

PD BA 7 717

OFFICIAL PROJECT

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT DATA SHEET

1. TRANSACTION CODE: **A** (A = Add, C = Change, D = Delete) Amendment Number: _____ DOCUMENT CODE: **3**

2. COUNTRY/ENTITY: **SOUTHERN AFRICA REGIONAL**

3. PROJECT NUMBER: **690-0225**

4. BUREAU/OFFICE: **AFRICA** [06] 5. PROJECT TITLE (maximum 40 characters): **REGIONAL AGRICULTURAL RESEARCH COORDINATION**

6. PROJECT ASSISTANCE COMPLETION DATE (FACD): **04 01 80** (MM DD YY)

7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4):
A. Initial FY **84** B. Quarter **4** C. Final FY **84**

8. COSTS (\$000 OR EQUIVALENT \$1 =)

A. FUNDING SOURCE	FIRST FY 1984			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	350	171	521	1000	500	1,500
(Grant)	(350)	(171)	(521)	(1000)	(500)	(1,500)
(Loan)	()	()	()	()	()	()
Other U.S.						
1.						
2.						
Host Country					180	180
Other Donor(s)	450	250	700	2000	1,140	3,140
TOTALS	800	421	1221	3000	1,820	4,820

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1)	111(s)	080		-	-	1,500		1,500	
(2)									
(3)									
(4)									
TOTALS						1,500		1,500	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): **020 070 310**

11. SECONDARY PURPOSE CODE: _____

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each):
A. Code: **R/AG** B. Amount: **1,500**

13. PROJECT PURPOSE (maximum 480 characters):

TO ESTABLISH INSTITUTION WHICH SERVES AS A FOCAL POINT FOR COOPERATION AND COORDINATION OF AGRICULTURAL RESEARCH AMONG SADCC MEMBER COUNTRIES

14. SCHEDULED EVALUATIONS: Interim **1 2 8 6** Final **1 2 8 9** (MM YY)

15. SOURCE/ORIGIN OF GOODS AND SERVICES: 000 941 Local Other (Specify) **SADCC Member Countries**

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment.)

17. APPROVED BY: **Roy A. Stacy**
Signature: *Roy A. Stacy*
Title: **Roy A. Stacy Director USAID/Zimbabwe**

Date Signed: **09 17 84** (MM DD YY)

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: _____ (MM DD YY)

INSTRUCTIONS

The approved Project Data Sheet summarizes basic data on the project and must provide reliable data for entry into the Country Program Data Bank (CPDB). As a general rule blocks 1 thru 16 are to be completed by the originating office or bureau. It is the responsibility of the reviewing bureau to assume that whenever the original Project Data Sheet is revised, the Project Data Sheet conforms to the revision.

Block 1 - Enter the appropriate letter code in the box, if a change, indicate the Amendment Number.

Block 2 - Enter the name of the Country, Regional or other Entity.

Block 3 - Enter the Project Number assigned by the field mission or an AID/W bureau.

Block 4 - Enter the sponsoring Bureau/Office Symbol and Code. (See Handbook 3, Appendix 5A, Table 1, Page 1 for guidance.)

Block 5 - Enter the Project Title (stay within brackets; limit to 40 characters).

Block 6 - Enter the Estimated Project Assistance Completion Date. (See AIDTO Circular A-24 dated 1/26/78, paragraph C, Page 2.)

Block 7A. - Enter the FY for the first obligation of AID funds for the project.

Block 7B. - Enter the quarter of FY for the first AID funds obligation.

Block 7C. - Enter the FY for the last AID funds obligations.

Block 8 - Enter the amounts from the 'Summary Cost Estimates' and 'Financial Table' of the Project Data Sheet.

NOTE: The L/C column must show the estimated U.S. dollars to be used for the financing of local costs by AID on the lines corresponding to AID.

Block 9 - Enter the amounts and details from the Project Data Sheet section reflecting the estimated rate of use of AID funds.

Block 9A. - Use the Alpha Code. (See Handbook 3, Appendix 5A, Table 2, Page 2 for guidance.)

Blocks 9B., C1. & C2. - See Handbook 3, Appendix 5B for guidance. The total of columns 1 and 2 of F must equal the AID appropriated funds total of 8G.

Blocks 10 and 11 - See Handbook 3, Appendix 5B for guidance.

Block 12 - Enter the codes and amounts attributable to each concern for Life of Project. (See Handbook 3, Appendix 5B, Attachment C for coding.)

Block 13 - Enter the Project Purpose as it appears in the approved PID Facesheet, or as modified during the project development and reflected in the Project Data Sheet.

Block 14 - Enter the evaluation(s) scheduled in this section.

Block 15 - Enter the information related to the procurement taken from the appropriate section of the Project Data Sheet.

Block 16 - This block is to be used with requests for the amendment of a project.

Block 17 - This block is to be signed and dated by the Authorizing Official of the originating office. The Project Data Sheet will not be reviewed if this Data Sheet is not signed and dated. Do not initial.

Block 18 - This date is to be provided by the office of bureau responsible for the processing of the document covered by this Data Sheet.

ACRONYMS

ACIAR	-	Australian Centre for Agricultural Research
ARRA	-	Agricultural Research Resources Assessment (AID)
AVRDC	-	Asian Vegetable Research and Development Center (Taiwan)
CARIS	-	Current Agricultural Research Information Service (FAO)
CDA	-	Cooperation for Development in Africa
CGIAR	-	Consultative Group - International Agricultural Research
CIAT	-	International Center for Tropical Agriculture (Colombia)
CIMMYT	-	International Maize and Wheat Improvement Center (Mexico)
CIP	-	International Potato Center (Peru)
CIDA	-	Canadian International Development Agency
CTC/R	-	Consultative Technical Committee/Agriculture Research (SADCC)
DANIDA	-	Danish International Development Agency
EMBRAPA	-	Empresa Brasileira de Pesquisa Agropecuaria (Brazil)
EEC	-	European Economic Community
GOB	-	Government of Botswana
IAEA	-	International Atomic Energy Agency
IADS	-	International Agricultural Development Service
IARC	-	International Agricultural Research Center
ICARDA	-	International Center for Research in Dry Lands (Syria)
ICRISAT	-	International Crops Research Institute for the Semi-Arid Tropics (India)
IDRC	-	International Development Research Center (Canada)

IFS International Foundation for Science (Sweden)
IITA International Institute of Tropical Agriculture
(Nigeria)
IRRI International Rice Research Institute (Philippines)
MOA Ministry of Agriculture (Botswana)
NARS National Agricultural Research Systems
NORAD Norwegian Overseas Agency for Development
ODA Overseas Development Administration (UK)
SACCAR Southern African Center for Coordination in
Agricultural Research
SADCC Southern Africa Development Coordination Conference
SAJAR Southern Africa Journal of Agricultural Research
SARCCUS Southern African Regional Commission for Conservation
and Utilization of the Soil
SAREC Swedish Agency for Research Cooperation in Developing
Countries
SIDA Swedish International Development Agency
USDA U.S. Department of Agriculture
WHO World Health Organization

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REGIONAL AGRICULTURAL RESEARCH COORDINATION

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I. INTRODUCTION

This project paper is presented in conjunction with the joint proposal being made by the U.S. Agency for International Development, Canadian International Development Agency (CIDA), Ministry of Foreign Affairs (Italy), and the Swedish Agency for Research Cooperation in Developing Countries (SAREC). The joint proposal, entitled Cooperation in Agricultural Research Program, is reflected in its entirety in this project paper. The project paper also reflects the earlier report Cooperation in Agricultural Research, written in August, 1983 by the International Agricultural Development Services, Inc. (IADS) and financed by USAID.

The IADS report, as the main resource document for both the joint proposal and AID project paper, proposed the basic structure and operational framework for the Southern African Center for Cooperation in Agricultural Research (SACCAR). This report was approved by the Council of Ministers of the Southern Africa Development Coordination Conference (SADCC). This action established SACCAR as a new SADCC institution. The Consultative Technical Committee for Agricultural Research (CTC/R), an already existing entity, was designated as the SACCAR 'Board of Governors'.

Requests for support for SACCAR were made to the donor community at the annual SADCC/Donors meeting in Lusaka in January/February 1984. At a latter meeting held in Gaborone, Botswana, specifically on SADCC's agriculture research program, representatives of Canada, Italy, the U.S., Sweden, and IDRC indicated an interest in supporting a multi-donor assistance effort to SACCAR. This interest has been followed up by all donor parties. This project paper is the outcome of USAID interest.

II. SUMMARY

A. Background

In 1980 the Southern African Development Coordination Conference (SADCC) was formed as an economic and technical cooperation body to foster mutual development in agriculture, communications, industry, transport and other fields and to reduce member states' dependence on external economic and political factors. Member countries are Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia, and Zimbabwe. Activities for mutual development and reduced dependence were allocated to individual countries. Botswana was chosen to help facilitate the coordination of agricultural research efforts in the region.

Consequently, SADCC approved the formation of the Southern African Center on Cooperation in Agricultural Research (SACCAR), based on the recommendations in the International Agricultural Development Services report, Cooperation in Agricultural Research. Although a charter has not yet been drawn for SACCAR, the organization has the overall goal of improving land use and crop/animal productivity in the region through agricultural research. SACCAR should work with national agricultural research systems of the member countries and to facilitate cooperation between members, international organizations, donor groups and supporting nations outside the region.

B. Problem Identification

The region is faced with an array of serious economic problems and inefficient use of land resources. Low crop and animal productivity and erosion of the natural resource base have been endemic. There are regional shortages of qualified personnel to address these problems and shortages of funds needed to initiate programs. There is also a lack of knowledge about alternative methods for solving problems, inadequate infrastructure required to support programs, and poor coordination of efforts to attack these problems.

An organization is essential which can facilitate linkages between the countries' efforts to combat these problems and promote concerted action. Provision of resources for improved coordination is needed, as is access to relevant information and help to train key personnel, that can help focus regional efforts on common problems, and link assistance organizations with viable programs.

It is felt that SACCAR can serve as such an organization. A program has been designed which will provide SACCAR with the inputs required to start helping SADCC countries address these pressing difficulties.

C. Project Description

The overriding goal or objective of the SACCAR initiative and the USAID project is to improve agricultural research systems in the region, leading to more effective land use, improved agricultural productivity, and growth in farmer income.

The purpose of both SACCAR and the AID project is to establish an institution which serves as a focal point for cooperation in the region and coordination of activities in agricultural research among SADCC members. The strategy used

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is to provide a continuous forum for national agriculture planners, researchers, and administrators.

This forum will help key personnel to work together, provide access to information and technical assistance for research, and provide training and educational opportunities for appropriate personnel.

Assistance to SACCAR is concentrated on the creation of an organizational capability to provide services in the following activity areas:

1. Promotion of Coordination in Agricultural Research;
2. Workshops and Training;
3. Documentation and Publications; and
4. Grants and Special Studies.

Promotion of coordination in agricultural research activities is divided into assistance to promote coordination within each member country, coordination between member countries, linkages with other research organizations and donors, and identification of areas of special attention for cooperation. The areas of special attention include maintenance of the inventory of the research capacities of member countries, natural resource and ecological information, and new regional research initiatives. Selection of activities will be determined by the member states themselves and agreed upon by the Consultative Technical Committee for Agricultural Research (CTC/R).

Selection of appropriate activities will be made by the CTC/R and the SACCAR Director, through discussions with key personnel involved in national agricultural research efforts. Implementation will be done in host countries, with assistance from SACCAR and with outside technical assistance when required.

SACCAR will help to determine the priorities for activities, determine the level of resources to be used, and establish criteria for its involvement.

Under workshops and training, support will be provided to promote and sponsor workshops, seminars and conferences. These gatherings are expected to fulfill specific training needs for agricultural research systems, address common and high priority agricultural research problems, serve as a mechanism for enhancing multi-disciplinary approaches, and help compile and synthesize information on priority topics. Some 450 person weeks of such workshops, seminars and conferences are provided for during the initial five-year program.

Under documentation and publications, funds will be available for an annual update of the inventory on national and regional research systems, a regional newsletter and agricultural research journal, and publication of special papers and seminar reports. It is expected that an estimated 18 issues of the newsletter, eight issues of the journal, and roughly twenty-five special papers will be produced during the five year project life. About 2,000 copies of each document are expected to be printed.

Under grants and special studies, the multidonor program will provide assistance for an estimated ninety small research grants, one hundred and twenty regional travel grants and funding for an estimated thirty person months of special studies and consultancies. These activities will help promote coordination in agricultural research. The grants will help the career development of junior and mid-level scientists, as well as provide valuable agricultural research.

To carry out these activities, SACCAR will require a core staff of four senior personnel: Director, Manpower and Training Officer, Information/Publications Officer and an Administrative/Accounts Officer. These individuals will require the assistance of two secretaries, one typist, a coordination assistant and an information assistant, as well as consultants and personnel conceivably seconded from national Ministries of Agriculture. Infrastructural support will consist of an office building, four staff houses and one vehicle. Budgetary support, under the program, has been estimated as follows:

SACCAR ILLUSTRATIVE BUDGET

(Outline in US\$000's, for Five Years)

<u>Category</u>	<u>USAID</u>	<u>Other Donors</u>	<u>SADCC</u>	<u>Total</u>
<u>General Operations</u>				
Salaries and Benefits	666.6	312.0	119.5	1098.0
Travel and Subsistence	118.5	52.5	22.0	193.0
Operations and Servicing	93.5	42.5	17.0	153.0
Other Costs	74.0	34.5	13.5	122.0
Contingency	<u>47.5</u>	<u>22.5</u>	<u>8.5</u>	<u>78.5</u>
Sub-Total	\$1000.0	\$464.0	\$180.5	\$1644.5

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Programs

Meetings (CTC)	--	96.5	--	96.5
Workshops/Conferences	--	590.0	--	590.0
Publications	167.5	--	--	167.5
Research/Study Grants	--	1438.0	--	1438.0
Travel Grants	--	204.5	--	204.5
Contingency	--	120.5	--	120.5

Sub-Total	\$167.5	\$2449.5	--	\$2617.0
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Capital Costs

Building and Houses	316.5	84.0	--	400.5
Furnishings	--	62.0	--	62.0
Equipment & Vehicles	--	69.0	--	69.0
Contingency	16.0	10.5	--	26.5

Sub-Total	\$332.5	\$225.5	--	558.0
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Total Costs	<u>\$1,500.0</u>	<u>\$3139.0</u>	<u>\$180.5</u>	<u>\$4819.5</u>
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Contributions - USAID	\$1.5 million
CIDA	1.1 million
Italy	1.5 million
SAREC	.539 million
SADCC	.1805 million
Total	<u>\$4.8195 million</u>

III. AGRICULTURAL AND ORGANIZATIONAL BACKGROUND

This section provides a broad overview of the SADCC countries, as a background for understanding the current situation in agriculture research. Without determining needs, the following presents the level and nature of cooperation and coordination of agriculture research (nationally, regionally, and internationally), a brief profile of SADCC and SACCAR, the executive summary of the Cooperation in Agricultural Research report, and known donor interest in regional agricultural research activities.

A. Area Agricultural Research

Each nation within the SADCC group has a national agricultural research system. Such a system consists of public and private organizations that plan, coordinate and implement agricultural research. Except in Tanzania where the Agriculture Research Organization is not part of the Ministry of Agriculture, all SADCC countries have a research division within the Ministry of Agriculture. Other organizations which

plan, coordinate and/or implement agricultural research include national research councils, agricultural research councils or organizations, university faculties of agriculture/veterinary science and private commodity research organizations. (See Annex F.)

Such a system, to be effective, calls for coordination among the various components. Often this coordination is tacitly left to the research division of the Ministry of Agriculture (MOA) in the country. This informal arrangement is generally ineffective.

Cooperation among SADCC countries in agricultural research has been done primarily on an informal basis. Some exchanges of germ plasm (seeds or shoots, sperm, etc.) and site visits have taken place. Consideration is only now being given to a regional association of Deans of faculties in agriculture and veterinary science. Publications play a minor role in regional interaction. There is only one agriculture journal of note, the Zimbabwe Journal of Agriculture Research. Its contributors within the SADCC region are largely researchers in Zimbabwe and its distribution is limited.

Many donor countries, agencies and international organizations support agricultural research in the SADCC countries. The international agricultural research organizations that cooperate with SADCC countries include: AVRDC, CIAT, CIMMYT, CIP, IAEA, ICARDA, ICRISAT, IITA, ILCA, and IRRI.

The donor organizations and countries which support agricultural research within the region include: CIDA, DANIDA, FAO, IDRC, IFAD, IFS, NORAD, ODA, SAREC, SIDA, USAID, UNDP, WHO, World Bank, Ford Foundation, Rockefeller Foundation, Holland, Belgium, France, Argentina, Yugoslavia and Cuba. There is little, if any, coordination among these bodies.

B. SADCC and SACCAR Profile

1. Southern African Development Coordination Conference (SADCC)

SADCC is an economic and technical cooperation body formed in 1980 at the Lusaka Summit by the representatives of the governments of Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia, and Zimbabwe. The aims of SADCC are to pool resources and coordinate mutual development in agriculture, communications, industry, transport and other fields and to reduce member states' dependence on exogenous economic and political factors.

The design of activities which work toward these aims are allocated to individual SADCC countries. Individual countries have been chosen to facilitate the coordination of specific areas of concern. The current assignment of responsibilities is as follows:

<u>Country</u>	<u>Area of Coordinating Responsibility</u>
Angola	Energy
Botswana	Agricultural research and animal disease control
Lesotho	Soil conservation and land utilization
Malawi	Fisheries, wildlife and forestry
Mozambique	Transport and communication
Swaziland	Manpower development and training
Tanzania	Industrial development
Zambia	Mining
Zimbabwe	Food security

The apex structure of SADCC consists of the Heads of State Summit which meets periodically. Next is a "cabinet level" Council of Ministers, followed by a Standing Committee of senior officials. A number of sectoral entities (such as the Regional Training Council and the Southern Africa Transportation and Communications Commission) have been set up, for each of which one country has special responsibility. A small secretariat to coordinate SADCC activities has been established in Gaborone.

SADCC countries have approved the formation of SACCAR (Southern African Center for Cooperation in Agricultural Research), based on the recommendations of the International Agricultural Development Service (IADS) report entitled Cooperation in Agricultural Research.

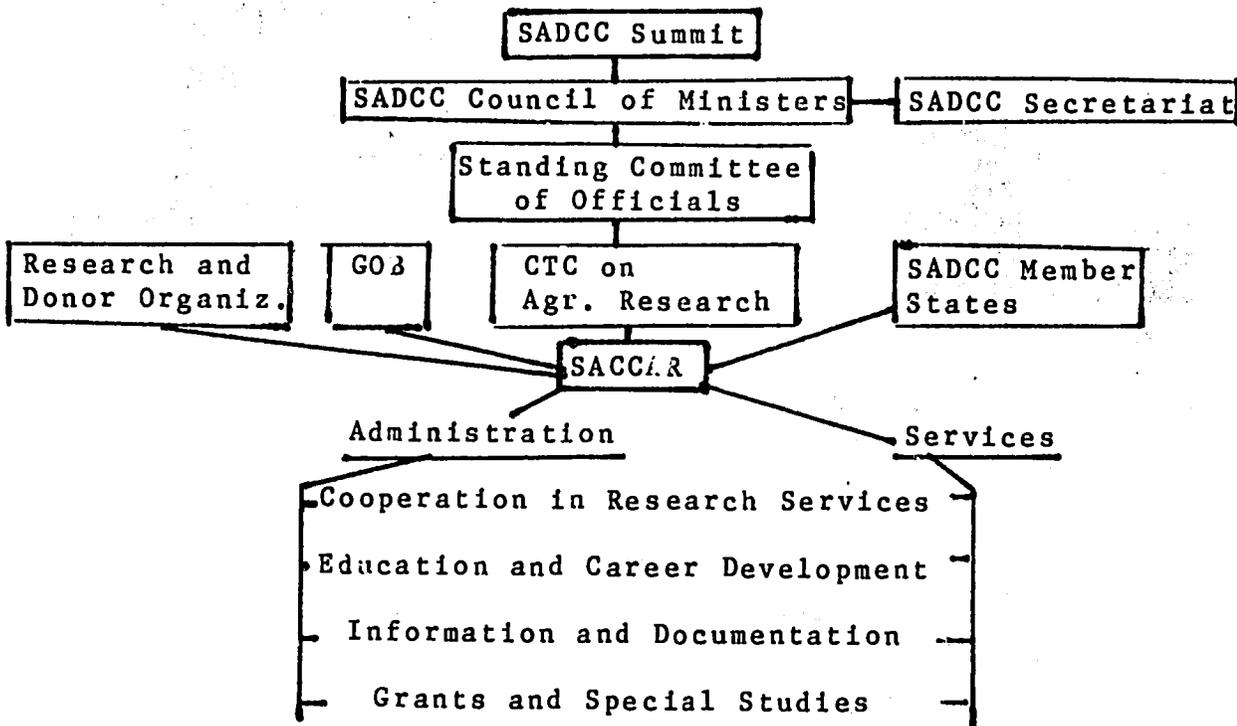
2. Southern African Center on Cooperation in Agricultural Research (SACCAR)

Following the submission of the IADS report, the SADCC Council of Ministers approved the formation of SACCAR, agreeing

to the framework recommended in the document. SACCAR is to be governed by the SADCC Consultative Technical Committee/ Agriculture Research, whose membership comes from the member states' Directors of Agricultural Research. The nine member Committee meets at least twice a year to help determine policies, plans and funding allocations. There have been four meetings since the inception, the last in May 1984.

The role of SACCAR is to facilitate the coordination of agricultural research activities in the member states and with external organizations. SADCC mandates that institutional growth be kept at a minimum and that activities be decentralized. SACCAR is consequently designed as an organization with a small core staff of only three senior staff members and one senior administration/finance officer.

Although a charter for SACCAR has not yet been drafted, the organization has the overall goal of improving land use and productivity in the region. The purpose of SACCAR is to serve as a nucleus to facilitate cooperation in agricultural research in the region. The following chart shows the basic relationships of SACCAR to SADCC, the GOB, member states, research organizations, and donor groups.



C. Cooperation in Agricultural Research

The IADS report, Cooperation in Agricultural Research, has served as the basic guide for this proposal. Portions of the report have been incorporated into this document and the executive summary is included here as part of the background information. It is recommended that the entire report be read. It can be obtained from the Southern Africa Regional Program, c/o USAID/Zimbabwe, or from the Government of Botswana, Ministry of Agriculture, Research Division.

The report is on cooperation in agricultural research among the nine countries covered by SADCC. The study leading to the report is based on a proposal submitted by the Government of Botswana to SADCC, as recommended by the CTC/R, which called for the establishment of a small regional coordination center in Botswana for agricultural research. On behalf of SADCC, USAID agreed to arrange for an international team of specialists to carry out a study to examine the feasibility and the role for such a center, and to report on its findings and recommendations. Following are quoted sections of the report.

"Current Status and Views on Cooperation

"Some cooperation exists between some of the countries, although it is quite uneven and generally of an informal nature. The CTC for Agricultural Research is a recently established mechanism which enables cooperation to be placed on a sounder basis. There is also considerable involvement of external research institutions (e.g. international centers and USAID-funded Collaborative Research Support Projects), as well as of external donor agencies supporting research, but there tends to be limited coordination among their efforts. CDA - Cooperation for Development in Africa - is a development support grouping of some of the donor agencies, currently seven countries, which includes among its plans cooperation in support to agricultural research in the SADCC region.

"There is a general feeling among agricultural scientists in the region on the need to strengthen cooperation across national boundaries.

"Also, in general, these scientists in the region support the idea of a small center for promotion of cooperation and coordination, and agree, in large measure, on its role and functions. These scientists identified areas of relative strength in individual national agricultural research systems, which can be used as country contributions to regional cooperation.

"Establishment of a Center

"Based on its discussions with national scientists, and on its own experiences, the study team supported the proposal for establishment of a Southern African Center for Cooperation in Agricultural Research (SACCAR). In its report, the Team describes in detail SACCAR's role, activities, location, staff, physical facilities, and relationship to organizations in SADCC, the Ministry of Agriculture (Botswana), donor agencies, and international agricultural research institutions.

"The report recommends that SACCAR be located at Sebele, with the Agricultural Research Station and College of Agriculture complex. It would be a modest center in terms of physical facilities and staff, but an ambitious one in terms of activities and objectives.

"The functions of SACCAR would be of two general categories - services and cooperation. The service functions, for which SACCAR would have the direct responsibility, and would fund through its budget, include:

- the Secretariat for the CTC for Agricultural Research;
- documentation on regional agricultural research and development policies and plans;
- an inventory of research (national and regional);
- research program reviews;
- publications (including a newsletter and a SADCC agricultural research journal);
- studies, workshops, etc. on common problems; and
- manpower training and career development (including regional travel grants, small research grants, training workshops, and manpower assessment studies).

"Cooperation would be in respect to inputs to research in the region by external donors and research institutions, including international agencies and associations such as OAU/STRC and AAASA.

"The proposed staff consists of a Director, a Manpower and Training Officer, an Information/Publications Officer, an Administrative/Accounts Officer, and basic support staff. At least one of the professional staff should have Portuguese as

the language of education. To the extent feasible, all should be recruited from within the region, but if fully qualified regional candidates are not available, recruitment should be extended outside the region.

"A Five-Year Plan and Budget

"The report presents a five-year plan which includes staffing, physical facilities and activities. All basic staff should be recruited as early as possible in the first year. It will be necessary to construct an office building and staff houses. Both should start as soon as possible during the first year, with the goal of completing them early in the second year.

"The overall estimated cost for SACCAR for the first five years is US\$5,241,300, consisting of \$597,600 for capital costs, \$1,615,100 for general operating expenses, and \$3,028,600 for program expenses. The largest component of the capital costs budget is buildings (US\$433,000). The general operating expenses make up 30.8% of the overall budget, or about 35% of the recurrent budget (general operating expenses plus program expenses). Salaries and benefits of senior and support staff, the largest component in the general operating expenses budget, constitute about 20.5% of the recurrent budget, reflecting the emphasis on the service role of SACCAR.

"The Team takes the position that SADCC members themselves should provide financial support early on for the Center. Outside support should be on a multi-donor basis to ensure broadbased donor participation, facilitate an effective center-donor interaction, and provide a greater stability of support."

D. Donor Interest

Three major donors have expressed a clear intent to fund the first phase (5 years) of SACCAR. These are the Canadian International Development Agency (CIDA), the United States Agency for International Development (USAID) and the Government of Italy. In addition, the International Development Research Council, Canada (IDRC) and the Swedish Agency for Research Cooperation in Development (SAREC) have indicated their willingness to fund certain aspects of SACCAR.

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The likely donor contributions are:

US \$

CIDA	1.1 -1.5 million	For
Italy	1.5 million	core
USAID	1.5 million	budget
IDRC	.08 million	For preparatory work to
		launch SACCAR,
		including funds for an
		interim director.
SAREC	.60 million	For small research
		grants.

Within the core budget, USAID plans to fund approximately two-thirds of general operations (approximately \$1.0 million), most of the capital expenditure (approximately \$.35 million) and a portion of the program budget (\$.17 million). CIDA and the Italian government are expected to provide approximately \$1.1 million and \$1.5 million respectively.

Neither SACCAR nor SADCC are at present "legal entities" by AID's definition, so it is expected that the grant agreement will be signed with the Government of Botswana which is responsible within SADCC for leadership in agricultural research. It should be noted that other donors, in this case Canada, do consider SADCC a legal entity and will sign their agreement with that organization and with the Government of Botswana. Funds will be disbursed to SACCAR by the Botswana Government. Precise details have yet to be negotiated.

The newly established Australian Center for Agricultural Research (ACIAR) has a mandate to further cooperation between Australian agricultural scientists and those in other regions of the world. Some support for SACCAR, although probably not financial, may also be forthcoming from ACIAR.

Similarly, the Empresa Brasileira de Pesquisa Agropecuaria of Brazil (EMBRAPA) has expressed an interest in cooperating with SACCAR. Brazil lies between the same latitudes as the SADCC region and has many agricultural problems similar to those in SADCC countries. Cooperation is likely to take the form of consultancy visits and/or stationing of EMBRAPA scientists at research stations in SADCC countries.

The European Economic Community (EEC) has indicated that it may be a future source of financial assistance to SACCAR. Assistance may be forthcoming through those international organizations mentioned in Section III A. There is also expected to be interaction through SACCAR between the donor coordination group CDA and SADCC.

IV. PROBLEM IDENTIFICATION AND PROJECT DESCRIPTION

A. Problem Identification

The region faces an array of problems and needs against which SADCC countries have joined together to undertake coordinated and cooperative programs. The region has serious economic problems, exacerbated by low levels of agricultural production. This contributes to an inadequate supply of food, and degradation of the natural resource base. These problems relate to a low standard of living for most of the population and an insufficient supply of foreign exchange. The nations have inadequate financial resources and only a small cadre of highly educated, experienced people to address these problems.

The agricultural potential of the region is vast and varied, but underexploited. Food crops are cultivated at altitudes ranging from sea level to over 2,500 meters in elevation. The land mass of the region covers some 4.9 million square kilometers and contains a population of over 60 million people. Within the region, over twenty primary food crops, forty vegetables, and in excess of fifty fruits are produced and traded. The ecology ranges from desert to very humid tropical zones. Drought conditions often plague SADCC countries. The region has a common historical legacy of agricultural research focused primarily on export crops and commercial farmers' concerns. Only a few of the numerous important food and animal types used for human consumption are produced using improved technology. Extension services lack access to a variety of technologies for farmers operating under different resource constraints that would increase productivity and incomes on a sustainable basis.

A lack of funds for recurrent expenditure and small items of equipment often exists in national research institutions, stations and universities. In addition, many new graduates do not have funds available to do field research. Many scientists planning to undertake research find it difficult to obtain funds because of their junior status. This is particularly true for lecturers in universities of the region. Researchers and scientists have limited opportunities to enhance their technical capacities, obtain feedback on their own work, and receive recognition for work well done. They lack access to regional information, since there is no central place which is responsible for collection and dissemination of information on agricultural research programs, plans, personnel and training facilities, and related data for the region. Also there is no formal system for periodic receipt of information on common agricultural research problems within SADCC countries. Too often agricultural researchers operate without

the opportunity to know about similar endeavors, methods employed, problems encountered, and results. Also they tend to be limited in their level of understanding of factors related to the socio-economic context of different types of farming systems and the scientific management of the natural resource base, which are linked with their own work. The scarcity of applied research often leads to research results that may be suitable for only a small proportion of the farmers.

Most of the national research programs are understaffed, underfinanced, and suffer from an insufficient pool of qualified, experienced scientists. Their programs are often managed inefficiently, because of lack of skills. With few exceptions, in-country coordination of agricultural research and related activities is weak. The assistance received from aid donors and many of the IARC's is linked with specific agricultural research programs or commodity teams. In general, little attention has been given to coordination within SADCC countries and across the region.

With the weakening (due to tensions in relations with South Africa, the lead member) of the Southern African Regional Commission for Conservation and Utilization of the Soil (SARCCUS), to which most of the SADCC countries belonged, cooperation among the countries in agricultural research has been primarily on an informal basis.

Recently SADCC began to develop several activities based on regional cooperation and coordination with donor countries and international centers. ICRISAT has begun to develop a regional program for work in sorghum and millet improvement in collaboration with SADCC members' national research systems. A Regional Grain Legume Improvement Project is in the final stage of design and may receive international funding by mid-1985. A Land and Water Use Management research project is presently being designed for the region. Also, a pre-feasibility study for a maize improvement project encompassing East and Southern Africa has been designed and is expected to be implemented with donor support by 1986. The AID-funded Regional Farming Systems Project, linking together the various AID supported national farming systems projects, will be renewed in October 1985 for an additional five years.

These specific initiatives have been identified as high priority regional concerns. They will each have a specific country center, with operational linkages to all member country research programs in their specific areas of concentration. Research coordination will be the operational responsibility of the countries and the regional management entity (and its sponsoring country Ministry of Agriculture). However, these arrangements still leave a gap in the loci of regional data, and coordination between regional activities which the CTC/R,

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as an advisory body, cannot fulfill on its own.

Data are unavailable on the region's agricultural production potential, the socio-economic situation, and capabilities of agricultural related institutions. Without systematic data on the nine countries as a whole, disaggregated by critical variables (such as agro-ecological zones), it is difficult to identify what types of agricultural research could be applicable from one area to another.

There are similarities in the agricultural development potential of different areas in the region. Yet the potential to increase efficiency in the allocation of human and financial resources is unfulfilled. One cause for this is the lack of a single regional entity, operating on a full-time basis with adequate finances to promote coordination and cooperation in agricultural research.

B. Project Goal, Purpose and Strategy

The overriding goal or objective of the SACCAR initiative and the USAID project is to improve agricultural research systems in the region for more effective land use and increased productivity, as well as income of farmers.

The purpose of both SACCAR and the AID project is to serve as a focal point facilitating cooperation and coordination in agricultural research efforts among SADCC members. The strategy used is to provide a continuous forum for national agriculture planners, researchers and administrators for working together, for providing access to information and technical assistance for research efforts, and for providing training and educational opportunities for appropriate personnel. This will be done through a variety of mechanisms, including journals and newsletters, workshops, seminars and conferences, information pooling, research grants, inter-regional travel grants, special studies, and coordination activities done on a regional basis. Support from the donor community, for this particular effort, will involve budgetary support for operational expenses, for programs and service activities, and for capital costs needed in the establishment of a regional office.

USAID will support development of SACCAR in collaboration with a group of donors. Funding assistance by AID will be on a parallel basis for discrete activities and donor funds will not be comingled. This will avoid possible difficulties for SACCAR in utilizing AID funding which has legal restrictions with respect to uses in Angola and Tanzania.

The multi-donor financing and parallel financing approach will allow SACCAR to carry out all of its program. AID funds will be used for operational expenses, publications, and some construction. Program activities will be funded by CIDA and Italy (or by CIDA alone, if Italian assistance is not forthcoming).

C. Project Description

During its initial stage of development, the SACCAR program will center on four main activities:

- promotion of cooperation in agricultural research;
- workshops and training;
- documentation and publications;
- career development grants and special studies.

1. Promotion of Cooperation in Agricultural Research

Since an effort to coordinate agricultural research in the SADCC region is new and since SADCC itself is only recently formed, it would be unwise to specify exact procedures at this early stage. SACCAR itself should be intimately involved in evolving procedures and mechanisms that lead to a successful coordination of member countries' agricultural research activities within the region and with external institutions. The activities suggested here should therefore be considered as guidelines to initiate and improve coordination, and SACCAR staff should be free to develop other activities and make recommendations to the CTC/R for implementation of agricultural research and related activities in the region.

(a) Coordination of Agricultural Research Within Member Countries

Individual SADCC countries will remain fully responsible for determining their own agricultural research needs, setting priorities and implementing their own programs. However, if requested, SACCAR could arrange for consultancy visits from a team of experts to review the procedures used in reaching these decisions, to advise on the coordination of agricultural research within the country, and recommend changes. The Director of SACCAR should receive requests and be empowered to decide which countries should receive such a mission.

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(b) Coordination of Agricultural Research Between Member Countries

SACCAR can make a major contribution to the coordination of agricultural research in the region through its role as secretariat of the CTC/R. It is assumed that the Director will be an ex-officio member of the CTC/R. Also, SACCAR is expected to participate at appropriate meetings sponsored by SADCC, e.g., the Food Security Program, quarantine regulations, seed legislation, etc., which relate to its programs.

The CTC/R should be responsible for agreeing on regional research priorities. SACCAR, with its proposed data bank on national agricultural research policies, programs and resources, will be able to provide information to enable the CTC/R to formulate a regional program and to enable SADCC countries to draw up proposals for a bilateral program within SADCC. SACCAR will be aware of the strengths of individual national programs which may be of value to the region.

Regional programs which are being formulated at present are:

- Grain Legume Improvement Program (beans, cowpeas and groundnuts);
- Sorghum and Millet;
- Improved Land and Water Use Management in Agriculture.

SACCAR, in support of the regional programs, will be able to award travel grants to SADCC country scientists involved in regional programs to ensure better coordination and smooth running of the projects and to exchange information and ideas. Further, SACCAR staff (and consultants, if deemed necessary by the CTC/R) would review and evaluate regional programs and make recommendations to the CTC.

Other regional cooperative activities are already taking place on an informal basis, mainly between individual scientists or groups of scientists, (particularly in regard to exchange of both plant and animal germ plasm). This may, in some cases, take the form of cooperative variety trials and the collection, evaluation and maintenance of regional germ plasm. SACCAR should encourage such activities and act as a clearing house of information on the location of such trials and collections, but should not have a direct responsibility for them.

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Regional activities would be greatly facilitated if SADCC members had, where possible, uniform quarantine regulations and seed quality standards. SACCAR should keep up to date information on quarantine and seed quality regulations/legislation, and take the initiative to ensure changes to promote harmonization.

(c) Linkages with Other Research Organizations and Donors

SACCAR will act as the focal point for the exchange of information on regional research problems and needs, with external organizations (particularly the IARC's), other national programs and potential donors.

SACCAR should:

(i) assist in the coordination of regional activities of the IARC's and other international organizations and agencies;

(ii) develop a list of priority regional projects to put before governments and donors;

(iii) maintain lists of bilateral regional and country projects and donors;

(iv) advise donors of possible projects worthy of support; and

(v) advise SADCC countries of possible donor support for proposed research projects.

(d) Areas of Special Attention for Cooperation

(i) Inventory of the Research Capacities of Member Countries.

For the nine countries of the SADCC region to develop appropriate, high priority, and cost effective research systems, it is important that the region maintain an up-to-date inventory of their technical, physical and economic resources as well as research results. CDA offered in early 1983 to finance and implement a study for SADCC to gather the baseline information upon which such an inventory could be established.

This effort, administratively managed by the Agency for International Development for the CDA, employed a consulting firm to coordinate this in-depth study. France and Italy also provided scientific personnel to help carry out the field work. During January-March of 1984, an initial pilot survey was undertaken by the consulting firm and national

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researchers in Swaziland, Botswana and Malawi. Results of this initial effort were presented to the CTC/R April 1984 in a document entitled the "Agricultural Research Resource Assessment". Revised inventory procedures were adopted in May and a workshop was held in June for selected national research institution collaborators and the consulting firm to explain the revised inventory procedures and develop an operational workplan.

The initial characterization of the region's research systems should be completed by the end of 1984. Publication of the initial inventory will be completed by mid-1985.

This initial ARRA study is funded outside of the SACCAR project. However, copies of the survey results of all member country research resources will be deposited in the documentation center of SACCAR.

SACCAR will use the inventory results in the design of training programs, specification of requisite research inputs, assessment of coordination needs and potential, and other activities essential in defining national and regional research programs and targets. SACCAR will be responsible for the updating of information through a process of systematic collection and reporting on changes in personnel, research, facilities, etc., in each country. The national inventories will be complemented by a regional resource update prepared by the SACCAR staff. It is anticipated that the inventories will be updated annually.

(ii) Natural Resources and Ecological Information

It is imperative that there be comparable information on regional natural resources, the societies, and economic factors for the nine countries. This data should include climatic, soil and topographic information to identify agro-ecological zones and potential land use. Information on agronomic characterization and geographic location of similar ecological situations, with an assessment of social and economic differences and similarities, would facilitate research priority determination and coordination within the region. Such data would be extremely valuable in defining what types of agricultural research results could be transferred from one area to another, thus reducing research duplication and speeding up the process of extending results to agricultural producers. Also, this characterization would permit the region

to determine the best use of its limited research capacity as well as permit the transfer of proven germ plasm and technology from outside sources to the SADCC countries. Such information, as it is assembled and refined, would also allow national governments to formulate increasingly more effective land use policies, infrastructure and resource management.

Natural resource and ecological data could be collected and analyzed through various mechanisms. SACCAR could hold interdisciplinary meetings with the region's meteorological services, soils and soil classification technicians, natural resource, agronomic and horticultural experts, livestock and animal husbandry specialists, botanical and hydrology technicians and others to determine uniform means of collecting, processing, analyzing and disseminating key decision making information for agricultural research and development. Available data could be brought together at the national level by the various agencies, placed in a uniform format for computer processing and provided to SACCAR. The regional center would serve as a depository for duplicates of national information. Moreover, the Center would process and analyze the data to identify the climatic, topographic, geological, land use and other patterns on a regionwide basis.

A system of uniform reporting on research experimentation should be developed among the institutions involved, so that the utility of data can be extrapolated to other similar ecological situations in neighboring countries.

SACCAR (on its own computer) will be responsible for processing the information and suggesting to national governments, commodity research teams, the CTC/R and the SADCC ways this data base can be used for national and regional planning of socio-economically sensitive research, infrastructure, production and resource management.

(iii) New Regional Research Initiatives

It is envisioned that as SACCAR develops, utilizing the research inventory, research agencies, with SACCAR encouragement and analysis, it will identify additional needs and opportunities for major regional research.

During the first five years, SACCAR will take a leadership role in identifying and promoting studies and sponsoring in-depth analyses, workshops, conferences and seminars directed toward formulation of new solutions to the region's agricultural and agro-forestry problems. These studies may take the form of problem identification in many areas: pasture and range management, natural resource management, irrigation systems, fuelwood production,

commodity oriented research (e.g., rice, cassava, soybeans, potatoes, sunflower, beef production, dairy production), discipline research (e.g., rinderpest, trypanosomiasis, large grain borer control, weed control, soil fertility, seed production, biological engineering) or systems analysis (e.g., land use and classification).

It is not feasible at this stage in SACCAR development to specifically identify the areas in which SADCC or the CTC/R will begin to focus. It is expected that SACCAR will, during the next five years, initiate several pre-feasibility or major investigative studies. From these, it is expected that at least one additional regional research initiative will be developed.

In this process, the SACCAR staff will play a key role in bringing together administrators and researchers in workshops and seminars to assess the state of the research art in the region and define its key regional needs. It will stimulate them to identify particular high priority problems which have significant impact on nutrition, incomes, employment generation, and natural resource use. SACCAR will provide technical leadership either from its own staff, or by additional grants or core-funded contracts, to work with member countries in the development of specific, agreed priority studies.

In this process and as a result of the workshops and consultations with member countries, for each preliminary and feasibility study SACCAR will secure the approval of the CTC/R and, as necessary, SADCC itself. With this approval, SACCAR will prepare the study terms of reference, statements on qualifications of consultants to be utilized, and do the contracting. SACCAR will be available to consult on the organization of the study so as to maximize benefits for all the member countries. SACCAR will be expected to monitor study progress and present the results for consideration to the member countries. If approved within SADCC, the feasibility study will serve as a proposal and be presented to donors for funding.

2. Workshops and Training

SACCAR will perform a leadership role in promoting and sponsoring workshops, seminars and conferences. The meetings are expected to fulfill the following functions:

- (a) address specific training needs in agricultural

research, systems investigations and institutional management;

- (b) address common priority agricultural research problems;
- (c) serve as a mechanism for enhancing a multi-disciplinary view on agricultural development problems; and
- (d) serve as a mechanism for developing and evaluating SACCAR-related programs and/or projects and for compiling and synthesizing information from SADCC countries on region-wide or specific priority topics.

Most of the workshops, seminars and conferences will be followed by publication of a summary of the proceedings and conclusions and/or of key reports for wider dissemination. Emphasis should be placed on making these promptly available to interested parties. In some cases the entire proceedings of the meetings will be printed and circulated. Moreover, many meetings could result in resolutions or recommendations on follow-up activities within and between countries. Thus, while initially the identification of seminar, workshop and conference topics are expected to emanate from SACCAR (for consideration by the CTC/R and SADCC), usually the topics will be those identified in previous meetings. The annual workplan of the Center will specify the meetings to be held each year.

It is recommended that different member countries be given the opportunity to host meetings. The temptation to hold most of them at the Center should be avoided. The Manpower and Training Officer probably will have overall responsibility for coordinating this activity. The overall responsibility for publications based on the meetings will be an important concern of the Information/Publications Officer.

The strategy suggested for SACCAR in its workshop, seminar and conference activities is based on the institution providing leadership in promotion of activities involving country representatives in addressing priority regional concerns. The role of SACCAR is expected to vary from full to partial sponsorship and management. Host countries will be expected to provide facilities (i.e., rooms and logistic support) to reduce per diem expenditures. Thus the proposed strategy incorporates a devolution of SACCAR responsibilities and a commensurate increase in the participation of SADCC states and scientists. The suggested strategy is based on

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three premises. First, those familiar with the local situation are in a better position to make logistical arrangements. Second, meetings can be more successful when they involve a team of people in the planning process. Third, in keeping with the establishment of SACCAR as a modest endeavor and the goal of better utilization of existing resources, meetings should be held in modest but adequate accommodations (rather than tourist hotels).

As mentioned above, SACCAR will assist member countries in upgrading the knowledge and skills of research personnel through training workshops or seminars. One topic suggested for early implementation as the basis for a regional training activity is management of agricultural research systems/institutions. Attention has been focused on this, since scientists are frequently placed in managerial positions or positions including a management function, but they have little or no experience in personnel management, project and program planning and evaluation, and budgeting. Scientists need opportunities to learn techniques and skills pertinent to critical problems which they encounter in their area of responsibility and for enhancing their managerial skills in other areas, as well as broadening their development perspective.

Further, meetings can be used as an important mechanism for those areas of special attention for coordination, as discussed in the previous section. The development of a body of natural resource and ecological data and the identification and formulation of new regional agricultural research initiatives will be the subject of several meetings to be sponsored by SACCAR.

SACCAR is also expected to make a contribution to human resource development by pinpointing specific priority areas for intensive short-term and long-term training. This, in part, can be done through updating the research inventory and preparing national and regional overviews, as well as using the results of deliberations at meetings. Further, relevant information will be forthcoming through the SADCC manpower studies and the Food Security Program on technical manpower in agriculture. SACCAR should become increasingly able to identify and quantify manpower needs in agricultural research.

Workshops will be used as a mechanism for drawing together people from member countries to define regional priorities, plans and potentials, and to address common problems and help in the development of SACCAR promoted activities (for example, establishment of a SACCAR editorial policy). Consultants may prepare a working paper setting out

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suggestions. Subsequently, SACCAR could hold a special workshop to finalize recommendations or develop the basis of project proposals to be presented to the CTC/R.

An expected outcome of such workshops would include a report specifying follow-up actions, such as plans to prepare a detailed project proposal. The Center would be expected to take a leading role in promoting the preparation of program and project proposals, seeking necessary approvals, and assisting in obtaining funding, including that needed from outside donors. In this way, the Center will be a dynamic, essential mechanism through which donors can channel support to priority agricultural research in the SADCC region.

3. Documentation and Publications

SACCAR functions will include documentation on regional and national agricultural research and development policies, plans and targets, an up-to-date inventory of national and regional research systems, and publications.

The purpose of having a source of current documentation on agricultural research and development policies, plans and targets is to provide information to assist in assessment of the adequacy of technology and current research efforts, in relation to requirements for meeting national and regional agricultural development goals. Each member state will be expected to provide SACCAR with recent plans for agricultural development and with sector studies, such as those made by the World Bank and USAID. SACCAR will also collect key regional and national documents on agricultural research. It will also obtain SADCC documents (particularly from the Food Security Program) bearing on food production, storage, processing, etc.

Also, SACCAR may eventually serve as a source of bibliographic data and selected documents from worldwide literature on agricultural research applicable to SADCC countries. The purpose would be to provide access to relevant information, broadening the base of knowledge so that on-going and planned research can be examined and duplicative research avoided. It would indirectly facilitate contact of researchers within SADCC countries with those outside the region. This effort might begin on an ad hoc basis by collection of information from sources such as IARCs, FAO Current Agricultural Research Information Service (CARIS), and the U.S. National Agricultural Library (which contains worldwide information). Sources and documents applicable to the region could be mentioned in the SACCAR Newsletter, discussed later. However, since selection and then availability of documents

applicable to SADCC countries implies use of financial resources, this effort shall not be undertaken to any great extent unless additional funds for it become available.

It is not intended that SACCAR should establish a library. Rather, it should work out arrangements with the Botswana College of Agriculture or the University of Botswana for shelf space, cataloguing, etc. SACCAR should have a reference file and an up-to-date index of the documents or a duplicate card catalogue of relevant documents.

SACCAR will also be responsible for maintenance of an up-to-date inventory of national and regional research systems. SACCAR would provide data input and synthesis of regional information as a basis for assessing areas for research collaboration and coordination in training and research. Relevant information from the SADCC Manpower Program (Swaziland) and the study on technical manpower in agriculture planned by the Food Security Program should also be kept and used by SACCAR.

SACCAR, in taking over the ARRA data program prepared by CDA, will be responsible for maintaining the inventory current on a yearly basis and providing printout information on request to appropriate persons (e.g., national researchers, SADCC officials and donor organizations).

This inventory, however, is not meant to take the place of research inventories maintained by individual countries. Rather, SACCAR will identify the contents and supplement them as appropriate. The results will be made available for planning and assessment. The inventory will be computer-based. A short-term consultant may be required to develop the inventory and other SACCAR computer programs. The micro-computer and stored data will be located at SACCAR headquarters.

SACCAR will continue to publish a newsletter in English and Portuguese. The first SACCAR Newsletter was issued in May 1984. The purpose of the newsletter is to serve as a channel for conveying to scientists in the region and to other interested parties information on progress and plans about activities of the Center, and more broadly, work to improve regional cooperation in agricultural research. In general, the newsletter will serve as an information bulletin of news, views, reviews and notes on current research and related activities in the region. The text could include such items as highlights of research programs, new crop variety releases, summaries of workshops and meetings and a calendar of upcoming events. It is also expected that the Newsletter will serve as an important vehicle for announcing the availability of specific publications which can be acquired from SACCAR upon request.

The newsletter should be printed in Gaborone, both in English and Portuguese. It is anticipated that the newsletter will begin with two issues in the first year and then quarterly issues thereafter. The Information Officer will have overall responsibility for publication, but senior staff are expected to provide this officer with information for possible inclusion. Funds will be available to hire a translator and, if necessary, a part-time editor. The editorial and distribution policies are expected to be established during the first year. Attention should be given to keeping printing costs at a reasonable level by avoiding the use of color and excessive numbers of pictures.

SACCAR is also expected to publish a Southern African Journal of Agricultural Research (SAJAR). The most desirable course would be to have the internationally reputable Zimbabwe Journal of Agricultural Research become the SAJAR. Discussions have been initiated and SACCAR should continue them with the Zimbabwe journal. If an amalgamation cannot be worked out, a separate SAJAR would be established. Assuming the Zimbabwe Journal becomes the SAJAR, it will most likely continue to be printed in and distributed from Harare.

The purpose of SAJAR will be to publish a selection of articles from the growing volume of scientific research in the region which are of interest to most or all of the countries. Also, the journal can serve as a forum for presentation of articles on methodologies which can be of benefit to regional scientists, since insight on methods and procedures can result in increased efficiency. The journal might also contain articles of a general interest which address agricultural development issues closely related to agricultural research (such as on-farm applications of scientific research results).

It will be important to have a regional editorial board, and the journal should have Portuguese abstracts of articles in English and vice-versa. It is anticipated that printing of SAJAR will be handled by a commercial firm. A scientific editor will probably be needed to complement the work of the regional editorial board and of the SACCAR Information/Publication Officer.

The financial policy of SAJAR will be determined by SACCAR in consultation with persons who have experience with other scientific journals. It is anticipated that the journal will be distributed on a three-tier basis: exchange, complementary, and subscription, and possibly contain

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advertisements. The journal is expected to be issued twice a year.

The Center will also produce the SACCAR annual report, special studies, summaries of meetings and sometimes proceedings of meetings. At times it may select specially significant papers to be produced on a large scale. Also, SACCAR might publish handbooks on subjects of common interest. An example is one on the major pests and diseases of plants and animals of the region. Special attention must be given to the target audience for each publication, so that the technical language and level are appropriate to the reader audience.

An editorial review and advisory committee might be established later to focus on publication of documents other than the newsletter and journal. It will be important initially to establish a publications policy and procedures, including financial. For example, rather than mass mailing of documents within the region, available documents could be listed in the newsletter and SAJAR so that interested parties could write for copies. Some materials are expected to be published through off-set printing, while others might be type-set.

Also, SACCAR will develop a computer-based record of potential consultants, especially from within the region. This record will be periodically up-dated and serve as a source for identification of suitable consultants and resource people for meetings.

4. Grants and Special Studies

SACCAR will have two grant programs: small research grants and travel grants. Both are aimed at career development. Also funds will be available for special studies and consultancies to assist directly with SACCAR functions.

(a) Small Research Grants

The SACCAR small research grants program is designed to assist in career development of junior and mid-level scientists. The overall objective of the grants should be to support research by junior and mid-level scientists, which is recognized as a priority for the countries of the SADCC region in terms of increasing agriculture production and enhancing land use for the improvement in the social and economic welfare of the people of the region. Funds will be provided for recurrent expenditures and equipment. It will be the responsibility of the Director to submit a program to the CTC/R outlining the criteria for grant selection, the procedures for

application, selection, administration and follow-up of results and monitoring the activity.

Criteria to be considered for the selection of grants should include:

- Improvement of food crops, animal production systems, agro-forestry, and/or the interaction of these enterprises;
- Demonstration in the proposed research project that the projected results will have application within the SADCC region;
- Encouragement of multi-disciplinary research, with the possibility of clustering grants, which gives special emphasis to the relationships of natural and social sciences;
- SACCAR access to the results of the research for possible inclusion in the SAJAR;
- Enhancement of the career development of the researcher who would work closely with senior staff.

Some elements to be considered in the design of the program should include the following.

1. A maximum size of grant will be some level under \$20,000 for a set period. Continuation would be subject to submission of a new application to a "selection jury".

2. Application for grants will be considered from individual scientists and/or groups of researchers. No salaries or honorariums will be covered by the grants.

3. Applicants should be citizens of the countries of the region.

4. Small items of equipment will be considered in the budget of the grant application. However, the line item for equipment should not exceed 50% of the total budget.

5. Applicants should indicate and substantiate research clearance from the government of the country where the work will be undertaken. Also applications should have the approval of the organization/institution for which the applicant works.

6. Research work must be undertaken within the SADCC region.

7. The approval of grants will be undertaken by a "selection jury". The jury will be selected by the CTC/R. It will consist of three scientists from the region, knowledgeable of the agriculture problems and priorities of the region. One member should be a social scientist. SACCAR will act as the administrative secretariat for the jury.

8. The jury will meet twice a year. The applications will be sent to the jury members at least two months in advance of the jury meeting. Written technical review by qualified researchers in the discipline considered will be solicited by the jury.

9. The jury members will serve for a fixed period of time. Members of the first jury may be selected to serve such that one will serve for one year, one for two years, and one for three years. This will ensure continuity.

10. The jury will be provided an honorarium for days spent on the selection.

11. The director of SACCAR will participate in the selection with the jury as an observer. All rejected applications will receive written comments based on the jury's deliberations. SACCAR will be responsible for preparing these comments and sending them to the applicants.

12. Announcements for the submittal of small research proposals will be made in the SACCAR Newsletter, agriculture journals, and/or newspapers in the region six months in advance of the deadline.

13. SACCAR will be responsible for administering the grants. Contracts will be prepared between SACCAR and the scientist(s). The contract will specify dates for submission of progress and financial reports.

14. SACCAR will maintain an inventory of all projects and report progress of the program in the SACCAR Director's annual report. Mention of progress on specific projects can be reported in the SACCAR Newsletter.

It is expected that the small research grant program of SACCAR will be an effective mechanism to channel a small amount of funds to junior and mid-level researchers and scientists from the region for important and meaningful research. Subject to final agreement on the size of the fund

over the five year program of SACCAR, it is expected that about 90 grants will be made available. This will depend on the number of approved proposals and the size of each research grant budget.

It is expected that the small research grant program of SACCAR will greatly assist in building human capacity to do research in the region by providing scientists with an opportunity to be fully engaged and gain experience of doing relevant research.

(b) Travel Grants

The Center will sponsor and organize the administration of educational travel grants for intra-regional travel. The purpose of the educational travel grants program will be to provide junior and mid-level scientists and researchers in national research programs, faculties of agriculture and veterinary science, and related organizations to avail themselves of the experience and expertise of the region's more senior scientists. It will also permit junior and mid-level scientists to learn of the research achievements and problems in other member countries. The grants will cover travel between countries, per diem and in-country travel. The country employing the scientist will be expected to continue salary payments to the individual on a travel grant. While the grants are expected to cover visits of approximately two weeks duration, they might also be used to cover travel costs in cases where the grantee will serve in an apprentice/trainee position of a longer duration when the host or affiliate institution covers living expenditures and salary. It is estimated that up to twenty-four travel grants will be awarded annually.

SACCAR will establish the criteria for judging education travel grant requests and the foci of responsibility. Also, it will be responsible for designing the application format and establishing financial procedures. It is expected that the grant application will be signed by a representative of the applicant's organization and the application will be accompanied by a letter of invitation or concurrence from the individuals to be visited.

(c). Special Studies

Unlike the small research and travel grant programs which respond to the research ideas and needs of scientists in the region, the Special Studies Program of SACCAR will initiate studies on issues and problems of agricultural research in the region. This program may also be used to help establish

systems and procedures for SACCAR's own operations. There are a wide range of regional issues where more information and knowledge must be generated and analyzed before decisions and proper courses of action can be taken.

The issues will be generated through a number of mechanisms:

- 1) The Director of SACCAR in consultation with scientists and policy makers in the region;
- 2) Recommendations from workshops; and
- 3) The directors of national agricultural research institutions in the form of the CTC/R (the governing board of SACCAR).

Also, the areas identified for special attention for regional coordination will receive funds from this Special Studies Program. In particular, funds will be used for the up-date of the research inventory, natural resource and ecological data collection, processing and analyses, and identification and formulation of new regional research initiatives.

The Director of SACCAR will outline the proposed studies in the annual SACCAR Program of Work and Budget in consultation with the CTC/R.

The studies will be undertaken by consultants on direct contract with SACCAR, who will report to the Director of SACCAR with the specific findings.

Preference will be given to consultants from the region. However, in cases where a suitable individual is not available, recruitment can be undertaken from outside the region. It is not expected that SACCAR staff will have sufficient time to undertake specific studies themselves, yet SACCAR will be responsible for developing the terms of reference for the studies, identifying the consultants, monitoring progress, and administering the consultants. SACCAR will be expected to develop a databank on consultants from which to draw. The results of the special studies will be used to serve as a background paper for a SACCAR workshop on the subject, to assist in the identification and formulation of new SACCAR activities, to identify new regional agricultural research activities and formulate proposals, or to make recommendations on SACCAR internal policies, systems and procedures.

The findings and conclusions of all special studies will

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be summarized in the annual report of SACCAR and presented to the CTC/R. They should also be summarized in the SACCAR Newsletter. Some special study reports may be applicable for wider distribution and be selected for SACCAR publication. Otherwise, a limited number of complementary copies should be distributed to key institutions/organizations and other copies be available to interested parties for the cost of copying and posting. The exact arrangements will follow the publications policy which SACCAR decides upon.

D. Project Inputs

This section is divided into three parts: budgeting estimates, operational support and technical assistance, and infrastructure and equipment.

1. Budgetary Estimates - The following chart shows an illustrative budget for the various activities to be carried out under the program. Notes on derivations of the estimates are found in Annex (D).

Funding sources are from donors and SADCC member countries. The funding expressions of intent are:

CIDA - \$1.1 - 1.5 mill
USAID - \$1.5 million
Italy - 1.5 million
SAREC - .6 million
SADCC - .2 million

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SACCAR ILLUSTRATIVE BUDGET

(Detail on USAID Contributions, in U.S. \$, 000's)

CATEGORY	Year 1			Year 2			Year 3			Year 4			Year 5			5YR. TOTAL
	AID	OTHERS	TOTAL	AID	OTHERS	TOTAL	AID	OTHERS	TOTAL	AID	OTHERS	TOTAL	AID	OTHERS	TOTAL	
GENERAL OPERATIONS	(65%)	(35%)		(65%)	(35%)		(65%)	(35%)		(65%)	(35%)		(47%)	(53%)		
1. Salaries and Benefits	121.0	65.5	186.5	125.0	67.0	192.0	138.0	74.0	212.0	152.5	82.0	234.5	130.0	143.0	273.0	1098.0
2. Travel and Subsistence	20.5	11.0	31.5	23.0	12.0	35.0	24.5	13.5	38.0	27.5	14.5	42.0	23.0	23.5	46.5	193.0
3. Operations and Servicing	16.5	9.5	25.0	19.0	9.5	27.5	20.0	10.5	30.5	22.0	11.5	33.5	17.0	19.5	36.5	153.0
4. Other Costs	13.0	7.0	20.0	14.5	7.5	22.0	15.5	8.5	24.0	17.0	9.5	26.5	14.0	15.5	29.5	122.0
5. Contingency	8.5	4.5	13.0	9.0	5.0	14.0	10.0	5.0	15.0	11.0	6.0	17.0	9.0	10.5	19.5	78.5
Sub-Total	179.5	96.5	276.0	189.5	101.0	290.5	208	111.5	319.5	230	123.5	353.5	193	212	405	1644.5
PROGRAMS																
6. Meetings (CTC)	-	16.0	16.0	-	17.5	17.5	-	19	19	-	21	21	-	23	23	96.5
7. Workshops/Conference	-	96.5	96.5	-	106.5	106.5	-	117	117	-	128.5	128.5	-	141.5	141.5	590
8. Publications	9.0	-	9.0	34.0	-	34.0	37.5	-	37.5	41.5	-	41.5	45.5	-	45.5	167.5
9. Research/Study Grants	-	235.5	235.5	-	259.0	259.0	-	285	285	-	313.5	313.5	-	345	345	1438
10. Travel Grants	-	33.5	33.5	-	37.0	37.0	-	40.5	40.5	-	44.5	44.5	-	49	49	204.5
11. Contingency	-	19.0	19.0	-	22.0	22.0	-	24	24	-	26.5	26.5	-	29	29	120.5
Sub-Total	9.0	400.5	409.5	34.0	442.0	476.0	37.5	485.5	523	41.5	534	575.5	45.5	587.5	633	2617
CAPITAL COSTS																
12. Building Houses	316.5	84.0	400.5	-	-	-	-	-	-	-	-	-	-	-	-	400.5
13. Furnishings	-	62.0	62.0	-	-	-	-	-	-	-	-	-	-	-	-	62
14. Equip. and Vehicles	-	47.5	47.5	-	-	-	-	-	-	-	21.5	21.5	-	-	-	69
15. Contingency	16.0	9.5	25.5	-	-	-	-	-	-	-	1	1	-	-	-	26.5
Sub-Total	332.5	203.0	535.5	-	-	-	-	-	-	-	22.5	22.5	-	-	-	558
TOTAL PROGRAM COSTS	521.0	700.0	1221.0	223.5	543.0	766.5	245.5	597	842.5	271.5	680	951.5	238.5	799.5	1038	4819.5

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These funds, disbursed as per agreements between the individual donors and the GOB and/or SADCC, will be used for activities as per the rules and procedures for each donor. AID funds will be used principally for general operations and capital costs. CIDA funds will be used for general operations and programs. Italian funds will be used for programs and capital costs. SAREC funds will be used for career development activities under programs. SADCC member funds will be used for general operations.

It is planned that AID funds for operations will be advanced on a recurring basis and deposited in a Special Account to be drawn upon by the SACCAR Director with MOA approval. Construction costs will be reimbursed using the Fixed Amount Reimbursement (FAR) method. Both procedures will be the subject of a Project Implementation Letter giving detailed instructions.

2. Operational Support and Technical Assistance - The following charts show projected senior staff workloads and the required personnel inputs for carrying out planned activities.

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Time Requirements
Weeks per year of Senior Staff
on Major Activities

Activity	Director	Manpower Trning Off.	Information Officer
Basic administration and supervision	12 wks	4 wks	4 wks
Inventory of national research programs, bilateral projects donors, etc.	2	6	6
CTC Secretariat functions	4	2	2
CTC meetings	4	2	--
Promoting coordination of regional projects	6	6	2
Review and evaluation of regional projects	3	3	2
Special SADCC meetings	2	1	1
Workshops, seminars, conferences	2	16	3
Preparation of publications	2	2	12
Coordination with IARC's, agencies donors	11	4	4
New regional research initiatives	2	4	4
Natural resource, ecological data	<u>2</u>	<u>2</u>	<u>12</u>
Total Estimate	52 wks	52 wks	52 wks

Inputs for Major Activities

Activity	SACCAR Staff Regional Travel - round trips and persons						SACCAR Staff International travel - round trips and persons					
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total
Promoting coordination of regional programs	4	4	4	4	4	20	--	--	--	--	--	--
Review and evaluation of regional programs	--	4	6	6	6	22	--	--	--	--	--	--
Seminars, conferences, workshops	4	4	4	4	4	20	--	--	--	--	--	--
Special SADCC meetings, CTC meetings	6	6	6	6	6	30	--	--	--	--	--	--
Natural resource and ecological info.	2	2	2	2	2	10	3	3	3	3	3	15
New regional research initiatives	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>20</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
	20	24	26	26	26	122	3	3	3	3	3	15
	Consultancies/special studies in number of days						Workshops/conferences, showing participants and (no. of gatherings)					
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total
Establishment of SACCAR systems procedures, operations	60	30	--	--	--	90	--	--	--	--	--	--
Inventory of national programs	30	--	--	--	--	30	--	--	--	--	--	--
Coordination within countries	30	30	30	30	30	150	24 (1)	24 (1)	24 (1)	24 (1)	24 (1)	120(5)
Coordination of regional programs	--	--	--	--	--	--	--	10 (1)	10 (3)	10 (2)	10 (2)	80(5)
New regional research initiatives	30	90	90	90	90	210	24 (1)	24 (1)	24 (1)	24 (1)	24 (1)	120(5)
Natural resource and ecological information	<u>90</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>210</u>	<u>24 (2)</u>	<u>--</u>	<u>40 (1)</u>	<u>16 (1)</u>	<u>--</u>	<u>104(4)</u>
	240	180	150	150	150	870	96 (4)	58 (2)	118 (6)	94 (5)	68 (3)	426 (20)

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3. Infrastructure and Equipment - The required capital cost items are shown in the cost estimate notes (Annex D). Some explanation will be made here. Because of shortages of both houses and offices, funding support is provided to construct four senior staff houses and an office building (see engineering analysis, Section V-C). The office building should be adequate to provide working space for staff and for periodic meetings or visits. In the interim period before occupation (the offices and houses will not be completed until September-December 1985), office space will be loaned by the MOA's Research Division at Sebele near Gaborone, Botswana. Houses for senior staff will be rented until construction of the new houses is complete. The land for both the houses and office building will be provided by the GOB from government land at Sebele. Housing is included in the project because of the severe shortage in Gaborone.

In addition to normal office equipment and furniture for all staff and for visitors, the office building will have a word processor and a computer. These will be used principally for compiling and collating data banks on basic agricultural information from SADCC member countries, but also can be used in preparation of reports and publications. Such data and documents can be used for national and regional planning exercises.

A van will be purchased with program funds, to facilitate movement of staff and to assist with transport of visitors. In normal circumstances, staff will be responsible for their own transport. The van is to be used for special needs and activities.

E. Project Results

Many expected results of the activities carried out under the project cannot be quantified, nor can a direct causal linkage be made to changes in research efforts solely because of the SACCAR program. Yet it is assumed with confidence that the program will make a significant contribution to improved agricultural research practices, reductions in redundant research efforts, improved relevance of research, better utilization of local and limited resources for research, increased regional interest in research efforts, and ultimately, improved crop, agro-forestry and livestock production throughout the SADCC countries.

Certain program results, directly linked to inputs provided through donor assistance, can be quantified. These are grouped by project activity under the headings:

1. Promotion of Coordination in Agricultural Research;

2. Documentation and Publications;
3. Workshops and Training;
4. Grants and Special Studies.

1. Promotion of Coordination in Agricultural Research.

This generic grouping of activities has been divided into four major activities.

a. Regional Cooperation in Planning and Implementation - The major results of this most important activity are not quantifiable. Linkages between programs, between countries and between research efforts worldwide and efficient and effective use of agricultural resources for the betterment of the populace cannot be measured in narrow terms. It is an increase in awareness or understanding of the factors which influence decision-making and actual practices that can result in increased cooperation and mutual assistance. The project itself will help link country efforts within each state, with neighbors, and with international and donor organizations. The project will help inform people of potentials and possibilities as available resources are better understood. This increased level of understanding will occur in part through the interaction of people at workshops, seminars and conferences. Besides CTC/R meetings (two per year), at least 15 meetings are planned. These will involve some 450 total person weeks.

b. Inventory of Research Capabilities - The program will fund annual country inventory updates, as per the ARRA reports. These will provide information on production, resources, climate, population, inputs, budgets, facilities, manpower and so forth. Annual regional updates will also be done. The information collected and made available can serve as important planning and implementation tools for national and regional agricultural programs.

c. New Research Initiatives - Although new research initiatives have not been identified, since this should be done by the member states' research bodies, the program will fund efforts to explore new areas for cooperation in agricultural research. This can be done both through workshops with planners and researchers and through funding individual initiatives with small research grants or special study funds.

d. Natural Resource and Ecology Information - Beyond the information that is available through ARRA updates, the

efforts to collect information on national and regional resources should provide climatic data, soil classification, land use information and remote sensing maps. This information will be obtained by training personnel in collection and collation using a systematic format, by funding research grants and through special studies. The data can serve as valuable planning tools for researchers and government officials.

2. Documentation and Publications

As a result of the program, a newsletter will be printed regularly, increasing the readers' knowledge of regional agriculture through an estimated 18 issues. A total of some 36,000 copies should be produced. Additionally, it is planned that eight copies of the research journal will be produced, with some 16,000 copies distributed regionally and worldwide. An estimated 25 special reports of various kinds may also be produced as funds and the need for them are identified.

3. Studies and Grants

Through the program, a large number of studies and grants will be funded for various agricultural activities. These activities, as stated earlier, will include new research initiatives, establishment of linkages, systems strengthening and consultancies. Some thirty person months of consultancies/special studies are planned, while research grants should cover an estimated ninety different efforts. A total of some 120 travel grants within the SADCC region are planned, basically for study and career development, as well as enhancement of linkages.

4. Workshops and Training

A total of 450 person weeks of activities are planned over the life of the project, used for seminars, conferences, courses and/or workshops. These exercises, helping planners, researchers and administrators to work together for improved agriculture and personal development, will enhance regional utilization of limited agricultural resources.

V. ADMINISTRATION AND IMPLEMENTATION

A. Implementation Plan

The implementation plan is purposely kept fairly general. Detailed plans are expected to be specified in the SACCAR Annual Plan and Budget. Construction and staffing can be more specific in the anticipated timing.

<u>ACTION</u>	<u>IMPLEMENTOR</u>	<u>DATE</u>
Submittal of project proposals	CIDA, USAID, ITALY, SAREC, GOB	July 1984
Approval of project proposals	CIDA, USAID, ITALY, SAREC, GOB	Aug./Sept. 1984
Appointment of Interim Director	IDRC, GOB	Sept. 1984
Meeting of CTC/R	SACCAR	Sept. 1984
Signing of grant agreements	Donors, GOB	Sept. 1984
Selection of architect	GOB, SACCAR	Dec. 1984
Staff selection & placement	SACCAR, CTC/R	Mar. 1985
Architect drawing approved	GOB, SACCAR	Mar. 1985
Computer, word processors ordered	SACCAR	April 1985
Meeting of CTC/R	SACCAR	April 1985
Tender for buildings issued	GOB	April 1985
Construction contract awarded	GOB, SACCAR	July 1985
Estimated 18 research proposals awarded	SACCAR	1985
Estimated 24 travel grants awarded	SACCAR	1985
Estimated 6 p.m. studies/consultancies done	SACCAR	1985
Estimated 2 newsletters issued	SACCAR	1985
Estimated 3 seminars held	SACCAR	1985
Meeting of CTC/R	SACCAR	Sept. 1985
Bidding & award for furnishings, contractors	SACCAR	Oct. 1985
Office furniture & equipment	GOB	Oct. 1985
Construction of houses & offices completed	GOB, Builder	. 1985

Two CTC/R meetings held	SACCAR	1986
First project evaluation done	Donors, SACCAR	1986
Est. 24 travel grants, 18 research grants, 6 p.m. consultancies/studies, 2 journals, 4 newsletters & at least 3 meetings	SACCAR	1986
Two CTC/R meetings held, est. 24 travel grants, 18 research grants, 6 p.m. consultancies/studies, 2 journals, 4 newsletters, and at least 3 meetings held	SACCAR	1987
Replacement vehicle purchased	SACCAR, GOB	1988
Two CTC/R meetings held, est. 24 travel grants, 18 research grants, 6 p.m. consultancies/studies, 2 journals, 4 newsletters, and at least 3 meetings held	SACCAR	1988
Final evaluation & project completion report	SACCAR, Donors	1989
Two CTC meetings held, est. 24 travel grants, 18 research grants, 6 p.m. consultancies/studies, 2 journals, 4 newsletters, and at least 3 meetings held	SACCAR	1989
Project completed	Donors	Mar. 1990
Senior staff replaced or rehired	SACCAR, CTC/R	Mar. 1990

B. Managerial and Administrative Responsibilities

The SACCAR will be a semi-autonomous unit of the Botswana Ministry of Agriculture (in terms of its legal status) until such time as SADCC may decide to designate it a permanent regional institution. The Government of Botswana, in hosting SACCAR on behalf of SADCC, will provide administrative and fiscal support services, as necessary. SACCAR is, however, being established as a regional services body and as such is ultimately responsive to, and dependent upon, all member governments of SADCC for its mandate and support.

Responsibility for the day-to-day management of SACCAR is to be assigned to the Director, who in turn will be responsible to the Ministry of Agriculture and to the SADCC Consultative Technical Committee/R. An interim Director will be appointed for nine months with assistance from IDRC, during whose tenure recruitment of permanent staff will be undertaken. In addition to the Director, there will be two other full-time professionals, a Manpower and Training Officer and an Information/Publications Officer. These positions are to be filled by citizens of SADCC countries or, if no qualified individuals can be released from their current duties in their present places of employment, by persons from outside the region. There will be a small support staff of secretaries, typists, drivers, etc. The Director will liaise with the Botswana Director of Agriculture Research as his principle point of contact within the Botswana Government. The Director of Agriculture Research, in addition to his duties in Botswana, is also the Chairman of the CTC/R and also the focal point for carrying out Botswana's responsibilities within SADCC for coordinating agricultural research (a function which will continue, although much of the task will be relieved by SACCAR's activities).

The SACCAR includes among its service responsibilities that of serving as Secretariat for the CTC/R. The CTC/R, in turn, has a responsibility to oversee the operations of SACCAR and to provide policy guidance and decisions on program/project proposals and activities. The CTC/R is currently funded under a grant to the Regional Food Security Administrative Unit in Zimbabwe, but this fund will be expended at the end of calendar year 1984 and support for its future activities is incorporated into SACCAR's budget. The CTC/R will meet at least twice each year to review planning and program/project progress for regional agriculture research. The Director of SACCAR will serve as an ex-officio member of the CTC/R and will attend these meetings in order to provide the CTC/R with reports on SACCAR's activities and receive guidance on future activities.

A Donor Group, consisting of representatives of those donors contributing financial assistance to SACCAR, will meet concurrently with one of the annual CTC/R meetings and a joint session will be held between the two groups to review implementation of this project. The Donor Group meeting should be held during the first CTC/R meeting following the conclusion of the Botswanan fiscal year, the basis upon which SACCAR's accounting will be kept (1 April to 31 March).

Donor assistance provided to SACCAR will be kept by the Government of Botswana in a Special Account (with the exception of funds used for construction, which will be handled using the FAR method and will be disbursed against completed work units), with provisions for accounting for its receipts and expenditures

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on the basis of each donor's contribution. A sub-account will be maintained for assistance intended to support the research and educational travel grants of SACCAR's program activities. The GOB will have fiscal responsibility for funds in the Special Account and sub-account. Funds released by SACCAR for activities in individual member states or contributed by member states in local currency will be deposited into special national accounts in each SADCC country and reserved for SACCAR use. Such national accounts will be under SACCAR's control.

Each donor will provide its grant assistance to SACCAR using their own procedures and format and will negotiate with the Government of Botswana and/or SADCC individually. However, to provide assurance that the necessary funding will be available to carry out the activities described in this paper, donors will provide each other with copies of letters of intent to provide assistance for SACCAR and the level of assistance planned.

The members of SADCC are expected to support the operation of SACCAR through regular, annual budgetary contributions. The donors agree to a one year grace period before such contributions shall begin and to a gradualist approach rising from a second year contribution at a minimum of five percent of SACCAR's general operating costs to a minimum in the fifth year of twenty percent. The CTC/R shall be expected to present (at the first joint meeting with the Donor Group) a plan by which such contributions will be made. Failure to establish an acceptable system for regular, annual contributions on an ever increasing percentage shall release donors from any commitments to financially support SACCAR.

Recognizing the foreign exchange problems of many SADCC members, the donors would accept that initially such SADCC contributions could be in the currency of each country which would be placed in a SACCAR account in those same countries and used to support such costs as travel costs of CTC/R members and local currency elements of research grants, travel grants and training programs under the SACCAR programs. However, the operating costs of SACCAR will ultimately be required in convertible currencies and any approach developed by the CTC/R to institute member state contributions must shift to direct contributions of foreign currency. Future donor support for

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SACCAR after the first five years will be contingent upon the CTC/R successfully implementing a system for SADCC assumption of its operating costs. The plan for this system is to be presented to the donors for their acceptance during the first year of implementation.

No funds provided by donors will be disbursed until the interim Director is in place and temporary office and support facilities have been made available.

Project management and monitoring of SACCAR operations will be the responsibility of USAID/Botswana and the Southern Africa Regional Program Office in Harare. The Project Manager will be the USAID/Botswana Agriculture Development Officer, with assistance, as necessary, from the staff of the Southern Africa Regional Program office in Harare. The regional office will represent AID at the bi-annual CTC/R/Donor Group meetings at which project progress will be reviewed. Controller services will be provided by USAID/Botswana, in cooperation with the USAID/Zimbabwe Controller, who handles the Southern Africa Regional Program accounts. Engineering services will be provided by USAID/Botswana, with REDSO/ESA support, as needed.

C. Technical Analyses

1. Socio-Cultural Analysis

Over 67 million people reside in SADCC countries and the number will probably reach 100 million by the year 2000. While population size and densities vary greatly between the nine member states, there are important demographic similarities. By global standards the population density per arable hectare of land is extremely high. The 1980 per capita GDP for the region is estimated to be \$400, with a range from \$200 to \$1,000 for individual countries. Population growth rates of 2 to 3.5 percent place an ever increasing pressure on land to meet national and regional food requirements.

The majority of the region's population live in rural areas and are dependent on agriculture for their livelihood. The proportion varies from 60 percent of the Zambian population to at least 90 percent of the people in Malawi and Mozambique.

Control over land and the means of agriculture production varies among SADCC countries, although most of the agriculturalists can be said to be using land which is within the household or community domain, in contrast to being laborers on private or state-controlled estates. In some SADCC countries, however, the skewed distribution of land coupled with the increase in population places extreme pressure on land within the small-scale farming sector. Land pressure within the small-scale farming sector is increasingly disrupting traditional patterns of maintenance of soil fertility and structure. It also leads people to cultivate marginal land where the risk of crop failure is high and the yields are low under existing farming practices.

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The process of identifying various categories of farming systems within the small-scale farming sector has begun in some SADCC countries. In general, though, one can describe the small-scale farming sector as labor intensive and primarily dependent on household members for labor inputs. The use of purchased inputs, with the exception of seeds, tends to be low. Use of draught animals varies: their use is more common in Botswana, for example, than in Tanzania. Combining crop and livestock production is common and livestock often play an important role in the household economy. Except for Botswana, each SADCC country has only a small proportion of its population which are almost exclusively pastoralists.

Farm labor patterns show that women play a major role on the farm, particularly in growing food crops. In Lesotho, Botswana and Swaziland the migration of men for off-farm work, especially in South Africa, results in women being the principal farm labor force. The socio-cultural norms and values which operate in most of the region also place the responsibility on women for production of food for household consumption.

The cash income from off-farm employment often serves a crucial source of funds for investments in agriculture. In this way the small-scale farming sector is closely linked with other sectors of the economy. But, the prospects for other sectors to continue to absorb the growing labor force is problematic. Hence, there is a growing demand for the small-scale farming sector to increase agricultural production, employment, and income levels while at the same time maintaining the natural resource base.

Programs in SADCC member countries focus, in varying degrees, upon the agricultural production systems, which include elements such as access to credit, technical information and markets. Basic and applied agricultural research, a costly element of the system, has been identified by SADCC for regional cooperation and coordination. SACCAR will have a major role to play in this undertaking. The results are expected to enhance the effectiveness and efficiency of agricultural research endeavors which will be of benefit to the small-scale farming sector, as well as other farming sectors in the SADCC countries.

The direct beneficiaries of the SACCAR programs will be primarily agricultural scientists in the region. Over two hundred junior and mid-level agricultural researchers are expected to receive research grants and educational travel grants. The grants will assist in increasing the capacity to

do research. Some 450 participants will take part in SACCAR-sponsored meetings. These meetings will provide the opportunity to upgrade knowledge and skill bases, to exchange information and to help forge team work. Special attention is expected to be given to management skills which will result in greater use of existing resources in research systems/institutions. Meetings will also be used as a mechanism to gain participation in the conceptualization and formulation of proposals for the SACCAR newsletter, journal and special publications. The readers of these publications will also be beneficiaries of the project. They are expected to be mainly personnel in national research stations, students and faculties of agricultural degree and diploma granting institutions.

2. Engineering Analysis

a. Construction Requirements

Construction of an office building and staff housing is required to support the establishment of the Southern African Center for Cooperation in Agricultural Research. The Center will be located at the current agricultural college site at Sebele on the outskirts of Gaborone. The Center will include offices for the professional staff, support staff, and visiting scientists, a small conference room, and space for storage, duplication, and computer-based inventory work. A summary of the estimated building space requirements is listed below. A sketch plan of the office, prepared by the Building Department of the Ministry of Works and Communication, is available upon request. For staff housing, standard GOB plans will be utilized: three type II houses and one type M2 house. Specifications are also available from the Ministry of Works and Communication.

b. Standards

GOB general specifications for construction will apply to both the office and staff housing. These specifications call for reinforced concrete foundations, concrete slab floors and concrete block walls. Roofs have wood rafters covered with IBR steel roofing sheets. Floors are covered with vinyl or bathroom tile as appropriate. Window and door frames are steel and doors are of wooden construction. In addition to these general specifications, provision is made for individual room air conditioners and special flooring in the computer room of the office building.

c. Contracting

The Building Department will administer the construction

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program. Funds are provided for the Department to contract with a local architect firm for final design and quantity surveying for the office building and for preparation of site plans and site works specification for all construction. The construction will be advertised for tender and a contract will be awarded according to standard GOB Tender Board procedures. Adequate construction labor and experienced contractors are available in Gaborone. Construction is generally of excellent quality. A current slack in construction work should insure competitive bidding and a reasonable final cost.

It is anticipated that Fixed Amount Reimbursement (FAR) procedures will be utilized to finance the construction. These procedures are used almost without exception by AID on other project financed construction in Botswana and has been found to be extremely satisfactory to both AID and the GOB.

AID approval of final plans and contract award will be required.

Implementation Schedule

<u>Action</u>	<u>Date</u>
Project Agreement	September 1984
Selection of Architect	December 1984
Final Plans Approved	March 1985
Tender Issued	April 1985
Contract Award	July 1985
Completion of Construction	December 1985

The scheduling dates are based on AID experience with similar housing and simple building construction in Gaborone.

e. Cost Estimates

Cost estimates for the construction are based on a June 1984 review of the program by the Chief Quantity Surveyor of the Building Department. Annual inflation of construction costs is currently about 10%. Costs for the office building are based on recent contracts for similar construction which averaged approximately P355 per m². House costs are based on contracts for identical houses.

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f. Conclusions

The facilities to be constructed under the project are adequate to meet the intended purpose. The use of standard GOB specifications and procedures will ensure smooth implementation of the program and minimal recurrent maintenance costs. The USAID/Botswana engineering review of the requirements, designs, contracting arrangements, implementation schedule, and cost estimates concludes that the planning is adequate and costs are reasonably firm and acceptable. Therefore, the analysis is considered to meet all 611(a) requirements of the FAA Act of 1961 (as amended).

Office Space Requirement

<u>Staff Person(s) or Function</u>	<u>Area Required</u>
Director	15
Personal Assistant to Director	8
Manpower/Training Officer	10
Information/Publication Officer	8
Administrative/Accounts Officer	8
Typing Pool (3 Typists)	15
Research Assitants (2)	15
Conference Room (12 people)	15
Photocopying Room	8
Computer Room	10
Storage	10
Toilets	12
Kitchenette	6
Cleaning Store Room	4
Driver & Messenger	6
Hallways/Reception	<u>60</u>
Total	210m ²

Estimates (Pula)

Office Block @ P355/m ²	P 75,000
Air Conditioners and Computer Room Flooring	10,000
3 Type II Houses (P47,500 each)	142,500
1 Type M2 Houses (P19,500 each)	<u>19,500</u>
Sub-Total	247,000
Site Works and Services (Water and electrical installation, drainage, fencing, etc.)	<u>65,000</u>
Sub-Total	312,000
Professional Fees	<u>23,000</u>
Total (6/84)	335,000
Inflation (10% per year over 1984 estimates)	<u>33,500</u>
Total (12/85)	368,500
Contingency 10%	<u>37,000</u>
Total	P 405,500

At the exchange rate of \$1.00 = P1.15, total cost is \$352,500

3. Economic Analysis

Internal rates of return and benefit/cost ratios have little applicability for analyzing this type of project. The development of an institution which assists regional and national agricultural research does not generate quantifiable economic returns. Therefore, the project will be assessed on a "least-cost basis".

The establishment and operation of SACCAR for the initial five years of the project is estimated to require approximately \$5 million. The resources will be provided by up to five principal organizations: AID, CIDA, IDRC, SAREC, SADCC countries, and perhaps Italy. No one donor is playing a major role in funding and the cost increments are small for each donor in comparison to overall requirements. Therefore, for a limited amount, donors can participate in a large activity. AID is contributing roughly 30% of the project costs.

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If AID were to undertake full sponsorship of an organization helping to coordinate regional agricultural research, it would first have to locate such an organization. There is no institution, other than SADCC and SACCAR, in the region with the mandate of assisting with cooperative agricultural research.

SACCAR could operate differently than it is presently envisaged. SACCAR could actually carry out research activities, it could be a much larger institution, and could conceivably provide funds for long-term academic training. SACCAR could possibly help educate people at all levels of agricultural research. Yet SACCAR, as agreed upon by the SADCC member states, has been designed to be a small, tightly knit body that serves the on-going work of agricultural research bodies. As a service organization for the region, limited by agreement of SADCC members to a role as a facilitator for cooperation and coordination, the size in staff and facilities has already been determined.

Using regional resources for staff and technical assistance will lessen costs considerably, as external technical assistance personnel costs would be roughly double the cost of hiring staff from SADCC member countries. Land (for office building and houses) and certain supervision (of the special account, construction of facilities) are to be provided by the GOB at no cost to SACCAR. SADCC member states will be assuming a growing percentage of general operations costs over the life of the project. All these elements will reduce the cost of the project to the donors. They also help demonstrate the interest of the GOB and SADCC members in supporting SACCAR. Using SACCAR in the manner set out in this proposal, given the role SACCAR is to play in the development of agricultural research, is clearly a cost effective approach. Least cost is maintained and many donors share in contributing to the development of a strong, viable SACCAR.

D. Monitoring and Evaluation

SACCAR will establish its own internal monitoring system and use the information to help direct its activities. This is extremely important since, for SACCAR to be successful, it must meet the needs of the SADCC countries and be able to take a leadership role in facilitation of coordination in agricultural research. The internal monitoring system will include but not be limited to:

- (a) participant evaluations of workshops, seminars and conferences,

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- (b) a record of all requests for publications and other data,
- (c) a composite record of all participants of SACCAR-sponsored meetings and of all grantees, which specifies nationality, sex, discipline, position and educational level.
- (d) SADCC countries' direct and indirect financial contributions,
- (e) records on follow-up and outcomes of workshops, seminars, conferences, travel grants, research grants and special studies, and
- (f) at least one overall reader/librarian assessment of SACCAR publications.

The annual report of SACCAR to the CTC/R will serve as an internal evaluation mechanism. The report will contain information on activities, an assessment of their effects, and explain problems encountered and plans for the forthcoming year. A financial statement will also be included.

Two external evaluations will take place during the first five years of SACCAR. The first evaluation will occur during the last half of the second year. The team is expected to be joint donor sponsored group. The purpose of the evaluation will be to review the policies, systems and procedures established by SACCAR, the adequacy of staff in relation to workload, and the annual workplans and their execution. The evaluation team will also consider the direct and indirect financial contributions of SADCC countries. The team will address other topics deemed significant by the CTC/R and donor agencies. Recommendations on strengthening SACCAR are expected to result from the evaluation.

In the fourth year an external evaluation team, selected by the donors in consultation with the CTC/R, will assess progress to date of SACCAR, its potential role in future years, its effect and the degree to which SADCC countries are contributing to SACCAR's operational expenses. Attention will be given to ways for self-generation of funds to cover some SACCAR expenses. Each program component will be assessed to judge its effectiveness in contributing to SACCAR's objectives. The funding of the evaluations are expected to lead to recommendations on the future directions and financing of SACCAR.

E. Conditions and Covenants

1. Conditions.

Besides the standard condition precedence, this project will require the following before initial disbursement of funds:

- A) that an interim director for SACCAR has been appointed and has assumed his duties;
- B) that the GOB has made available to SACCAR temporary office and support facilities satisfactory to perform its functions; and
- C) that donor pledges have been received which assume full life of project funding.

Prior to disbursements related to construction activities the GOB shall furnish final plans and specifications, including cost estimates, for such construction, as well as evidence that appropriate sites have been made available by the GOB for such facilities.

Finally, prior to disbursement for operational and publication expenses for each year after the first project year, the GOB shall submit the approval SACCAR annual plan and budget for such year. The plan will include provisions that by the fifth project year, SADCC member-states will find twenty percent of SACCAR operating costs.

2. Covenants.

Only the standard special covenant on project evaluation will be included in the Grant Agreement.

F. Waiver

The authorized source and origin for goods and services will be the SADCC member states and Geographic Code 941. To be eligible for AID financing, ocean shipping must be on flag vessels of the United States, Code 941, and Botswana. A waiver from Code 941 to Code 935 may be requested for up to \$333,000 of construction materials. The materials to be used do not appear to be available (produced by) the SADCC countries in Code 941. Waivers will be processed during implementation, on a case-by-case basis, when the materials, suppliers, and amounts actually involved are identified.

All services are to be procured regionally if possible. Given the nature and mandate of SADCC and SACCAR, this is most appropriate for this project. The bulk of AID assistance will

be used for general operations of SACCAR (\$1 million), which will pay the salaries of core staff (both professional and support personnel who should be citizens of SADCC COUNTRIES) and support of core activities. Construction is to be done by the GOB (for \$332,500) through the Ministry of Works. AID will also fund the production of publications (\$167,500), which will be published in the region by locally owned printing firms.

G. Environmental Threshold Decision

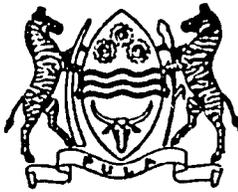
The PID recommended that a negative determination be made for construction and a Categorical Exclusion be granted (in accordance with 22 CFR Part 216, Section 216.2c). By STATE 265631, the environmental officer of the Africa Bureau accepted that recommendation and, therefore, no further action is required.

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TELEPHONE:

TELEGRAMS: FINANCE

REFERENCE:



REPUBLIC OF BOTSWANA

MINISTRY OF FINANCE AND DEVELOPMENT PLANNING

PRIVATE BAG 008

GABORONE

ANNEX A

26th June 1984

Mr. Dale Pfeiffer, Regional Program Officer
USAID/Harare

Mr. Paul Hudleston, Regional Officer
CIDA/Harare

Mr. Pietro Antinori, Department of Cooperation
Ministry of Foreign Affairs, Italy.

Dear Sirs,

The Government of Botswana, on behalf of the Southern African Centre for Cooperation in Agricultural Research (SACCAR), requests the multi-donor assistance of your respective organisations for financial support of SACCAR. This support, as per the meeting held in Gaborone on February 24, 1984, would be to finance general operations, programs, and capital costs over a five year period.

As Botswana has been given the responsibility, under the Southern African Development Coordinating Committee (SADCC), for regional agricultural research, we are soliciting your support for this worthwhile program. As part of a multi-donor contribution, your participation will greatly enhance regional cooperation in agricultural research and the establishment of SACCAR.

Yours faithfully

JUL 2 1984

O. K. Matambo
for / PERMANENT SECRETARY

cc: Permanent Secretary,
Ministry of Agriculture

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Annex B

PID Approval Cable

(See Classified Cable State 046877, Dated 2/16/84)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

(INSTRUCTION: THIS IS AN OPTIONAL FORM WHICH CAN BE USED AS AN AID TO ORGANIZING DATA FOR THE PAR REPORT. IT NEED NOT BE RETAINED OR SUBMITTED.)

Life of Project: From FY 85 to FY 90
Total U.S. Funding \$1.5 million
Date Prepared: July, 1984

Project Title & Number: Cooperation in Agricultural Research (690-0225)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes: (A-1)</p> <p>Improvement of regional agricultural research systems for more effective land use, improved agricultural productivity, and growth in farmer income.</p>	<p>Measures of Goal Achievement: (A-2)</p> <p>Local researchers share research findings and methodologies.</p> <p>Regional research activities are carried out effectively.</p> <p>National plans reflect improved systems.</p>	<p>(A-3)</p> <p>Participation in workshops by reps. from all members. charter of SACCAR reflects unified approach agreed upon by member states.</p>	<p>Assumptions for achieving goal targets: (A-4)</p> <p>SADCC member nations continue to work together for mutual benefits and allow free collaboration in agricultural research.</p>

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PROJECT DESIGN SUMMARY
 LOGICAL FRAMEWORK

Life of Project:
 From FY 85 to FY 90
 Total U.S. Funding \$1.5 million
 Date Prepared: July, 1984

Project Title & Number: Cooperation in Agricultural Research (690-0225)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose: (B-1)</p> <p>SACCAR serves as focal point for cooperation in the region and for coordinated activities in agricultural research amongst SADCC members.</p>	<p>Conditions that will indicate purpose has been achieved: End-of-Project status. (B-2)</p> <p>SACCAR is viewed by member states as the body that assists in regionalizing agriculture research and that helps research activities procure donor assistance.</p>	<p>(B-3)</p> <p>SACCAR annual reports evaluations.</p> <p>SADCC member states funding of SACCAR continues to increase.</p>	<p>Assumptions for achieving purpose: (B-4)</p> <p>Necessary financial support from member states and donor community is available.</p> <p>SADCC continues to work and full member participation continues.</p>

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project: From FY 85 to FY 90
Total U.S. Funding \$1.5 million
Date Prepared: July, 1984

Project Title & Number: Cooperation in Agricultural Research (690-0225)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Outputs: (C-1) Active participation from researchers in all activities, including publications, grants, seminars. Nations incorporate regional research initiatives in local workplans, budgets.</p>	<p>Magnitude of Outputs: (C-2) 450 person months of seminars/workshops, an estimated 90 research grants, 30 person months of special studies, 120 regional travel grants, 18 issues of newsletters, 8 issues of journals, up-to-date research inventory.</p>	<p>(C-3) Project annual reports evaluations publications accounts</p>	<p>Assumptions for achieving outputs: (C-4) Participation and cooperation in research activities by all members is achieved. Researchers utilize all available SACCAR resources.</p>

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 85 to FY 90
Total U.S. Funding \$1.5 million
Date Prepared: July, 1984

Project Title & Number: Cooperation in Agricultural Research (690-0225)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Inputs: (D-1)</p> <p>Funding support for general operations, for certain programs and for construction of facilities, all in conjunction with assistance from CIDA, Italian Aid, and SAREC.</p>	<p>Implementation Target (Type and Quantity) (D-2)</p> <p>Funding totalling an estimated \$5 million is obtained from multi-donor group.</p>	<p>(D-3)</p> <p>Budgets and reports agreements of SADCC and GOB with donors.</p>	<p>Assumptions for providing inputs: (D-4)</p> <p>Funding from donors and member states is adequate for carrying out project activities.</p>

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Cost Estimate Details

Working on the GOB fiscal year (1 April - 31 March), it is assumed that all personnel will be in place as of 1 April, 1985. Inflation at 10% per annum has been incorporated throughout the budget, starting in year two (year one being the base year). Figures represent emoluments for the highest salary levels paid within the region for equivalent positions and benefits, rounded to nearest \$500.

(1) Salaries and Benefits	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total
a. Senior Staff						
Director	25.0	27.5	25.5	30.5	33.3	153.0
Manpower & Training	21.0	23.0	25.5	28.0	30.5	128.0
Information Officer	18.0	20.0	22.0	24.0	26.5	110.5
Gratuity (10%)	6.5	7.0	8.0	9.0	9.5	40.0
Moving	12.0	--	--	--	17.5	29.5
Medical Insurance	7.0	7.5	8.5	9.5	10.0	42.5
Educational Allowance	12.0	13.0	14.5	16.0	17.5	73.0
Leave and Local Travel	7.5	8.0	9.0	10.0	11.0	45.5
Sub-Total	109.0	106.0	118.0	130.0	159.0	622.0
b. Support Staff						
Admin./Accounts	16.0	17.5	19.5	21.5	23.5	98.0
Technical Assistants (2)	24.0	26.5	29.0	32.0	35.0	146.5
Secretaries (2)	15.0	16.5	18.0	20.0	22.0	91.5
Typist/Clerk	5.5	6.0	6.5	7.5	8.0	33.5
Driver	4.0	4.5	5.0	5.5	6.0	25.0
Messenger/Cleaner	2.5	3.0	3.0	3.5	3.5	15.5
Gratuities (10%)	6.5	7.5	8.0	9.0	10.0	41.0
Insurance	4.0	4.5	5.0	5.5	6.0	25.0
Sub-Total	77.5	86.0	94.0	104.5	114.0	476.0

(2) Travel and Subsistence

a. Within SADCC, twenty four trips per year, at a cost of \$500 per trip, increased 10% per annum. A per diem of \$75 a day is provided, assuming five days per trip or 120 days total per year. Total is \$21,000 per year.

b. Outside SADCC three trips per year are assumed, at \$2,500 per trip airfare and per diem of \$100 per day for seven days per trip. The total is \$9,600 per year. Total travel and subsistence is therefore estimated at \$31,600 in year 1, increased 10% p.a. thereafter.

(3) Operations and Servicing

a. Telex operations are estimated at \$5 per message, 2500 messages per year, increased 10% p.a. Total annual costs are therefore \$12,500.

b. Vehicle POL/R & M is calculated at \$0.20 per km and 30,000 km per year, increasing 10% p.a.. In year 1 the cost is \$6,000. The vehicle is replaced in year 4.

c. Buildings and Houses - Maintenance and repair costs are assumed at roughly 1% p.a. of capital costs or \$5,000 per year.

d. Servicing of the photocopier, computers, and typewriters is estimated at \$1,500 p.a. In the base year the total operations and servicing costs are estimated at \$25,000 and is increased 10% annually thereafter.

(4) Other Costs

Stationary and office supplies are estimated at \$7,500 per annum, as are telephones and postage. Utilities (electric, water, waste disposal services) are estimated at \$5,000 per annum. The annual estimate of \$20,000 is increased 10% in year two and thereafter.

(5) Contingency

A contingency factor of 5% on all items is used for variations and to allow budgetary flexibility.

(6) Meetings

CTC/R meetings are to be held twice a year. One participant per country per meeting will be funded. Air fares are estimated at \$500 round-trip. For eight participants (host country participant will not travel) plus one SACCAR secretariat person, two trips annually will cost \$9,000 a year. Per diem, for nine persons, \$75 a day for five days per trip totals \$6,750. The annual estimated cost of \$15,750 is increased 10% p.a.

(7) Workshops, Seminars and Conferences

a. Participants are estimated at 27 per gathering, three done per year, lasting five days each. Using \$75 per diem on 24 people (host country people not receiving per diem) and \$500 airfare per person, the annual cost is $\$75 \times 24 \times 5 \times 3 + 500 \times 24 \times 3 = \$63,000$, increased 10% p.a.

b. Resource persons will be required. It is assumed that an average of three people will be needed, one from outside the region and two from the region. Airfares per workshop are then estimated at \$3,500. Per diem per day is \$75, seven days and a fee of \$150 per day paid. This equals \$4,725 per workshop. For three workshops, resource persons will cost about \$24,675, increasing 10% annually.

c. Translation and miscellaneous expenses, such as papers, reception, rentals, etc., are estimated at \$3,000 per workshop or \$9,000 per annum. Annual costs are then estimated at \$96,675, increased 10% p.a.

(8) Publications

a. Newsletter budget is based on issuing two in year 1 and 4 thereafter, each issue being for some 2000 copies. Translation, printing and distribution are estimated at \$1,500 per issue. This level is increased 10% p.a.

b. Journals are to be produced semi-annually, 2000 copies of each issue (averaging 100 pages). The first journals are prepared in year two, costing \$10,500 per issue for editing, translation, printing and distribution.

c. Others, such as printing and distributing of consultancy reports, duplications of special papers, workshop summaries, etc., are estimated at \$6,000 per year. The total estimate for publications is then \$9,000 in year one. In year two, with four newsletters of \$1,650 each (\$6,600), two journals at \$10,500 each (\$21,000) and other documents at \$6,600, the cost is \$34,200 and is increased 10% thereafter.

(9) Research/Study Grants

a. Research Grants are estimated at \$10,000 each, with eighteen initiated in each year. These are also increased 10% p.a.

b. Study Grants

These studies, for special SACCAR activities and including consultancies, shows six person months per year. The cost for travel is assumed at \$15,000 per annum (international travel at \$2,500 per trip), with a fee of \$150 per day and a per diem of \$75 on 180 days. The annual cost is then \$55,500, increased 10% p.a. The total Research and Study Grants is then \$235,500 p.a., increased 10% annually.

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(10) Travel Grants

Regional travel grants will be given at a rate of twenty-four per year. A travel cost of \$500 is assumed for each trip with \$75 per diem paid for twelve days (two weeks). Therefore annual costs are \$33,600 and increased 10% per annum.

(11) Contingency

A contingency of 5% is put on the total estimated costs for each year.

(12) Building and Houses

Using the cost estimates shown in the Engineering Analysis (Section VC), building costs and housing costs are estimated at \$352,500. Rental of four houses during the first year at \$1,000 per month per house is also included. Therefore the total is \$400,500, all incurred in the first year.

(13) Furnishings

a. Staff house furnishings, bought in the first year, are calculated as follows:

Item	Cost & No. Units	Total
Dining Set	\$1,300 x 4	\$ 5,200
Sofa Set	2,000 x 4	8,000
Bedroom Set	2,000 x 4	8,000
Kitchen Stove	500 x 4	2,000
Refrigerator/Freezer	1,100 x 4	4,400
Air Conditioners	500 x 12	6,000
Writing Table	200 x 4	800
Chairs	100 x 12	1,200
Lamps and Misc.	1,000 x 4	4,000
Draperies	1,000 x 4	4,000
		<u>43,600</u>

b. Office furnishings, also purchased in the first year of the Project, are estimated as follows:

Item	Cost & No. of Units	Total
Executive Desks	\$ 600 x 4	2,400
Executive Chairs	350 x 4	1,400
Ordinary Desks	300 x 4	1,200
Desk Chairs	150 x 8	1,200
Ordinary Tables	120 x 4	480
Ordinary Office Chairs	70 x 20	1,400
Typing Desks	140 x 3	420
Filing Cabinets	150 x 10	1,500

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Air Cond'ioner Units	500 x 9	4,500
Curtains	1000 x 1	1,000
Refrigerator and Cooker	1600 x 1	1,600
Conference Table	1500 x 1	1,500
		<u>18,600</u>

The total for furnishings is rounded to \$62,000, all costs incurred in the first year.

(14) Equipment and Vehicles

a. Vehicle. In the first year of the project, a van (mini-bus) is purchased at an estimated \$16,000 and is replaced/augmented in year four by another mini-bus in year four at an estimated cost of \$21,500.

b. Mini-computer. A mini-computer, with peripherals and software, is budgeted at \$10,000.

c. Telex Terminal. The cost has been estimated to set up a (rental unit) terminal at \$1,500.

d. Audio-visual equipment. A projector (movie), slide projector, recorder and cameras have been budgeted at \$4,000.

e. Word Processor. A simple word processor, with printer and two stations, has been estimated to cost about \$3,000.

f. Typewriters. Three typewriters will be purchased, at an estimated \$1,000 each.

g. Photocopier. A large unit, capable of collating and reducing copy size, is budgeted at \$8,500.

h. Miscellaneous Equipment - Such items as trays, staplers, scissors, rulers, waste baskets, cleaning and gardening tools, etc., are estimated to cost \$3,000.

Total estimated cost in year one are \$47,500.

(15) Contingency

Even though there is contingency shown in the Engineering Analysis (Section VC) an overall 5% is again used in the first year. This provides a further cushion for possible cost escalations and modification.

The overall AID contribution is \$1,500,000 and is allocated to general operations (\$1,000,000), publications (\$167,500) and capital costs (\$322,500).

The overall CIDA contribution is \$1,100,000 and is allocated to general operations (\$464,000) and programs (\$636,000).

The Italian contribution to the Project is expected to be \$1,500,000 and is allocated to programs (\$1,274,500) and capital costs (\$225,500).

The participation by SAREC and IDRC in programs is estimated at \$539,000, for research, study and career development activities.

The contribution from SADCC countries during the initial five year period is estimated at \$180,500 for general operating expenses.

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Job Descriptions for Senior Staff

(a) Director

Duties:

The Director should be responsible to the Ministry of Agriculture, the Government of Botswana, and to the CTC for Agricultural Research for the performance of the following duties:

- Overall responsibility for management of the Center and its activities;
- Responsibility for supervision of Center staff;
- Development of close working relationships with: the Government of Botswana (Ministries of Agriculture and of Finance); the CTC for Agricultural Research; the SADCC Secretariat; the SADCC Agricultural Programs; the external assistance organizations, including CDA member representatives; and with the IARCs and corresponding research institutions outside of the region;
- Gaining a comprehensive familiarity with ongoing and prospective agricultural research projects and activities of a regional nature in the SADCC region;
- Preparing and being responsible for the Center budget; and

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Other duties, as may be required to fulfill the role of Director of the Center.

Qualifications:

- A degree of Doctor of Philosophy (or its equivalent) in some discipline of agricultural science;
- International recognition as a competent scientist in his own right with a minimum of 5 years of research experience supported by refereed publications;
- Experience and proven effectiveness and success in the administration of agricultural research programs, such as being director of national agricultural research;
- Experience in regional or international agricultural research; and
- If the language of education is English, a fluency in Portuguese; or, if the language of education is Portuguese, a fluency in English (highly desirable, but not a requirement).

(b) Manpower and Training Officer

Responsible to Director

Duties:

- Assessment of natural and human resources within the region for agricultural development
- Review of manpower training needs within the region.
- Advise on current and future requirements for manpower and training within the region.
- Promotion of training and career development of SADCC scientists including arrangements for (a) regional meetings, workshops and conferences, (b) regional travel grants (c) small individual grants for research, and (d) training courses.
- Other duties as may be assigned by the Director.

Qualifications

- A M.S.C. degree or its equivalent, in some discipline

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of agricultural science.

- A minimum of three years of experience as an officer responsible for training, conferences, workshops, administration study/travel grants in the field of agricultural research.
- Regional or international experience in the administration of training.
- A fluency in Portuguese if the language of education is English (or vice-versa) - high desirable but not essential.

(c) Information/Publications Officer

Responsible to Director

Duties

- Promote continuous and rapid interchange and utilization of technical and scientific information among scientists in the region.
- Compilation of information on regional and national plans for agricultural research and development including production targets.
- Maintain current computer based inventories of informal or national agricultural research systems or the region.
- Publication of a period newsletter.
- Publication of a regional journal of agricultural research.
- Other duties as may be assigned by the Director.

Qualifications

- A minimum of M.Sc. degree in a relevant subject.
- Experience as an editor or information/publications officer in an agricultural research institution.
- A knowledge of handling a computer-based data base.
- Experience in a regional or instructional agricultural research institution (preferable but not essential).

- Language of education English, and preferably, fluency in Portuguese.

(d) Administrative/Accounts Officer.

Responsible to Director

Duties

He will report to the Director of the Center and be:

- Responsible for day-to-day administration of the Center (accommodation, material, management, printing, furniture, purchasing);
- Make arrangements for selection and appointment of support staff such as secretaries, typists, drivers and messengers;
- Keep all accounts for the Centre;
- Maintain a petty cash account;
- Arrange for travel;
- Prepare cost analyses of Center activities;
- Other responsibilities attendant to his position as Administrative/Accounts Officer.

Qualifications:

- Training in business administration, or a related field, to the level of B. Admin., or the equivalent;
- Experience in the maintenance and operation of accounts;
- Experience in handling administrative responsibilities and accounting in an organization of comparable size and complexity to that of the Center; and
- A person whose language of education is English, and preferably, with a fluency in Portuguese.

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(e) Coordination Assistant

Responsible to Director
Duties

- Assist in the preparation of reports for CTC meetings
- Assist in the preparation of reports for various SADCC meetings on agricultural research
- Draft minutes of CTC meetings
- Prepare drafts of annual reviews of regional projects
- Routine correspondence
- Other duties as may be assigned by the Director

Qualifications

- B.Sc. degree or equivalent in some discipline of agricultural science
- A minimum of two years as an agricultural research assistant
- Regional or international experience highly desirable.

(f) Information Assistant

Responsible to Information/Publications Officer

Duties

- Maintain a current computer-based inventory of information on national agricultural research systems of the region.
- Maintain current lists of bilateral and programmes within the region.
- Maintain current information on national plans for agricultural research development, including production targets.
- Assist in the preparation of the newsletter.

Qualifications

- B.Sc. degree or equivalent in a relevant subject and training in computer programming and operation.
- A minimum of two years experience of handling computer-based data banks.

Experience of agriculture production or research high preferred.

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AGRICULTURAL RESEARCH IN ANGOLAA. Brief description of the national agricultural research system

Crops research is handled by I.I.A. (The Instituto de Investigações Agrícolas) which is located at Huambo, in the interior of the country. It is one of the several dependencies under the Vice Minister of Agriculture (see organigram). IIA consists of the Departments of Soils, Phytopathology and Plant Breeding. It has 20 researchers, all at the B.Sc. level.

Animal research is within the I.I.V. (Instituto de Investigações Veterinárias) and deals mainly with diagnosis and treatment of diseases, and preparation of vaccines.

There is one College of Agriculture (Faculdade de Ciências Agrárias), also located at Huambo, which grants the equivalent of B.Sc. degrees. Also, there are three technical schools of agriculture (Institutos Médios Agrários).

B. Research priorities

The priorities in crop research are maize, rice, cassava, potatoes, cotton and coffee. Within the animal sciences, poultry receives primary attention.

C. Publications

There is no regular research publication at present. There are farmers publications.

D. Interaction of the national research system with other national systems in the SADCC region

There is some interchange, mainly with Zimbabwe, but it is considered weak. Scientists try to attend regional meetings.

E. Cooperation with international research organizations

IIA has some relationships with IITA (Two IIA scientists have been train at IITA) and with CIMMYT.

F. Views on possible functions of a coordinating center

1. Maintenance of up-to-date records of agricultural development policies, production targets and reviews.

Some data can be provided but perhaps some cannot. The persons interviewed consider that in this regard only the Minister can give an opinion.

2. Assist with the reviews, at regular intervals, of national and international research programs in the region.

The view was expressed that the reviews can be done at the request of the country and wherever there is a need for such.

3. Maintenance of an inventory of agricultural research workers, research projects and resources for research.

The national research system can provide information about the research workers and research projects, but cannot give information about resources for research.

4. Promote continuous and rapid interchange and utilization of technical and scientific information by:

- (a) technical journal and newsletter
- (b) regional meetings, conferences, seminars etc.
- (c) exchange of visits by specialists, scientists and technicians.

This function is considered to be very important, and they emphasized that in the case of the journal and newsletter, the use of Portuguese is very important. This is perhaps even more important in the case of conferences and seminars, because while they can read English with some difficulty, they find it difficult to fully participate in seminars given in English.

5. Promote and facilitate concerted studies of problems common to several or all countries.

This was considered to be an important function.

6. Promote cooperation in training and career development of scientific and technical personnel.

This was considered to be the first priority and the greatest need, and they pointed out that the training has to be in Portuguese. Their opinion is that the trainers can be from Portugal, Brazil or from a Latin American country, considering that it will be easy for them to understand Spanish.

7. Encourage free exchange and cooperative evaluation of plant and animal germplasm and improved material.

They are in agreement.

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8. Promote effective interaction with the international agricultural research centres.

They agree completely.

G. Persons interviewed

Oscar Asencot de Menezes - Director of Nacional de Organizacao da Producao Agraria.

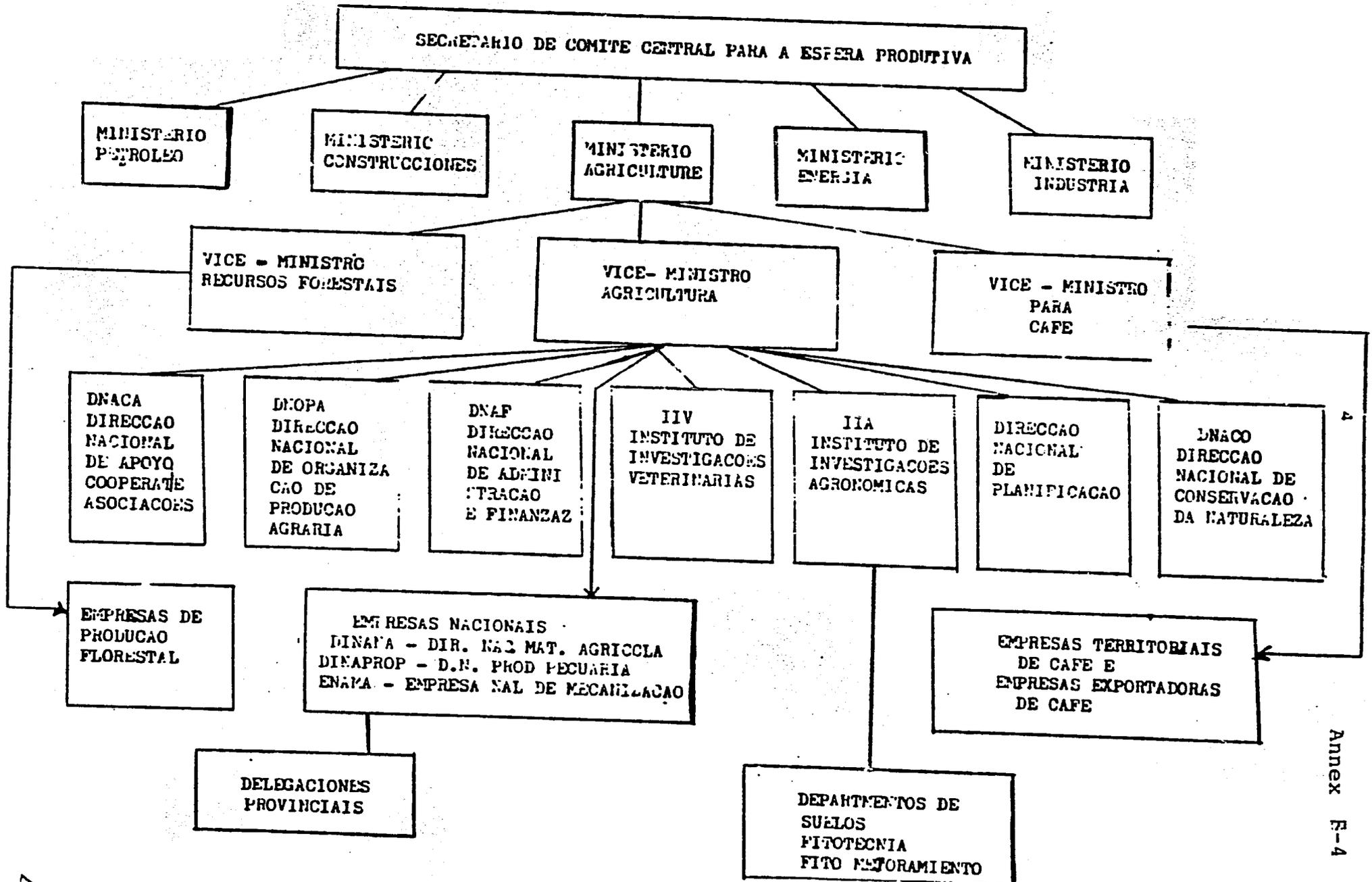
Jose Reis - Chefe de Sector de Fitosanidade

Carlos Rosario - Chefe de Departamento de Agricultura

Joana Coelho da Cruz (SRA) - Chefe do Gabinete do Ministro do Agricultura.

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ANGOLA



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AGRICULTURAL RESEARCH IN BOTSWANA

I. The Components

The Department of Agricultural Research in the Ministry of Agriculture is responsible for all national agricultural research. The Department is headed by a Director of Agricultural Research who is assisted by a Chief Arable Research Officer, as Head of the Arable Crops Division, and a Coordinator for the Animal Production Research Unit.

The current program of research in the Arable Crops Division consists of the following projects and experiments:

1. The Dryland Farming Scheme which conducts studies on the problems of soils and climate as they affect arable cropping in the semi-arid areas.
2. Evaluation of Farming Systems and Agricultural Implements Project. The objective of this project is to develop a range of animal powered machinery for cultivating, planting, weeding and fertilizing the main arable crops of Botswana.
3. The Agricultural Technology Improvement Project conducts farming systems research in Eastern Botswana.
4. Agricultural Development Ngamiland is also a farming systems project in Western Ngamiland.
5. Melapo Development is a water management project at the Mazanga molapo in Eastern Ngamiland.
6. Plant pathology: studies on sorghum downy mildew and cowpea aphid-borne viruses.
7. Entomology: biology and ecology of stalkborers, insecticide evaluation, pest surveys.
8. Crop Screening: sorghum, maize, cowpea, mungbean, sunflower and groundnut.
9. Fertilizer research.
10. Nitrogen studies in cereal/legume crop mixtures and sorghum/cowpea rotation.
11. Crop Improvement (pulses and oilseeds).
12. Wheat investigations (yield evaluation of introduced material under dryland and irrigated conditions).

13. Horticulture, mainly agronomic trials of cabbage, carrot, onions and potatoes, and studies on the economics of production.

The Animal Production Research Unit conducts research in beef production and range management. It has experiments in animal breeding, nutrition, health and husbandry. It also conducts research in production economics and diarying. Range management experiments include bush control, grazing systems, stocking rate, communal grazing and fodder introduction.

II. Priorities and Strengths

Priority areas of research are sorghum and cowpea production, and beef and range management.

Areas of strength are in:

- (a) development and testing of ox-drawn equipment or machinery for small-farm use in semi-arid areas.
- (b) crop water use efficiency studies under semi-arid conditions.
- (c) cattle breeding and range management studies.

III. Publications

The Department of Agricultural Research publishes two division reports in arable crops and livestock, respectively, and separate projects reports on an annual basis.

IV. Interaction with national agricultural research systems in the SADCC region

Since the demise of SARCCUS, to which most of the SADCC countries belonged, interaction with other national agricultural research systems has been poor. The only noteworthy activities are the receipt of groundnut and maize germplasm from Zimbabwe, and the transmission of soya-bean germplasm from Zimbabwe through Botswana to Zambia. Recently Ms. L.L. Lethola, animal breeder at Sebele Research Station, visited Zanzibar at the request of the authorities there as a consultant in beef cattle breeding.

V. Cooperation with research and research support organizations outside SADCC.

Many donor countries and international donor organizations support agricultural research in Botswana. There also exists effective interaction with the IARCs. ILCA, for example, has a representative located at Sebele Research Station.

VI. Views on regional cooperation

A. Need for a regional centre

There was unanimous agreement on the need for a centre to promote cooperation in agricultural research between SADCC member countries.

B. Views on suggested functions of the Center

There was general support for the suggested functions of the Centre as contained in the terms of reference. However, on the function of "assist with reviews of national programs", the view was expressed that the Centre should make the service available and use it only at specific request of national programs.

The urgent need for regional germplasms as working collections was emphasized, as well as the training of technical farm research personnel, and assistance to national programs in experiment station development and operation.

Another area in which it was felt the Center could play an important role, is to advise government of important areas requiring research and the application of research results to farm production.

C. Possible contribution to regional activities

Botswana has strengths to share with other SADCC countries in cattle breeding, range management, sorghum breeding, soil physics and testing of ox-drawn equipment.

VII. Organizations and persons contacted

Office of the President

L.M. Mpotokwane

Administrative Secretary, and
Chairman of SADCC Committee of
Officials.Ministry of Finance

E.M. Maphanyane

Planning Officer (SADCC)

M. Afeta

Principal Planning Officer

Carol Heald (Ms)

Secretary, Inter-Ministerial
Drought Committee

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USAID

Paul Guedet

Director

Anita Mackie

Rural Development Officer

British High Commission

A. Davies

Acting High Commissioner

S.W. Gregson

Aid Secretary

VIII. Documents Consulted

1. Anon. Draft research work programme, Agricultural Research - Arable Crops Division, List of ongoing projects and experiments 1982/83. Mimeo 19 pp.
2. Anon. 1980. Ten years of animal production and range research in Botswana. Animal Production Research Unit, Ministry of Agriculture, Gaborone. 199 pp.
3. Anon. Evaluation of farming systems and agricultural implements project (EFSAIP) Botswana Report No. 5 1980-81, and Report No. 6 1981-82.
4. Anon. Dryland Farming Research Scheme, Phase III Third Annual Report 1981/82. Summary 21 pp.

AGRICULTURAL RESEARCH IN LESOTHO

I. The Components

A. Department of Agricultural Research Services

The Agricultural Research Division is in the Ministry of Agriculture, Cooperatives and Marketing. At present, the main emphasis is on crop research, and this is being undertaken at the Maseru Central Experiment Station. There are sub-stations at which field trials are undertaken and these comprise: Leribe, Teyateyaneng, Matsieng and Mafeteng in the lowlands; Machache in the foot hills; and Mokhotlong in the eastern part of the mountains. The main fields of operation are:

- (i) Agronomy
- (ii) Horticulture
- (iii) Pasture and Range
- (iv) Plant Protection
- (v) Seed Testing, and
- (vi) Engineering

An integrated approach to farming system research is being undertaken with assistance from USAID. Animal production research has not been launched yet, but it is anticipated that in future great emphasis will be paid to improving the quality of livestock.

The Government of the Kingdom of Lesotho has been keen to see that agricultural research was directed at looking for ways and means of halting soil erosion, improving soil fertility and improving the productivity of livestock.

Lesotho has been investing in crop research since the 1930s. The crops which have been receiving major attention are: maize, wheat, sorghum, malting barley, soya beans, groundnuts, fruits, while haricot beans, peas, sunflower, potatoes and lentils.

The main programs of work include:

- (i) Irrigation research under the Irrigation Research Project,

(11.) Dryland crop research which is undertaken at the Maseru Research Station and includes:

- (a) Soil fertility and fertilizer studies,
- (b) Varietal testing for different agro-ecological zones for major cash crops such as maize, sorghum, wheat and beans,
- (c) Cultivation trials,
- (d) Herbicides trials,
- (e) Insecticides trials,
- (f) Experiments with potential cash crops such as malting barley, soya beans, groundnuts, fruits and vegetables.

A USAID-supported Research Report on Lesotho's Agricultural Sector Analysis of 1978 emphasized the need for more information on climate and soil capability so as to be able to predict and counter environmental hazards which include, or lead to, recurrent droughts, frequent hail, crop killing frosts, field flooding and infestation of crops by insects and blight. In the Farming Systems Research Project, expatriate specialists in agronomy, extension and marketing work hand in hand with Lesotho nationals in trying to see that research findings get applied and benefit the farmers. The USAID has also funded Field Research Centers in which demonstrations to farmers on improved farming techniques are undertaken.

B. The National Research Council

The National Science Research Council established several years ago, has not been active in recent time. The Unit in the National University of Lesotho at Roma, known as the Institute of Southern African Studies (ISAS), is playing the role of the National Research Council. The Board of Directors of the Institute includes senior officials in most of the Government Ministries. The Director of Agricultural Research is a member of the Board, and the Vice-Chancellor of the National University of Lesotho is the Chairman. The Board receives, considers and approves or rejects the applications to undertake research by various scientists in the country. The ISAS disburses funds for research once the project has been approved. The Rockefeller Foundation has supported the establishment of the Institute (ISAS) in the national University. The Free University of Amsterdam, Holland and other agencies have also provided funds for research to the ISAS.

C. Research by the University

Although Lesotho has no faculty of agriculture (one is planned to start at the College of Agriculture in Maseru in 1984), some agriculturally-related research is undertaken by the ISAS in the National University of Lesotho. It is hoped that when the Faculty of Agriculture is established, it will assist in training local agricultural scientists who would undertake research. These would work together with the Lesotho nationals who are currently undertaking research and who are too few to be very effective.

D. Other Organizations which undertake agricultural research

At the time of the visit, there were no other institutions other than the Ministry of Agriculture and the University which were undertaking agricultural research. However, the Fertilizer Board, the herbicides companies, the Agricultural Associates Company, and the seed companies have supported research by providing funds, chemicals or seeds.

II. Priorities and strengths

The findings from the ISAS Unit and the Farming Systems Research Project will be of value to all SADCC countries. Lesotho can also contribute to the knowledge on crops, fruits and vegetables which are adapted to areas with a temperate climate.

III. Publications

Agricultural scientists in Lesotho do not have a scientific journal in which to publish their results. Only occasional research papers are published. The research workers in the Ministry of Agriculture, therefore, welcomed the idea of having an agricultural science journal for the SADCC countries.

IV. Interaction of the national agricultural research system with other national systems in the SADCC region

The interaction of staff in the Research Division with counterparts in other SADCC countries is mostly on an informal, personal contact basis. There has been an exchange of maize and wheat seeds with Zimbabwe and beans with Malawi. Agricultural scientists in Lesotho have visited research centers in Botswana, Mozambique, Angola, Zimbabwe and Zambia, but these visits have been arranged on an informal basis. Lesotho was very keen to see that there was more cooperation between agricultural research scientists in the SADCC countries.

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Lesotho has well established wool and mohair industries, and is the world's fourth largest producer of mohair, after the Republic of South Africa, USA and Turkey. If research were developed to improve the productivity of these industries, SADCC countries with potential for wool and mohair production could learn from Lesotho. The country has in addition several crossbred cattle. Screening them for either dairy or beef production, using the experiences from Botswana and Zimbabwe, would be very worthwhile. Lesotho could also benefit from other SADCC countries in the fields of livestock nutrition, pasture and range management, afforestation and water harvesting techniques.

V. Cooperation with and research support by organizations outside of the SADCC region

The Department of Agricultural Research cooperates with CIMMYT, ICRISAT, IITA and CIAT.

The organizations which provide financial support for agricultural research include, USAID, IDRC, FAO, ISNAR, the Rockefeller Foundation, the Netherlands Government and ODA.

VI. Views of the national agricultural system on regional cooperation

As pointed out earlier, the agricultural research staff in the Ministry of Agriculture in Lesotho are very keen to see that there is cooperation in agricultural research among the SADCC countries. Lesotho would gain in the fields of exchange of information, training, and exchange of improved varieties of crops. They would in turn offer some experience in farming systems and in horticulture.

VII. Organizations and persons contacted

A. Ministry of Agriculture

1. W.P. Nts'ekhe, Chief Research Officer
2. M.T. Matli, Deputy Chief Research Officer
3. P. Kolobe, Accountant
4. M.M. Kotsokoane, Sen. Research Officer, Horticulture
5. H.M. Makhatha, Fodder Tech. Officer

USAID Farming Systems Research

6. J. Clark Ballard - Chief of Party
7. D.V. Youmans - Extension Specialist

B. The National University of Lesotho

1. A.H. Rweyemamu, Institute of South African Studies

VIII. Documents Collected

1. Staff List Division of Agricultural Research. (Mimeo).
2. Agricultural Research Technical Information Bulletin. A new Model for the Education of Village Agricultural Committee Members at Nyakosba and Siloe, Lesotho. April 12-21, 1983. By D. Youmans. Extens. Specialist. Wash. St. Univ. and Min. of Agriculture. Maseru.

AGRICULTURAL RESEARCH IN MALAWI**I. Organization of research**

Attached to this country report are three organigrams the first of which (1a) shows the recently adopted organization of the Ministry of Agriculture and the place of the department of agricultural research within this organization. The second of these organigrams shows the current organization of the department of agricultural research, bearing in mind that research subjects and crops are projectised and that each research project (program) has a national program coordinator. The third of these organigrams (1c) shows the proposed organization of the department of agricultural research in which the current research projects (programs) are grouped into commodities. Note the part of this proposal under ADD (Agricultural Development Division) Adaptive programs; there will be eight of these carrying out on-farm-trials testing the recommendations put out by research teams. ADDs will also assist extension staff with farmer demonstration plot work.

This description of research organization in Malawi does not include commodity funded research on tea and tobacco nor university research. The link is through the Chief Agricultural Research Officer who is a member of research boards, etc.

II. Research staff establishment

The total establishment of research staff from Chief Agricultural Research Officer to Technical Assistant levels, and including Senior Administration staff, is 436 for Malawi with its 6.3 million population. Total vacancies amount eight only. In slightly more detail there are 75 Principal Officer (Graduate Research Officer) posts of which two are vacant; 89 Technical Officer (3-year Diploma) posts of which one is vacant; 272 Technical Assistants (2-year Certificate) posts of which four are vacant and eight Senior Administrative Officer posts of which one is vacant.

III. Research training programmes - research officers

There are 12 staff in the USA in Ph.D. programs, and 14 staff in M.Sc. programs (12 in the USA and 2 in the U.K.). Three-year Diplomate and Two-year Certificate training is carried out in Malawi.

IV. Major research programs

Major research programs are present in the commodity-funded crops, tea and tobacco. The emphasis in the Department of Agricultural Research is in maize, cotton, groundnuts, rice and horticultural crops (fruit, tree nuts and vegetables).

There is to be a greater thrust in livestock research which will be expanded and intensified. Very little research has been done on goats (the most numerous livestock) or sheep though a little has been done with introduced breeds by the university. There has been some work on rabbits for meat production but very little farmer production is going on.

Significant but of lower priority is research in sorghum and pearl millet, phaseolus beans, wheat and triticale (to attain self sufficiency), root crops (sweet potato, cassava, European potato) pastures, and legume microbiology.

There is a major thrust in back-up to research and extension in the National Rural Development Programme (NRDP) within the Ministry of Agriculture, which has some research input. Areas of development identified as critical are markets for produce, roads, schools, health services, credit, availability of agricultural inputs and water supplies. The whole country is to be covered for these developments in 17-20 years (from 1979).

V. Commodity research

As previously mentioned, tea and tobacco research are both commodity-financed. The Tea Research Foundation of Central Africa employs 11 graduate research officers, 4 diplomate technical staff and 10 certificate technical assistant staff; its annual budget is about K 0.5 million. The Tobacco Research authority employs nine graduate research officers, five technical officers and 12 technical assistant staff; its annual budget is about K 610,000. Furthermore, the Tea Research Foundation in Malawi is a regional one covering Zimbabwe (which contributes funds to the research budget) and Mozambique which is currently negotiating a relationship. There is financial support to government research in macadamia and tung oil nut, from the respective industries. The sugar industry produces an important export commodity, but there is currently no research beyond the importation and testing of varieties by the industry itself. There is a close link for this purpose with the Mt. Edgecombe Sugar Cane Research Station in Natal. Currently arrangements are being made for the sugar industry to fund its own research on local problems.

IV. Research funding

Including commodity research funds, agricultural research in the Ministry of Agriculture, Malawi, is funded 80% nationally and 20% externally. External funding is in these main areas: agricultural economics, farming systems, horticulture, maize, groundnut, wheat pasture, livestock, seed technology, soil laboratories and post-graduate training overseas. The eight Agricultural Development Divisions (ADDs) receive an annual sum of aid funding tied to adaptive field trial work.

VII. The role of the university

The Bunda College of Agriculture, University of Malawi is 17 years old and it has four departments viz. Agricultural Engineering, Crop Production, Animal Production and Rural Development. It trains students for a diploma (3 years) and a general B.Sc. degree (further 2 years) in agriculture, with no optional specializations. There are no honors degrees nor postgraduate course. The teaching staff establishment of 45 is composed of 50% local and 50% expatriate members. Students number about 400 all of which read for the 3-year diploma course. A fourth to a third of those who are successful are selected to continue for the B.Sc. degree course (2 years more). Diploma graduates who go into the field may return to complete the further 2-year training for the B.Sc. degree. The curriculum is currently being revised to introduce specialization.

There is no research subvention from the Ministry of Agriculture, but a part of the University research grant (only K40,000) is allocated to the Agriculture Faculty to support research. The department of Crop Production has an active research program on Phaseolus bean and it is receiving financial support from the State University Bean and Cowpea CRSP with USAID/Washington, DC. The U.S National Academy of Science is interested in supporting agro-forestry/bio-fertilizer work through grant-funding. Livestock husbandry studies with pigs, cattle (beef and dairy) are ongoing. Joint research with the commodity-funded tobacco program is going on into methods of flue-curing (energy source, energy efficient and drying systems).

There are other staff research projects tied to personal interests rather than national needs, but the Faculty is open to undertaking commissioned research where adequate funding is provided.

VIII. Publication of research information

There is no national agricultural research journal in Malawi but agriculture-related articles are published in the Malawi Journal of Science, an organ of the Association for the Advancement of Science in Malawi.

Scientists are free to publish their results in international research journals. Otherwise, there are in-house subject research seminars which are summarized by national project (programme) coordinators as information on which to base (a) further research and (b) farmer information to put into farmer field days and farmer field demonstrations. Additionally there is an annual research report and specific research and extension bulletins and circulars. Regular use is made of the radio for disseminating new information.

Of these publications, the annual research report is the only one that is circulated outside Malawi on a regular basis.

IX. Interactions between SADCC member countries and international organizations in the field of research

Malawi is in a strong position in the area of bilateral cooperation with international organizations. This is less so in regard to regional cooperation with other country programs since the break up of the Federation with Zambia and Zimbabwe, and the greatly reduced activities of SARCCUS.

When SARCCUS was active, technical meetings were frequent and formed a regular forum for discussion. There were a number of technical committees in many areas that met regularly and meetings were rotated around all member-countries. An example of coordination quoted was that of nurseries for variety testing of maize and wheat; similar activity was planned for bean and groundnut but it did not materialize. Whilst retention of membership of SARCCUS is now under discussion in Malawi, it is hoped that they will be able to retain scientist to scientist contact.

There are associations with regular organizations (not confined to SADCC countries though) such as the OAU/STRC Phytosanitary Commission and the Red Locust Control Organization for East and Southern Africa. The latter now covers red locust but has recommendations to deal also with the migratory brown locust, army worm, tsetse fly and bird pests, e.g. Q. quelea, although currently it lacks funds for this expansion.

Malawi has its own plant quarantine station based at Bvumbwe which may be moved to Lilongwe, with its large international airport. The OAU/STRC has shown interest in upgrading it to become a regional station and the Government of Malawi is amenable to this proposal. It would then serve SADCC countries (as well as others), replacing to some degree the East Africa Plant Quarantine Service at Muguga, Kenya which is no longer active regionally. Such a quarantine center for the region is essential in respect of the regional grain legume programme centered in Malawi (and other regional programs), for the importation of germplasm.

The last regional cereals meeting was held in Tanzania in 1976 and is said to be in need of revival. In 1980 Malawi held a regional bean workshop at which support was forthcoming for a revival of both regional cereal and bean workshops.

Malawi has a number of bilateral relationships with international research centres and organizations. These are summarized briefly.

CIMMYT Exchange of wheat and maize germplasm and cooperation with the FSR training activities. CIMMYT is providing assistance in organizing and carrying out farming systems research.

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- IITA Support for cowpea/cassava nurseries and in maize (variety testing); training at IITA in crop agronomy, fertilizer use and seed technology.
- ICRISAT Support for training in groundnut, pigeon pea, chickpeas and sorghum production. Opened a regional sub-station for groundnut research which CDA proposed be converted to a regional grain legume project.
- ILRAD Support with vaccine to combat animal diseases.
- CIAT Support with phaseolus beans to become part of the grain legume program; University of Malawi bean research will also become a part of this programme.
- ILCA Support for small farm animal power and small farmer dairy. This centre has recently had a team in Malawi exploring areas for greater contact.
- IITA There is an IITA project concerned with the biological control of the green spider mite and mealybug pests. Reportedly natural predators for these imported pests are not present in the region. This work would be applicable to other SADCC member countries, i.e. Tanzania.
- IRRI Despite the fact that Malawi is a major rice producer in the region and exports this grain to neighboring countries, the activity of IRRI has, until recently, been limited to sending out new rice varieties for testing in the country. There has been no training input to date, but Malawi will be attending a workshop in IRRI for the first time, later this year. Staff of IRRI have visited Malawi.
- CRSP(USAID) Michigan State University is involved in a bean and cowpea research project with the Department of Crop Production, Bund College of Agriculture, University of Malawi.

X. SADCC regional centre activities and functions.

There was general agreement with the functions of the coordinating centre as summarized in the team's check list, with some additions. Particular emphasis was placed upon the availability to the center of flexible funding which would enable workshops, seminars and meetings on research subjects/areas of regional significance to be rotated around regional member countries.

Other suggested center activities were:

- the utilization and processing of available meteorological data in the region to map areas with similar climatic parameters in as great a detail as possible.

- promotion and development of uniform standards of seed certification and quality throughout the region.
- training of scientists and experiment station management staff in development of management of experiment station.
- promotion of uniform, high standards of plant and animal quarantine procedures in the region. Development of regional facilities will be an objective c.f. report on upgrading of the Malawi plant quarantine facilities. The compilation of a regional list of major pests and diseases to be guarded against, in the form of a loose leaf, color-illustrated, handbook. The centre could serve with advantage as the communications link for disseminating early warning information on animal disease outbreaks, plant pest and disease outbreaks.
- small biometrics centre for processing data and advising on experimental design and layout for plant, animal and laboratory experimentation. (Refer later in this report for Malawi comment on this).

In general terms the centre should seek to mobilize regional expertise for 'in house' consulting and advisory duties, evaluation of progress in research. It should serve fundamentally to promote and catalyse cooperation to strengthen national research.

There was unanimous agreement that the permanent staffing of the center should include technical expertise in both crop and animal areas; representation in either one or the other was considered quite unsatisfactory. Furthermore, there was some expression of preference for the animal representation to be in the area of veterinary medicine and livestock diseases. To be too small would be dangerously ineffective.

In discussion of research management training it was learned that ICIPE, which is based in Nairobi, Kenya, has already run workshops on research management and finance, and that they were currently considering entering into the field of research management training.

The question was raised of the relationship between the centre and member countries on regional aid in an area for which nationally acquired funding was obtained on bilateral terms. Malawi has obtained substantial funding over a ten-year period for reorganization of research, restructuring and strengthening to include eight adaptive research teams which include recurrent expenditure. This is expected to produce one of the best (if not the best) national research services in Africa.

Another question concerned the manner in which organizations that cover a regional grouping different to that of SADCC, will interact with the center. How will they obtain entry and liaison with the SADCC countries to involve the center?

Malawi considered that in research there was a need to remove apparent inter-international research centre competition for national recipients; the centre should get together first before discussing independent outreach programs at the national or regional levels. Malawi has decided that for its regional grain legume program, it will take materials from all centres e.g. CIAT, IITA and ICRISAT etc.

The British Development Division in Southern Africa, which is based in Lilongwe, pointed out the need for an early warning system about major animal diseases, plant diseases and plant pests in the SADCC region. It was suggested that the centre should consider this activity e.g. rinderpest or foot and mouth disease outbreak notification, movement of grain borer infections in stored maize, movement of green spider mite and mealybug of cassava and of tobacco spider mite.

A number of matters were noted in discussion with the Principal of the Bunda College of Agriculture, University of Malawi, which would come within the remit of the centre if it were to concern itself with training of research staff in the region. These were;

- (i) technology transfer training courses for agricultural extension and rural development. The constitution within the SADCC region of a strong training centre in this area by drawing together an overseas university, long-term multinational funding and a national university e.g. Agricultural Extension and Rural Development Centre, University of Reading, U.K., CDA donor and University of Malawi.
- (ii) In a like manner foster the establishment of pre-eminent training strength in specific relevant subject areas, at single universities throughout the region, with particular reference to taught, post-graduate M.Sc. degrees.
- ii) The Bunda College of Agriculture, University of Malawi has suffered at the end of aid project input, from the problem of inadequate local recurrent finance with which to maintain and continue what was established and achieved during the project. This problem arises with agricultural research, development, extension and training projects. The solution must be in recurrent finance support either from the original donor or from a further donor.

XI. National contributions to regional cooperation in agricultural research

When the national plant quarantine station is upgraded to become a regional station, Malawi will be in a position to offer a regional plant quarantine service to SADCC member countries as a contribution to regional cooperation in agricultural research.

XII. Organizations and persons contacted

A. Ministry of Agriculture

1. J. T. Legg, Chief Agricultural Officer
2. D. R. B. Manda, Assistant to Chief Agricultural Officer

B. Agricultural College, Bunda, University of Malawi

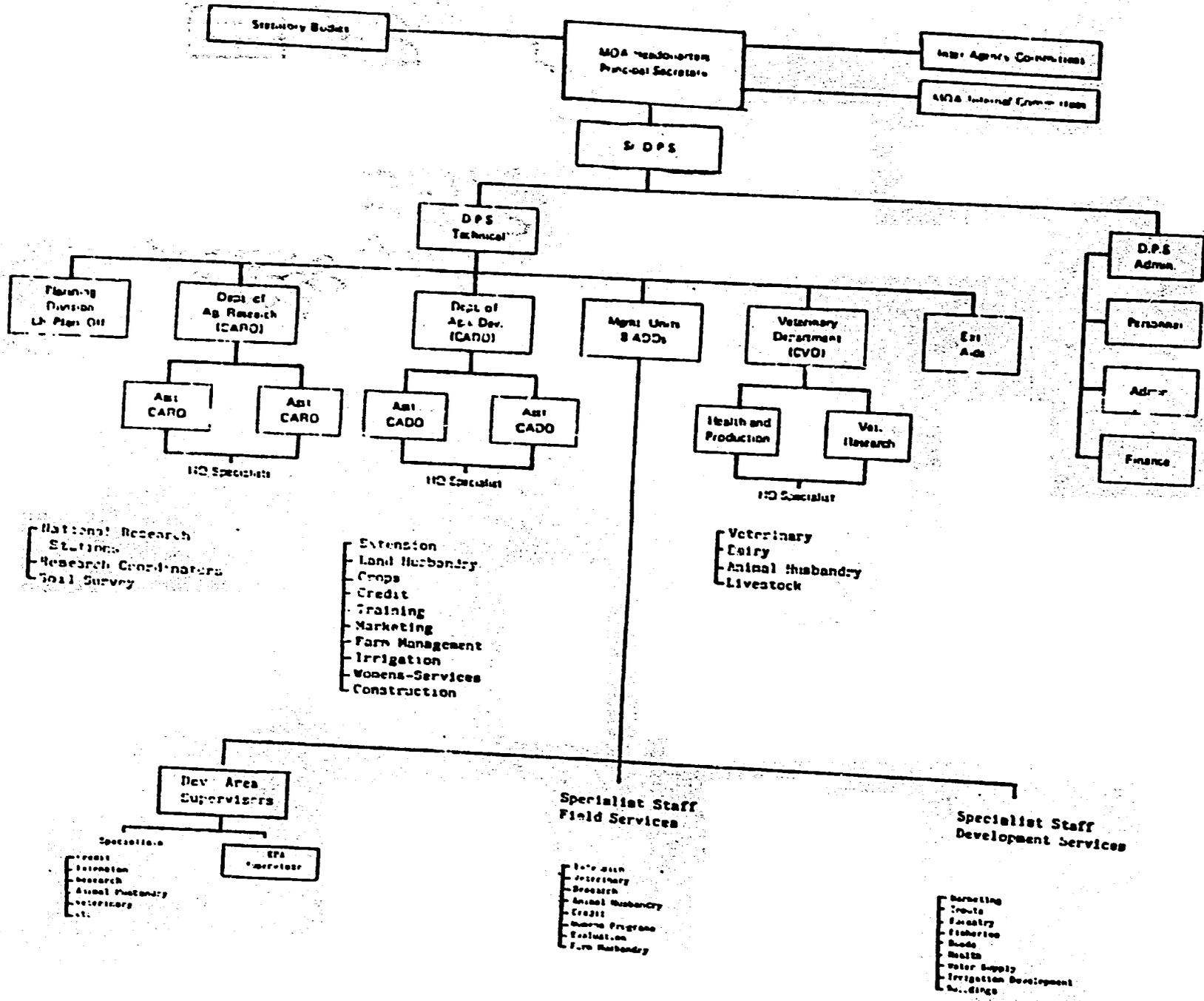
1. Prof. Chirmphamba, Principal

C. British Regional Development Division of Southern Africa

1. J. T. Salmon, Advisor

MALAWI

Ministry of Agriculture, Revised Organization Chart



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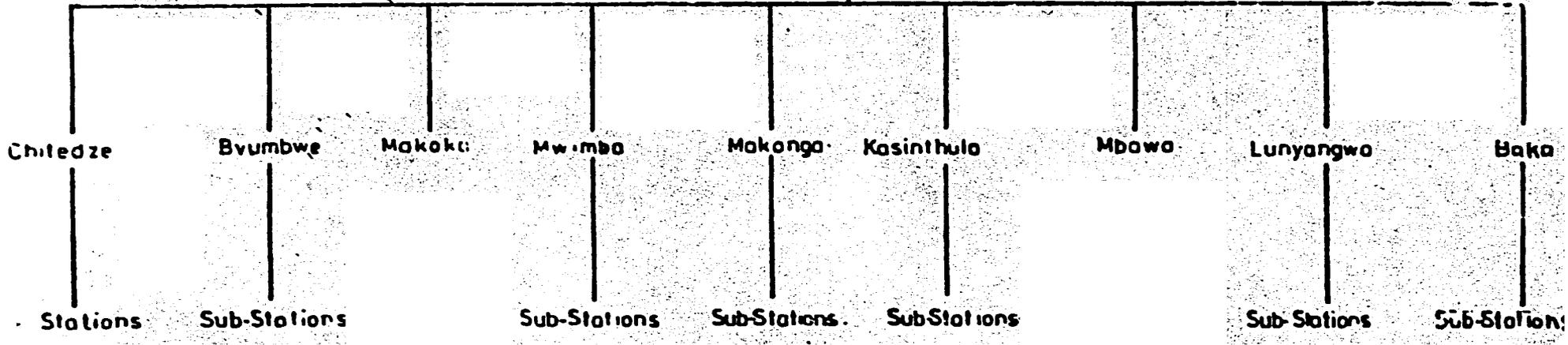
PRESENT ORGANISATION

C. A R O (HQ)
ASST C A R O (HQ)
OTHER STAFF (HQ)

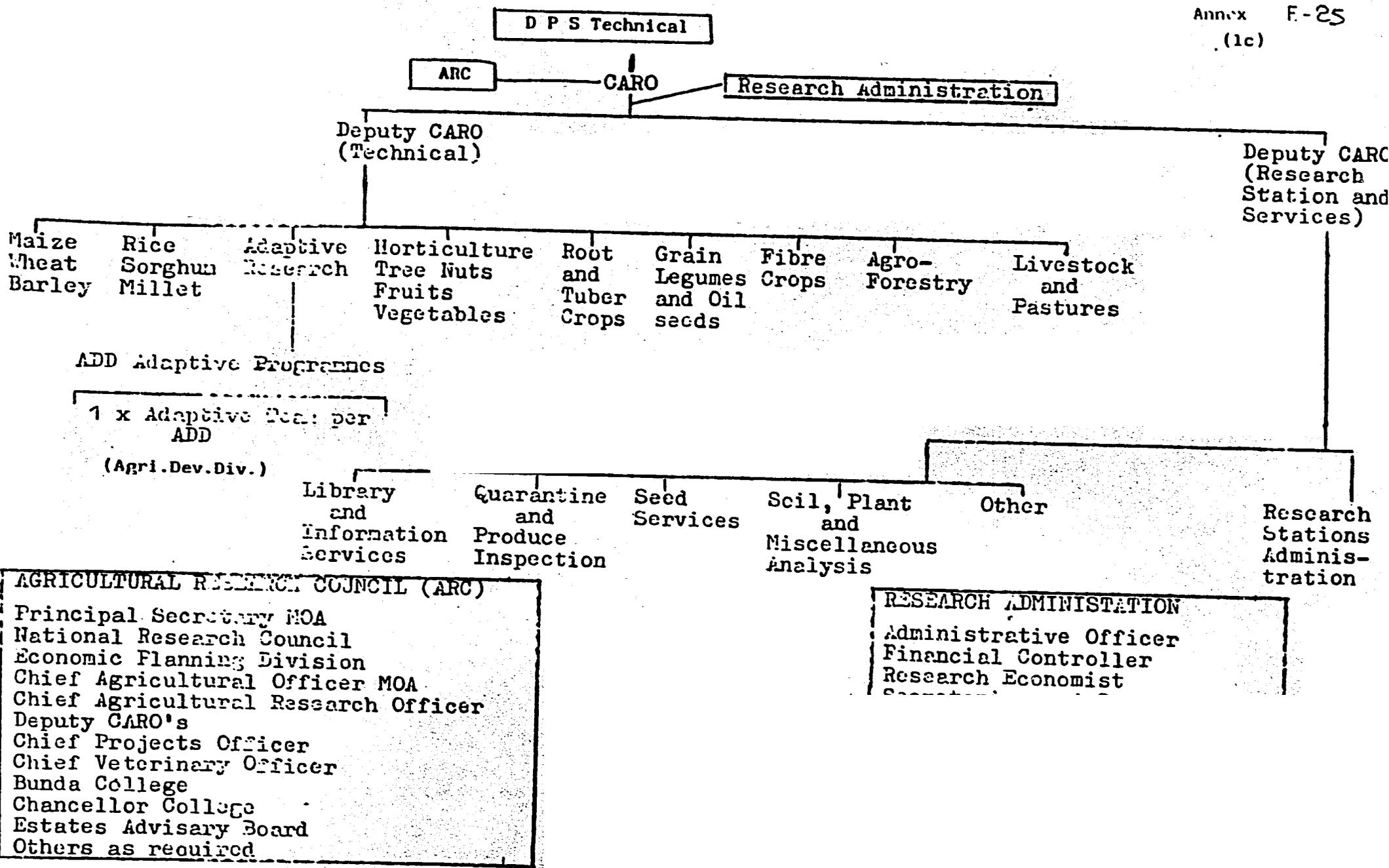
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AGRICULTURAL RESEARCH IN MOZAMBIQUE

I. The components

The Ministry of Agriculture of Mozambique is divided into five national directorates. (See attached organigram). Agricultural research falls under the National Directorate of Agrarian Technics (Direccao Nacional Tecnica Agraria). There are three institutes: INIV, IREMA and INIA.

INIV, (the Instituto Nacional de Investigacoes Veterinarias) dedicated mainly to studies of animal diseases, diagnostics and vaccine production. IREMA (Instituto de Reproducao e Melhoramento Animal) the Institute of Reproduction and Animal Breeding, is concerned mainly with breed improvement through crosses. In the near future it will do research on nutrition. The institute has several stations located throughout the country.

A. INIA (Instituto de Investigacoes Agrícolas), The National Institute of Agricultural Research

INIA is responsible for agronomic and crops research, and is divided into departments. It has several regional centres and also carries out some experimentation at the state farms. The main research is on soils, rice, maize, wheat, sorghum and, in lesser degree, on soya beans, millet, grain legumes (Phaseolus, Vigna and Cajanus), cassava, sweet potatoes, sunflower and sesame.

B. Faculty of Agriculture, University of Eduardo Mondlane

The Faculty of Agriculture has a research project on groundnut improvement funded by the IDRC. The objectives of research are the identification of high yielding varieties adapted to different ecological zones of the country and the improvement of cultural practices. The project collaborates with ICRISAT scientists in India and Malawi, and the national program in Zimbabwe.

II. Organization

As is represented in the following organigram, INIA is directly under the National Directorate of Agrarian Techniques (DNAT) which is under the Ministry of Agriculture. INIA is responsible only for crops, as livestock is under INIV, and Forestry is under the National Directorship of Forestry.

INIA is organized by commodities as well as disciplines, and carries out the research on a geographical basis, using the state farms and cooperatives for the validation of technology. Once it is validated, adaptive research/demonstrations are carried out with the small farmers and also with the private sector.

There are only 30 researchers, of which the main proportion are expatriates. Most of the national researchers are at the technician level.

III. Research program priorities

Research priorities are given to food crops such as maize, sorghum, rice, wheat and millet. Grain legumes are also considered important and work is done with Phaseolus, Vigna and Cajanus.

Groundnuts are also an important crop. At present there is a great need of seed, since, due to the recent drought and diseases, most of the seed was lost. Other crops which are also important are cassava, sweet potatoes, sunflower, soya beans and sesame.

IV. Publications

The organization in charge of publications is called CEDASPE (Centro de Documentacao das Pesquisas). At present it is producing only reports, but there are plans in the near future to publish a research journal every three months. This publication will be distributed within and outside Mozambique.

V. Interaction of INIA with other national systems in the SADCC region

The interaction of INIA with other national research systems is very informal. The main interaction has been with Zimbabwe, which consists of infrequent visits to research programs. However, even this contact is considered weak. Some researchers are planning to attend regional meetings, such as for the Research Project No. 1 "Improved Land and Water Management Systems", in which they are interested. There is no monetary restrictions for attending these meetings, the main restriction being the shortage of researchers.

VI. Cooperation with other international organizations

INIA has had cooperation from international organizations such as CIMMYT, INTA of Argentina, the Yugoslav Maize Research Institute, IITA, ICRISAT, and Cuba Research Institute.

VII. Checklist of functions of the coordinating centre

1. Maintenance of up-to-date records of agricultural development policies, production targets and reviews.

Mozambique does not want the centre to be converted into a data bank. They consider certain research information to be restricted to their country which cannot be shared with other countries.

They agree that information, such as from varieties trials, and available technology, can be given to other SADCC countries. They think that the breeders rights is an obstacle for the cooperation of the SADCC countries. They are not willing to pay royalties for the use of varieties.

2. Assist with the reviews, at regular intervals, of national and international research programs in the region.

They agree with the need for review of regional programs, however, in the case of national programs, they would be only at the request of the country. They do not want the Centre to become large and bureaucratic with the tendency toward centralized decisions. They want the Centre to provide the services required by the countries.

3. Maintenance of an inventory of agricultural research workers, research projects, and resources for research.

In general they are in agreement with this point, but with the same restrictions given earlier. They are not willing to give information on budgets.

4. Promote continuous and rapid interchange and utilization of technical and scientific information by:

- a) technical journal and newsletter
- b) regional meetings/conferences/workshops
- c) exchange of visits by specialists, scientists and technicians.

They are in agreement in this point, but are apprehensive about the frequency of seminars and conferences, considering the shortage of human resources.

5. Promote and facilitate concerted studies of problems common to several or all countries, and the initiation of coordinated, cooperative resolutions of such problems.

They are in agreement with this point and feel that it is very important, especially in the case of crop diseases.

6. Promote cooperation in training and career development of scientific and technical personnel.

Mozambique considers this to be the most important function for the Centre. They feel that training should be focused on the medium level technicians and should be different from the classical approach. In-service training would be very useful. The training should be done in consultation with the research

directors, and according to the needs of each country. The training should be given in Portuguese, in the case of Mozambique. Training is considered of first priority, because they cannot send their personnel for training at the international centres because of the lack of higher degrees, equivalent to the B.Sc., and also the lack of knowledge of the English language.

7. Encourage free exchange and cooperative evaluation of plant and animal germplasm and improved material.

They are in agreement and feel that there already exists interchange of materials. However, they feel that the Centre should not encourage the concept of breeders' rights for the varieties to be used.

8. Promote effective interactions with the international agricultural research centres and similar organizations interested in working in the region.

They feel this to be an important function to be carried out by the Centre. They will appreciate having more information about the services that can be obtained from the international centres. They also feel that the Centre can help to identify certain projects and advise about the needed consultants and where to find them.

IX. Other considerations

They are not concerned about the name of the Centre. They feel that the Centre should have multi-donor support for its establishment and operation. They do not want to get free from one dependency and fall in another.

They feel that at least one of the senior staff members of the Centre should speak Portuguese.

Also, the publications, newsletter, etc., as well as the training material should be in Portuguese.

The Extension Service does not exist as such at the moment, but they are thinking in the future that extension will be tied to research.

Seed production is, at the moment, above all priorities. This activity is handled by the "Empresa Nacional de Sementes" which is under the Ministry of Agriculture. There are seven seed plants.

X. Persons interviewed

J. Rodriguez Pereira - Director of Research, INIA
 Rui Ribeiro - Secretary to the Minister of Agriculture
 Fernando De Pinho Morgado - Director of INIV
 J. Samson - Foreign Affairs, Ministry of Agriculture

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MOZAMBIQUE
MINISTERIO DE AGRICULTURA

DIRECCAO NACIONAL
TECNICA AGRARIA

DIRECCAO NACIONAL
DE
RECURSOS HUMANOS

DIRECCAO NACIONAL
DE
ECONOMIA AGRARIA

DIRECCAO NACIONAL
DE
FLORESTAL E FAUNA

DIRECCAO NACIONAL
DE
COOPERATIVAS

DIRECCAO NACIONAL
TECNICA AGRARIA

NORMALIZACAO E
DESENVOLVIMENTO
TECNICO

GABINETE DE
ESTUDOS E
PROJETOS

INSTITUTO NACIONAL
DE
INVESTIGACOES
VETERINARIAS

INSTITUTO DE
REPRODUCAO E
MELHORAMENTO
ANIMAL

INSTITUTO NACIONAL
DE
INVESTIGACOES
AGRICOLAS

INIV

IREMA

INIA

DEPTO FITOTECNIA
DEPTO PEDOLOGIA
DEPTO FITOPATOLOGIE
DEPTO ENTOMOLOGIA
DEPTO SEMENTES
ETC.
CAMPOS EXPERIMENT

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AGRICULTURAL RESEARCH IN SWAZILAND

I. The components

A. Department of Agricultural Research and Planning

The directorate of this Department is based in the Ministry of Agriculture's Headquarters in Mbabane. It is responsible for policy formation in Agriculture and thereby for identifying areas in which research and extension efforts should be concentrated. The main policy of the Department is self-sufficiency in food, especially the major staples - maize being one of them. The research effort is directed at solving agricultural problems in the smallholder farms in the rural areas. The main aim is to develop an organizational framework and a program of applied research which is suited to the needs of the farmers in the Swazi National Land (SNL), and not so much to the needs of the large scale farmers in the Individual Tenured Farm (ITF) type agriculture.

The Department of Research and Planning is one of the five departments of the Ministry of Agriculture. The others are Agriculture and Extension, Veterinary Services, Cooperatives and Marketing, and Administration. The Research and Planning Department is composed of the Research Division, an Economic Planning and Analysis Section, a Land Use Planning Section, a Land Valuation Section, a Land Tax Valuation Section, and a Marketing Advisory Unit. The Economic Planning and Analysis Section is responsible for carrying out crop profitability studies on the basis of technical data provided by the Research Division.

In the third National Development Plan, the Government considers that efficient research is an essential adjunct to progress in agriculture and the success in the rural development program.

Specifically, major efforts in research are to be directed into the following fields:

(a) Animal Production

- Find new methods of improving the yield of range and pastures.

(b) Crop Production

- Find new methods of:

(a) improving the yield of crops

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- (b) preventing damage by pests and diseases
- (c) increasing soil fertility
- (c) Other Fields of Importance
 - (a) Mechanization
 - (b) Appropriate farming systems

B. The Research Division

This Division is charged with the responsibility of conducting research in the fields already mentioned. Most of the research work is conducted at the Central Research Station at Malkerns in the Middleveld which has a rainfall of 750 - 1,200 mm per annum and altitude of 350 to 1,000 m above sea level. The rest of the research is undertaken at the following research stations:

- (a) Hebron and Mangcongco in the Highveld with rainfall ranging between 1,000 and 1,750 mm per annum and 1,000 to 1,800 m above sea level,
- (b) Mhlangano and Luve in the Middleveld with rainfall and altitude similar to the environment at Malkerns, and
- (c) Big Bend and Swaziland Irrigation Scheme in the Lowveld with rainfall ranging between 500 and 800 mm per annum and altitude of between 60 and 375 m above sea level.

Finally, some additional cooperative trial programmes are undertaken on large and small scale farmers' fields throughout the country. This spread of activities is made necessary by the diversity of the ecological zones within the country.

The main areas in which research is concentrated are:

- (1) Crop agronomy dealing with:
 - (a) cereals - maize, sorghum and wheat;
 - (b) grain legumes - groundnuts, beans, soya beans and bambara groundnuts;
 - (c) oil seeds - cotton, castor, sunflower and sesame;
 - (d) root crops - Irish and sweet potatoes; and
 - (e) others - tobacco

- (a) Cotton breeding and
- (b) Cotton entomology.

(ix) Forestry Research.

This is undertaken by the forest industry.

(x) Pineapple Research.

Like forestry research this field is fully funded by the pineapple industry although facilities are provided by the Central Research Station at Malkerns.

(xi) Biometry.

There is an established post of a biometrician and the duties are to:

- (a) assist in the design and analysis of the Division's field trial programmes,
- (b) provide assistance in agricultural survey and census work of the Ministry of Agriculture, and
- (c) provide lectures in biometry within the University.

At the time of the visit, little or no research was being undertaken in animal diseases and in fisheries.

The major constraints to efficient agricultural research system are lack of funds for research and lack of continuity of research projects. The latter is caused by shortage of trained local staff and quick turnover of expatriate staff.

Finally, it might be pertinent to point out that since the Central Research Station is only a few kilometres from the Faculty of Agriculture of the University of Swaziland at Luyengo, research staff assist in teaching some courses to undergraduates and diploma students.

C. The National Research Council

The National Research Council is charged with the responsibilities of establishing research priorities in all disciplines, including agriculture. The research staff are expected to formulate programmes to satisfy these priorities. Since the National Research Council does not have a permanent Secretariat, its impact in directing and coordinating research is not being greatly felt.

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D. Research by the University

There is a Social Science Research Unit in the University of Swaziland. Its establishment was supported by the Netherlands Government. It has undertaken research in smallholder farms which complements that being done by the Research Division of the Ministry of Agriculture. Some research in intercropping is being undertaken by staff in the Faculty of Agriculture.

E. Other Organizations which undertake agricultural research

Various industries in the country undertake commodity-oriented research on crops which include forestry, pineapple, citrus, sugar cane and cotton.

II. Priorities and strengths

Farm management data being collected by the Social Science Research Unit in the University, by the Ministry of Agriculture under the Rural Development Programme, and by the Farming Systems Research Project, will be of interest to all SADCC countries. Swaziland has done well in vegetable production and has produced drought resistant varieties of carrots, cabbage, and tomatoes, and might offer assistance in this field.

III. Publications

Agricultural scientists in Swaziland do not have a journal within the country in which to publish their research findings. The Social Science Research Unit in the University of Swaziland, however, publishes Occasional Research Papers. Similarly, the Extension Wing in the Ministry of Agriculture publishes bulletins which are of value to extension workers and farmers. The research workers in the Ministry of Agriculture welcomed the idea of having an agricultural science journal for the SADCC countries.

IV. Interaction of the national agricultural research system with other national systems in the SADCC region

The interaction of staff in the Research Division with counterparts in other SADCC countries is mostly on an informal or personal contact basis. There has been some exchange of tobacco and cotton varieties between Swaziland and Zimbabwe, as well as some exchange of soya bean varieties with Mozambique. Recently, Directors of Research and the Chief Research Officers from SADCC member countries have been meeting regularly as a Consultative Technical Committee (CTC) of the SADCC.

V. Cooperation with and research support by organizations outside of the the SADCC region

The Department of Research and Planning cooperates with CIAT, IITA, ICRISAT, CIMMYT and CIP. The organizations which provide support to agricultural research include: USAID, IDRC, IFAD, ISNAR, FAO, IFS, the Belgium Government, the Netherlands Government, ODA and WHO.

VI Views of the national agricultural system on regional cooperation

In general, most persons interviewed supported the idea of the need for greater cooperation in agricultural research in the region. Agricultural scientists in Swaziland would gain by having access to publication facilities, exchange of varieties of crops and animals, and above all of collaborating in manpower development and training. They pointed out that duplication of research activities would be avoided and costs of undertaking agricultural research in several SADCC countries would be reduced.

The Chief Research Officer had just returned from a meeting of the African Chapter of the International Federation of Agricultural Research Systems for Development (IFARD) which was held at IITA (Ibadan, Nigeria) between 6th and 10th June, 1983. The congress discussed cooperation between National Agricultural Research Systems (NARSs) and between International Agricultural Research Centres (IARCs) and NARSs. It would seem therefore that regional cooperation in agricultural research has a support from the whole of Africa. Swaziland pointed out problem areas for which exchange of information and/or joint studies might be undertaken by SADCC countries, such as in the problem areas of overgrazing and drought power. There will be need also to work out uniform seed certification regulations in order to facilitate the exchange of seed varieties. Caution was expressed, however, that it might be very costly if an attempt was made to send the newsletter to individual scientists instead of distributing them to the libraries. It was also pointed out that although one type of newsletter might suffice at the beginning, later there might be need to have three editions, one for each of the disciplines; crop science, animal science and extension technology.

Swaziland was willing to share its experiences with other SADCC countries in the areas of farm management and farming systems studies involving smallholder farms. This work is being undertaken by the Social Science Research Unit (SSRU) which is based in the University College of Swaziland, and under the Rural Development Research Programme (RDRP) which is based in the Ministry of Agriculture. Several research reports have been published by staff working in the SSRU on the factors affecting agricultural production in the above farms. The findings in these reports might be of relevance to some of the SADCC countries.

VII. Organizations and persons contacted

a. Ministry of Agriculture

1. N. Dlamini (Miss), Director of Research and Planning
2. F.M. Buckham, Chief Research Officer, Malkerns
3. J. Pali - Shikhulu, Agronomist (Field Crops) Malkerns
4. D. Gama - Horticulturalist, Malkerns
5. B. Maphalala - Farm Management Economist, Malkerns
6. E.M. Mdlangamandla - Farm Manager, Malkerns

USAID/Farming (Cropping) Systems Research and Extension Training Project

7. C. Seubert - Agronomist
8. D. Grenoble - Horticulturalist
9. R. Freud - Agricultural Economist
10. G. D. Bengtson - Information Specialist
11. C. Sachs - Visiting Rural Sociologist
12. M.N. Ngwenya - Agricultural Officer - Soil Testing Service
13. S.S. Dlamini - Agricultural Officer - Crop Storage
14. L.P. Dlamini (Miss) - Research Officer - Crop Storage
15. W.M. Nxumalo - Agricultural Officer - Extension
16. KI-Ho Suh - Development of Quality Seed Production Project
FAO Supported

B. University of Swaziland

1. G.T. Magagula - Dean, Faculty of Agriculture, Luyengo
2. F. de Vletter - Director of Social Science Research Unit

VIII. Documents consulted

1. Agricultural Research in Swaziland by C.E. Brook (Mimeo)

2. Simple Survey of Maize Growing in Swaziland by Margo Russell, Nikiwe Mbatha and Vincent Sithole. Research Paper No. 1 Social Science Research Unit (SSRU). University College of Swaziland.
3. The Smallholder Cotton Sector in Swaziland. Some thoughts for future research. By T. J. Kliest. Res. Paper No. 2 SSRU. Univ. College of Swaziland.
4. The Rural Development research project (RDRP). Directions for 1983 - 1984. By M. Russell, F. De Vletter and T.J. Kliest. Res. Paper No. 4 SSRU, Univ. College of Swaziland.
5. Boundaries and Structures in the Swaziland Homestead. By M. Russell. Es. Paper No. 6 SSRU, Univ. College of Swaziland.
6. The SSRU and RDRP in 1983 and beyond. By M. Russell and H. Tieleman. Res. Paper No. 7 SSRU, Univ. College of Swaziland.

AGRICULTURE RESEARCH IN TANZANIA

I. Organization of research

Attached to this country report is an organigram showing the basic organization of the Tanzanian Agriculture Research Organization. TARO is a parastatal organization established in 1980 which plans, coordinates and controls almost all agricultural crops research in Tanzania, with responsibility by the Director General to the Ministry of Agriculture, through the TARO Council. A sister organization, the Tanzania Livestock Research Organization (TALIRO), which is structured on similar lines, is responsible for veterinary and livestock research, to the Ministry of Livestock Development. It is concerned with animal development (husbandry), animal nutrition and pasture research, animal diseases and animal breeding. In size TALIRO is about a quarter that of TARO.

In addition there is a research director in the Ministry of Agriculture who has a significant coordinating role in respect of research and who is responsible for specific projects: the Dakawa rice project; the national coconut development project; Tropical Products Research Institute Arusha; Horticultural Research and Training Institute, Tengeru; and, Uyole Institute in Mbeya plus the Mbozi and Mitalula stations.

It was noted that in May 1982 an FAO team reviewed the research organizations and the research program for Tanzania

A. TARO

Whilst TARO coordinates all research in association with Ministry of Agriculture staff, it does not have administrative responsibility for everything at present. It is believed that it may be given full responsibility in the future.

Development through research is based upon taking results to the farmer. This implies a very close and effective cooperation between research and extension whereby research results - often as a package of practices - pass through on-farm investigation, i.e. village government farms and demonstration. Farmer recommendations follow a study of the farming systems.

The total establishment of research staff, from the Director General of TARO to the Technical Assistant level, is 600 with a country population of 18.3 million on which upwards of 90% are directly or indirectly involved in agriculture.

Total vacancies in this establishment amount to 72. In somewhat more detail, there are 183 research officer (graduate) posts of which 63 are vacant; 417 technical assistant (Diploma/Certificate) posts of which nine are vacant. However, these technical assistant

posts are almost entirely field positions and there is a very serious shortage of qualified laboratory (scientific) assistants at present; i.e. only two or three in all.

There are nine staff overseas in Ph.D. programmes and 23 in M.Sc. programmes in crops. These training programmes are mainly being undertaken in the USA and the UK. There is a real need for laboratory technician training; i.e. in agricultural chemistry, plant pathology, entomology, plant physiology, etc. It was stated that no facilities are available within Tanzania for this type of training at present.

Emphasis for food crops research is on maize, sorghum and millets, rice, phaseolus bean, wheat, root cassava, banana, sugarcane and oil seeds (groundnut, sesame, sunflower and coconut). For maize, rice, sorghum and millets, emphasis is on breeding and agronomy; for wheat it is soil management viz. available crop moisture (dry land wheat farming) in areas of 700 - 850 mm rainfall.

Although bananas are such an important part of the staple diet in several areas of Tanzania, not a great deal of research has been carried out on this crop in the past because of the lack of local expertise. However, one of the main producing areas (Bukoba, W. Tanzania) where bananas are paramount, is said to be threatened by a combination of root nematode and banana weevil infestations.

B. TALIRO

TALIRO, which is a parastatal organization of the Ministry of Livestock Development, conducts research in two major areas, namely, livestock husbandry and animal health. The main Research Institute for animal husbandry is located at Mpwapwa in Central Tanzania. It is supposed to coordinate the work which goes on at the Research Stations which are located at Tanga, West Kilimanjaro, Malya, Kongwa and Sao Hiu. It is expected to cooperate with the Uyoile Agricultural Research Centre in research in animal husbandry.

The major areas of research are in crossbreeding of dairy cattle, pasture and range management, crossbreeding of beef cattle and in sheep and goat studies. The main research areas in animal health have been in fields of veterinary parasitology, pathology and microbiology.

The Central Veterinary Laboratory, located in Dar-es-Salaam, is the main centre for veterinary research. It has substations at Mwanza, Arusha, Tanga, Mpwapwa, Iringa, Mtwara and Tabora - these are called Veterinary Investigation Centres. There is a separate Tsetse Research Institute at Tanga.

Staffing the major sections of livestock husbandry and animal health with competent research staff is a major problem at present. As more graduates from the Faculty of Agriculture, Forestry and Veterinary Science are recruited and gain experience in research, this problem of lack of staff will be reduced.

C. The National Scientific Research Council

The National Science Council is headquartered in the Ministry of Economic Development and Planning. It advises the Government on national science policy. It has subcommittees for each of the major sectors of the economy, including one in agriculture and natural resources. The Council sets priorities for research, and research workers are expected to formulate research programmes based on the set priority areas. The Council also disburses funds to research workers in all sectors of the economy once they present well thought-out research proposals. The Council expects to receive at regular intervals reports on the progress of the research and on the expenditure of funds. Because of the smallness of the staff it employs the Council has not been very effective at coordinating research. The progress it has made thus far has been commendable and several international research organizations such as IDRC, SAREC, NORAD and IFS have been channelling funds for research through it. It has a Board of Directors who come from various government ministries, parastatal bodies and from the University. Improvements in staffing could make it a major research coordinating body in the country.

D. The Faculty of Agriculture, Forestry and Veterinary Science, University of Dar-es-Salaam

The Faculty of Agriculture, Forestry and Veterinary Science, founded in 1969, is located at Morogoro, 200 km from the capital, Dar-es-Salaam. It is divided into the Divisions of Agriculture, Forestry and Veterinary Science. The staff in each of the three divisions undertake research in their areas of specialization. The Division of Agriculture comprises seven departments, namely, crop science, animal science, agricultural engineering and land planning, rural economy, agricultural education and extension, soil science and food science and technology. Scientists in the Faculty can apply for research funds to the Research and Publication Committee of the University, the National Scientific Research Council, parastatal commodity organizations, as well as from foreign agencies. As a rule all applications for research funds have to pass through the official channels of the University.

The cooperation between the Faculty and other research organizations in the country is facilitated by the appointment of University staff to the governing councils or bodies of the research organizations, and by having University staff sit in the various crop, livestock and forest research committees of these government research bodies.

The Faculty of Agriculture has been cooperating with TARO in implementing intercropping, farming systems, oil seeds, rice and grain legumes research projects. The foreign organizations which have been funding research include IDRC, IFS, SAREC, USAID, NORAD, the Ford Foundation, and the International Atomic Energy Agency (IAEA).

The Faculty has a very strong post-graduate training programme in agriculture, forestry and veterinary science. The Danish Agency for International Development (DANIDA) has been supporting the post-graduate programs in agriculture and veterinary science. The Norwegian Agency to International Development (NORAD) has been supporting post-graduate programmes in animal science, forestry and soil science. Other Governments, including the USA, UK, France, Sweden, the Netherlands, Canada, and Belgium, have been supporting various staff development programmes in the Faculty. The Faculty, as a result of this support, is fairly well staffed and is therefore in a position to train at post-graduate level potential research staff from other SADCC countries.

E. Commodity Research

Commodities that are wholly or partially industry-funded are coffee, tea, sisal and cotton. In principle all commodity crop research is expected to be industry-funded. The most important subject in coffee is selection and/or breeding for resistance to coffee berry disease (Colletotrichum coffeanum var. virulenus) and coffee leaf rust (H. vastatrix).

II. Research funding

Agricultural research in Tanzania is funded 70% by government, 8% by commodity finance (internal) and 22% by external finance. Principal areas of research funded externally are: farming systems; maize, sorghum, millet, wheat and grain legume food crops; soil research and services; and coffee and cashew nut. Post-graduate training overseas is a further area of assistance.

III. Publication of research information

Tanzania has been affected very adversely by the virtual cessation of publication of the East African Agriculture and Forestry Journal. To fill the gap they are about to launch a national journal named "The Tanzanian Agricultural Journal for Research and Development." It would

seem that this journal will be of a similar type to the Zimbabwe Agricultural Journal and would satisfactorily complement a SADCC regional agricultural research journal, which is one of the proposed activities for the SADCC research coordination centre.

Scientists in Tanzania are free to publish the results of their studies in international research journals, but the new national journal should receive strong support. There is the annual research report and farmers information for demonstration and farmers days. The annual research report is the only one of these that is circulated outside Tanzania.

Tanzania scientists may also be members of the Soil Science Society of East Africa which last held a meeting in 1981 (a meeting is planned for 1983). There are office bearers in each country (Tanzania, Kenya and Uganda), but the Society publishes and circulates a newsletter only.

IV. Interaction between national SADCC member countries and international organizations in the field of research

Because of travel difficulties and the time factor it was not possible to obtain detailed information of cooperative and coordinated agricultural research programmes between Tanzania, the several international agricultural research centres and other international organizations.

In the Malawi country report reference is made to the new green spider mite and mealybug pests of cassava introduced from Latin America via Uganda and currently the subject of research (for biological control) by IITA in Nigeria. The Director General of TARO, Dr. J.N.R. Kasembe, is very concerned about this matter and the spread of these pests southward into Tanzania. IITA has already achieved some success with an imported predator (from Brazil) that exerts control on the mealybug, but there has been no success yet with the green spider mite pest. Referring to this and the arrival and spread of the great grain borer (Prostephanus truncatus) which can devastate stored maize, he urged the essential need for regional plant quarantine facilities and welcomed the possibility of the Malawi facilities being upgraded to become the regional facility. He stated that the East African Plant Quarantine Station located outside Nairobi, Kenya, no longer functions regionally. The need for regional animal quarantine facilities, uniform phytosanitary and seed certification standards were also emphasized in support of current and future regional research programs.

Interactions between Tanzania and SADCC member countries in terms of study visits by scientists, holding or attending research workshops, seminars and meetings were controlled by the availability of external funding. The participation of Tanzanian research staff in such activities was very limited.

Dr. J.N.R. Kasembe, who is a member of the governing council of IFARD (International Federation of Agricultural Research Systems for

Development which is headquartered in Hong Kong, with the African Chapter based in Ibadan, Nigeria) and is also the African Representative on the CGIAR, was very concerned for the urgent need to strengthen cooperation between national and international agricultural research centres. He has the responsibility for IFARD (Africa Chapter) or preparing a data base (inventory) of research staff, programmes etc. by late 1984, as well as having to report on IARC's/NARC's cooperation at the November 1983 CGIAR meeting in Washington.

A great deal of this IFARD thrust overlap with the suggested major functions of the SADCC Centre, suggesting that cooperation and working relationships be established early on between IFARD (Africa Chapter) and the proposed SADCC centre.

V. SADCC regional centre activities and functions

The check list of proposed activities and functions of a centre prepared by the team, was discussed with general agreement to all items. Certain activities were emphasized and some further suggestions were made, as noted here.

Tanzania is in favour of identifying and selectively strengthening existing/potential areas of agricultural training in the different universities of the SADCC region, particularly at the taught M.Sc level, rather than all the countries striving for this independently.

Just as Malawi expressed concern over the geographical location of the proposed centre in Botswana, so did Tanzanian research staff who went on to suggest that Malawi might be a more suitable site.

Tanzania felt that it would be essential to have both plant and animal separately represented by the senior staff at the proposed centre. Technical dialogue (detailed) between a plant scientist and animal researchers and vice versa, would probably be unsatisfactory.

Great interest and strong emphasis was placed upon the proposed centre's function in building up data base and inventory information that would be 'on call' to member countries. The inventories of national research staff, research programmes, objectives, targets and achievements, were considered essential data for identifying areas of cooperation, and research strengths and weaknesses within the region. Very close cooperation with IFARD and its objectives would be highly desirable.

Strong interest was expressed in a biometric unit in the proposed SADCC centre both for processing national research data, for training, and for advice on experimental design and layout. In view of the situation in Malawi in this subject, it might be considered advisable to investigate the possibility of funding and support to raise the Malawi centre to regional action status.

A request was made that the centre start a scientific literature service, i.e. undertake scientific literature searches with the AGRIS, CARIS, etc. reference bases for national scientists, and circulate title pages of international scientific journals. This arises largely from the cessation of these services from the East African central agricultural library at KARI (previously EAAFRO/EAVRO) outside Nairobi, Kenya. It might appear impossible to provide photocopies of title pages where there is no library receiving a very full range of journals, but it might be undertaken through the agricultural section of the international journal "Current Contents" which does just that, i.e. publishes reprinted and reduced size journal - content pages very soon after journal publication.

It was considered very essential that the SADCC CTC's should rotate their meetings around member countries as soon as possible. Circulation in a similar manner of seminars, meetings, etc. was also endorsed.

Coordination of the outreach programs of IARCs in similar crop and work areas, in the national and regional programs, must be considered vital to obtain maximum benefit.

An area of research staff deficiency was identified as technical assistant personnel in the agricultural laboratories. National training facilities are not available at the formal course level but are a recognized need. This may be an area for cooperation within the SADCC region if appropriate funding can be located.

General support was forthcoming for the centre to pursue the utilization of nationally available meteorological data in the region to map areas of similar climatic parameters in as great a detail as possible.

There also was support for uniform regional standards of seed certification, and for regional training of scientists and station managers in standards of field crop experimentation, research station development and management.

Particular support was forthcoming for the centre to act in mobilizing regionally available expertise for consulting, advisory and evaluation work as an alternative to importing such requirements from outside the SADCC region. This was seen as an important opportunity to apply regional resources to strengthen national agricultural research. The possibility of identifying a number of regional crop/subject research program officers from within national staff should be considered. If program workshops, seminars and meetings in specific subjects became a regular regional activity, such persons might act as chairman-coordinators supported by centre staff as executive secretary.

Tanzania is in favour of the centre producing a publication listing current major pests and diseases of plants and animals with particular emphasis on new entries into the SADCC region, possibly as a loose-leaf, colour-illustrated handbook. It also agreed with the value of the centre operating an early warning system for animal and plant disease or pest outbreaks within the regional through the members of the CTC on Agricultural Research.

The centre should compile and maintain an inventory of national aid projects, and donors concerned with research and research training projects.

There was strong interest in animal-powered farm implements for the small farmer. This is recognized as an area of need in Tanzania. The first action of the centre, it was suggested, should be to hold a meeting to survey, summarize and review the present position and needs of the member countries in this field.

VI. Organizations and persons contacted

A. Ministry of Agriculture, TARO

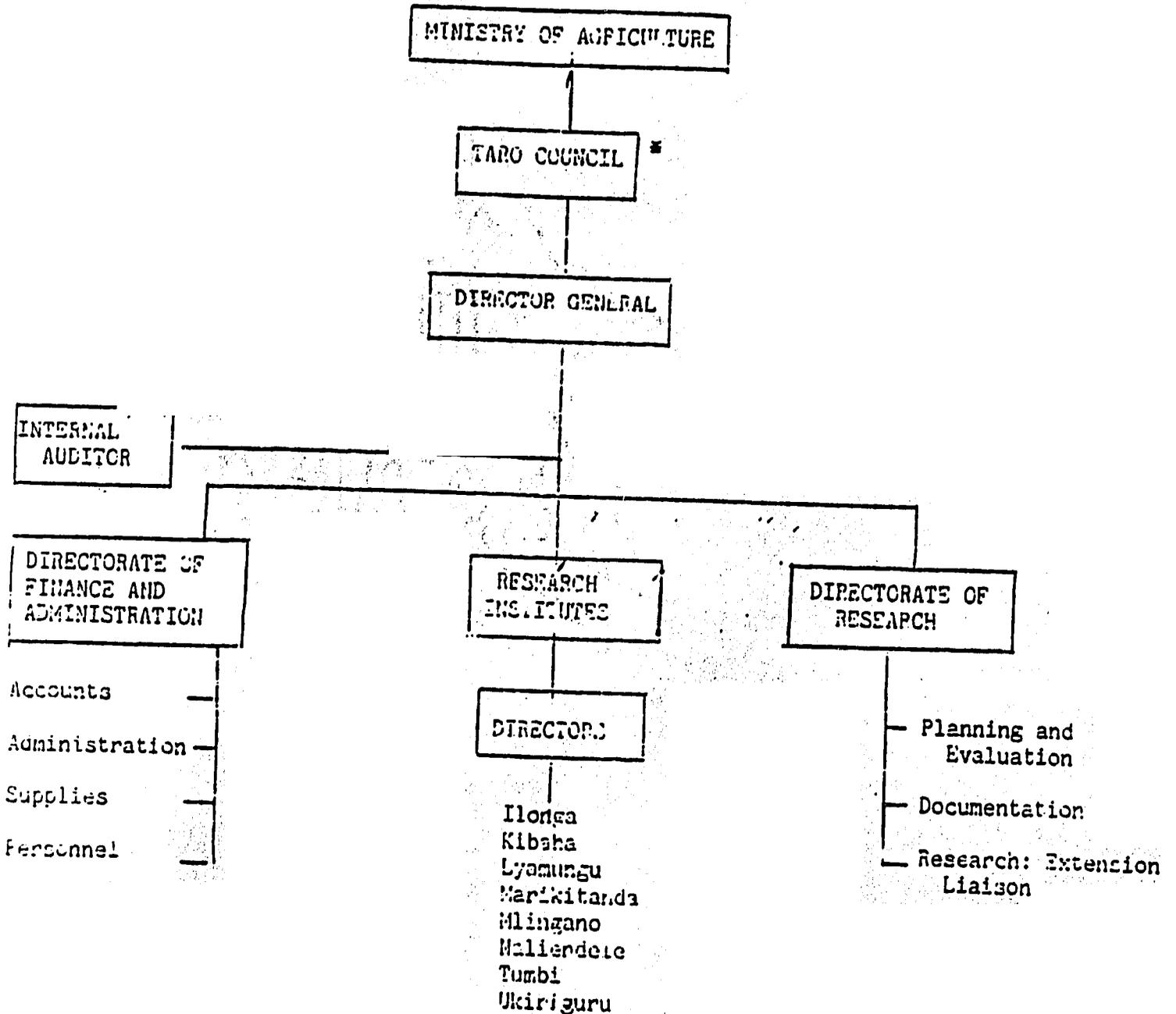
1. J. N. R. Kasembe, Director
2. C. K. Tupa, Director of Finance and Administration
3. M. E. T. Mbagi, Chief Planning and Evaluation Officer
4. Shao, Director, Ilonga Research Institute

B. University of Dar-Es-Salaam, Faculty of Agriculture, Morogoro

1. Demoka, Soil Science

TANZANIA COUNTRY REPORT

Organigram of the Tanzania Agricultural Research Organisation



The Council Chairman is appointed by the President of Tanzania. The present chairman is the Principal Secretary, Ministry of Agriculture.

Members of the Council represent other interested Ministries e.g. Ministry of Livestock Development, University of Dar es Salaam, Tanzania National Scientific Research Council and TALIRO.

TARO is a parastatal organization established in 1980.

AGRICULTURAL RESEARCH IN ZAMBIA

I. The Components

A. Ministry of Agriculture and Water Development (MAWD)

The MAWD is responsible for the major aspects of national agricultural research, including that on livestock. Animal health-related research is conducted by the Department of Veterinary Services and Tsetse Control, whereas animal husbandry and crops research are the responsibility of the Research Division of the Department of Agriculture.

The Agricultural Research Division is headed by a Deputy Director (Research) who is assisted by a Chief Agricultural Research Officer (CARO) based at the central agricultural research station at Mount Makulu, near Lusaka, and a Coordinator for the Adaptive Research Planning Teams based at Lusaka headquarters. The CARO is in charge of staff and programmes of the national commodity and Specialist Research Teams, and is assisted by a research program coordinator and the commodity and specialist research team.

Research is organized into (a) nine Commodity Research Teams for cereals, oilseeds, fibre crops, root and tuber crops, vegetable crops, tree and plantation crops, tobacco, grain legumes, and animal husbandry and pastures; (b) seven Specialist Research Teams for food storage and conservation, weed control, farm machinery and tillage, plant protection, soil productivity, cropping systems, and irrigation, and (c) Adaptive Research Planning Teams (ARPT), one for each province. The ARPTs conduct systematic studies of traditional farming systems to identify the requirements of farmers and their families. Such studies are used to clarify issues requiring investigation by the commodity and specialist research teams, and hopefully will result in the development of more appropriate technology.

The Research Division also provides services in biometrics, soils, library, and seed control and certification.

B. University of Zambia School of Agricultural Sciences

Agricultural research in the University of Zambia depends to a large extent on the specific interests of individual staff members of the School of Agricultural Science. There are currently over 25 research projects covering crops, livestock, soils, marketing, farm machinery and agroclimatology. Most of the projects are of short-term duration. Ideas for research come from staff members and are discussed in faculty committees and in the annual research meetings of the Research Division of the MAWD. There is thus effective collaboration with the Department of Agriculture.

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C. National Council for Scientific Research (NCSR)

The NCSR is a parastatal organization whose main function is to ensure that national development plans are supported by appropriate research activity. It fulfills this role by advising on and coordinating all scientific research through a series of committees, and also executes research in areas not covered by the technical departments of various government ministries.

The Agricultural and Natural Resources Committee assists the NCSR in determining, on a national basis, the short- and long-term agricultural research priorities. At present the NCSR is itself carrying out agricultural research in selected areas of animal productivity (livestock vector-borne diseases, nutritional deficiencies and infertility) at the Livestock Centre located at Mount Makulu Research Station.

II. Priorities and strengths

Agricultural research priorities are determined in accordance with the general objectives of agricultural development of the Third National Development Plan (TNDP), 1979 - 83. The overriding aim of the TNDP is to achieve self-sufficiency in staple food production. To this end the national research program has substantial inputs into the generation of technology for food production: cereal and legumes crops and beef production.

The sunflower research program has developed varieties and hybrids that combine high oil content (about 38%) with high seed yield. This is a tangible area of strength in which Zambia could contribute to regional sunflower research and production.

Another area of strength is the innovation of establishing the Adaptive Research Planning Teams as part of the research program in order to discover the real problems and constraints to production at farmers' level in the traditional subsistence sector.

III. Publications

In addition to the annual reports published by the various research organizations, the NCSR publishes the Zambia Science Abstracts and the Zambia Journal of Science and Technology. Both publications include articles in agricultural research. There is a substantial lag in the publication of these journals.

The University of Zambia School of Agricultural Sciences is considering publishing a Zambia Agricultural Journal, if adequate funds and articles would be forthcoming. However, if a SADCC regional agricultural research journal is established, the Dean of the School felt that there would be no need for a separate Zambian journal.

1. The Centre should seek funds for regional research projects. The latter should preferably be located in countries where existing programs are weak.
2. Promotion of free germplasm exchange and cooperative evaluation of germplasm and breeding materials were rated high on the list of priorities for the Centre. Concern was expressed about the plant breeders' rights laws in Malawi and Zimbabwe which would restrict these activities. Perhaps the Centre could do something about this.
3. The development of young scientists needs special attention by the Centre. Suggestions to encourage this were (a) the provision of small research grants for research on problems of regional importance and (b) the award of travel grants for junior scientists within the region to learn from experienced and competent colleagues.
4. The Centre should coordinate all regional research projects and donor input into them. Specific examples of projects that need regional coordination are the proposed ECA Maize Research Centre for Eastern and Southern Africa to be located in one of the SADCC countries, and the IITA program of development, international testing and demonstration of high-yielding varieties of maize, rice, cowpea and soya beans.
5. The Centre should play a role in liaising with organizations involved with the production aspects of agriculture.
6. The Centre should assist national programs in monitoring and reviewing their research projects.
7. Assistance with experiment station development and operation, particularly the training of experiment station managers, would be most useful to Zambia.
8. Several problems of regional importance need concerted action by the SADCC countries and the Centre should take action on them. Examples given were: maize streak virus disease, tsetse fly control, mineral nutrition and deficiency in cattle.
9. Provision of facilities within countries in the region for storage of breeders' seed stocks so that they can be distributed and multiplied where needed. FAO is considering assistance in this area.
10. There are many institutions and organizations interested in research in the SADCC region. Too many visits are made with insufficient coordination. The Centre could rationalize such visits of outside organizations to the region.

IV. Interaction with other national agricultural research systems in SADCC region

Existing cooperation between Zambia and the other SADCC countries has included the following activities:

- (a) Cooperation in soya bean research with Zimbabwe. Soya bean varieties developed in Zimbabwe, but late in maturity for the season there, adapt well to Zambian conditions, giving high yields. This is a particularly good example of the practical usefulness of germplasm exchange between countries.
- (b) Zambia has sent its high yielding varieties and hybrids of sunflower, which are in demand in the region, to Tanzania, Malawi, Zimbabwe and Mozambique for testing and evaluation under local conditions.
- (c) Zambia has sent sorghum and wheat seed for testing in Swaziland and Malawi.
- (d) Zambia has received semen and Mashona cattle from Zimbabwe for research purposes.

V. Cooperation with research and research support organizations outside SADCC region

The IARCs (IITA, CIAT, ICRISAT, ILCA, ICARDA, AVRDC) have cooperative activities with the Zambian national research programs. Cooperative research activities are also undertaken with SAFGRAD and the Yugoslav Maize Research Institute. Many donor organisations support research in Zambia including CIDA, SIDA, USAID, FAO, UNDP, NORAD, ODA, World Bank, Ford Foundation, IFAD, Belgian Development Corporation Program, Dutch and French Aid organizations and the IAEA (use of isotopes in animal research).

VI. Views of research scientists and organizations on regional cooperation

A. Need for a Regional Centre

There was general agreement on the need for a centre to promote cooperation in agricultural research among the SADCC member countries. The view was expressed that most national programs are weak because they spread their meagre resources too thinly on many activities. If they can benefit from research elsewhere in the region, their resources can be concentrated on fewer projects. However, a minority concern was expressed that due to competition among national programs, the centre might not be effective in promoting cooperation.

B. Functions of the Centre

All the scientists and officials contacted were highly supportive of the proposed functions of the Centre as contained in the Team's terms of reference. In the discussions the following functions were emphasized:

C. Possible Zambian contribution to regional activities

Development of high yielding varieties and hybrids of sunflower with high oil content for local production of cooking oil (which most countries in the region now import) would be Zambia's immediate valuable contribution to regional research.

D. Other points from discussions with scientists and officials

1. The view was expressed that the CTC for Agricultural Research, at present composed of Directors of Agricultural Research of the nine SADCC countries, should be expanded to include Deans of Faculties of Agriculture and other heads of organizations conducting agricultural research in the region, e.g., Director of the Zimbabwe Tobacco Research Board, and Director of the Tea Research Foundation of Central Africa in Malawi. Such an expanded CTC should meet at least once a year.
2. The Economic Commission for Africa (ECA), under its Multinational Programming and Operations Centre in Lusaka, is making arrangements for the establishment of a Sub-regional Maize Research Centre for Eastern and Southern Africa. The proposal to establish the Centre precedes SADCC and was approved by the Council of Ministers of the sub-region, including SADCC countries, at the Sixth Meeting of the Council of Ministers at Mbabane, Swaziland 14-16 February 1983. A meeting of consultants and concerned countries will be held in Lusaka on 22-26 August, 1983 to determine the location of the Centre. The establishment of a maize research centre in the SADCC region is an activity in which the SADCC centre could play a major role.

VII. Organizations and persons contacted

Ministry of Agriculture and Water Development Headquarters

W.M. Chibasa

Deputy Director of Agriculture
(Research)

Mount Markulu Research Station

D.M. Naik

Chief Agricultural Research Officer

S. Kean

Adaptive Research Planning Team

B. Griffiths

Seeds

K.N. Rao

Maize Pathologist

A.J. Prior	Cereals Research Team
R. Raemaekers	Plant Pathologist
R.W. Magai	Soil Scientist
A.M. Bunyolo	Soil Scientist
H. Harrison	Animal Nutrition
S.T. Sanogho	Soil Microbiologist
P.J. Chimuka	Chief Agricultural Supervisor
B. Sakala	Animal Physiology Technologist
E. Lumande	Librarian
S. Boobola	National Council for Scientific Research
E. Malubita (Ms)	National Council for Scientific Research

National Council for Scientific Research

E.J. Zimba	Head of Research and Development Planning and Coordination Section
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University of Zambia School of Agricultural Sciences

B.D. Owen	Dean of the School, and Animal Nutritionist
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USAID

E.J. Gibson	Agricultural Development Officer
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Economic Commission for Africa (ECA)

S.A. Ochola	Acting Director, Eastern and Southern African Sub-regional Office
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UNDP

Judy S. Cheng-Hopkins	Assistant Resident Representative
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VIII. Documents consulted

W.M. Chibasa 1982. Agricultural Research efforts in Zambia. Paper presented at the inaugural meetings of the consultative technical meetings under SADCC Food Security Project One. Ministry of Agriculture and Water Development, Lusaka, Mimeo. 13pp.

Anon (undated). Present status of Agricultural Research in Zambia, Mimeo. 9pp.

AGRICULTURAL RESEARCH IN ZIMBABWE

I. The components

A. Department of Research and Specialist Services

This Department, under the Ministry of Agriculture, is responsible for conducting research in agricultural science and crop and livestock production. It is also entrusted with provision of certain services to the agricultural industry and with regulatory services under various Acts. It maintains a close relationship with the Agricultural Research Council, a statutory body established by the Minister to review, to promote and coordinate agricultural research, excluding tobacco, sugar cane, pigs and forestry, which are not included in the responsibilities of the Department.

The Department, headed by a Director, embraces three research divisions, each under an Assistant Director, namely Research Services Division, Crop Research Division, and the Division of Livestock and Pastures.

1. The Research Services Division

This Division is charged with the conduct and coordination of disciplinary research in the biological, physical and mathematical sciences applied to agriculture, and for providing services in support of the research programs of other branches of the Department, as well as for the agricultural industry as a whole. It consists of:

- Chemistry and Soil Research Institute (agricultural chemistry, crop nutrition, pedology, soil productivity, and fertilizer and farm feeds registration);
- Plant Protection Research Institute (entomology, nematology, pathology, pesticide registration, and phytosanitary services);
- Biometrics Bureau;
- Institute of Agricultural Engineering (appropriate technology, conservation engineering, crop mechanization, and testing and development);
- National Herbarium and Botanic Garden;
- Seed Services (seed laboratory and inspectorate, and plant breeders' rights);

- Information Services; and the
- Technical Development Unit.

2. The Crop Research Division

This Division is responsible for the coordination of the research policy and functions of the institutes, stations and research groups working on all field and horticultural crops, and for coordinating farming systems research for the communal area farmers. It consists of:

- Cotton Research Institute;
- Horticulture and Coffee Research Institute;
- Lowveld Research Station;
- Crop Breeding Institute;
(maize, oilseeds, potatoes, small grains, winter cereals); and the
- Agronomy Institute
(crop ecology, crop physiology, crop production, farming systems, weed research).

3. The Division of Livestock and Pastures

This division is responsible for all aspects of livestock production, including cultivated pastures and veld for grazing. In addition to its research function, the Division has a regulatory role in regard to the poultry and dairy industries, and also undertakes the grading of carcasses at the various abattoirs throughout the country. It consists of:

- Matopos Research Station
(livestock breeding and production, and veld management);
- Grasslands Research Station
(livestock, veld management, legume inoculant factory);
- Henderson Research Station
(animal nutrition, dairy, pasture, physiology, poultry unit);
- Dairy Services;

- Meat Breeding Services;
- Veld and Pasture Research Institute; and
- Makoholi Experiment Station.

B. The Faculty of Agriculture, University of Zimbabwe

The Faculty of Agriculture consists of three departments: Crop Science, Animal Science, and Land Management.

The Crop Science Department is responsible for teaching and research on all crops including pasture research. The production, physiology, breeding, diseases and pests of all the major crops of importance in Zimbabwe are covered.

The Department of Animal Sciences is primarily concerned in propagating knowledge of the factors which affect the productivity of farm animals and the way in which animal products are prepared and processed for market. This function is achieved by teaching and research. Much of the research is done on research stations in collaboration with the Department of Research and Specialist Services of the Ministry of Agriculture. The benefits of the involvement of the Department of Animal Science with the Ministry of Agriculture and with the livestock industry have enabled the animal scientists at the University to make important contributions to the development of the livestock industry in Central and Southern Africa.

The Department of Land Management is unique in its composition comprising agricultural economists, soil scientists and an agricultural engineer whose teaching and research are all aimed at a sound holistic approach to land use, planning and development. The Department is involved in a range of issues including maintenance of soil fertility, conservation of soils and natural resources, land use and agricultural policy, and alternative forms of land use. The Department is collaborating with the Department of Research and Specialist Services, and with CIMMYT, in farming systems research.

C. Other Research

In Zimbabwe, farmers directly support a substantial amount of research. Research on tobacco is handled by the Tobacco Research Board, with about two-thirds of the funds provided by growers through a levy on sales, with the remainder provided by the Government. The Board contracts for some of Malawi's research needs in tobacco.

The Pig Industry Board, supported entirely by producers, has a farm and supports mainly management type research (e.g. nutrition, housing and management). An extensive genetic improvement program is undertaken involving litter testing, post performance and on-farm multiplication testing.

The Sugar Association Experiment Station was started in late 1966, independently of Government. The greater part of the research is on selection of suitable varieties for local production. Breeding work is undertaken by the Sugar Association in Natal, under contract, and promising varieties are tested at Chiredzi.

The Zimbabwe Seed Maize Association has a farm (Rattray Arnold Station) and is conducting a breeding program on maize and soya beans. More recently, the Agricultural Research Trust has been established, funded by the Grain and Oilseeds Commodity Associations. Its research work is based at a farm on the outskirts of Harare.

It has purchased a farm and has a modest research program. In general, commercial and industrial organizations in the country are increasing their research activities.

II. Priorities and strengths.

In looking at the agricultural research system of Zimbabwe, the following stand out as areas of strength among the SADCC countries:

- legume microbiology
- sub tropical legumes
- animal nutrition
- crop breeding
- seed certification

III. Publications

The Information Services of the Department of Research and Specialist Services provides a management service for the Zimbabwe Journal of Agricultural Research, a botanical journal called KIRKIA and the Zimbabwe Agricultural Journal.

Since the team was asked by the CTC for Agricultural Research to look specifically at it, information in some detail was obtained relative to the Zimbabwe Journal of Agricultural Research. Earlier, this

journal was published by the Agricultural Research Council of Central Africa as the Rhodesia, Zambia and Malawi Journal of Agricultural Research, and thus, in the context of current international boundaries, was regional in nature. The present title, the Zimbabwe Journal of Agricultural Research, reflects the change in making it a journal of Zimbabwe.

The journal is published twice-yearly in Harare by the Department of Research and Special Services, Ministry of Agriculture. It is an internationally recognized journal by and for agricultural scientists, and all articles are refereed by an editorial board. It covers all disciplines in agricultural research, broadly interpreted to include forestry and fisheries.

Virtually all articles are written by Zimbabwe scientists, although recently some manuscripts have been submitted by scientists from other SADCC countries.

The Government handles printing, although in 1982 the work had to be handled by a commercial printer. Some problems are being encountered in getting the journal out on schedule.

A press run is in the order of 600 copies of which some 400 are routinely distributed to 59 countries, about equally among exchange, complimentary copies and subscriptions (1981-82). About 157 are sent to SADCC countries as follows:

Exchanges 4

Complimentary 114

Subscription 39

Zimbabwe accounts for more than 90% of the SADCC region distribution. Angola, Tanzania and Lesotho do not appear on the regular distribution list.

The cost of publication is about Z\$9,000 - 10,000 per year, based on Vol. 19 (No. 2) and Vol. 20 (No. 1). The revenue for subscriptions for that period was about Z\$1,200. Thus, the current net cost per year is around Z\$9,000 for the journal which, for this period, ran 102 - 108 pages per number.

IV. Interaction of the national agricultural research system with other national systems in the SADCC region

Interaction of the Department of Research and Specialist Services with counterpart organizations in other SADCC countries is mostly on an informal basis - personal contacts. Of course, the CTC for Agricultural Research now provides a vehicle for periodic meetings of the Director with the other directors of research in the region.

The Faculty of Agriculture is developing a basis for a cooperative research and training project with the University of Zambia, with possible external funding from three donors. The project is referred to as the Sebongwe Development Project and is an area of resettlement resulting from construction of the Kariba Dam. A workshop has been proposed of Deans of Agriculture of the SADCC region.

As mentioned previously, the Tobacco Research Board interacts with the tobacco research program in Malawi.

V. Cooperation with research and research support organizations outside of the SADCC region

The Department of Research and Specialist Services cooperates with CIMMYT, CIAT, ILCA, IITA and ICRISAT. The following are included in organizations providing support to research of the Department: USAID, ACIAR, IDRC, ODA, USDA, the World Bank and IFAD.

The Faculty of Agriculture collaborates with CIMMYT in its East-Southern Africa-based farming systems research program, specifically in the conduct of training workshops. Its links with donor agencies include USAID, IDRC and the Ford Foundation.

VI. Views of the national agricultural system on regional cooperation

In general, persons interviewed supported the idea of need for greater cooperation in agricultural research in the region. However, a range of feeling was expressed about the need for a regional coordinating center. In the few cases where some skepticism was expressed, the reasons may have included a feeling that Zimbabwe would have relatively less to gain than most of the other countries. On the balance, though, a centre was viewed as a useful mechanism for promoting research, if it effectively carried out the kinds of activities described in the terms of reference for the study team.

Certainly the agricultural research system of Zimbabwe has much to offer to other countries of the region by means of a centre of cooperation. These include (a) experts in a number of fields who could serve as consultants, and resource persons for workshops; (b) improved genetic materials and production technology for crops such as maize and tobacco; (c) training opportunities such as in farming systems research at the Faculty of Agriculture; and (d) making the Zimbabwe Journal of Agricultural Research a corresponding SADCC journal.

5C(2) PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A. includes criteria applicable to all projects. Part B. applies to projects funded from specific sources only: B.1. applies to all projects funded with Development Assistance Funds, B.2. applies to projects funded with Development Assistance loans, and B.3. applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

N/A. This is a Regional Activity.

Yes. See 5C(3) attached.

A. GENERAL CRITERIA FOR PROJECT

1. FY 1982 Appropriation Act Sec. 523; FAA Sec. 634A; Sec. 653(b).

(a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project;
(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that amount)?

(a) A Congressional Notification was sent to the Congress on June 13, 1984. Per State 196845, the Congressional waiting period expired without objection being raised to Project.

(b) Yes.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,00, will there be

- (a) engineering, financial or other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?
4. FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973? (See AID Handbook 3 for new guidelines.)
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?
- (a) Yes. See p. 48 of the Project Paper.
- (b) Yes. See pp. 33 and 49 of the Project Paper.
- Not applicable.
- Not applicable.
- Construction component does not exceed \$1,000,000.

6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.

Yes. Project is susceptible to being executed as a regional, multilateral project and will be so executed. At the conclusion of the Project, there is a requirement that that a regional entity (SADCC) assume full financial responsibility for the operational costs of SACCAR.

7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

The successful establishment of SACCAR will improve the agricultural research systems in the SADACC Region, thus improving the technical efficiency of the region's agriculture-(e). This in turn should increase the flow of agricultural trade within the region and encourage the development of private farmers -(a) and (b). (c), (d), and (f) will not appear to be effected by this Project.

8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

This project will have minimal impact on the encouragement of U.S. private trade and investment abroad, or in U.S. private participation in foreign assistance programs, as most Project expenditures will be for local costs or costs within the SADCC Region.

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9. FAA Sec. 612(b), 636(h);
FY 1982 Appropriation
Act Sec. 507. Describe
steps taken to assure
that, to the maximum
extent possible, the
country is contributing
local currencies to meet
the cost of contractual
and other services, and
foreign currencies owned
by the U.S. are utilized
in lieu of dollars. Initially Botswana, and by the fifth Project
Year, all the SADCC Member Countries will
bear a fair share of the local costs of this
activity.
10. FAA Sec. 612(d). Does
the U.S. own excess
foreign currency of the
country and, if so, what
arrangements have been
made for its release? No.
11. FAA Sec. 601(e). Will
the project utilize
competitive selection
procedures for the
awarding of contracts,
except where applicable
procurement rules allow
otherwise? Yes.
12. FY 1982 Appropriation Act
Sec. 521. If assistance
is for the production of
any commodity for export,
is the commodity likely
to be in surplus on world
markets at the time the
resulting productive
capacity becomes
operative, and is such
assistance likely to
cause substantial injury
to U.S. producers of the
same, similar or
competing commodity? Not Applicable. This Project is not directed
toward the production of specific agricultural
commodities for export.
13. FAA 118(c) and (d).
Does the project comply
with the environmental
procedures set forth in
AID Regulation 16? Does
Yes.

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the project or program take into consideration the problem of the destruction of tropical forests?

Not applicable.

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)?

Not applicable.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

Not DA funded.

a. FAA Sec. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and

Not applicable.

otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A, 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used?

Not applicable.

c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor.?

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

Not applicable.

e. FAA Sec. 110(b).
Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"? (M.O. 1232 defined a capital project as "the construction, expansion, equipping or alteration of a physical facility or facilities financed by AID dollar assistance of not less than \$100,000, including related advisory, managerial and training services, and not undertaken as part of a project of a predominantly technical assistance character."

Not applicable.

f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

Not applicable.

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage

Not applicable.

institutional development;
and supports civil
education and training in
skills required for
effective participation in
governmental processes
essential to self-government.

2. Development Assistance Project
Criteria (Loans Only)

Not a DA loan funded project.

a. FAA Sec. 122(b).

Information and conclusion
on capacity of the country
to repay the loan, at a
reasonable rate of interest.

Not applicable.

b. FAA Sec. 620(d). If
assistance is for any
productive enterprise which
will compete with U.S.
enterprises, is there an
agreement by the recipient
country to prevent export
to the U.S. of more than
20% of the enterprise's
annual production during
the life of the loan?

Not applicable.

c. ISDCA of 1981, Sec. 724
(c) and (d). If for
Nicaragua, does the loan
agreement require that the
funds be used to the
maximum extent possible for
the private sector? Does
the project provide for
monitoring under FAA Sec.
624(g)?

Not applicable.

3. Economic Support Fund
Project Criteria

a. FAA Sec. 531(a). Will
this assistance promote
economic or political

stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

This project will promote economic and political stability within the SADC Region. It does reflect the policy directions for agricultural research activities under FAA Section 102.

b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities?

No.

c. FAA Sec. 534. Will ESP funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to nonproliferation objectives?

No.

d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

No.

stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

This project will promote economic and political stability within the SADCC Region. It does reflect the policy directions for agricultural research activities under FAA Section 102.

- b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities? No.

- c. FAA Sec. 534. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to nonproliferation objectives? No.

- d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? No.

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?

Yes.

2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him?

Yes. Local and regional cost financing will be authorized under AID delegations of authority.

3. FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?

Botswana and the other SADCC Member Countries do not discriminate against U.S. insurance companies.

4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If offshore procurement of agricultural commodity or product is to be

financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)

Offshore procurement of agricultural commodities will not be financed under the Project.

5. FAA Sec. 604(g). Will construction or engineering services be procured from firms of countries otherwise eligible under Code 941, but which have attained a competitive capability in international markets in one or these areas?

No. Construction services will most likely be procured from Botswana firms, and Botswana is not one of the Code 941 Countries with firms who have attained a competitive capability in international markets within the meaning of FAA Section 604(g).

6. FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent that such vessels are available at fair and reasonable rates?

To the extent Section 901(b) is applicable to Project activities it will be complied with.

7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? If the facilities of other

Yes.

Federal agencies will be utilized, are they particularly suitable not competitive with private enterprise, and made available without undue interference with domestic programs?

Not applicable to this Project.

8. International Air Transport. Fair Competitive Practices Act, 1974. If air

transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available?

Yes, but most international air travel under the Project will be inter-Regional and not capable of being performed with U.S. carriers

9. FY 1982 Appropriation Act Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?

No direct AID contracts are contemplated, but any direct AID contract under the Project would contain such provision.

B. Construction

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services to be used?

The construction component being financed by AID is quite small (approximately \$350,000). It most likely will be performed by Botswana firms under FAR procedures. Basic engineering has been previously financed by the Government of Botswana.

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

Yes, under Government of Botswana FAR procedures.

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP)?

Not for the construction of a productive enterprise within the meaning of FAA 620(q).

Other Restrictions

1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?

Not a DA loan.

2. FAA SEC. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?

Not applicable.

3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?

Yes. Our Project Agreement and Implementation letters will so provide.

4. Will arrangements preclude use of financing:

a. FAA Sec. 104(f); FY 1982 Appropriation Act Sec. 525: (1) To pay for performance of abortions as a method of family

(1) Yes.

planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; (4) to lobby for abortion?

(2) Yes.

(3) Yes

(4) Yes.

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property?

Yes.

c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?

Yes.

d. FAA Sec. 662. For CIA activities?

Yes.

e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained?

Yes.

f. FY 1982 Appropriation Act, Sec. 503. To pay pensions, annuities, retirement pay, or

Yes.

adjusted service
compensation for military
personnel?

g. FY 1982 Appropriation
Act, Sec. 505. To pay
U.N. assessments,
arrearages or dues?

Yes.

h. FY 1982 Appropriation
Act, Sec. 506. To carry
out provisions of FAA
section 209(d) (Transfer
of FAA funds to
multilateral
organizations for
lending)?

Yes.

i. FY 1982 Appropriation
Act, Sec. 510. To
finance the export of
nuclear equipment, fuel,
or technology or to train
foreign nationals in
nuclear fields?

Yes.

j. FY 1982 Appropriation
Act, Sec. 511. Will
assistance be provided
for the purpose of aiding
the efforts of the
government of such
country to repress the
legitimate rights of the
population of such
country contrary to the
Universal Declaration of
Human Rights?

No.

k. FY 1982 Appropriation
Act, Sec. 515. To be
used for publicity or
propaganda purposes
within U.S. not
authorized by Congress?

Yes.

Discussion

A. The nature of the Project.

The Project will improve the agricultural research systems in the SADCC region through the establishment and operation of the Southern African Center for Coordination in Agricultural Research (SACCAR). The Center will be located at the current agricultural college site at Sabele, Botswana, on the outskirts of Gaborone.

AID funds will support the development of SACCAR in collaboration with additional donors. AID funds will be disbursed on a "parallel financing" basis for discrete project activities and will not be comingled with other donor funds. AID funds will be used for operation and publication expenses of the Center and for construction.

B. Legal Constraints Concerning Assistance to SADCC.

Briefly, assistance to SADCC is unlawful if it results in providing "direct" assistance to any of the prohibited countries. There are long established GC legal standards for determining whether assistance to a prohibited country under a truly regional activity is "indirect" and thus permissible. ^{3/} In the last analysis, a prohibited country might be allowed to benefit from assistance reaching it under a truly regional program if the assistance is not primarily intended for its benefit and if the withholding of such benefits would impair provision of the assistance to other non-prohibited countries. The above-mentioned GC tests are applied strictly within the Africa Bureau, and "when it appears that a benefit to a prohibited country might not be insubstantial, in absolute terms or in relationship to the project as a whole, it will be referred to AA/AFR for a policy decision." ^{4/}

^{3/} See Legal Opinion, Southern African Regional SADCC Technical Support Project, 690-0215, dated September 12, 1983 pp.2-3.

^{4/} Draft Southern Africa Implementation and Management Policy Memorandum p.2.

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C. Discussion.

This is a relatively simple project to improve agricultural research systems in the SADCC region. It will be implemented through a direct bilateral agreement with the Government of Botswana. Within SADCC, Botswana has the coordinating responsibility for this effort, and thus AID funding (\$1,500,000) will be channeled through the GOB as part of a multi-donor activity. (The estimated total life-of-project cost is \$4,820,000) In accordance with Southern Africa Implementation and Management Policy guideline no. 3, since this regional activity would involve some indirect benefits reaching Angola and Tanzania, AID has sought and secured other donor funding for activities such as funding meetings, workshops and conferences; research and study grants; and travel grants.

Legal Opinion.

It is my legal opinion that the strict parallel financing approach adopted in the final design for the AID funded portion of the Southern African Cooperation in Agricultural Research Project, has assured that AID funds will not be used to provide direct assistance to Angola and Tanzania within the meaning of established GC opinions on the subject, nor does it appear that AID funding would benefit a prohibited country in a substantial manner, in absolute terms or in relationship to the project as a whole, requiring this activity to be referred to AA/AFR for a policy decision.

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