) In Malawi, the regional component has been established. The regional coordinating committee (PCC) was convened. To ensure that activities are demand driven, this body will determine the focus of regional programs. The first annual conference offered regional participants an opportunity to establish contact and share experiences and on lessons learned.

4.3.16 Project AAA.6.19, Satellite Tracking Of Elephant Movements 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 made available by the Belgian Government who in conjunction with SADC will implement the project soon.

4.3.17 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 utilization programme that involves live capture, cropping or culling. Improvements in the methods, procedures and technologies in wildlife utilization will greatly enhance the profitability of wildlife enterprises. The project is budgeted at US\$ 550,000. Funding is being sought.

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\$ 2.00m.

The Wildlife Sub-Committee has reviewed this project and recommended that the emphasis of the project should now be changed from chick production to research and extension services. The Sub-Sector will encourage 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 reinforce the efforts of the member states to conserve the black rhino which is unique but an 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 Zimbabwe. In the other SADC countries, the species is on the verge of extinction.

The project is estimated to cost US\$ 3.5 m. Funding is being sought.

4.3.20 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 scope is being expanded by the SACIM Board to include management and research in elephant population and marketing of other wildlife products.

The project is estimated to cost US\$ 750,00 to establish the centre. Funding has been pledged by the involved SADC member states. Contributions are being worked out towards the establishment and running of the centre. Once established, SACIM will be self-financing through the levy of a small commission on all ivory sales.

4.3.21 ANG.6.1, Rehabilitation and Development of Kissama National Park

The overall objective is to support the government of Angola in the establishment and management of a network of wildlife areas for science, education, recreation, tourism and general environmental conservation. The rehabilitation and management of Kissama National Park will become a focal point for the enhancement of wildlife and nature conservation.

The project is estimated to cost US\$2,920,000 and funding is being sought.

5. NEW PROJECT PROPOSAL

5.1 FORESTRY

5.1.1 Development of Forestry Information Management Network System in the SADC (Project No. AAA.5.25)

Background

Over the past five years, the Sector has tried to develop a regional forestry sector data base but these efforts have been hindered by a varied and generally low rate of response to questionnaires sent to member states. In a bid to improve the situation, the Sector Coordinating Unit, between January and May 1992 conducted follow-up visits to all ten member states and a number of problems were identified in the course of discussions with the member states. This new project proposal arises from the findings and recommendations of the visits. The proposal was examined by the Technical Sub-Committee for Forestry at its 11th meeting held from 6 to 8 May, 1992 at Etosha Pan in Namibia. The project was approved by the Food, Agriculture and Natural Resources Ministers at their meeting which was held in Swaziland in June, 1992. The Council is invited to approve this project.

Justification

Data is a prerequisite to sound planning, implementation and management. Any organisation involved with development activities require readily available, easily accessible and high quality data to ensure good management decisions and practices. It was realised during the follow-up visits that member states are not able to supply all requested information because of a number of problems, the major ones being inadequate manpower, computer facilities and training in data and information systems. Efforts of the Unit to establish a regional data base may thus be futile unless these major problems facing member states are overcome. It is the primary aim of this

proposal therefore to improve forestry sector information management systems in all member states and to strengthen the linkage between the regional (FSTCU) data base and national data bases and promote information networking in the region.

#### Objectives

- (i) To strengthen capabilities of member states to develop national data bases.
- (ii) To facilitate development of the SADC forestry programme of action by providing the much needed data base for planning and decision making.
- (iii) To promote regional integration through exchange of expertise and information.
- (iv) To develop and harmonise standard procedures for data collection, processing, storage, dissemination and exchange.

#### Project Activities

- (i) Development of national forestry data base management information systems i.e. design of data bases and collection, entry, processing, storage, documentation, dissemination and exchange of data,
- (ii) Regional networking and harmonisation of forestry information management systems in the region,
- (iii) Training in aspects of 4 (i) and (ii) above,

#### Project Inputs

- (i) Manpower: 3 information management specialists
- (ii) Equipment and Facilities: Computer packages for each member state.
- (iii) Office space and transport

#### Project Outputs

- (i) Regionally networked and harmonised Forestry Information Management System.
- (ii) Comprehensive and rich forestry data bases in all member states

- (iii) Annual Regional and National Forestry Statistical Bulletins
- (iv) Well trained staff and expertise in data base management information systems, and
- (v) Improved facilities for data processing and storage

Project Implementation

The project will be managed by the Forestry Sector Technical Co-ordination Unit and implemented in all ten member states.

Project Duration

The project will run for a period of 5 years.

Project Estimated Costs

The Total Project Estimated Cost over the five year period is US \$2.5 million broken down as follows:

(a) Foreign Contribution:

- Staff	US \$600,000
- Equipment and Facilities:	US \$200,000
- Training Courses:	US \$300,000
- Data Collection Consultancies	US \$250,000
- Networking Activities e.g. visits, meetings etc.	US \$350,000
TOTAL	US \$1,700,000

(b) Local Contribution:

(Staff, office & other)	US \$800,000
Grand Total (a + b)	US \$2,500,000

Project Sustainability

To ensure sustainability, the project will, at national level, be managed and implemented by existing data bank coordinators in each member state with technical assistance from the information management specialists. At regional level, it will be managed and co-ordinated by Forestry Sector Technical co-ordination Unit. The Information

Management Specialists will be hired for 2 to 5 years during which time they will impart the necessary knowledge and skills to the data bank co-ordinators who will eventually assume full responsibility.



The following sub-projects in the RFTP and their estimated costs have been identified:

	<u>Estimated cost</u> (US \$ million)
1. Coordination of Regional Fisheries Training Programme (RFTP).	1.155
2. Natural Resources College/Mpwepwe Fisheries Training Institute, Malaŵi, Pre-service training for personnel at technical/fisheries assistant level.	0.714
3. Maseru Fish and Duck Farm in Lesotho, Short courses in fish and fish-cum-duck farming in collaboration with the Lesotho Agricultural College.	0.360
4. Chilanga Fish farm in Zambia, Short courses in practical fish farming of warm water species.	0.160
5. Mbegani Fisheries Development Centre in Tanzania - Short and long term training for specialists and instructors.	1.731
6. Helder Neto Maritime Training Centre in Angola - Medium level specialist training.	0.752
7. Bunda College of Agriculture of the University of Malaŵi - Training in aquaculture at diploma, B.Sc. and M.Sc. levels.	1.500
8. University of Zimbabwe - Fisheries diploma and short courses in limnology at the Lake Kariba Research Station in Zimbabwe, and M.Sc. course in tropical fisheries and hydrobiology in Biological Science Department.	0.885
9. Short courses in fisheries economics and management, and project planning and management.	0.550
10. Training in control and surveillance of foreign fishing, and training of fisheries enforcement staff.	0.360
11. A general scholarship fund for fisheries and aquaculture.	1.500
<b>TOTAL</b>	<b>US \$ 9.667</b>

STATUS:

A fact finding consultancy mission, financed under a previous project AAA.4.4 was undertaken to investigate training needs and priorities and a project document was produced, indicating that funding in the sum of US\$5.95 million was required to meet regional training needs.

The preparatory phase (SADC Project No. AAA4.5), funded by NORAD, has successfully been completed by a consultant. The consultant visited all ten SADC member states to update information on fisheries training needs and facilities, and to prepare and make recommendations for the main phase. Revised cost estimates after the preparatory phase are US\$ 9.67 million.

The Icelandic International Development Agency (ICEIDA) has supported the project with US \$260,000 in the years 1991 - 1993 together with technical assistance for the establishment of a training unit as part of the proposed programme. A Fisheries Training Adviser arrived in September 1991 to begin implementation of the RFTP.

Additional funding is being sought.

# Project Descriptions

AAA.4.6 REGIONAL FISHERIES INFORMATION AND DOCUMENTATION SYSTEM

Estimated Costs:                      Financing Gap: US \$ 6.096m

Total:            US \$ 7,26m

Foreign:        US \$ 6.09m                      Executing Agency:

Local:            US \$ 1.17m

Funding Secured                      Start:            Not specified

Foreign:        Nil

Local:            US \$ 1.17m (Malawi)

Duration:        7 years

---

OBJECTIVES:        The objectives of the project are to create and put into operation a SADC 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 standardization of the regional system in order to attain full compatibility and unification of 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 growth should be accelerated. Information is a key factor to development as it may accelerate research, transfer of technology and thus, the overall development process.

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 completed research and progress reports; 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.4.6(1)            **COMPUTERISATION OF INLAND FISHERIES PRODUCTION  
STATISTICS THROUGHOUT THE SADC REGION.**

<u>Estimated Costs</u>	<u>Financing Gap:</u> US\$ 0.32m
Total:        US \$ 0.32m	
Foreign:      US \$ 0.32m	<u>Executing Agency:</u>
Local:        -	
<u>Funding Secured</u>	<u>Start:</u> Not specified
Foreign:      Nil	
Local:        Nil	<u>Duration:</u> 3 years

---

OBJECTIVES:

a) Overall

Computerisation of inland fisheries production statistics will allow SADC 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 SADC to deal with these issues in an informed, unified, and coordinated fashion.

b) Specific

There are two major specific objectives to this proposed project:

- 1) Computerisation of inland national fisheries production statistics in member SADC countries.
- 2) Creation of a regional database which summarises nation statistics from member SADC countries.

DESCRIPTION:

In examining the problems faced in the area of inland fisheries statistics by SADC member States, 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.

The expert will:

- design and install a uniform database system which can incorporate data from all SADC 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 SADC countries.

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> US \$ 2.37m
Total: US \$ 2.83m	
Foreign: US \$ 2.37m	<u>Executing Agency:</u>
Local: US \$ 0.46m	
<u>Funding Secured</u>	<u>Start:</u> Not specified
Foreign: Nil	
Local: US\$0.46m(Ang)	<u>Duration:</u> Phase 1 (2 years) Phase 11 (5 years)

---

OBJECTIVES: The overall goal of the project is to create employment opportunities and to produce animal protein in rural development through the promotion of aquaculture. The goal will be achieved in 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, expected national benefits and cost 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 2 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 with basic investigations into possibilities, justification and problems of aquaculture development. On the basis of these investigations it will assist Government in developing appropriate policies and in planning the most beneficial aquaculture development of a national research training centre, as the focal point for aquaculture development; this will be planned in all details identifying also the best site for Centre. Phase I therefore constitutes an advisory type of project attached at a high level to the Instituto de Desenvolvimento Florestal (IDF).

Phase 2 will be based on the results of the phase I activities. It will support the establishment of a national aquaculture centre, financially and technically. The Centre will have to be attached to the Department of the IDF which assumes responsibility for aquaculture development, ensuring its effectiveness in respect to its function. 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>	US \$ 8.52m
Total:	US \$ 8.52m	
Foreign:	US \$ 8.52m	<u>Executing Agency:</u>
Local:	-	
<u>Funding Secured:</u>	<u>Start:</u>	Not specified
Foreign:	Nil	
Local:	-	<u>Duration:</u> 7 1/2 years

---

OBJECTIVES: The establishment and development of a SADC Regional Trout management project is proposed in order to promote the development of a viable trout industry in the region.

Specific Objectives:

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 in the Region;
- establish in each country, trout hatcheries with the capacity to produce seed to meet local, regional and probably international demand; and,
- bring about regional collaboration and cooperation in all aspects of trout management. To achieve these objectives 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 by interested Donor Agencies to work with local experts from the SADC participating countries in formulating strategies, identifying individual country requirements and present recommendations on how best the projects shall be executed. This work will take a period of 6 months. The last two and half years of this phase will involve setting up basic structure 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, response from Donor agencies will be followed up for funding the main implementation phase of the project.

The project 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 from the region to work with local experts on this exercise on a consultancy basis. This will be an important component of this project because food quality is a very important prerequisite for successful trout farming.
- Provision of an active extension support service such as transport, running expenses and personal emoluments for projects staff.
- Training of local staff on trout management either by attachment arrangement 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 SADC REGION

<u>Estimated Costs</u>	<u>Financing Gap:</u> US \$ 1.32m
Total: US \$ 1.32m	
Foreign: US \$ 1.32m	<u>Executing Agency:</u>
Local: -	
<u>Funding Secured:</u>	<u>Start:</u> Not specified
Foreign: Nil	
Local: -	<u>Duration:</u> 3 years

---

OBJECTIVES: The overall development objective of the project is to assist SADC 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 possible means whereby existing species technologies may be extended into cooler areas and concurrently, under laboratory conditions initially, establish the low temperature tolerance of fish species suitable for cultivation. Wherever it is located in the host country the project will operate in close consultation with national research staff, and at the stage of field trials will depend on being able to use some of the national facilities. There are two approaches to undertake concurrently, a programme of field trials to investigate the effects of different pond designs on their water temperature, with 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 as many different species and strains) of tilapia and other culture fish, as can be managed.

STATUS:

Funding is being sought.

Mal.4.3 PILOT INTEGRATED FISH/PIG FARMING RESEARCH AND DEVELOPMENT AT KASINTHULA, MALAWI

<u>Estimated Costs</u>	<u>Financing Gap:</u> US \$ 0.73m
Total: US \$ 0.73m	
Foreign: US \$ 0.73m	<u>Executing Agency</u>
Local: -	
<u>Funding Secured</u>	<u>Start:</u> Not specified
Foreign: Nil	
Local: -	<u>Duration:</u> 5 years

---

OBJECTIVES: 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. Therefore the project will be used to obtain relevant information on chemical factors and biological parameters to help better understanding of the relationship between physio-chemical factors and fish farming. 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 SADC Region.

STATUS: Funding is being sought.

Mal.4.4 SUPPORT TO FISHERIES DEVELOPMENT PLANNING

<u>Estimated Cost</u>	<u>Financing Gap:</u> US \$ 4.10m
Total: US \$ 4.10m	
Foreign: US \$ 4.10m	<u>Executing Agency:</u>
Local: -	
<u>Funding Secured</u>	<u>Start</u> Not specified
Foreign: Nil	
Local: -	<u>Duration:</u> 5 years

---

OBJECTIVES: Overall development objective of the project is to assist SADC member States individually and collectively in increasing their fish production up to the limits of maximum sustainable yields, in a co-ordinated and economically justified manner.

The project will have the following immediate objectives of benefit to the individual countries, and SADC Region as a whole:

- (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 SADC as a regional entity, the requirement for realisation of the fisheries development potential with a view to facilitate specific investment and developing decisions in an orderly manner including but not necessarily limited to:
  - a) infrastructure requirements;
  - b) institutional requirements
  - c) development of human resources;
  - d) capital investment requirements;
  - e) needs for technical assistance;
  - f) research requirements.

DESCRIPTION:

The project would be primarily of a technical assistance nature; it would employ 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. 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 operation. Institutional training in the SADC 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, guiding the planning process and training personnel.

STATUS

Funding is being sought.

AAA.4.11 CONSERVATION OF THE BIODIVERSITY OF INLAND WATERS OF THE SADC REGION

Estimated Costs

Total: US\$6.0m  
Foreign: US\$6.0m  
Local: NIL

Financing Gap

US\$6.0 m

Funding Secured

Foreign: NIL  
Local:

Executing Agency

Start

Duration

---

OBJECTIVES: At the seventeenth technical sub-committee meeting of fisheries and wildlife held in Windhoek Namibia 9 - 13 April, 1992, at which all SADC countries were represented, a project proposal was presented, namely, Conservation of the Biodiversity of Lake Malawi/Niassa. This proposed project aims to develop and extend the knowledge base and the technical, institutional and economic mechanisms needed to conserve the biodiversity and ecological integrity of Lake Malawi/Niassa.

The Ministers further recommended that since conservation of biodiversity of living natural resources is an important issue in all SADC countries, this project should be expanded to reflect a biodiversity programme for all inland water bodies of the region. To express this regional interest, it is proposed to change the project's title to Conservation of Biodiversity of Inland Waters of the SADC Region. The activities stipulated in the current project proposal will affect Malawi, Mozambique and Tanzania. Council approved the project.

STATUS: Funding is being sought.

AAA.5.02 REGIONAL HERBARIUM AND CONSERVATION OF ENDANGERED SPECIES.

Estimated Costs

Total: US\$1.7m  
Foreign: US\$1.7m  
Local:

Financing Gap

US\$1.7 m

Funding Secured

Foreign:  
Local:

Executing Agency

SADC Governments

Start

Project proposal approved in 1984.

Duration

---

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 SADC 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 SADC region.

DESCRIPTION:

The project will be implemented in each of the member states, as appropriate.

The project will provide technical assistance to member states in documenting and reviewing their botanical collections and expanding 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.

STATUS:

Funding is being sought.

AAA.5.03 URBAN FUELWOOD PROJECT

Estimated Costs

Total: US\$14.32 m  
LES Component: US\$ 0.28 m  
MAL Component: US\$ 8.90 m  
MOZ Component: US\$ 4.20 m  
TAN Component: US\$ 0.94 m

Financing Gap

US\$6.42 m

Funding Secured

Foreign: US\$6.5 m (NORWAY)  
Local: US\$1.3 m (MALAWI)  
US\$0.1 m (MOZAMBIQUE)

Executing Agency

NORAD  
Each component by  
respective govt.

Start MAL only, 1986.

Duration 6 years

Project proposal approved in 1984.

---

OBJECTIVE: 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 species will be established adjacent to urban centres which face a critical shortage of fuelwood.

Rural development will be stressed as an important incentive and means of sustaining these 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 under implementation. 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.5.04 REGIONAL FOREST INVENTORY

Estimated Cost

Total: US\$6.1 m  
Foreign: US\$6.1 m  
Local:

Financing Gap

US\$6.1 m

Funding Secured

Foreign:  
Local:

Executing Agency

Mozambique, Tanzania  
and Zambia

Start 1991

Project proposal approved in 1987.

Duration 5 years

---

OBJECTIVES: The objectives of this project were revised in 1990, and are as follows:

- (a) To undertake an extensive forest inventory of the SADC 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, in respect to the proposed SADC regional forest inventory.
- (c) To establish a network for the exchange of forest inventory information and expertise among SADC member states.

DESCRIPTION: The project will be based in Mozambique with sub-components in Tanzania and Zambia. All member states will be involved. All member states will be involved.

This project will develop an extensive regional forest inventory based on data and mapping available in the 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.

STATUS: Funding is being sought for the main project.

AAA.5.11 PILOT PROJECT ON REHABILITATION OF MINING AREAS

Estimated Costs

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

Financing Gap

US\$0.70 m

Funding Secured

Foreign:  
Local:

Executing Agency

SADC member states

Start

Duration 5 years

Project proposal approved in 1986.

---

OBJECTIVE: The objective of this project is to establish fuelwood and pole plantations, and to preserve the existing indigenous forests for water catchment in mining areas.

DESCRIPTION: This pilot project will establish and manage plantations, as well as control measures on indigenous forests in mining areas, as a rehabilitation and conservation measure. Successful management practices will be replicated throughout the region.

STATUS : Funding is being sought.

AAA 5.12 COMMUNITY FORESTRY DEVELOPMENT FOR FUELWOOD PRODUCTION, ENVIRONMENTAL CONSERVATION AND RECLAMATION OF DEGRADED LANDS IN SADC MEMBER STATES

Estimated Cost Financing Gap

Total: US\$9.84 m US\$9.84 m

Foreign: US\$9.84 m

Local:

Funding Secured Executing Agency

Foreign: SADC member states

Local:

Start Duration

Project proposal approved in 1986.

---

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 SADC 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 SADC 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: This project will be implemented across all member states.

The project will examine community forestry development programmes in each of the member states 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, regional training programmes and incentive schemes.

STATUS: Funding is being sought.

**MAL.5.1 DEVELOPMENT OF MONTANE FOREST RESOURCES, MALAWI**

Estimated Cost

Total: US\$4.0 m  
Foreign: US\$4.0 m  
Local:

Financing Gap

US\$4.0 m

Funding Secured

Foreign:  
Local:

Executing Agency

Malawi

Start

Duration 5 years

Project proposal approved in 1986.

---

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 SADC countries in Integrated Resource Management Planning.
- (c) To identify other sites in the SADC 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 SADC countries.

The project will identify constraints to rational development 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 SADC member states.

STATUS: Funding is being sought.

AAA.5.17 OPTIMAL MANAGEMENT OF WATERSHED AREAS,

Estimated Cost

Total: US\$0.91 m  
Foreign: US\$0.74 m  
Local: US\$0.17 m

Financing Gap

US\$0.74 m

Funding Secured

Foreign:  
Local: US\$0.17 m (MAL)

Executing Agency

SADC Member states

Start

Duration 10 years

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;
- (b) to select and construct experimental watersheds for collection of data on various forest management and land use practices;
- (c) to study and evaluate physical conditions of experimental watersheds.

DESCRIPTION: This project will initiate field research projects in three small catchment areas and, on the basis of the findings obtained, a set of recommendations on forestry practices for optimal management of watersheds will be prepared and submitted to government for consideration and approval.

STATUS: Funding is being sought.

AAA.5.18 EDIBLE MUSHROOM FARMING

Estimated Cost

Financing Gap

Total:  
Foreign:  
Local:

Funding Secured

Executing Agency

Foreign:  
Local:

SADC member states

Start

Duration

Project proposal approved in 1987.

---

OBJECTIVE:

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.

The project has been incorporated into project AAA.5.20.

A detailed project description for Development of Non-Wood Forest Products in the SADC Region has been prepared.

AAA.5.19 AGRO-FORESTRY IN ARABLE AND PASTORAL FARMING,

Estimated Cost

Total: US\$0.37 m  
Foreign: US\$0.37 m  
Local :

Financing Gap

US\$0.37 m

Funding Secured

Foreign:  
Local:

Executing Agency

SADC member states

Start

Duration 5 years

Project proposal approved in 1987.

---

OBJECTIVES:

The objectives of this project were revised in 1991 and are as follows:

- a) To undertake research on agroforestry species selection for Angola, Botswana, Lesotho Namibia and Swaziland.
- b) To provide training in analysis, design and implementation of agroforestry projects
- c) To establish appropriate demonstration projects.
- d) To promote information exchange through regular meetings and a data base network.

DESCRIPTION:

The project will undertake "diagnostic and design" (D&D) studies at macro and micro level for each country involved. Research trials will be established and results coordinated through a data base network. Demonstration projects will then be established dealing with the main land-use problems where agroforestry is a viable solution. An important component of the project will be development of a training program for both graduate and diploma level training.

STATUS:

Funding is being sought.

AAA.5.20 MANAGEMENT OF INDIGENOUS FORESTS AND THE DEVELOPMENT  
OF NON-WOOD FORESTRY PRODUCTS

Estimated Cost

Total: US\$3.24 m  
Foreign: US\$3.24 m  
Local:

Financing Gap

US\$3.24 m

Funding Secured

Foreign:  
Local:

Executing Agency

SADC member states

Start

Duration 5 years

Project proposal approved in 1987

---

OBJECTIVES: The objectives of this project are:

- (a) To institute sound forest management practices for the indigenous forests of the region.
- (b) To compile data on forest resource inventories, regeneration trials and other research activities for the indigenous forests and the development of non-wood forestry products such as mushrooms and bee-keeping.
- (c) To develop multiple land use plans, including controlled grazing and wildlife management, for the conservation of indigenous forest systems.

DESCRIPTION: The project incorporates former projects AAA.5.18 and AAA.5.21. 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 multiple-use plans for management of the indigenous forests, including sustainable development and utilisation of non-wood forestry products.

STATUS:

Funding is being sought.

AAA.5.21 BEE KEEPING DEVELOPMENT IN THE SADC REGION

Estimated Costs

Financing Gap

Total :  
Foreign :  
Local :

Funding Secured

Executing Agency

Foreign :  
Local :

Lesotho and Zambia

Start

Duration

5 years

---

OBJECTIVE: The objective of this project is to support the development of the bee-keeping industry in the SADC Forestry sector.

DESCRIPTION: 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 and processing methods, and marketing. The project will also include technical training and the establishment of demonstration pilot projects.

The project has been incorporated into project AAA.5.20.

A detailed project description for Development of Non-Wood Forest Products in the SADC region has been prepared.

**AAA.5.23 STRENGTHENING OF FORESTRY RESEARCH INSTITUTIONS**

<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	:	SADC member States
<u>Start</u>		<u>Duration</u>

---

**OBJECTIVES:** The objectives 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 will undertake a comprehensive review, evaluation and analysis of the current situation in forestry and forest products research institutions and programmes in the SADC region.

SADC Project AAA.5.0.6, Fuelwood Research and Development in the High Altitude and Dry Zone Areas of the SADC Region, is integrated with this project.

**STATUS:** The planning phase of this project is funded by FINNIDA, and under implementation.

AAA.5.25 DEVELOPMENT OF FORESTRY INFORMATION MANAGEMENT NETWORK SYSTEM IN THE SADC

Estimated Costs

Total : US\$2.5m  
Foreign : US\$1.7m  
Local : US\$0.8m

Financing Gap

US\$1.7m

Funding Secured

Foreign :  
Local : US\$0.8m (Mal)

Executing Agency

Forestry Sector

Start

Duration

5 Years

---

Data is a prerequisite to sound planning, implementation and management. Any organisation involved with development activities require readily available, easily accessible and high quality data to ensure good management decisions and practices. It was realised during the follow-up visits that member States are not able to supply all requested information because of a number of problems, the major one being inadequate manpower, computer facilities and training in data and information systems. Efforts of the Sector to establish a regional data base may thus be futile unless these major problems facing member States are overcome. It is the primary aim of this proposal, therefore, to improve member States and to strengthen the linkage between the regional (FSTCU) data base and national data bases and promote information networking in the region.

OBJECTIVE:

- i) To strengthen capabilities of member States to develop national data bases.
- ii) To facilitate development of the SADC Forestry programme of action by providing the much needed data base for planning and decision making.
- iii) To promote regional integration through exchange of expertise and information.
- iv) To develop and harmonise standard procedures for data collection, processing, storage, dissemination and exchange.

Project Activities

- i) Development of national forestry data base management information systems, i.e. design of data bases and collection, entry, processing, storage, documentation, dissemination and exchange of data.

- ii) Regional networking and harmonisation of forestry information management systems in the region.

#### Project Inputs

- i) Regionally networked and harmonised Forestry Information Management System.
- ii) Equipment and Facilities: Computer packages for each member State.
- iii) Office space and transport.

#### Project Outputs

- i) Regionally networked and harmonised Forestry Information Management System.
- ii) Comprehensive and rich forestry data bases in all member States.
- iii) Annual Regional and National Forestry Statistical Bulletins.
- iv) Well trained staff and expertise in data base management information systems, and
- v) Improved facilities for data processing and storage.

#### Project Implementation

The project will be managed by the Forestry Sector Technical Coordination Unit and implemented in all ten member States.

#### **STATUS:**

The project is estimated to cost US\$2.5 million over a period of five years. Funding is being sought.

AAA.6.5 REGIONAL WILDLIFE MANAGEMENT TRAINING PROGRAMME

Estimated Costs

Financing Gap US\$5.41m

Total : US\$5.41m  
Foreign : US\$5.41m  
Local : -

Executing Agency  
Sector Coordinating Unit

Funding Secured - Nil

Duration: 5 Years

---

OBJECTIVES:

The general goal of the project is to contribute to the improved management and utilization of the wildlife resource by promotion of appropriate and effective training in order to:

- determine needs for the training of staff at all levels.
- modify, expand or create structures or procedures which will allow derivation of maximum benefits from the investment in the training of staff.
- improve performance of middle level technical managers and through this the work output of low level staff.
- promote the provision of appropriate university training within the region for a selected number of upper level managers.

DESCRIPTION:

On the basis of an EEC funded regional study of the needs and priorities in wildlife management training, these two projects have been merged into a Regional Wildlife Training Programme.

This programme aims at improving regional training facilities for medium and upper level personnel in wildlife and protected areas management. It seeks to harmonize training efforts within the Region and to render training more specific and beneficial to the needs of member countries. Early implementation of the programme is regarded as a top priority for the development of the wildlife sector.

STATUS:

Funding is being sought.

AAA.6.7 CONSERVATION EDUCATION

Estimated Costs

Financing Gap US\$ 0.65m

Total : US\$ 0.65m

Foreign: US\$ 0.65m

Local: -

Executing Agency

Sector Coordinating Unit

Funding Secured Nil

Duration 2 years

---

OBJECTIVES:

In order to increase public acceptance of protection and wise use of natural resources, particularly wildlife, the project will establish a Regional Conservation Education Unit in order to:

- (a) advise member countries on the integration of conservation concepts in school curricula at various levels;
- (b) investigate the availability of audio visual materials and aids already available in the member States and their possible use in others;
- (c) assist member States in the development, production and use of audio visual materials teaching aids; and,
- (d) assist Wildlife Departments and institutions of member states in establishing and operating mobile educational units and various types of non-formal education in selected areas.

DESCRIPTION:

SADC Policies and Strategies for the conservation and wise use of natural resources require support in the social environment through programmes and measures which create environmental awareness. These are beyond the scope of projects dealing with management and use of the natural resources. The project will assess the scope and extent of existing national conservation education programmes and, through a regional workshop, determine the regional needs and priorities. The regional unit will then initiate the production and distribution of educational materials. This two year project is designed mainly as an exploratory phase which should lead to the design of a larger scale and wider-ranging regional programme on environmental education.

STATUS:

Funding is being sought.



AAA.6.11 ENVIRONMENTAL IMPACT ASSESSMENT WORKSHOP

Estimated Costs

Funding Gap US\$0.08m

Total : US\$0.08m  
Foreign : US\$0.08m  
Local :

Executing Agency

Sector Coordinating Unit

Funding secured - nil

Duration: 1 week

---

OBJECTIVES: The objectives of this project are:

- a) to introduce the concepts and methods of Environmental Impact Assessment at national and regional levels to planners and resource managers.
- b) to demonstrate such concepts and methods through case studies conducted on projects within the region.
- c) where possible, to conduct studies of some projects which may still be in the planning process.
- d) to assess the role and scope of EIA in the region and to prepare guidelines of the kind of projects that need EIA.
- e) to discuss ways of introducing EIA in each country of the region.

DESCRIPTION:

The workshop aims at introducing concepts and methods of Environmental Impact Assessment (EIA) into national and regional development planning, particularly where wildlands and wildlife resources are concerned. The workshop will be multidisciplinary involving all other Sectors and is regarded as an instrument for promoting the implementation of the recently adopted SADC Natural Resources Development Strategy. It will be organized jointly with the SADC Sector for Environment and Land Management as soon as funding is secured.

STATUS:

Funding is being sought

AAA.6.13 LAW ENFORCEMENT IN WILDLIFE MANAGEMENT AND UTILIZATION

Estimated Costs

Funding Gap: US\$1.5m

Total : US\$1.5m  
Foreign : US\$1.5m  
Local :

Executing Agency:

Sector Coordinating Unit

Funding Secured - nil

Duration: -

---

OBJECTIVES: The objectives of this project are to:

- a) strengthen and better equip anti-poaching units to combat poaching and illegal trafficking of wildlife products in the region
- b) to develop a regional communication network and to encourage exchange of information on poaching and trafficking

DESCRIPTION: The project will seek to enhance the enforcement of wildlife protection in strategic border areas and to assist Wildlife Administrations in the control and monitoring of the intra-regional trade in wildlife products. The project is being reformulated so that it covers all SADC countries. The project comprises consultancy services, a training element and logistical support.

STATUS: Funding sought. (Funding for the training element has been pledged by EEC under Project AAA.6.5).

AAA.6.17 REGIONAL WILDLIFE RESOURCES INVENTORY

Estimated Costs  
Total: US\$5.0m  
Foreign: US\$5.0m  
Local:

Financing Gap US\$5.0m

Executing Agency

Sector Coordinating Unit

Funding Secured Nil

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 standardized 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 SADC 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 of 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 sought. EEC have agreed to fund the investigative consultancy which will produce a project dossier. A consultant has been recruited to carry out the consultancy. Project budget has been revised from US\$2.1m to US\$5.0m.

AAA.6.15 COORDINATION OF REGIONAL TSETSE FLY ERADICATION WITH  
WILDLIFE MANAGEMENT PROGRAMMES

Estimated Costs

Financing Gap US\$0.04m

Total : US\$0.04m

Foreign: US\$0.04m

Local: nil

Executing Agency

Sector Coordinating Unit

Funding Secured: Nil

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 SADC 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 utilization 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 harmonized with the conservation and sustained utilization of wildlife. These recommendations will then form the basis for the development of concrete projects aimed at securing the protection of wildlife resources in those areas cleared of tsetse fly; and the development of specific follow-up projects on rural wildlife utilization. The project will be implemented jointly with the Livestock Production and Animal Disease Control Sector.

STATUS: Funding is being sought.

AAA.6.19 SATELLITE TRACKING OF ELEPHANT MOVEMENTS ACROSS NATIONAL BORDERS

Estimated Costs

Financing Gap: US\$1.0.m

Total : US\$1.0m  
Foreign : US\$1.0m  
Local :

Executing Agency

Sector Coordinating Unit

Funding Secured - Nil

Duration 2 years

---

OBJECTIVES: The objectives of this project are to:

- a) establish accurate elephant population figures in trans-national protected areas within SADC.
- b) determine transborder movements of elephants occurring in conservation areas adjacent to national borders.

DESCRIPTION: The project aims at enumerating and monitoring the seasonal movements of elephant populations in conservation areas lying along or near national borders in the region and the extent to which these elephants migrate across national borders.

STATUS: Funding is being sought.

AAA.6.20 STUDY OF WILDLIFE CAPTURE, CROPPING AND CULLING  
TECHNIQUES.

Estimated Costs

Financing Gap: US\$0.55m

Total : US\$0.55m  
Foreign : US\$0.55m  
Local : -

Executing Agency  
Sector Coordinating Unit

Funding Secured - nil

Duration: 2.5 years

---

OBJECTIVES: The objectives of this project are to:

- a) collect and collate information on existing techniques on Wildlife Capture, Cropping and Culling.
- b) produce a practical handbook on such techniques for capture, cropping and culling of animals and skinning, drying, smoking and packaging of meat and skins.
- c) train local communities interested in wildlife utilization schemes in the most efficient methods of cropping or culling as well as marketing strategies of the products.
- d) identify areas where sustainable utilization can be established and assist in the planning and early implementation of the project.
- e) ensure accruals of revenue from wildlife utilization to local communities.

DESCRIPTION: The SADC region does not have comprehensive wildlife expertise. As a result enormous revenue is lost due to poor handling and treatment of wildlife products. At the conclusion of this project the following benefits should be expected:

- improved techniques in capture, cropping and culling of wildlife.
- improved techniques in treatment and preservation of meat and other perishable products.
- increased value for wildlife and wildlife products.

STATUS:

Funding is being sought.

Zim.6.1 DEVELOPMENT OF OSTRICH PRODUCTION SYSTEMS

Estimated Costs

Total : US\$2.0m  
Foreign : US\$1.26m  
Local : US\$0.74m

Financing Gap US\$1.26m

Executing Agency

Sector Coordinating

Funding Secured

Foreign: Nil  
Local: US\$0.74m

Duration: 3 years (with possible extension)

---

OBJECTIVES:

The project will foster the development of ostrich production in the 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 SADC member states concerned with the survey and sustainable utilization 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, ostrich research, and marketing 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 local human populations. The technical know-how and markets are carefully guarded by South Africa, although several SADC member states, notably Botswana and Zimbabwe, have abundant wild ostrich resources. These could serve as a basis for the development of ostrich production systems in the 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 systems in the Region, which will:

- (a) 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 private enterprise; and
- (c) provide specialized research and extension services for individuals and technical departments of member countries and research into international markets for ostrich products.

**STATUS:**

Funding is being sought.

Zim.6.2 RHINO CONSERVATION PROGRAMME

Estimated Costs:

Total : US\$3.54m  
Foreign : US\$3.0m  
Local : US\$0.54m

Financing Gap: US\$3.0m

Executing Agency

Zimbabwe Government/Sector  
Coordinating Unit

Funding Secured

Foreign: Nil  
Local: US\$0.54m (Zimbabwe)

Duration: 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 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 relict 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 SADC member states in the formulation and implementation of such active policies. To this end, a Rhino Conservation Centre will be established in Zimbabwe, the last of the SADC member states holding a viable wild rhino population, as a focal point for specific conservation activities.

The centre will pursue these objectives by 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 is being sought.

Bot.6.1 ESTABLISHMENT OF SOUTHERN AFRICAN CENTRE FOR IVORY  
MARKETING (SACIM)

Estimated Costs

Funding Gap US\$0.25m

Total : US\$0.75m

Foreign: US\$0.25m

Local : US\$0.5m

Executing Agency

Funding Secured: - Nil

Local: US\$0.5m (SADC)

Duration: 2 years

---

OBJECTIVES:

The objectives of this project are to:

- a) to establish a regional facility for the marketing of raw ivory
- b) to provide an efficient and effective mechanism to control the trade in ivory
- c) to mobilise resource for the sustainable management and conservation of elephants.

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 maximize 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.

STATUS:

Funding is being sought.

ANG.6.1 REHABILITATION AND DEVELOPMENT OF KISSAMA NATIONAL PARK

Estimated Costs

Total : US\$2.92m  
Foreign : US\$2.41m  
Local : US\$0.51m

Financing Gap US\$2.41m

Executing Agency

Government of the Republic of Angola

Funding Secured - Nil  
Local: US\$0.51m

Duration 2 Years

---

OBJECTIVES: The objectives of this project are:

- a) to support the Government of Angola in the establishment and management of a network of wildlife areas for science, education, recreation, tourism, and general environmental preservation.
- b) to assist in planning of national parks development.
- c) rehabilitation and management of Kissama National Park as a focal point for the enhancement of wildlife and nature conservation.

DESCRIPTION: The first phase will render assistance to the Ministry of Agriculture in reviewing the legal, administrative and infrastructural status of wildlife conservation areas. On the basis of this review, it will recommend the most appropriate administrative structure for the development and management of wildlife in general, and for Kissama National Park in particular. The project will also elaborate a master plan for rehabilitation and management of the Kissama National Park, identifying capital, and recurrent costs and personnel requirements.

In phase two, the project will support Kissama National Park technically and financially in rehabilitation and management work. The second phase is capital intensive.

STATUS: Funding is being sought

## AAA.6.6 REGIONAL WETLANDS CONSERVATION PROGRAMME PHASE II

### A. Background

There is a diversity of types of wetlands and wetland utilization patterns in the region. In the regional context, wetlands include:

1) intertidal and subtidal marine systems, 2) estuarine systems, 3) lakes (both natural and man-made), 4) riverine systems, 5) floodplains, 6) swamps and marshes and 7) dambos. Wetland ecosystems play a central role in the water cycle. They absorb floodwaters and regulate floods, helping to ensure a year-round water supply; they absorb nutrients and retain sediments, thus ensuring cleaner water; and they buffer wave and wind action, protecting coastal areas from storms. In addition to these ecological and hydrological functions, they provide a wide range of products which can be harvested sustainably. Within the SADC region they constitute the basis of large fishing industries, provide fuel and forest products and constitute key resources for livestock and crop production. Many support diverse wildlife populations which form the bases of a major tourist and safari industry.

Human activities in the region have resulted in serious wetland degradation and loss. Some of the threats on wetlands relate to dam building, irrigation, vegetation destruction through wood harvesting or cultivation, poaching, overfishing, overgrazing and water extraction. Wetland degradation and loss is ultimately a consequence of inadequate planning, sub-optimal policies, inadequate management institutions and methods and poor law enforcement. Underlying all of these is a poor understanding of the role and value of wetlands. Much of the current wetland degradation is avoidable, and leads to substantial negative impacts upon local communities which depend upon the resources.

The proposed programme draws on the activities of SADC and IUCN. In 1990 SADC implemented a three phase regional wetlands conservation programme in collaboration with IUCN and with funding from NORAD. It included a survey of all SADC wetlands, a SADC conference and the publication of a wetlands report. The latter was a comprehensive publication dealing with wetlands of the region, their value and an action plan for their conservation and utilization (SADC, 1991: Wetlands: A Conservation Programme for Southern Africa). At an international level, the IUCN Wetlands Programme has reviewed current issues and required action (IUCN, 1990: Wetland Conservation). The IUCN maintains a Wetland Programme Coordinator within its Regional Office for Southern Africa.

## B. Justification

There is a daunting array of issues which need urgent action if real progress is to be made in conserving and sustainably utilizing wetlands. Concerted strategies are required, including inventory, assessment, and the development of legislation and other administrative mechanisms to control utilization of wetlands. There is an urgent need for a reorientation of policy, management and training. It is widely recognised that it is critically important to address the social and economic forces driving wetland degradation.

The present programme concentrates on many of the above issues. It includes the following components: 1) awareness raising; 2) training for planners and managers and 3) support for field projects that lead to the implementation of management plans.

A regional programme is essential as some of the wetlands form international boundaries, all the wetland types are found in at least four SADC countries and degradation of certain wetland types leads to downstream problems in neighbouring countries.

The proposed programme will form the basis of on-the-ground activities which will lead to the conservation and sustainable utilization of wetland resources. The programme will provide a network of activities which can support national and regional institutions to invest more effectively in the conservation and utilization of these resources.

## C. Expected benefits

The programme will lead to greater regional co-operation on mutual problems. Cross-boundary interactions between policy makers, planners, managers, researchers and trainers will improve management of wetlands, assist in the identification of priorities and focus research. Better management of wetland resources will lead to less environmental costs, both for the country concerned and downstream neighbouring countries. It will also lead to long-term resource productivity.

The programme will result in greater awareness of wetland roles and values, in more relevant policy and legislation, in a cadre of well-trained resource managers and planners, and will be the first step in the implementation of wetland management plans.

## D. Objectives

### **Overall objective**

The overall objective of the programme is to promote sustainable utilization of wetland resources, thus conserving the ecological and hydrological processes of wetlands and ensuring a flow of products from the wetlands.

## Specific objectives

The three specific objectives are:

- 1) To promote an awareness of the role, value and appropriate uses of wetlands amongst policy makers, resource planners, resource managers, extension workers and users of wetlands;
- 2) To train personnel in wetland planning and management and wardening, and
- 3) To provide national governments, on the basis of specific requests, with the resources to undertake inventories of wetlands, to formulate management plans and to prepare project proposals for the implementation of management plans.

### E. Project conception

The present project arose out of the SADC wetland conservation survey report, and enables SADC to provide support to countries interested in implementing the policy framework agreed at the SADC Wetlands Conference in Gaborone (June 1991). Through the SADC Forestry, Fisheries and Wildlife Unit in Malawi, SADC will thus facilitate and catalyse wetland's conservation initiatives by member states.

### F. Required project inputs

#### Personnel

One Programme Coordinator (preferably a national of SADC) will need to be recruited. The Coordinator will be responsible for recruiting further consultants for short-term contracts, where appropriate.

#### Equipment

The Programme Coordinator needs a vehicle and personal computer.

#### Operational costs

The operational costs need to cover the running costs of the programme (e.g. office, stationery, communications), the costs of seminars and training workshops and the cost of the project support services.

### G. Project activities

#### 1) Duration and phasing

The duration of the project is three years. All of the three components to the project will be initiated at the start of the project. Seminars for policy makers and training workshops will be spread out throughout the project period.

## 2) Description of components

There will be three components to the project, each addressing one of the three specific objectives.

### Component One: Awareness raising

Campaigns should be mounted to:

- 1) promote an awareness of the role, value and appropriate uses of wetlands;
- 2) catalyse activities by policy makers, researchers, planners and managers of wetlands; and
- 3) catalyse and support actions by local communities.

This component will consist of two parts, one directed at a broad audience and one directed specifically at policy makers.

The broad awareness campaign will include various activities. Some possible activities are as follows:

- 1) The making of a wetlands calendar for dissemination to policy makers, planners, managers, researchers and local councils;
- 2) The production of a video that deals with the products and services that wetlands provide; the nature and effects of mismanagement; and the appropriate management techniques. It should be directed at the national television, at the policy maker's seminars and at training courses such as described in component two;
- 3) The commissioning of a local playwright to prepare a short play on wetlands and the production of a video on the play or dissemination at local training centres;
- 4) The preparation of pamphlets and posters.

The awareness campaign directed specifically at policy makers will be conducted by means of day or half-day seminars. The aim of this activity is to:

- 1) raise awareness of the role and value of wetlands
- 2) clarify the salient and pertinent issues relating to the state of wetlands;
- 3) focus on the management decisions relating to the conservation and utilization of wetlands;
- 4) draw attention to regional conflicts and their resolution;

- 5) deal with the institutional, policy and legislative framework required to solve wetland problems;
- 6) highlight further areas requiring research or technical development, and
- 7) clarify to participants the project identification services provided by SADC (component three).

There should be one seminar in all or most SADC countries. The seminars will be targeted at policy makers and high-level managers, technical advisors and planners. Researchers and/or consultants will prepare specific background papers for the seminars. Workshop participants should include heads of ministries, permanent secretaries and heads of departments. The relevant departments are those which cover water, forestry, wildlife, fisheries and natural resources. Awareness raising activities within the seminars will include the dissemination of materials, pamphlets and videos related to the subject.

Component Two: Training workshops for planners and managers

The definition of wetlands is very broad and covers a wide range of issues which often cannot be covered within a single coherent framework. For purposes of project activities the following four categories of wetland types should be recognised:

- 1) marine and estuarine systems;
- 2) lakes;
- 3) rivers, floodplains, swamps and marshes;
- 4) dambos.

Because of the diversity of wetlands, at least four workshops need to be organized, each covering a specific wetland type. To achieve the set aims, each workshop should have many participants from many countries. Existing SADC procedure is that there are usually three representatives from each member country. Because of the diversity of issues to be tackled within a single wetland type, there should be at least five representatives from each country at each workshop.

The following is a suggested list of countries to be represented at each workshop:

- Workshop on marine and estuarine systems - Angola, Mozambique, Namibia and Tanzania.
- Workshop on riverine systems (including marshes, swamps and floodplains) - Botswana, Zambia, Lesotho, Swaziland, Namibia

- Workshop on lakes - Zimbabwe, Malawi, Lesotho, Mozambique, Tanzania
- Workshop on dambos - Angola, Zimbabwe, Zambia, Malawi

Each workshop should be of ten days to two weeks duration. The aim would be to provide the participants with intensive instruction in the integration of wetland management and rural development. The courses should be directed towards planners, managers and trainers of field personnel (the latter will ensure a trickle down effect to field managers, extension staff and, ultimately, the people themselves).

The course should cover the following topics: the definition, nature, extent, role and value of wetlands; the policy and legal framework for resource management; present and proposed management strategies; participatory approaches to research and development; field techniques for wetland quality monitoring; economic evaluation of wetland benefits; planning techniques; the production and implementation of management plans; the design and supervision of environmental assessment studies, and the evaluation procedures for development projects.

The course should consist of two parts. The first part should be class-room centered, and consist of lectures, practical sessions and short field trip. The second part should be largely field-based and consist of a group activity in which the group actually undertakes a rapid environmental appraisal based on the participatory research approach. This will enable participants to return to 'their wetlands' and prepare preliminary assessments which could be the basis for preparing inventories, management plans and ultimately project documents to fund the implementation of plans.

The programme should allow for ample time for discussion, and the analysis of specific problems encountered by some participants in the course of their own duty. A key objective of these workshops is to promote an integral approach to conservation and sustainable utilization of the region's wetlands.

### Component Three: Project identification support services

This component of the programme seeks to establish a capability within SADC to assist member states to identify, screen and produce project proposals on wetland-related topics. The technical unit within SADC will act as a catalyst or facilitator, either the project proposals being written by teams within the member countries.

This component should result in a series of field projects, as each project proposal will include the following:

- 1) A specific wetland will be surveyed from a biological, ecological, socio-economic and land-use point of view;
- 2) Inventories should be made of the products and

services obtained from each part of the wetland system, and the requirements to sustain these should be determined;

- 3) The short and long term impacts of water and land use changes should be determined;
- 4) Community views on conservation and development issues and community expressions of needs and aspirations should be investigated;
- 5) The formulation of a plan for development which meets the social and economic needs of the people in a sustainable fashion;
- 6) A proposal for the implementation of the management plan to be submitted by the individual member countries to donor organization for funding.

For these purposes a fund will be established by SADC to provide financial support for such studies upon application by member countries. The SADC unit will provide funding for up to ten field studies, each leading to project proposals; the funding will cover the running costs of the team undertaking the studies, and consultants fees, where necessary.

To achieve the above the SADC unit needs to create project proposal guidelines; create a directory of research and expertise in the region; dissemination of information about the services and funding provided; create within it an ability to prioritise areas of concern. It is envisaged that this programme will benefit from close collaboration with IUCN's wetlands programme for the region.

#### H. Cost estimate

For three years in US\$

	US\$
<b>Salaries</b>	
One full-time Programme Coordinator	200,000
<b>Equipment</b>	
One vehicle	20,000
One computer	5,000
<b>Running costs</b>	
Fuel and Maintenance	9,000
Air travel for Coordinator	19,500
Per diems for Coordinator	45,000
Office expenses and communications	20,000

Component one

Videos	80,000
Publications	25,000
Seminars	
Consultants	
fees	60,000
per diems	9,000
airfares	10,000
Hiring rooms, transport etc.	100,000

Component two

Air-tickets	50,000
Per diems	150,000
Hiring facilities, local transport	150,000
Trainer's fees	90,000

Component three

Fund for servicing projects	250,000
-----------------------------	---------

TOTAL 1,292,500

Budget notes  
Salaries

One full-time Programme Coordinator: This includes costs of international recruitment.

Equipment

One vehicle: cost of two-wheel drive.  
One computer, inclusive of software and accessories.

Running costs

Air travel for Coordinator  
1 international ticket per year (\$2,000 each) and 6 regional tickets per year (\$500 each).

Per diems for Coordinator  
7 trips per year at \$150/day for 10 days each.

Component one

Videos Two 30 minute videos in english  
Publications, including cost of calendar, pamphlets  
Seminars (ten)

Consultants

fees Ten consultants, each contracted to prepare and

283

present a key paper for the seminars. 1 month each x \$6000/month.

per diems Two non-local consultants per meeting x 3 days x \$150/day

airfares Two tickets per meeting x \$500 each.

Hiring seminar rooms, publications, local transport.

Component two

Air-tickets: 20 persons at \$500 each for four courses  
Per diems : 20 persons at \$150/day for 10 days for four course.  
Hiring seminar rooms, hiring local vehicles for field work, publications.  
Trainer's fees (3 trainers per course, 10 days on the course and 20 days preparation at \$250/day).

Component three

Fund the servicing projects: this fund can be used for servicing 10 projects at an average of \$25,000 per project. Within each project, provision is made for covering running costs (mileage, aerial photographs etc. and for 2-person months of consultancy fees).

STATUS : Funding being sought

# 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					
INLAND FISHERIES								
AAA.4.3	Support to SADC Coordination of Inland Fisheries, Forestry and Wildlife	0.40	0.40	-	0.40 (EC)	-	-	Under implementation, has been extended for two more years.
AAA.4.5	Regional Fisheries Training Programme	9.67	9.67	-	0.20 (NOR) 0.26 (ICE)	2.00 (NOR)	7.21	Preparatory phase completed under NORAD funding, pre-implementation phase has been started under ICEIDA funding.
AAA.4.6	Regional Fisheries Documentation System	7.26	6.09	1.17	1.17 (MAL)	-	6.09	Feasibility study done. Funding sought.
AAA.4.6 (1)	Computerisation of Inland Fisheries Statistics	0.32	0.32	-	-	0.32 (DEN)	-	Funding under negotiation with DAVIDA.
AAA.4.7	Development of Aquaculture in SADC (including 4 individual sub-projects)	19.74	19.28	0.46	7.07 (SWE) 0.46 (ANG)	2.20 (BEL)	10.01	Additional funding sought.
AAA.4.8	Provision of Fisheries Extension Services	3.33	3.33	-	-	3.33 (EC)	-	Funding under negotiation with EC.
AAA.4.10	Support to SADC Fisheries Coordination Unit	0.28	0.28	-	0.28 (ICE)	-	-	Under implementation, has been extended for two more years.
AAA.4.11	Conservation of Biodiversity of Inland Waters of the SADC Region	6.00	6.00	-	-	-	6.00	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 in Lesotho	0.31	0.31	-	0.31 (FAO)	-	-	Completed.
MAL.4.1	Joint Research of Pelagic Fisheries Resources of Lake Malawi/Nyadza	6.30	6.30	-	6.30 (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.
ZAM.4.1	Zambia/Zimbabwe SADC Fisheries Project (Lake Kariba)	8.34	8.34	-	0.77 (DEN) 7.57 (NOR)	-	-	Pre-Project phase complete. Project under implementation.
TOTAL		67.53	65.90	1.63	25.54	7.85	34.14	

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	US\$ Million			
FORESTRY								
AAA.5.1	Special Facility for a SADC Forestry Project Development	3.00	2.40	0.60	2.40 (CAN) 0.60 (SADC)	-	-	Under implementation. The project includes projects AAA.5.7, AAA.5.10
AAA.5.2	The establishment of a SADC 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	-	7.60 (MOR)	-	0.28	Malawi Component
	Malawi	8.90	7.60	1.30	1.30 (MOR)(MAL)	-	-	Being implemented.
	Mozambique	4.20	4.10	0.10	0.10 (MOZ)	-	4.00	Funding being sought for other components.
	Tanzania	0.94	0.94	-	-	-	0.94	
AAA.5.4	Regional Forestry Inventory Project	6.10	6.10	-	-	-	6.10	Project Preparation Mission undertaken through project AAA.5.1 to develop project document. Funding sought.
AAA.5.5	Regional Tree Seed Centre Network	12.00	12.00	-	12.00 (CAN)	-	-	Agreement signed and implementation will start shortly.
AAA.5.9	Improvement and Strengthening of Forestry Colleges in the SADC Region	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	1.95	1.95 (LES)	-	-	-	1.95	Funding sought
	Development for Fuelwood	2.85	2.85 (MOZ)	-	-	-	2.85	Funding sought.
	Production, Environment	3.84	3.84 (TAN)	-	-	-	3.84	Funding sought
	Conservation and Reclamation of Degraded Lands	1.20	1.20 (ZAM)	-	-	-	1.20	Funding sought.
AAA.5.13	Development of Montane Forest Resources	4.00	4.00	-	-	-	4.00	Funding sought.
LES.5.1	Village Fuelwood Plantation Project	5.39	2.02	3.37	2.02 (UK) 3.37 (LES)	-	-	Project under implementation.
TAN.5.1	Centre for Advanced Practical Forestry Training Areas	4.60	4.60	4.60 (MOR)	-	-	-	Implementation has started.

Project	Project Title	Estimated Cost US\$ Million		Funding Secured & Source	Funding under Negotiation US\$ Million	Financing Gap US\$ Million	Comments/Status	
		Total	Foreign	Local				US\$ Million
AAA.5.17	Optimal Management of Watershed Areas	0.91	0.74	0.17 (MAL)	-	0.74	Funding sought.	
AAA.5.18	Edible Mushroom Farming and Development	-	-	-	-	-	Incorporated into project AAA.5.20	
AAA.5.19	Agro-Forestry in Arable & Pastoral Farming	0.37	0.37	-	-	0.37	Funding sought.	
AAA.5.20	Management of Indigenous Forests and Development of Non-wood Products	3.24	3.24	-	-	3.24	Project incorporates project AAA.5.16 and AAA.5.21	
AAA.5.21	Beekeeping Development in the SADC Region	-	-	-	-	-	Incorporated into project AAA.5.20.	
AAA.5.22	Rural Plantation and Timber Processing in the SADC Region	1.07 3.26 4.12	1.07 (LES) 3.26 (TAN) 4.12 (ZAM)	- - -	- - -	1.07 3.26 4.12	Funding sought. Funding sought. Funding sought.	
AAA.5.23	Strengthening of Forest Research Institutions and Fuelwood Research in High Altitude and Dry Zone Areas	14.87	14.87	0.38 (FIN)	-	14.49	Project includes AAA.5.6	
AAA.5.25	Forestry Information Network Development	2.5	1.7	0.8	0.8 (MAL)	-	1.7	Funding sought.
TOTAL		130.33	123.99	6.34	73.68	56.65		

PROJECT	PROJECT TITLE	TOTAL	ESTIMATED COST FOREIGN US\$ MILLION	LOCAL	FUNDING SECURED & SOURCE US\$ MILLION	FUNDING UNDER NEGOTIATION US\$ MILLION	FINANCING GAP US\$ MILLION	COMMENTS/STATUS
WILDLIFE								
AAA.6.2	Support to Wildlife Coordination Unit	-	-	-	-	-	-	Implementation started mid-1990
AAA.6.3	Relief Programme for Drought Stricken Wildlife Areas	-	-	-	-	-	-	Project to be reformulated
AAA.6.4	Processing and Marketing of Durable Products	-	-	-	-	-	-	Completed
AAA.6.5	Regional Wildlife Training Programme	5.41	5.41	-	-	-	5.41	Investigative Consultancy completed. Funding is being sought
AAA.6.6	Wetlands Conservation (Phase II)	1.29	1.29	-	-	-	1.29	Funding sought for Phase II
AAA.6.7	Conservative Education	0.65	0.65	-	-	-	0.65	Funding sought
AAA.6.8	Infrastructure Development in Conservation Areas (includes three components)							
	Angola	2.92	2.41	0.51	0.51 (ANG)	-	2.41	Funding sought
	Lesotho		-	-	-	-	-	Funding sought
	Swaziland		-	-	-	-	-	Funding sought
AAA.6.11	Environmental Impact Assessment Workshop	0.08	0.08	-	-	-	0.08	Funding sought
AAA.6.13	Law Enforcement in Wildlife Management Utilisation	1.5	1.5	-	-	-	1.5	Funding sought
AAA.6.14	Crocodile Management and Utilisation	-	-	-	-	-	-	Project implemented
AAA.6.15	Coordination of Tsetse Fly Eradication and Wildlife Programme	0.04	0.04	-	-	-	0.04	Funding sought
AAA.6.16	Regional Development of Community Based Management and Utilisation of Wildlife	32.70	20.10	12.60	20.10 (USA,BOT,MAL, ZIM)	-	-	All components Botswana, Malawi, Zambia and Zimbabwe under implementation. Project Coordinator started work in August 1991.

AAA.6.17 Regional Wildlife Resource Inventory	5.00	5.00	-	-	-	5.00	Investigative Consultancy completed Project Dossier under preparation
AAA.6.18 Regional Survey of Wildlife Utilisation and the Economic Potential of the Wildlife Resource	0.23	0.23	0.23	0.23 (FAO)	-	-	FAO funding secured. Project implemented
AAA.6.19 Satellite Tracking of Elephant Movements Across National Borders	1.0	1.0	-	-	-	1.0	Funding sought
AAA.6.20 Study of Wildlife Capture, Crepping and Culling Techniques	0.55	0.55	-	-	-	0.55	Funding sought
BOT.6.1 Southern African Centre for Ivory Marketing	0.75	0.25	0.50	0.50 (SADC)	-	0.25	Agreement signed by SACIM members. Funding will be provided by SADC member States involved
ZIM.6.1 Development of Ostrich Production Systems	2.0	1.26	0.74	0.74 (ZIM)	-	1.26	Funding sought
ZIM.6.2 Regional Rhino Conservation Programme	3.54	3.0	0.54	0.54 (ZIM)	-	3.0	Funding sought
TOTALS	57.66	42.77	14.89	35.22	-	22.44	

# Marine Fishers and Resources

C O N T E N T S

	<u>PAGES</u>
EXECUTIVE SUMMARY	1
REVIEW OF THE REGIONAL SITUATION	2
REVIEW OF THE PROGRAMME	3
CURRENT STATUS OF PROJECTS	4
PROJECT DESCRIPTION	7
FUNDING STATUS OF PROJECTS	8

## 1.0 EXECUTIVE SUMMARY

1.1 At its meeting, in August 1991, the SADC Council of Ministers formally allocated to Namibia the sector of Marine Fisheries and Resources, in accordance with the policy of the organisation., Accordingly, Malawi, former Marine Fisheries Coordinating country, and Namibia, have proceeded and finalised the transfer of marine projects and documents to Namibia.

Following consultation with Malawi and the SADC Secretariat, Namibia is now finalising the organisation and staffing of the SADC Coordinating Office for Marine Fisheries and Resources.

1.2 The Marine Fisheries sub-sector programme aims at the development of Marine Fisheries and Resources. Namibia's accession to SADC has raised the catch tonnage for marine fisheries to 1300,000 tonnes. The potential of the Marine Fisheries is, however, far from being realised. Future development action therefore is primarily focused on the assessment of this potential and realisation of its sustainable exploitation.

1.3 Marine Fisheries can potentially satisfy the growing demand for animal protein, particularly amongst low income groups. Furthermore, marine fish could become an important foreign exchange and cash income earner for coastal states such as Angola, Mozambique and Namibia. To this end, the marine fisheries programme should be geared towards development of regional resources assessment, management and surveillance systems, labour intensive and value adding technologies, and internal and external markets.

1.4 The Marine Fisheries Sector has six (6) projects approved under the SADC Fisheries Programme of Action. Only one has secured funding. The rest of the projects are seeking funding.

1.5 Negotiations are under way with the Nordics (except Finland) and EEC to fund Project oz. 4.2: Assessment of Marine Fisheries Resources of the SADC 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 for implementation and produce a detailed working document. Funding is being sought for the project planning workshop.

1.6 The Marine Fisheries Programme has a project (AAA 4.12) entitled Establishment of Marine Fisheries Inspectorates in SADC Region. The objective of the project is:

- to establish and train staff for a designated inspectorate unit within the fisheries Ministry/Department of each SADC Member State which will be capable of undertaking effective measures to

control and monitor marine fisheries activities within the country's Exclusive Economic Zone (EEZ).

The estimated cost of the project is US\$ 13 million.

1.7 The SADC Marine Fisheries and Resources Coordinating Office is continuing the strengthening of links between Member States in order to promote initiation and speedy development of Marine Fisheries projects. It is envisaged that visits to Member states in this regard will take place during the course of the year.

## 2. REVIEW OF THE REGIONAL SITUATION

2.1 The maritime Member states of the SADC abounds with a variety of marine fish resources. The recent accession of Namibia has raised the estimated annual catch tonnage from 600,000 to 1.3 million.

2.2 The catch potential however, is much greater than the present output. The fisheries potential of the SADC region could easily yield an annual catch of 2.0 million tonnes provided good conservation, management policies and practises are applied. However, uncertainty about true marine fish biomass levels for increased but sustainable catches has to be resolved before any significant expansion beyond current catch levels can be encouraged.

2.3 Fish constitutes a major source of animal protein, particularly in the diet of the rural populations of most of SADC Member states. This is due to its relatively low price. However, growth in fish production is lagging behind when compared to the rapid population growth rate, the demand for fish requires an additional fish production of 550,000 tonnes per annum in order for fish production to catch up with the demand by year 2000.

2.4 It is therefore essential that efforts are made to increase production and sustainable utilisation of the marine fish resource in the region. In this regard, it is necessary to introduce technologies minimising catching and post-catching losses and to come forward with regional resources assessment, management and surveillance systems.

2.5 The demand for demersal and crustacean fish products appear to be on the increase particularly in the EEC and Far East regions, respectively. Thus, marine fisheries could become an important foreign exchange and cash income earner. This could better be achieved by improvement of both artisanal and industrial fisheries in turn leading to more employment opportunities, and by the development of internal and external markets and distribution capacities for marine products.

### 3. REVIEW OF THE PROGRAMME

- 3.1 The SADC Marine Fisheries Development Programme generally aims at the sustainable exploitation of the marine fisheries thus making a significant and lasting contribution to the overall socio-economic development of the region.
- 3.2 The SADC Seminar on Needs and Priorities for development of Marine Fisheries, Luanda, May 1989, identified regional needs in areas as outline below:
1. Training and institutional capacity building
  2. Research and resources assessment
  3. Surveillance and control
  4. Fish handling, processing and quality control
  5. Distribution and Marketing
- 3.3 The main objective of the Marine Fisheries Sector therefore is to strengthen the role of artisanal and industrial fisheries as a source of food, income and employment. This means that specific regional objectives include:
1. maximisation of sustainable yields;
  2. fish supply as food particularly to vulnerable and low income groups;
  3. significant increase in the contribution to the gross domestic product.
- 3.4 Strategies to achieve these objectives will include:
1. establishing regional/joint resources assessment surveillance and management systems;
  2. stepping up of training efforts in the marine engineering, nautical and fisheries fields;
  3. promoting development of labour intensive and value adding technologies and industries;
  4. facilitating adoption of common import and export strategies and promoting intra-regional trade;
  5. promoting common approached in entering fishing agreements;
  6. promoting minimisation of catching and post-catching losses.
- 3.5 The marine fisheries sector has started with the process of Sector Analysis and Planning. As outlined above, regional marine fisheries objectives were drafted and extensive lines of strategies proposed. A team of experts, involving representatives of member States and an outside expert has

been constituted. The team of experts guided by agreed terms of references will proceed with the collection, review and analysis of national marine fisheries plans and formulate a regional strategy and a review of the programme of action.

- 3.6 The mandate of the Sector covers other marine resources apart from fish species. Member states have agreed that "marine resources" is understood to mean living marine resources. An inventory list of commercially important living marine resources is being compiled. Further, it is suggested that a SADC study on sustainable utilisation of living marine resources be started.
- 3.7 The Sector has six projects all essential in respect of development priorities objectives and strategies outlined above. Only one has secured funding, while funding is sought for others. The project on 'Support to the SADC Fisheries Coordination Unit' funded by ICEIDA was considered by both SADC Coordinators for Inland and Marine Fisheries to be primarily oriented towards marine fisheries and therefore was transferred to Namibia.
- 3.8 Member states have agreed that new projects should be initiated and developed within the framework of the Luanda Seminar on SADC Marine Fisheries Needs and Priorities of 1989.
- 3.9 In order to appraise unfunded projects a project workshop involving Fisheries Directors, experts and cooperating partners is scheduled to take place in October, 1992. Mozambique has been requested to hold this workshop.

It is suggested that projects, Moz. 4.2 Assessment of Marine Fisheries and Resources of the SADC Region and AAA. 4.12 Establishment of SADC Marine Fisheries Surveillance and Inspectorate Units, should be split each into two sub-projects in order to facilitate fast and smooth implementation and appropriately cater for specific needs in the SADC Indian Ocean Region on one hand and the Atlantic Ocean Region on the other.

#### 4. CURRENT STATUS OF PROJECTS

##### 4.1 Project No aaa. 4.9 - Establishment of Regional 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, vessels and time. Estimated cost is US\$0.14 million. Funding is being sought.

4.2 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.

4.3 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 SADC member States.

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

4.4 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.

4.5 Project No MOZ.4.2 - Assessment of the Marine Fisheries Resources of the SADC Region

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

- (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 SADC national 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.

Negotiations are under way with Nordic countries (except Finland) and EEC, to fund the 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.

#### 4.6 Project AAA.4.12 - Establishment of Marine Fisheries Inspectorates in the SADC Region

The project aims:-

To establish and train staff for a designated unit within the Fisheries Ministry/Department of each SADC member 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\$13,00 million.

# Project Descriptions

MOZ.4.1 QUALITY CONTROL AND STANDARDIZATION OF FISHERY PRODUCTS

<u>Estimated Costs</u>		<u>Financing Gap</u>
Total:	US\$ 1.80m	US\$ 1.30m
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 SADC 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 SADC 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 ASSESSMENT OF MARINE FISHERS  
RESOURCES OF THE SADC 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 SADC 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 SADC 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 SADC 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 SADC 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 SADC coastal State, the donor(s) involved and representatives of the SADC 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 SADC States with the assistance of the reputable research institutions. Based on the evaluation, a systematic research programme will then be carried out including strengthening the SADC 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 SADC coastal States will effectively conduct research and manage their resources for long term socio-economic benefits.

**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 SADC 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 SADC coastal states.

DESCRIPTION

This project would be implemented within the framework of the action programme for Marine Fisheries in the SADC 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 SADC 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 being sought.

AAA.4.9 ESTABLISHMENT OF REGIONAL COMPUTER-BASED MARINE FISHERIES CATCH DATA SYSTEM

Estimated Costs

Financing Gap

Total: US\$ 0.14m  
Foreign: US\$ 0.14m  
Local -

US\$ 0.14m

Funding Secured

Executing Agency

Foreign: -  
Local: -

Start

Duration

34 weeks with possible  
Extention

---

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 unitlization of information within the SADC member States for sustainable fisheries planning, development and management.

DESCRIPTION

Following the Programme of Action for the Development of Marine Fisheries in the SADC 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 SADC 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.4.12 ESTABLISHMENT OF THE MARINE FISHERIES INSPECTION IN THE SADC REGION

Estimated Costs

Financial Gap

Total: US\$ 3.59m  
Foreign: US\$ 3.59m  
Local: -

US\$ 3.59m

Funding Secured

Executing Agency

Foreign: NIL  
Local: NIL

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 SADC 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 SADC 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.

# **Funding Status of Projects**

ESTIMATED COSTS US\$MILLION SADC PROJECTS 01/08/92	TOTAL	FOREIGN	LOCAL	FUNDING SECURED SOURCE	FUNDING UNDER NEGOTIATION	FINANCING GAP	COMMENTS/STATUS
.....							
SECTOR:MARINE FISHERIES							
AAA.4.9 Regional Computer- Based Catch Data System	0.14	0.14	-	-	-	0.14	Funding sought
AAA.4.10 Support to SADC Fisheries Coordination Unit	0.15	0.15		0.15	ICELAND	-	Under implementation
AAA.4.12 Establishment of Sea Fisheries Inspectorate in the SADC region	3.59	3.46	0.13	0.13	(SADC)	3.46	Funding sought
ANG.4.2 Promotion of Export Marketing of Marine Fish Products	1.67	1.67	-	-		1.67	Funding sought
MOZ.4.1 Assistance to Quality Control & Standardisation of Marine Products	1.79	1.79	-	-		1.79	Funding sought
MOZ.4.2 Assessment of Marine Fisheries Resources of the SADC Region	115.78	115.78	-	-		115.78	Funding sought
.....							
TOTALS	123.12	122.99	0.13	0.28		122.84	-
.....							

18