Sida Evaluation 03/35

Sida' Support to the University Eduardo Mondlane, Mozambique

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Background

The development of research capacity in Mozambique has been hampered by several factors. With Independence in 1975, most Portuguese settlers left Mozambique leaving the country with only a handful of university graduates.

Two factors contributed to drain the Eduardo Mondlane University (UEM) of its students. The first was that many students left the country with their parents. Since most teachers were of Portuguese origin, a dire vacuum of teachers developed. The second one was that the new Mozambican Government and the public administration were in desperate need of trained people and many students were recruited to fill the gaps.

With the co-operation of the then socialist block and some European countries, including Sweden, the university was slowly rehabilitated. By 1990, pre-Independence enrolment had been attained again with roughly 3 000 students. However, during this period, the Mozambican population had increased about 50%.

The Mozambican economy was damaged by the civil war and poor economic policies. In the allocation of scarce public resources, UEM fared badly. The war in turn resulted in massive disruption in the country, and the whole education sector was practically shattered.

After peace was established in 1992, a democratically elected government took power. In addition, substantially improved economic policy-making contributed to high rates of economic growth in Mozambique. This, in turn, greatly increased the demand for university graduates and exacerbated their shortage.

The supply of university graduates has also increased rapidly and will continue to do so. Student enrolment increased from about 4 100 in 1991 to about 14 200 in 2001. No studies exist predicting what the market will look like for university graduates. Eventually, the market may become saturated. Already, in some professions, demand is not much higher than supply.

With the liberalisation of the economy, private universities have been established, and their enrolment is growing rapidly. Still, of the university student population, UEM still accounts for about half.

Sweden has a long and consistent track record of supporting research capacity-building in Mozambique. The Nordic countries support to research capacity building commenced already in 1976 with the establishment of the Mozambique Nordic Agricultural Programme (MONAP). MONAP included support to the National Veterinary Institute (INIVE) and to the National Agricultural Institute (INIA). Two Mozambican PhD holders were originally funded under MONAP. SAREC, which remained an independent public entity until 1995 when the new Sida was created, began to support UEM in 1978.

This evaluation covers the period 1998–2002. During the course of work, it was necessary to probe deeper into the past. The Terms of Reference (ToR) covers a broad range of areas to be investigated:

The Study should assess the impact and relevance of Sida support to research capacity building and to the university's strategic plans for reform. It should enable UEM to assess and improve its administration, as well as to assess its future research role in relation to national research capacity, the national higher education system and Mozambique's development needs.

According to the ToR three broad areas should be covered:

- research capacity building;
- core support, administration and management of research; and
- the university's national research role.

To cover the different tasks, a multidisciplinary international Team was formed with the necessary skills to address the issues raised in the ToR.

Research capacity building

Research capacity is the ability to define and analyse a researchable problem, proposing one or more hypothesis and creatively engineering a method of solving it.

Postgraduate studies, especially the undertaking of dissertation and thesis culminating with the award of Masters and Doctoral degrees, equip the candidates with skills and knowledge that contribute to research capacity building for a nation. Sida/SAREC's support has enabled many Mozambicans to qualify for Masters and Doctoral degrees. It has not been possible to estimate the Sida/SAREC's contribution to the research training. For the whole of UEM, the total number of Mozambican teachers with a PhD degree increased from 10 in 1990 to 110 in 2002. It is this type of research training that is responsible for the observed increase in Mozambican publications in international peer-reviewed journals.

Period	Number of publications
1981–85	68
1986–90	85
1991–95	126
1996–00	187
2001–02	80

The training of staff with Swedish funding has relied on a modified sandwich model which allowed students to complete their studies abroad over several study visits, with the home stay period rarely devoted to postgraduate studies or dissertation/thesis research. Only marginally have senior staff at UEM assumed postgraduate research supervisory responsibility.

The PhD training has been very slow, and, in practically all cases, the time required to complete the studies has been more than six years and often 8 to 10 years. Consequently, the sandwich programme model has not worked as intended and has certainly not been cost-effective.

UEM has only developed a few masters programmes though masters training outside Mozambique is costly and not sustainable in the long term.

The Team visited various collaborating institutions in South Africa and Sweden and was, with few exceptions, impressed by the competence and commitment of the participating academics. There has been a rapid growth in training programmes in South Africa, and they have some advantages over sending students further abroad. In general, they are also more cost effective.

In the context of globalisation, Sweden reaps benefits from international research cooperation. The country's and not least Sida's resource base cannot be sustained unless there is international

cooperation. In addition, tomorrow's leaders are trained at universities. Finally, good governance and democratic development are key Swedish development objectives, which can be promoted by international research cooperation. For these reasons, the full cost of Mozambique's collaboration with Swedish institutions should not be charged to the budget of the cooperation programme.

Because of deficiencies in English, many Mozambican students face difficulties. If Mozambique wants to be part of the international research community and interact with its neighbours, a good command of English is necessary, particularly for graduate studies.

The lack of incentives continues to plague UEM. The problem is not only related to salaries but also to career opportunities, the research environment, and the academic culture cultivated within UEM. In part, this lack of incentives is the responsibility of UEM's senior management. Ultimately it is the responsibility of the government of Mozambique to ensure that UEM is given an institutional framework that would enable UEM's leaders to make good use of its available resources. The recently passed law on Higher Education (26 November 2002) is an important step in the right direction.

Management Issues

The evaluation has studied in some detail the financial and research management. UEM still has reminiscences of Portuguese colonial rule and the highly centralised socialist period.[1] Simultaneously, universities in the North are grappling with restructuring problems. The challenge for UEM is enormous.

Several layers of several bureaucracies, both within and outside Mozambique interact. Within the Swedish system, there is Sida with its various departments and divisions. Within UEM, there are projects, departments, faculties and various central organs. UEM is funded by government through the Ministry of Higher Education, Science and Technology, MESCT, which is seen by some donors as having a coordinating role for national higher education. Some donors collaborate with the higher education system via the ministry rather than directly with UEM. In addition, there are collaborating institutions in various universities in South Africa and many universities in Sweden. In addition, UEM is subject to pressures from various donors. Still, whatever bargaining power UEM has had, has not been used.

A priori, such an organisational set-up for cooperation would be a managerial nightmare in any country. The Evaluation Team has highlighted several problems in the Report. At the bottom line, it is clear that the management structure for Swedish-Mozambican research cooperation is completely inadequate. Other factors have made co-operation difficult. For example, since 1999 UEM does not have a Vice Rector for academic affairs. And during the last ten years there have been five different persons responsible for Sida/SAREC support to UEM and several UEM heads of research. The interaction between Mozambican and Swedish entities has resulted in serious delays involving high and unnecessary costs. Swedish support to UEM has not been cost effective.

With 17 donors to UEM, each with their special bureaucratic rules and cultures, the problems have become overwhelming. UEM has a major responsibility for co-ordinating donors. Nevertheless, the donors have a special responsibility as well. They have agreed at OECD's Development Assistance Committee (DAC) meetings to provide programme support and to pool their funds wherever possible. Sida has established its own provisional guidelines in this area. Little of this policy has been implemented at UEM. In fact, it would seem as if the situation at UEM has deteriorated as compared to some five years ago.

[1] Dutch aid is partly supporting UEM's modernisation process.

Sida/SAREC has supported Mozambique since 1976/1978. The *Promemoria,* the basis for the decision making, are based on three-year periods with less long-term strategic vision for Sida/SAREC support. The objectives for support to UEM are not even spelt out. With the rapid turnover of research officers at Sida/SAREC, institutional memory becomes weak and research officers tend to be drowned in the multitude of problems. Lack of a Vice-Rector in UEM and relatively high turnover of the UEM Head of Research can further add to uncertainty. *Ad hoc* solutions are found, and, over time, the strategic perspective often seems to get lost.

The University's National Research Role

As was stated earlier, UEM is no longer the only higher education institution in Mozambique. Nevertheless, UEM will continue to be the dominant actor in terms of qualified research capacity. In this role, it has a special competence to train academic (and other) staff for the whole higher education and research system. This would have to include masters and doctoral programmes. Much work remains to be done since UEM still offers very few masters and no PhD programmes.

The UEM also has a responsibility for building a research culture nationally. But the problems noted earlier, clearly hamper UEM to fulfil its role in this respect.

With the growth of universities in Mozambique, over-all policy making for this sector is of strategic importance. The establishment of the Ministry of Higher Education, Science and Technology (MESCT) filled an important gap. Funding of the UEM's and the MESCT's Strategic Plans need not and should not be divided up among the donors.

Cross-Cutting Issues

Most plans and strategic documents and policy statements of Sida, Sida/SAREC, UEM and MESCT pay lip service to **gender** issues in Mozambique as, in practice, very little progress has been made. Women continue to play a secondary role at UEM in terms of access to university education, research opportunities, and resources. Improvement in gender equity will not be reached unless special efforts are made. In this respect, Sida/SAREC is in a unique position as a major UEM donor to assist the university to implement its gender policies.

Little is known about the **HIV/AIDS** problems in general, and even less about the situation at UEM. For lack of better data, it can be surmised that one out of every 10 students and staff members is probably infected. The early loss of highly educated people is both a human tragedy and a loss to the nation. The benefits of providing care to the infected would by far exceed the costs.

While **environmental** concerns are high on the political agenda both in Sweden and in Mozambique, much remains to be done. The lack of an *ex ante* environmental impact assessment by UEM and Sida attests to this.

Poverty reduction is a central Swedish development objective. This concern is also shared by Mozambique and the Council of Ministers approved the Strategy Document for the Reduction of Poverty, PARPA, in April 2001.

Recommendations

The Evaluation Report outlines a series of recommendations at different levels. For overarching issues, it is recommended that:

- Very soon, Sida initiates a dialogue with other donors so that ongoing fragmentation of support at MESCT can be attenuated; meanwhile it is recommended that:
  - Sida supports the establishment of a national research fund; and
  - Sida supports a nationwide Masters scholarship fund.
- UEM, with Sida's support, sets up a task force to explore the possibility of transforming the presently fragmented donor-support for UEM into an effective and consistent support for the implementation of UEM's Strategic Plan; meanwhile it is recommended that:
  - The cooperation agreements are extended from 3-year to 5-year periods;
  - UEM is empowered to use Sida funds in a way that is more flexible temporally and between projects; and
  - UEM and Sida agree on the objectives of the cooperation and establish targets to be met with verifiable indicators and the setting in place of a monitoring system.
- UEM initiates a dialogue with the government to obtain more effective autonomy, e.g. in setting salaries and firing poor performing staff members.
- Sida supports UEM's effort to enlist other donors in this endeavour to establish programme support.
- Sida reviews and defines the structure to be responsible for support to higher education and research within Sida.
- Sida initiates a discussion with Swedish collaborating institutions on the modalities of support to Higher Education and Research in Mozambique.

List of Acronyms

Acronym	English	Portuguese
AusAid	Australian International Development Agency	Agência Australiana para o Desenvolvimento Internacional
BIM	International Bank of Mozambique	Banco Internacional de Moçambique
HE	Higher education	Educação superior
CTIA	Agricultural Research Council	Conselho Técnico de Investigação Agrária
GASD	Group Against AIDS and Sexually Transmitted Diseases	Grupo de Activistas Anti-Sida/DTS
GOM	Government of Mozambique	Governo de Moçambique
HEI	Higher education institution	Instituição de educação superior
INIA	National Institute for Agricultural Research	Instituto Nacional de Investigação Agraria
INIVE	National Veterinary Research Institute	Instituto Nacional de Investigção Veterinaria
ISRI	Higher Institute of International Relations	Instituto Superior de Relações Internacionais
ISI	International Institute for Scientific Information	Instituto Internacional para Informação Científica
MA	Master of Arts	Mestrado de letras
MESCT	Ministry of Higher Education, Science and Technology	Ministério de Ensino Superior, Ciencia e Tecnologia
MINED	Ministry of Education	Ministério de Educação
MONAP	Mozambique Nordic Agricultural Programme	Programa Nordico Agrícola para a Agricultura em Moçambique
MSc	Master of science	Mestrado de ciência
NATUR	Department for Natural Resources and the Environment (Sida)	
NORAD	Norwegian Development Agency	Agência Norueguesa para o Desenvolvimento
NUMAC	Nucleus of Academic Women (at UEM)	Nucleo da Mulher Academica
NUFFIC	Dutch Organisation for Development in Higher Education	Organização Holandesa para o Desenvolvimento em Educação Secundária
PARPA	Action Plan for the Reduction of Poverty	Plano de Acção para a Reducção da Pobreza
PhD	Doctor of Philosophy	Doutor de Filosofia

PM	Promemoria (term used within Sida for background document prepared to assist decision making)	*Promemoria*
PROAGRI	Agricultural Sector Programme	Programa para o Sector de Agricultura
SAREC	Swedish Agency for Research Cooperation with Developing Countries (now a department within Sida)	Agência Sueca para Cooperação em Pesquisa com Países em Vias de Desenvolvimento
Sida	Swedish International Development Cooperation Agency	Agência Sueca de Cooperação para o Desenvolvimento Internacional
SEK	Swedish currency (Krona)	Moeda sueca (Krona)
SWAP	Sector Wide Approach	Estratégia integral para um Sector
SLU	Swedish University of Agricultural Sciences	Universidade Sueca para as Ciências Agrícolas
TOEFL	Test of English as a Foreign Language	Exame de Inglês como Língua Extranjeira
UEM	Eduardo Mondlane University	Universidade Eduardo Mondlane
UFICS	Entity for Social Science Training and Research at UEM	Unidade de Formação e Investigação em Ciências Sociais
UNICEF	United Nations Children Foundation	Fundação das Nações Unidas para as Crianças
WB	World Bank	Banco Mundial

For acronyms, we have used the Portuguese abbreviations for Mozambican institutions.
For non-Mozambican institutions, we have used the English acronyms.

1 Introduction

1.1 The Terms of Reference

This is an evaluation of Sida's support to the University Eduardo Mondlane in Mozambique. The Terms of Reference are extensive. Sida explicitly stated that the evaluation should be participatory. As is stated in the ToR, *the evaluation will be used both as a benchmark and as a strategy document for Sida and UEM's planning for future support. It will be participatory in orientation and be conducted in dialogue with Sida and UEM.*

The ToR further state that:

> *The Study should assess the impact and relevance of Sida support to research capacity building and to the university's strategic plans for reform. It should enable UEM to assess and improve its administration, as well as to assess its future research role in relation to national research capacity, the national higher education system and Mozambique's development needs.*

The following three areas should be covered:

- research capacity building;
- core support, administration and management of research; and
- the University's national research role

The detailed ToR can be found in Appendix 1. These ToR were discussed with Sida in Stockholm at an early stage of this assignment. At this stage, it was agreed to include certain aspects outlined in Sida's Evaluation Policy such as a discussion of the cost-effectiveness of the programme. The ToR were analysed jointly with the UEM and some minor points were raised. A note was prepared from this meeting and forwarded to UEM and Sida.

1.2 The Team

In order to comply with the tasks, a Team was formed composing six persons, reflecting different scientific backgrounds and experiences relevant for the assignment. A summary of the Team members' background can be found in Appendix II. The distribution of major responsibilities, based on the ToR was as follows:

- Dr. Tom Alberts (Team leader. Responsible for *Cross-cutting issues).*
- Prof. Berhanu Abegaz (Responsible for *Research capacity building)*
- Prof. Peter Coughlin (Responsible for *Core support, administration and management of research)*
- Dr. Else Skjønsberg (Responsible for *Social sciences, gender and HIV/AIDS)*
- Prof. David Wield (Responsible for the *University's national research role)*
- MSc Gunnar Jehrlander (Responsible for *International financial management).*

The UEM expressed at an early stage the wish to have a Mozambican professional on the Team. When the Team met with UEM and invited UEM to nominate a person, it was made clear that UEM felt, correctly, that the person should not be an employee of the university and that it was improper for the

university to make a decision on who should participate. The consultant agreed to this suggestion but since work had already begun it was impossible to include someone full time. To get a substantive input from a knowledgeable Mozambican, Dr. Salomão Júlio Manhiça was included in the Team during the Report writing.

In addition, the Team included Ms. Rita Muterva as an assistant and two research assistants — Mauro Salia and Daniel Lucas — who assisted the Team in gathering statistical information. Mr. Seife Ayele of the Open University in the UK prepared Table 3 *Mozambican publications produced in international journals over 1981–2002* and Appendix IX.

The Team would like to extend its gratitude to the many people who have assisted us in our work. As can be seen from the list of people met, Appendix III, we have met with many persons. Each and everyone has shared their experiences and knowledge and provided invaluable insights. Nevertheless, our work would not have been possible without the collaboration of Dr. Zita Ustá and Dr. Orlando Quilambo who were appointed by the UEM to assist the Team. Also, Dr. Paul Dover and his successor Dr. Zinaida Iritz, Sida/SAREC responsible for the support to UEM, have provided indispensable support.

1.3 Milestones and comments received

Prior to the departure from Mozambique, on 15 November, the Team presented its major findings to the Swedish Embassy in Maputo and to UEM. Part of the Team (Berhanu Abegaz, Tom Alberts and Gunnar Jehrlander) continued to South Africa to visit universities in the Pretoria-Johannesburg region. Tom Alberts and Gunnar Jehrlander visited Swedish collaborating institutions from 25 November to 3 December. The Draft Report was forwarded on 9 December.

The Draft Report was presented to the Swedish Embassy on 16 December, to UEM on 17 December, and to other donors on 18 December. The Draft Report was presented to Sida and to the Swedish collaborating institutions on 6 February 2003.

The Draft Report was made available on UEM's Website in February 2003.

Many detailed and general comments have been received from UEM, MESCT and Sida. In addition a few persons have commented the Draft Report.

2 Programme Context

2.1 Background

The development of Mozambican research capacity has been constrained by a number of far reaching events. Mozambique became independent in 1975, and, with the massive exodus of the Portuguese, the country was left with only a handful of university graduates. Illiteracy rates were above 90%. Building research capacity in this context was not an easy task, and, unfortunately, the prospects were not favourable.

At that time, Mozambique was surrounded by hostile neighbours. The Ian Smith's regime in Rhodesia and the apartheid government in South Africa threatened the existence of the newly independent country. During the first decade after independence, the country opted for a socialist development strategy. A civil war emerged and was supported by Rhodesia, South Africa and some of the colonialists that had fled Mozambique. When Zimbabwe became independent in 1980, the hope for peace was thwarted by South Africa's support for Renamo in Mozambique. With mounting economic problems within the country and a cruel civil war, the prospects for Mozambican development were dim.

With peace established in 1992 and with the democratisation of the country and improved economic policy-making, the country has since made spectacular progress although poverty remains acute in many parts of the country. The eradication of poverty is the stated policy of the Mozambican government.

The war resulted in millions of Mozambicans becoming displaced both within and outside the country. On top of this, the destruction of primary and secondary schools caused the loss of the early gains in eradicating illiteracy. With peace established in 1992, Mozambique faced a formidable task of rehabilitating the economy, including its education system.

Universidade Eduardo Mondlane is Mozambique's major higher education institution. It was established in 1962 and mainly served the needs of the Portuguese colonial regime. In a country then with about 13 million people, there were only 3 000 university students. With the exodus of the Portuguese this figure dropped to 1 300 after Independence and then further to only about 1 000 in 1980 (Wield 1998, pp. 11–12).

Until the peace agreement, the number of university students slowly and steadily increased to about 3 000, the same level as prior to Independence. With the rehabilitation efforts after the war, the return of displaced people, and the rehabilitation of schools, the number of students in secondary schools has increased and will continue to do so as a result of the efforts in primary education. Twelve years after the peace accord, a growing number of secondary students are knocking at the doors of the universities though only a fraction of those can be admitted.[2]

Still, the growth in the number of university students has been impressive. The total number has grown from 4 100 in 1991 to 14 200 in 2001. For UEM, the increase was from about 3 000 to 7 100 during the same period. According to the Operational Plan for UEM, this figure will reach 12 200 in 2004. UEM's share in the student population has decreased from 73% to 50%. These figures also suggest that UEM has been loosing grounds in relative importance.

[2] According to Lind and Igboemeka 2002, p.6, in 1999 there were almost 11 000 applicants for 2 300 places. The study also highlights regional and gender inequalities.

This high and growing demand for university training is the result of two factors: *(i)* the very low availability of university graduates in general and *(ii)* the very high rate of economic growth attained by Mozambique since 1992, which has boosted demand for university training.

2.2 Sida's support to research and higher training

Prior to 1995, Sida and SAREC were two independent public entities. As of 1 August 1995, Sida ceased to exist and SAREC became one department within the new Sida organisation. In the new organisation, SAREC has a semi autonomous status with its own budget and board of directors. Traditionally, SAREC has had three basic objectives:

- research capacity building
- generating relevant research
- support to development research at Swedish academic institutions (10% of the budget)

These objectives have been retained by SAREC in Sida. To what extent should SAREC broaden its mandate is still being discussed. For example, whether Sida/SAREC should have over-all responsible for tertiary education remains an open question. Inevitable, at present, Sida's division of work appears somewhat confusing. For example, the Natural Resources and Environment Department (NATUR) supports a large programme involving PhD and MSc training and research in Ethiopia. In Mozambique, the same division has been supporting agricultural research and research training. Sida/NATUR participated actively in the development of the sector programme for agriculture, PROAGRI, and set aside significant resources for the planning and development of a national agricultural research system. SAREC did not participate in this work.

Sida/SAREC has successively taken over responsibility for various Sida Departments support to UEM. This change in responsibilities has been particularly complicated in the agricultural sector. (More on the support to agricultural research can be found in Appendix VII.)

In addition, through the Swedish Embassy in Maputo, Sida has provided funding to UEM. Only this year was it decided that this support should be administrated by SAREC.

Swedish support to Mozambique commenced immediately after Independence. SAREC's support commenced in 1978 and is well described by Wield (1998). The original support was mainly for the social sciences. Over time, a shift in emphasis can be noted with the natural sciences playing a much more dominant role during the last decade.

3 The Methodology Used

3.1 Objectives and verifiable indicators

3.1.1 Sida

The point of departure in any evaluation is to identify the objectives, the expected impact of the programme with verifiable indicators. What was the programme supposed to do and what was achieved?

SAREC's planning cycle involves receiving a request from UEM, which is then processed. At the end of the planning process, a *Promemoria* (PM) is prepared for SAREC's Board for a decision. The PM from November 1997, covering the period 1998–2000, lists no objective(s) for the co-operation. However, in the section on results, some expected results are indicated for the period 1998–2000.[3]

The PM from May 2000, covering the period 2001–2003, is in English, which is a laudable step because it makes this key document available to non-Swedish speakers. Still, the PM contains no objectives for the cooperation. From the PM, it is not possible to identify what results the cooperation with UEM should yield.[4]

Reviewing various agreements between Sweden and Mozambique, a slightly different picture emerges. The agreements between Sweden and Mozambique from November 1998[5] state:

> *The main objective of the support is to:*
>
> *Support Mozambique in its efforts to strengthen higher education, promote research, develop institutional capacity, and in general strengthen university development within the framework of national development.*

The agreement between Sida and UEM is very similar, and it can be concluded that one main objective is to strengthen higher education

The agreement between UEM and Sida for the period 2001–2003, dated 3 May 2001, states that:

> *Article III. Scope and objective of the cooperation*
>
> *The main objective is to promote research and the development of institutional capacity, in the effort to strengthen higher education and university development in the framework of national policies and plans.*

There has been a slight shift in emphasis since, for the ongoing period, the main objective is not to *strengthen higher education*. In this context, research and institutional capacity are seen as necessary for higher education and university development. It has not been possible to ascertain whether this change in wording was deliberate or not.

Nowhere in the documents are verifiable indicators stated though these are nearly essential for an evaluation.

In summary, it is not clear what the cooperation should achieve during these two planning periods (1998–2000 and 2001–2003).

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[3] 28 PhDs, 16 masters, and more than 30 *licenciaturas*.

[4] For a review of SAREC's policy and verifiable indicators see also Appendix X.

[5] The programme is for the period 1998 to 2000, and the agreement was signed at the end of 1998.

3.1.2 UEM

The University's *Strategic Plan 1999–2003* is further discussed in Chapter 4.3. As a statement of policy guidelines it is an excellent piece of work. It was later supplemented with an Operational Plan for the same period. The Operational Plan identifies a series of activities to be undertaken and a great number of areas to monitor were developed. However, in many cases, specific indicators are missing.[6] It is understandable that at this stage it is difficult to specify targets to be attained within a given time-frame. To do this, an estimate of the funds needed and those available would be necessary.

Concurrently with the elaboration of these documents, the World Bank Human Resources Development Project was coming to an end, and the Bank was interested in financing a project for tertiary education in Mozambique. With the assistance of three WB consultants, the Report, *Capacity Building Project,* was finalised in January 2001. It is understood that the planning method was that of a bottom-up approach and that these "needs" were aggregated. There are three scenarios for the five-year period ranging from a total cost of USD 139 million to 190 million. This eventually led to the WB project involving a loan of USD 60 million and a GOM contribution of USD 11 million. The total project cost for UEM (including WB, GOM and donor financing) is estimated at USD 32.9 million.

With such a large project, the questions of what are UEM's objectives and to what extent does this project reflect the UEM's priorities can be raised. As an example, the Operational Plan lacks targets for attaining equity. The World Bank project impact assessment of the project is that:

> *Increased by 5% point the number of students from the North (from 10% to 15%) and Center (from 30% to 35%) by 2006 enrolled into public HEIs*
> (Project Appraisal Document for Higher Education Project, 2002)

But there are no targets for gender equity though this is an explicit objective in UEM's Strategic Plan.

So, UEM has partially developed verifiable indicators targets, with the World Bank, to be attained during the period 2002–2007, the period covered by the WB loan. But the implementation of a monitoring system for the implementation of UEM's Strategic Plan is still lagging behind.

Since the project is so large, there is an inherent risk that UEM's objectives might become distorted because the WB project covers but part of the university's needs.

One view expressed by UEM management was to assign a total price tag to the Strategic Plan of USD X million. Hence, X can be viewed as the sum of WB + Sida + NL + others. But this leads to an impossible situation as is discussed in Chapter 4.2.

In summary, neither Sida nor UEM have established clearly verifiable indicators for measuring progress. How the Team has dealt with this situation is discussed below.

3.2 The Approach Followed by the Team

Given the vagueness of the Sida objectives it was decided to focus mainly on the issues raised in the ToR. Major emphasis was given to UEM issues while, in some cases, specific Sida-related activities were studied in detail.

As was mentioned in the introduction, the different Team members were assigned specific responsibilities. Most Team members also worked on **Research-Capacity** building, and priority was given to the different projects supported by Sida. A questionnaire was developed jointly by the Team members for use at the faculty/department and project levels.

[6] The "evolution of post-graduate activities" is proposed to be an indicator.

The Team has followed a bottom-up => top down => bottom up approach, in other words findings at the project level were discussed at faculty and UEM senior management levels. The findings and ideas were then discussed with lower levels.

While new investments are needed for the development of UEM, it is possible that more could be obtained with existing resources. This is in line with UEM's Operational Plan (p. 3) where it is stated that "*one of the plan's guiding principles is the capitalisation of human and material resources and the use of the already existing human potential*". This issue is intimately related to cost-effectiveness, an analysis of which has to be included in Sida evaluations.

To this end, the Team probed various aspects of Sida's support and UEM's management. To guide this work, a questionnaire was developed. The main findings can be found in Chapter 4.2.

Finally, the Chapter 4.3 on UEM's national research role was based on unstructured interviews, various policy documents, and experiences from elsewhere. During all stages of the work, the Team has interacted. When there have been differences in the analyses, conclusions and recommendations, the issues have been discussed at length. In case of strong differences in opinion, it was at an early stage decided that the different interpretations should be presented rather than to present a compromise solution. To this end some Appendices were included to provide more detail and also views which were not necessarily shared by all members of the Team. In this way, it is believed that the Report will be more useful to UEM and Sida.

The report differs slightly from the Sida format.

4 Findings

4.1 Research capacity building

4.1.1 Introduction

Research capacity is the ability to define and analyze a researchable problem, proposing one or more hypotheses and creatively engineering a method of solving it[7]. Universities in many African countries were often set up by replicating North institutions and, in most cases, are alien to the empirical knowledge and traditional practices of these countries. The initial set of curricula are generally developed and implemented by expatriates and/or nationals who trained in North institutions and that are understandably more able to ensure international standards than local relevance. UEM is no exception to this and is even more disadvantaged because its predecessor, the Universidade de Lourenço Marques was not designed to benefit the indigenous population of Mozambique. Research capacity building in such institutions is a very complex and time-consuming process. Undertaking research and teaching that is relevant to local needs and national development, and maintaining high international standards is a formidable task.

An important process for universities to acquire the much-needed relevance of their programmes to development and society is through engagement in social and development oriented research. Postgraduate training that embodies research-training as an integral part of its programme is fundamental in this context. How much capacity has been built up in a particular institution is a rather complex process particularly for an evaluating team such as the present one in a short span of three to four weeks. However, an attempt is made to do so and in this regard we have looked into three assessable areas. These are: Research manpower, infrastructure and research output

4.1.2 Research Manpower

Staff development

The main emphasis of Sida/SAREC's cooperation with UEM since the late eighties has been in the area of building capacity through research training and infrastructure development. Several projects spread over several faculties have been supported, although the main focus of support for the current funding period is the Faculty of Science (Yap et al, 2000). Although a number of donors are supporting various programmes in the University, it is interesting to note that Sida/SAREC is currently the only sponsor of postgraduate research to the Faculties of Science and Engineering (Lind and Igboemeka, 2002). The cooperation has, in most cases, involved the participation of Swedish institutions. In one or two cases other European institutions were involved drawing on Swedish financial support.
South African institutions (the University of Witwatersrand, Rand Afrikaans University and the Universities of Natal and Pretoria) and the University of Zimbabwe in Harare have been involved as cooperating partners in the research training of Mozambican academics. Though many projects have faced innumerable problems, many have done reasonably well and there is a modest level of capacity that has been built, in many cases from scratch.

[7] For more information on SAREC's Policy and research capacity see Appendix X.

Table 1 UEM full-time Academic staff break down by rank and gender – 2002.

Category	Total			Nationals			Expatriates		
	M	F	Tot	M	F	Tot	M	F	Tot
Professor	6	0	6	3	0	3	3	0	3
Assoc. Professor	31	7	35	10	4	14	21	0	21
Assist. Professor	48	13	61	38	12	50	10	1	11
Senior Lecturer	268	94	36	262	84	346	6	10	16
Lecturer	182	33	2	102	32	134	2	1	3
Total			13 7						
	457	14 7	60 4	415	132	547	42	12	54

Source: UEM

UEM has made significant improvement in its staff development over the last five years (See also Lind and Igboemeka, 2002). The most recent figures indicate that UEM has 604 full-time academic staff members of which 547 (>90%) are Mozambicans. In the year 1995/96 there were 512 full time academic staff members of which 380 (74%) were Mozambicans. (Wield 1998, p. 23) The break down of these by rank and gender is shown in Table 1.

Table 2 indicates the situation for the various faculties and also includes part time teachers.

Table 2 Teaching staff and students, by faculty, sex – 2002/2003

Faculty	Students		Teaching Staff				Staff beingtrained			
	Male	Fem.	Ph.D	MSc	Lic.	Bsc	Ph.D		MSc	
							M	F	M	F
Agronomy	529	170	17	20	27	0	1	3	6	1
Science	981	265	42	19	105	1	6	1	2	0
Law	816	314	1	6	45	0	1	0	1	2
Economics	665	197	6	20	27	0	1	0	0	0
Engineering	1 437	82	17	10	78	0	13	0	1	0
Arts	662	279	21	17	68	0	n.a.	n.a.	n.a.	n.a.
Medicine	328	346	14	11	96	0	8	7	0	0
Veterinary	135	94	6	19	27	0	0	1	0	0
UFICS	298	156	8	20	37	0	2		1	2
Architecture	154	16	0	7	27	0	0	0	0	0
Education	72	50	5	8	14	0	n.a.	n.a.	n.a.	n.a.
TOTAL	6 077	1 969	137	157	551	1	32	12	11	5

Source: UEM

In 1995/96 there were 5 200 students of which 1 261 were women (24.3%). By the year 2002/2003 the student population had increased to 8 046 of which 1 969 were women (24.5%). In terms of gender equality not very much has been accomplished. Unless concerted efforts are made, the composition of females in staff training does not suggest that there will be any significant changes to rectify the gender imbalances within the foreseeable future.

Between 1995/1996 and 2002/2003 the student population increased rapidly (54.7%). During the same period the number of full time teachers increased only by 6.8%. The number of part time teachers increased from 177 to 263 during the same period (48.6%). These figures suggest that UEM has become more efficient insofar as the expansion of students has been more rapid than the expansion of teachers.

There has been a very rapid growth in the number of Mozambican teachers holding a PhD degree from 10 in 1990 to 110 in 2002. (Table 3) This is also a good indicator of the growth of the potential research capacity. Of the 110 Mozambican teachers 21 were women (23.6%) which shows a significant gender imbalance at UEM.

Table 3 Number of Mozambican staff holding a PhD degree[8]

Year	Number
1990	10
1996	34
2002	110

To what extent has Sida/SAREC contributed to this development? There are no systematic records on PhD and MA/MSc graduates with Sida/SAREC funding, neither at UEM nor at Sida/SAREC[9]. Tentatively though, it appears as if Sida/SAREC's contributions to these changes are not high. For example in the Medical Faculty, only two (out of the 14) PhDs were trained through the Sida/SAREC cooperation. These two started their training in 1992 and finished in 2000 (after eight years)[10]. Are there rational and positive sides to the slow rate of training under the auspices of the Sida/SAREC collaboration? In a true Sandwich type of programme (See 1.2 below), there is the possibility that research will be performed in the home institution, and hence this would result in the slow build up of research culture, which may take time. However, most of the training programmes under the Sida/SAREC cannot be classified as "Sandwich" type, since the candidates return only to teach or to do administrative work and not least attending to other job commitments to secure an adequate income. Too little time is spent on research at home. Efforts should be made to find ways by which students are supported and encouraged to continue their postgraduate studies during their stay in Mozambique. This will not only ensure the continuity of their training but will also shorten the training period. The faculties and departments also claim that the Sida/SAREC programme has allowed them to send their staff at times when the teaching obligations are low. Some coordinators feel that it would have been difficult for them to release several of their staff simultaneously to go overseas for full time or for periods of study exceeding six months. There is obviously a need to carefully examine the benefits of intermittent training to the cost and the long period (8–10 years) it takes to train the Masters and Doctorate levels.

Training modalities

The training of research manpower has been accomplished following the Sandwich Model. It became clear during the evaluation that the term "sandwich training" is used rather broadly. Traditionally this

[8] Insatspromemoria 1997, p. 3 and UEM.

[9] The Insatspromemoria from 1997 stated that during the period 1996–1997, 10 had finished their studies and another 28 would complete their degrees 1998–2000. Of these students 4 were financed by other donors as well. During the course of our work, Sida/SAREC sent out a questionnaire to the Swedish collaborating institutions. According to the answers there were only 5 PhDs who had graduated. The two sets of data are incompatible. Moreover, there are no tracer studies and it is next to impossible to estimate to what extent these graduates remain at UEM.

[10] A third trainee died due to illness.

term is used to designate "split-side study programmes" in an external and home institutions, with varying degrees of involvement of the two, falling between the following two extreme situations:

a) The trainee is registered in the external training institution where s/he attends courses (if any) and also starts the research work. The trainee then gets opportunities to return to the home country (may not even be the home institution) to do field work. S/he then returns to the external institution to complete the programme, write a thesis/dissertation, defend (where required) and obtain the sought qualification (Masters or PhD). Such programmes have least contributions from the home university and are encountered when there is very weak capacity in the particular area in the home institution. In this case, the candidate will at best acquire skills and knowledge while s/he contributes to the further development of the research programme of the external institution. The training rarely requires the candidate to start a research programme in his/her own institution.

b) The trainee is registered in the home institution, under the supervision of a local research advisor, where also most or all of the course work and research is done, but the trainee travels to the external institution to do a course or two that may not be available in the home institution and/or to conduct aspects of the research work that can not be performed in the home institution[11]. The trainee may take advantage of the better access to literature in the external institution and writes the thesis/dissertation, defends (where required) it and obtains the sought qualification *(Masters or PhD) at* home. Such programmes have significant contributions from the home university and require a reasonable degree of competence in the home institution. In this case, the training of the candidate not only equips him/her with skills and knowledge, but also contributes to the development of research capacity and research culture in the home institution.

Research training for most projects at UEM falls in the first category while a few projects are making preparations to switch to the second. An example of the latter is the Department of Biological Sciences, which is in the process of conceptualizing a masters programme in marine biology.

According to the Operational Plan (p. 16), the number of Masters programmes should have grown from 6 in the year 2 000 to 14 in 2002. The implementation has been very slow.

Still, some sections of the university offer Masters programmes almost fully on their own. These include the Rural Development programme at the Faculty of Agronomy, the Public Health programme in the Department of Community Health of the Faculty of Medicine and three departments in the Faculty of Education. A proposal for a postgraduate Masters programme in Law has been approved by the University Council and is ready to admit students. These programmes were not (at least not directly) embraced in the Sida/SAREC cooperation programme and were developed directly without going through the sandwich process with direct assistance from other donors.

Some of the Sida/SAREC funded projects have definitely advanced and seem to have the potential to launch UEM-based Masters programmes. Among the Science Faculty projects, two that may be considered in this category are the *Photovoltaics Power System and Applications* and the *Solid State Physics: Accelerator Based Ion Beam Analysis Methods* projects. However, it does not look as if this is about to happen as neither directives from the UEM leadership, nor initiatives from the projects to venture into postgraduate studies appear to be forthcoming. Some departments have fairly senior staff that have reached the ranks of associate professor and also have managed to publish good papers in peer-reviewed international journals. It is noted that these staff members are not seriously engaged in supervising postgraduate students who return to Mozambique after a study visit abroad of six months.

[11] This model is emphasised in SAREC's policy where it is stated that "Supervisors are appointed from both co-operating institutions." (p. 29)

There is general concern that many staff members have acquired high level training abroad but are not able to engage themselves in quality scholarly activities. Some complain about the lack of enabling environment to function optimally.

Some training programmes are incorrectly referred to as sandwich programmes since they only involve periods of study abroad lasting up to six months followed by return to Mozambique to be engaged in teaching and administration responsibilities only. Such a scheme has allowed certain departments to train several staff members without having to send them on full time study for several years. This approach does take a long time to train staff (up to eight years) and in spite of the long duration, seems to be quite popular in many departments. However, this scheme was a source of frustration to one trainee from the Faculty of Engineering who found out that the project topic that he had started on during his first sojourn to Sweden was taken over by another student, and was not happy when he was made to start on another project, totally unrelated to the first one during his next visit. It is not surprising that this happened because he had essentially de-linked himself from the postgraduate programme that he had enrolled in and it is quite understandable that the supervisor was less inclined to allow a project in a competitive area to stay idle for too long. The contribution of such a training scheme to the capacity building efforts of the Mozambican institution is rather minimal and may best be replaced by proper "sandwich" or full-time study programmes.

During the discussions with Swedish collaborating institutions in February 2003, it was clear that many of them would be interested in supporting the development of Masters programmes at UEM. Apart from having some Swedish teachers taking on some courses at UEM, the idea of engaging UEM teachers for certain time periods at Swedish academic institutions was also discussed. This would enable Mozambican and Swedish researchers to co-operate more actively. It was also felt interesting to explore the possibility of engaging other academic institutions in the region, e.g. South Africa.

Training in Southern Africa

A significant development over the last five years is the development of stronger regional links with other universities in the region. UEM's leadership is pursuing this with some vigour. Recently (24 July 2002) the vice chancellors of four universities in the region (UEM, Venda, Wits, and Botswana) and the Provost of the University of Virginia in the US met in Maputo to sign an agreement for the formation of a formal consortium for collaborative research in regional ecosystems and sustainable development research and education. UEM scientists have also taken part in an international scientific research program called SAFARI2000. The principal investigator of one of the Sida/SAREC supported *Application of Accelerator Based Ion Beam Analysis Methods* project has been an active member and continues to be involved in a regional cooperation programme concerned in environmental monitoring of air quality.

Some of the Sida/SAREC projects have linkages with universities in South Africa. The collaborating South African universities are: the University of Durban (Development of Biological Research Capacity, Environmental Impact of Mining Industry in Mozambique), the University of Pretoria (Internet-based learning activities in Mozambique, Morphological, Reproductive and Genetic Studies on Local Animals of Economical Importance and the Diagnosis and Control of Tropical Veterinary Diseases and Zoonosis), Rand Africans University (Photovoltaics project) and the University of Witwatersrand (Assessment of the Teaching and Learning Mathematics at Secondary and Tertiary Education in Mozambique), both in Johannesburg, the Shoneland Center of the University of Witwatersrand and Ithemba labs – National Accelerator Center near Cape Town.

The Team had the opportunity to visit three of the collaborating institutions in Johannesburg and Pretoria, namely: The Faculty of Veterinary, University of Pretoria, The Department of Physics (Rand

Africans University) and the Shoneland Center (of the University of Witwatersrand). All three institutions have well developed PhD programs, active research centres, some undoubtedly involved in cutting edge science and frontiers of knowledge. The visit was very brief, nevertheless, the team felt that these centres can serve as strong complements, if not alternatives to the Swedish institutions in the effort by Sida/SAREC and UEM to build research capacity in Mozambique.

Mozambique's membership in SADC is also an important factor to stronger regional cooperation in the area of higher education because of the existence of a protocol[12] that allows students from a member state in one country to study in a university in any other country by paying only the fees applicable for nationals (SADC 1997). This is obviously an opportunity that UEM can pursue to send its postgraduate students to universities in the SADC countries for fulltime or sandwich type training. It is not clear at this time if UEM has exploited this opportunity within the region. The SADC protocol, referred to earlier as well as the MESCT Strategic Plan emphasize the importance of strengthening centres of specialization focusing on the problems of the region (MESCT 2000, p. 7).

Language

In the last part of this section, we would like to address the issue of language. Portuguese is the medium of instruction and the official language of Mozambique. Undoubtedly it would be possible to survive with it, but it would mean that its world is confined only to the few countries who are Lusophone. But in order to go beyond survival, to interact more meaningfully with the neighbouring countries and the rest of the world, in order to make sure that the next generation and those after are not disadvantaged, it would be necessary to introduce English as an additional language. A policy decision to allow some courses in the undergraduate and most postgraduate course to be taught in English would be a very good start[13]. Our visit to South African Universities has also confirmed our suspicion that Mozambican postgraduate students had some difficulties in communication and were required to pass TOEFL (Test of English as a Foreign Language administered by Princeton University) or some equivalent English proficiency tests. In the long term, most post-graduate courses will need to be offered in English, *particularly* if the university desires to offer specialized subjects or degrees to students from the region, most of whom cannot speak Portuguese

Incentives to Staff

An important challenge still to be tackled is the issue of incentives to staff involved in research, and retention of trained staff. This problem is currently manifesting itself in all sections of the university, although it may be more acute in the Faculty of Engineering.[14] International brain drain, or failure of Mozambican academics to return home from overseas training does not seem to be a major problem, although there have been incidences[15]. Domestic or internal brain drain is, however, quite rampant. Most academic staff, including those in the Medical Faculty have second jobs in order to augment their income. Many staff teach in the other higher educational institutions. We were told that the academic buildings in the Faculty of Science are locked by the security guards by mid-afternoon. The issues of

[12] This protocol, named *SADC Protocol on Education and Training*, signed by 11 Heads of States 0n 8 September 1997 states: "within ten years from the date of entry into force of this protocol, they (member states) shall treat students from SADC countries as home students for purposes of fees and accommodation. Already the University of Botswana has adopted this for postgraduate students.

[13] We hope this will be a start of a trend to embrace the use of more than one language not only in the university but also in the entire country.

[14] Comparing the salaries paid to public servants and UEM teachers, the latter is not doing so badly. Excluding extra benefits, the salary paid to staff at the Veterinary Institute was roughly the same for a PhD or a MSc about USD 460. At the Veterinary Faculty a PhD holder would receive about USD 800 while a MSc would receive about USD 540.

[15] The team was told that three women (two MSc and one PhD candidates) sent abroad through the Sida/SAREC program of the Medical Faculty failed to return. In addition one PhD graduate from INIVE has remained in Sweden.

adequate compensation for staff and incentives have been referred to in the previous evaluation by Wield (1998) in the recent report by Lind and Igboemeka (2002) and the need for salary system based on performance is mentioned in the strategic plan for higher education (MESCT 2000, p. 13). With such a performance system, the total amount of salaries paid might not have to increase very much.

Incentives must be viewed in a broader context. With the high rate of economic growth in Mozambique, demand for university graduates has been buoyant. In fact, several embassies have noted that the cost of employing Mozambican professionals is approaching that of bringing expatriate professionals to Mozambique. However, as university enrolment is increasing and the number of graduates grows, the upward pressure on wages of academics will be attenuated.

Incentives are also related to career opportunities, the research environment and the academic culture cultivated within the UEM.

The incentive issue cannot be addressed through one cooperation programme such as that with Sida/SAREC. It is an over-all university management issue and the UEM has to take the lead. Because of an inadequate incentive system the returns on the significant investments made in research capacity building have been far below the potential.

4.1.3 Research Infrastructure

The execution of research depends on the hard, i.e. physical resources such as buildings, laboratories and equipment, and the soft resources like access to national and international literature and databases as well as the administrative, management and technical support capacity. A functioning research environment also needs capacities to evaluate, monitor and disseminate research, and to procure and maintain resources. Sida/SAREC support has embraced both areas although somewhat modestly in the former as it does not usually extend assistance to erect buildings.

Physical infrastructure

New and better facilities have been built up during the last five years. The World Bank-financed Science Building has been completed and has housed some departments of the Science Faculty.

There is some concern in regards to the dispersal of various sections of the university in three locations within Maputo. This arrangement may have particular disadvantages to some departments, which inherently have close relationships among each other. The Department of Biological Sciences is still in the Faculty of Agronomy, but not physically far away from the new Science Building. As far as we can tell there is no plan, perhaps no need also, to bring it any closer to the other departments of physics and chemistry. On the other hand, the Department of Geology, or at least some sections of it are still in another location where the Engineering Faculty is located. Although Physics is housed in the new building of the Main Campus, some of the research facilities of the nuclear physics research group are still in the Old Campus. The difficulties around this situation were explained to the team but no solutions were expected in the near future.

The team also visited the Marine Station of the Faculty of Science at Inhaca Island, met and held discussions with the Head/Director of the station and also visited the facilities. The station has laboratories for water, plant and animal examinations, two lecture rooms, a museum for marine and terrestrial fauna, coral reefs and insects, Herbarium housing ca 90% of the plant species on the island, a small library, four boats, including a semi-large vessel for research activities, fwd vehicles, computers, telephone and radio communications, solar and generator based electricity, etc. Most of these facilities were obviously acquired from the Sida/SAREC cooperation programme. Most of the facilities that were visited seemed functional and clean. However, there was no evidence of scientific activity.[16]

[16] A tractor full of tourists arrived for a tour of the station while the evaluation team was about to conclude its visit.

The rooms and buildings are in dire need of maintenance. One is inclined to feel that more and better use of the facilities could be made.

A special concern was expressed by a member of the evaluation team that visited the Mozambican Historical Archives. This programme receives core support from Sida/SAREC. Housed in some buildings not owned by UEM in yet another part of Maputo, it is considered among the best in Africa, covering a century of government records from national and local administrative services in the field of economics, agriculture and forestry and containing 400 titles on Mozambican colonial history and more than 25 000 books and 1 600 journals, a photographic library and tapes including oral remembered history. The later stem, *inter alia* from a Sida/SAREC funded research carried out by the Archives and the Faculty of Arts. However, various concerns, including the one made in the 1998 evaluation, calling for urgent action to find a suitable housing for the collections did not bring any remedy as yet. The situation has apparently worsened. An estimate of USD 15 million is needed to fully rehabilitate the collections in a central building at UEM. An alternative lower cost (USD 100 000) proposal, but providing only temporary solution is also available, but the problem is very alarming and quick action is really needed. It is also possible that organisations like UNESCO may help in tackling this problem.

The team also saw some of the facilities and equipment purchased for the various projects. This includes the solar energy equipment for the Photovoltaics Project in the Department of Physics and the natural products chemistry laboratory in the Department of Chemistry. Here again, all the Sida/SAREC equipment appears to be functional. A 200 MHz nuclear magnetic resonance (NMR) spectrometer bought several years ago under a World Bank Finance Scheme still awaits installation. Obviously there have been a series of problems the most serious of which is claimed to be the lack of standby generator, which has now arrived.

The medical faculty was perhaps the most impressive among the various faculties. We saw many small groups of students in various rooms in seminars and classes. Computers were seen in many rooms and students were using them well. There is Internet connection here as well as in many sections of the university, although many complain that the speed is very slow. Access to the slow Internet appears to be a problem in the engineering faculty perhaps 10 kilometres away from the main campus.

Research administration, internal resources and research priorities

The administrative structure of research at UEM is headed by Scientific Directorate,[17] which is presently headed by a PhD biologist. The Directorate is one of four directorates that come under the Vice-Rector for academic affairs. This post has been vacant since 1999 and has put extra work on the academic directors.

The various faculties also have positions of Deputy Deans for research. All these positions are filled and thus UEM has put in place a strategically important structure for research. The visit of the team members to the various faculties and the effort in each instance to gather pertinent information was greatly facilitated by these Vice Deans. An attempt to have a joint meeting of all the Vice Deans was only partially successful since only three of them showed up. This was unfortunate but it was still possible to hold a very interesting meeting that allowed the diverse expressions for a number of important issues. Each faculty has also set up a Scientific Committee to evaluate research proposals and to recommend funding. The establishment of the Open Fund by Sida/SAREC has provided opportuni-

[17] Although the strategic nature of this structure is obvious what is less obvious is how effectively and satisfactorily it has functioned. Considering the backbreaking burdens of administration in an institution like UEM, it is possible that the Director may simply have been too busy to provide the necessary leadership to the research community. The writer of this Section is not convinced that the central coordination that is in place is more effective than would be the case if greater responsibility was given to Faculties for the research done there.

ties for these committees to develop procedures and modalities for peer review and approval of research. Open Fund provisions now exist in four faculties, i.e., Engineering, Science, Medicine and UFICS. Each of these faculties is provided USD 100 000 and they can develop their own priorities for funding. There is also a University-wide open fund (SEK 6.4 million for the period 2001–3) administered by the Scientific Directorate. The committee of Vice Deans for Research meets twice a year to review proposals and recommend funding. The ceiling for funding from the Open Fund at both Faculty as well as Central level is USD 15 000. An attempt was made to interview recipients from the Open Fund. The Dean of the Engineering Faculty kindly arranged the meeting and discussions were held with three recipients, one who had just been awarded a grant from the Faculty Open Fund, a second who has completed his studies and a third who was still in the implementation stage. This meeting, however, did not lead to any conclusion, in part due to shortage of time and partly due to difficulties faced by the staff to communicate in English. The team member also was handicapped by his inability to speak Portuguese. It appears that most applicants requested higher amounts than USD 15 000, and so each one got nearly the maximum amount. Is the ceiling of USD 15 000 too high? Wouldn't more staff benefit if the grant was in the range of say USD 5 000? Is the duration of the grant six months? Or one year? In some cases, even a year may be too short. These are issues that may have to be looked into before any firm conclusions or recommendations can be made to make more optimal use of these funds.

Wield had indicated in 1998 that the government would be creating a new budget line to allocate internal resources for research. This has finally happened and the equivalent of ca USD 150 000 is now made available annually for supporting research. This is a welcome development as it clearly demonstrates the commitment and the level of government support to research activities in its higher education institutions. The MESCT has also invited research proposals dealing with any aspect of the 2000 floods to be supported from funds (USD 750 000) made available to it from the Ford Foundation.

We have enquired if the present projects evolved as a result of a strategically developed priority or simply as a result of a process which invited for a range of research projects and the best (hopefully!) got selected for funding. It appears that the latter may very well have been the case. The current research projects may be grouped into three:

a) Those that are development oriented. These are found in the Faculties of Engineering and Agriculture.

b) Those that are development, environment and health oriented. Such projects are quite common in the faculties of Engineering, Medicine and Science.

c) Projects in areas of particular importance and or of relatively comparative advantages.

Some comment regarding the last project category is in order. The team members feel that this is one of the important categories for development of fully in house postgraduate programmes leading to the highest qualification, i.e. the PhD degree. Areas of particular importance and comparative advantages include such areas of study as Mozambican languages and history and even Mozambican law. It is in these areas that UEM can easily acquire the necessary expertise to be recognized as the best in the world. Mozambique should beacon all scholars from anywhere in the world to get the highest qualification in the above areas. Universities should have niche areas of expertise and African universities should strive to make studies in the national history, languages and law to be among those areas in which they can be world leaders. Such strategic thinking can be extended to aspects such as unique geographic location, natural resources including biodiversity. A recent book from the World Bank (2002) also recommends that *Low-income countries should consider concentrating on the strategic development of a few targeted disciplines and raising their quality to international standards*. Such ideas have been expressed by

Mozambican academics and we are inclined to believe that under more favourable and enabling conditions they would be able to fully express their abilities to fully develop these ideas.

UEM is to be congratulated for having set up this vital research administrative structure. But more tasks and responsibilities await ahead as the issue of developing a strategically thought out research policy has to still be dealt with. There are signs that UEM authorities have already entertained these ideas, but have yet to develop a strategic research policy and identify nice areas for research endeavour.

Research Output

A report given to our Team by the Scientific Directorate provided information on the number of projects supported by Sida/SAREC during the periods 1998–2000 and 20001–2003. For the period 1998–2000 there were 23 projects in which 44 persons were involved. The breakdown of the projects (and number of investigators) were: Faculty of letters and Social Sciences 3 (11), Science: 10(18), Engineering 5 (6), CIUEM 1 (1), Medicine 2(5).Veterinary 1(1), AHM 1(2). For the period 2001–2003, the number of projects had increased to 31 and 79 investigators were involved.

Although we were able to collect samples of publications from a few projects (Natural Products Chemistry, Photovoltaics and Acceleratory Based Ion Beam Analysis projects (all from the Faculty of Science) it was difficult to get complete information on the number of publications that have come out from Mozambican researchers. However, some information was obtained on Mozambican publications from the International Institute for Scientific Information, ISI, databases[18] covering the period 1981–2002 (Table 3). Data have been searched by author affiliation and address, and for all language categories. The results are summarized below:

Table 4 Mozambican publications produced in international journals over 1981–2002.

Subject categories	1981–85	1986–90	1991–95	1996–00	2001–02	1981–2002
Sciences	34	66	89	165	73	427
Social sciences	25	15	31	20	5	95
Arts and Humanities	9	4	6	2	2	23
Total	68	85	126	187	80	546

Source: ISI (22 November 2002)

The following observations are made from the above Table.

Over 1981–2002 Mozambique had 546 publications in international journals. Most of these (78%) are in the sciences, social sciences, and arts and humanities had 18 and four per cent, respectively.
The pace at which these publications were produced has been improving: from about 14 publications per year over 1981–1985 to 37 and 40 publications per year over 1996–2000 and 2001–2002, respectively. The vast majority of publications were from UEM though we did not count. And of these, a fair proportion was from researchers who had had Sida support.

4.1.4 Conclusions and Recommendations

1. The research-training of staff to the masters and doctoral level has been very slow. Intermittent training (i.e. training abroad and returning to work at UEM) has disadvantages. It makes the training programme discontinuous. The momentum of research is lost. Supervisor's interest in the research may also change. Besides, it takes too long and may even be expensive. If no research is done in

[18] Seife Ayele, of the Open University, did the search and the accompanying analysis and observations. We are grateful to Dr. Ayele for his assistance. The methodology used can be found in Appendix IX.

Mozambique during the programme, it does not contribute to the development of research culture at UEM.

Recommendation: Intermittent training should be de-emphasized. More support should be provided to true "Sandwich" type training programmes.

2. The launching of postgraduate studies programme is now a strategic issue. But it should be done in such a way that quality and relevance are guaranteed. It is particularly important that the students who go through the programme feel that their training is of international standard. This should be done by enabling them to acquire experiences that enable them to gauge their knowledge by interacting with their peers in other universities. Allowing them to have short-term visits, to participate in regional and international conferences, etc. will help in this regard. Strategic objective II, "To ensure excellence and quality" of the UEM Strategic Plan 1999–2003 is consistent with such thinking (UEM 1998).
The demand for higher education in Mozambique is increasing and this has resulted in the creation of many tertiary level training institutions. UEM has the advantage of being the only institution with many years of experience in research and research training. It has the highest concentration of highly trained Mozambican academic staff in the country. UEM would be well advised to consider them as very precious property and put them into optimal uses. They should be provided with the best enabling environment that the country can provide and should be charged with the responsibility of producing the academic leaders that will lay the foundation for the future

Recommendation. Postgraduate training in key strategic areas should be launched. UEM should be assisted in its effort to assume the responsibility of training the academic staff of the other higher educational institutions. Postgraduate training will contribute to institutional research capacity building and hence should be supported well.

3. There are a number of well-established universities in the region, particularly in the Republic of South Africa. These universities have highly developed competence, especially, in certain areas and are regarded as areas of excellence at least regionally. Our own visits to three universities have convinced us of the advanced nature of the research that is done in some of these institutions. What is also striking was the consistent reference made at each of the sites visited regarding excess capacity that is available to train more postgraduate students at masters and doctoral level. There were also very positive attitudes expressed by South African scientists towards extending professional advice to institutions and mentoring of junior staff in Mozambique. The team is convinced that these regional institutions can serve as strong complements and in some areas even as alternatives to Swedish expertise and institutions.

Recommendation: Sida/SAREC to facilitate UEM's efforts to take advantage of the expertise and facilities that exists in countries like South Africa, Zimbabwe and Botswana to enhance its efforts in capacity building.

4. Mozambique is a Lusophone country. Portuguese is the official language and is the medium of instruction in schools and universities. The rest of the world is slowly but surely embracing English as the scientific language. Eight chemical societies in Europe have abandoned (back in the 90s) their individual publications (in German, French, Italian, etc) and have decided to publish one European Journal of Chemistry in English. Mozambican students are disadvantaged when they go out to other countries where English is the working language. The use of Portuguese in UEM discourages students from the region to come and attend courses. Short-term visits by senior academics from the region would be greatly facilitated (for the visitors as well as for the students) if English is adopted as a possible language for instruction.

Recommendation: UEM will benefit a great deal if it considers a strategy to introduce English as a medium of instruction for some undergraduate courses and for most postgraduate programmes.

5. UEM is to be congratulated for having put in place a hierarchical research structure headed by the Scientific Directorate at the pinnacle and Vice Deans and Scientific Boards at Faculties level. It is also significant to recognize that internal funds have now been allocated for research.

Recommendations: These structures can be used to identify and develop those areas of research that are strategic for the development of the University and the country.

Given its leading role in higher education in Mozambique, the university should design a strategy for development of **niche areas** of specialized scientific research and training and, hence, the infrastructure to support it while not prejudicing the general objective of creating a wide scope of research capacity. The strategy should sometimes include the programmed cooperation of other national universities or research organs.

4.2 Management of Research and Core Support

The 1998 Evaluation pointed out that the government budget to UEM had remained practically constant during the period 1992–96 and that it had not risen in line with the increase in student intake. While the government budget for UEM was then in the order of USD 6–7 million per year it has since increased to an estimated record high of USD 15.8 million in 2002.

Donor funding has always been a very important source of funding for UEM and, in 1991, the socialist bloc provided an important source of financing as can be seen from Table 5. The table also illustrates, with a few exceptions, the lack of long-term stability in donor support though Sweden has consistently maintained a high level of support during this decade. The *apparent* decrease in support from Holland and Norway may be partly explained because some resources are channelled through the universities in these countries and are consequently **not recorded** by the UEM.

Table 5. UEM estimated receipts of donations in 1991 and 2001, '000 USD

Donor\Year	1991	2001
Ford Foundation	0	918
Kellogg Foundation	0	338
Holland	4 300	926
Italy	1 960	1 470
Norway	500	126
Sweden	2 620	2 733
USSR	4 330	0
GDR	790	0
Cuba	680	0
UK	1 220	0
Others	2 500	514
Total	18 900	7 025

Source: 1991 taken from Wield 1998, p. 17 and 2001 UEM.

The income generated by the university itself has grown in importance. In 1996 own receipts were 5.0% and in 2001 it had risen to 10.4%. (For details on UEM receipts and expenditures see Table 3 in Appendix VIII).

During this decade the most salient feature is that total donor support has decreased dramatically from USD 18.9 to 7.0 million. Ten years ago, the donor contributions were three times higher than the government's contribution. In 2002, the situation had almost reversed and the government contributed much more than the donors.

Table 6. Sida/SAREC support to UEM, 2001–2003, '000 USD

	Total	Per cent
SOCIAL SCIENCES	**707**	9,8%
Research Programmes	525	
Open Fund in Humanities and Social Sciences	182	
FACULTY OF SCIENCE	**1 744**	24,3%
Research Programmes	1 653	
Open Fund for the faculty of science	91	
FACULTY OF ENGINEERING	**829**	11,5%
Research Programmes	693	
Open Fund for Faculty of Engineering	136	
CENTER OF INFORMATICS	**465**	6,5%
Internet-based Learing Activities in Mozambique	64	
Training (6 students)	401	
FACULTY OF MEDICINE	**481**	6,7%
Research Programmes	345	
Open fund for faculty of Medicine	136	
VETERINARY SCIENCES		
Research Programmes	**375**	5,2%
HISTORICAL ARCHIVES		
Core support for historical archives	**318**	4,4%
FACULTY OF LAW		
Research Programmes	**121**	1,7%
FACULTY OF AGRONOMY		
Research Programmes	**253**	3,5%
INSTITUTIONAL RESEARCH SUPPORT	**931**	12,9%
University open research fund	582	
Library Services	232	
Scientific Directorate	68	
Administration	49	
	931	
Sida external evaluation	**57**	0,8%
Sub-total of Sida/SAREC research support	**6 282**	87,4%
Core support country frame	**909**	12,6%
TOTAL UEM	**7 191**	100,0%
Total open funds	**1 127**	15,7%
Source: Sida/SAREC		
Note: Rate of exchange used SEK/USD	11	

UEM has had few degrees of freedom to use the support, either from donors or the government, according to its own objectives. In this context, Sida core support to UEM became important because it provided UEM with some flexibility. The origin of the core support is that Sida decided to support

the institutional development "Present and Perspectives" of UEM as of 1991.This was later bundled into the term of core support (through Sida/Sida). The term core support is ambiguous and can be anything from budget support to project support.

Sida/SAREC aid to UEM comprises several components. The open funds provide the UEM with flexible financing primarily for research. The term core support is ambiguous and can be anything from budget support to project support. Finally, there is research-project support which in Mozambique primarily has been research capacity building. The total budget for this aid is roughly USD 7.2 million (SEK 79.1 million) for the years 2001–2003.

Though overlapping, each component has its own objectives and management system. A second overlap—that with the support activities of the government and numerous donors (17 in 2001) — creates additional inefficiencies as the university administration tries to cope, responding to the divergent managerial and financial reporting demands of numerous donors. On top of this, the university has few funds (e.g., own receipts, the Swedish open funds) that are truly free to be applied where needed. Thus, while suffering from overlapping administrative systems for different funds, the university frequently confronts dire gaps where funds are urgently needed but not available despite the existence of underutilized funds tied to other activities.

These gaps, overlaps and binds — in large part the result of donor exigencies — create a ponderous bureaucracy invigilating activities, responding to and hosting donor delegations, and churning out reports with different formats and timing but often similar content. Moreover, restrictions on paying competitive wages to key personnel (teachers, managers and accountants) undermine the university's ability to implement more efficient, technology-intensive solutions for financial and academic management and to enhance the lecturers' and professors' dedication to teaching and research. Under such strictures, financial management becomes expensive and cumbersome, and strategic thinking and analysis, incomplete and slow to respond to needs.

This restrictive framework also inhibits the administration of the funds from Sida/SAREC. Thus, despite significant improvements, the university's financial and academic management of Sida/SAREC funds reveals inefficiencies, some of which derive from the rules and procedures developed by the UEM and Sida/SAREC cooperation. Below, we discuss financial and academic management separately though each has numerous repercussions on the other.

4.2.1 Financial Management: Questions of Delays, Underspending and the Efficient Utilization of Funds[19]

At different stages of the Sida/SAREC programme, various organs are involved. The most problematic step, the initial approval of each three-year programme, involves many stake-holders— Sida/SAREC, the University Eduardo Mondlane, and the Mozambican Ministry of Foreign Affairs and Cooperation —and the approval process is largely sequential, encompassing often unforeseen delays. Later, during the implementation phase, the issue of whether the university is able to spend the available resources arises and, if not, whether the subsequent remedial measures are appropriate. These issues—initial delays, subsequent underspending, and interim remedies—are interrelated. A fourth issue is belated reporting, and a fifth, the efficiency with which funds are utilized.

Delays in Disbursals, Underspending of Resources, and the Applied Remedies

Detrimental delays can be caused by any or all agents involved in approving, disbursing and using the initial or subsequent annual grants, i.e., Sida/SAREC, the Mozambican government, the university's

[19] This section focuses on delays, underspending and efficiency instead of the detailed issues of accounting, prevention of fraud, and the protection of assets.

central administration and faculty directorates, and the individual researchers or ultimate organs receiving funds.

It was not until mid August that the first tranche of the core-support funds for 2001 was forwarded to UEM. And, it was not until, mid September 2001 when the first tranche of the project-support money for 2001 was transferred to UEM. The long hiatus in the programme's continuation caused many research[20] and core-support projects to halt though some projects did continue because they still had funds left over from 2000. The details of the delays in disbursals can be found in Appendix VIII.

The administration of the core support provided through the Swedish Embassy, in the order of SEK 10 million per year, was transferred to Sida/SAREC. There was a Sida decision to allocate SEK 10 million in 2001 but, after this date, it was the responsibility of Sida/SAREC. The practical implications of this decision were probably never fully understood by UEM and Sida/SAREC. For SAREC, core support is financial support to activities that are needed for research such as a library books while the Sida core support was more directed at supporting UEM at large. As a result of the merger of Swedish public aid organisations in 1995, Sida and SAREC policies had to be harmonised. This work has not yet been fully concluded since the responsibility for tertiary education has not yet been decided.

As a result of SAREC policies, SAREC decided to review the Sida/SAREC core support and decided not to pay core support for the year 2002. It should also be recalled that the origin of Sida's core support was to support the UEM transformation process initiated at the beginning of the 90s. Since then, many changes have taken place and a review of the modalities of core support has become necessary. This will be discussed later in this report. Nevertheless, in these circumstances, **denial of all core support** for 2002 was an **unfortunate outcome** for all parties.

The problems of transferring the responsibility of various former Sida activities to SAREC have caused serious problems for both UEM and Sida/SAREC. The question of core support is not the only one in this context, and similar problems could be found in the Faculty of Agronomy. A review of the effects on agricultural research of the transfer of responsibility from the Agricultural Division to SAREC can be found in Appendix VII.

Sida, as most donor organisations, has to ensure that aid money is spent and that savings are not accumulating. There has been a continuous concern of Sida/SAREC that UEM's spending capacity has been low. A review of the data reveals that between 1998 and 2002, the overall spending/receipts ratio has been **97.8%.** The yearly rates were 97% in 1998, 78% in 1999, 117% in 2000, and, for 2001, 90%. These figures reveal considerable absorption capacity though, for various reasons, sometimes the funds are applied *outside* the **original programme period.** For diverse reasons—many not of its own making—the university is sometimes slow in getting and consuming core-support funds, but consume them it does. Thus, for these funds, the underspending is mostly an illusion. Slowness, sometimes yes, but not underspending.

One fund that has been slow in utilising its resources is that for laboratory support. But the problem can be exaggerated. For this fund, the university is often slow in the beginning, but has always ended up utilizing nearly all the available resources. Nevertheless, an evaluation of the causes for this slowness is warranted. Presently the allocation of funds for laboratories involves a two-tier bureaucracy. Faculties devise and submit proposals, and the university's scientific committee rates them and selects what it deems best. Given this procedure, the bulk of the money is not spent till nearly the end of the relevant period. Three complementary solutions might help to reduce the delays and cut the administrative overhead for the system. *First,* UEM's scientific director could inspect the laboratories in the faculties

[20] Such problems were confirmed, for example, by researchers in engineering and physics.

and centres and encourage directors to turn in proposals for the purchase of laboratory equipment **well before** the start of each new programme year. *Second*, part of these funds could be distributed to the faculties as additional, open funds free to be spent on anything, including laboratory equipment. This increase in the fungibility[21] of resources would be useful, especially in some faculties, since freely applicable funds have great utility in an overly constrained system replete with categorical and temporal restrictions. *Third*, a portion of the laboratory funds could still be distributed centrally, especially if a medium- and long-term strategy for the development of such infrastructure were adopted.[22]

Evidence also reveals that many research coordinators are quite slow in spending their resources. Available data, however, may exaggerate this since the planning horizon for projects often goes beyond a year and the planned expenditure stream is seldom uniform over the years. Still, as of 30 September 2002, **only 31%** of the faculty-level research and open funds had been spent. Though the results vary from faculty to faculty (e.g., science, 46%; engineering, 17%; veterinary science, 7%), the overall situation is dismal. This data suggests the need for more latitude to **shift funds quickly** from slow to fast spending projects or even to new ones. In our opinion, this would best be the responsibility of the faculty directors albeit with clear guidelines for how to determine when delays are excessive and unjustifiable.[23]

The low spending rate for research projects also points to another problem. Nearly everyone we talked to at the university stressed the need for incentives to encourage research because the high wages and consultancy fees available in the private and NGO marketplace divert staff from academic research for which they earn little or nothing. As one eminent local researcher pointed out, people working for a masters or Ph.D. are often motivated to initiate and finish research in order to get their degrees. But, as the university succeeds in getting more of its staff to obtain a Ph.D., that very success will cause a new problem. Upon getting their Ph.D.s, such staff lose the "degree anxiety" that once propelled them to conduct and finish research. Without that and lacking other incentives to do research, many shift their attention to remunerative, non-university endeavours.

Another factor that may hamper faster spending, especially toward the end of a programme year, is the present interpretation applied for the administration of core support by Sida/SAREC. Though, originally under Sida, core support was supposed to be funds that the university could use as it saw best, and as support for UEM's proposal to set up multi-donor funding for the strategic plan. Now, probably as a result of the inability of UEM to draw in other donors to the core funding concept, core support is perceived increasingly as a programme comprising various projects. This rigidity inhibits the university from applying the funds quickly and more productively.

Late Reporting

The recent decision to allow the university to submit its semi-annual and annual reports even if some data is missing has helped to focus attention on the audit reports, apparently the main culprit for the delayed submissions. The delays in the preparation of the external audit reports are, in fact, worrisome. By agreement, they are supposed to be submitted in March together with the annual report for

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[21] Resources are *fungible* when they may be allocated freely to any purpose. *Fungibility*, however, describes a situation where an institution has more projects than funds. Some of its funds are **tied** to specific projects while other resources may be allocated freely. It is often an illusion that it is possible to earmark money for specific purposes, money is often fungible. For example, good intentioned donors often earmark money for food aid, and the result is too often that they help governments to increase military spending.

[22] For a discussion of research strategy, see p. 34.

[23] In May 2002, a Sida/SAREC-UEM workshop vested faculty directors with more authority to manage projects but, in our opinion, they should have even wider authority so long as they are given the required managerial resources, e.g., good accountants and infrastructure.

the previous year.[24] As of November 2002, however, the audit report for 2001 was only in draft form still subject to a round of reviews before submission. In this regard, two questions arise. Why the delays? And is the March submission deadline realistic?

Given how the university functions, with many staff taking vacation during January, it is not reasonable to expect the auditors to begin work till early March.[25] Once started it takes them two months to do the fieldwork, two to communicate and verify preliminary results through numerous contacts with individual researchers and other, and one month to write the report. So, at earliest, the fully audited report for the previous year can be **ready by August,** not March. Setting March or even May as the deadline only causes friction, frustrations and wasted time in communication about the inevitable "delay". **Unaudited** reports can and have been presented at a far earlier date, for example in April or May, and that practice can continue.

Though a revised date is needed, that would not fully resolve the problem. Even if the date were August 31st, recent practice suggests that the university would not generate the report on time. Why? The answer points to *(i)* the terrible organisation of the accounting for research-project funds by project coordinators, *(ii)* the lack of skilled accountants in the faculties, *(iii)* the lack of a computerized accounting system integrating the finance directorate with the faculties and other organs, *(iv)* the often belated start of the auditors' work, and *(v)* their waste of time due to insistence on documentation that should ordinarily be deemed unnecessary.

– *Poor Organisation of Accounting for Research Funds.* The research funds have three administrative systems (research projects funded directly by Sida/SAREC, others by the university-wide open fund, and others by the faculty open funds). Moreover, in an effort to speed up disbursements, as of 2001, the finance directorate set up more than a 100 individual bank accounts, one for each project coordinator. From an accounting perspective, this was a disaster. Moreover, the new system both pleases and irritates researchers. Though happy with having ready access to their money, they are academics, not accountants, and often loathe the associated paperwork.[26] As a result, the finance directorate spends great time communicating with them to extract the required accounting and documenta-tion and, when that fails, with the faculty directors to get them to pressure the project coordinators to cooperate. Albeit laborious and very difficult, the directorate usually gets what it needs from all but two or three coordinators given direct grants or from the faculty-administered open funds. The directorate attributes this to the faculty directors' ability to persuade or coerce reluctant coordinators to conform.

  That leverage is absent for the grants given out by the university-wide open fund and, without pressure, many of the research coordinators just do not provide the required documentation. The situation is so bad that the finance directorate doubts that the audit of these funds for 2001 will ever be fully complete. For that reason, the directorate itself advocates—and we concur—that all these individual bank accounts should be **consolidated** into **one account** for each faculty, supervised by the faculty administrator and accountant. Thus, research coordinators would requisition funds directly from the accountant, who would demand the requisite documentation, write the check, and present it together with the petition and documentation to the administrator for authoriza-tion and signature. Exactly this is the system adopted in the Faculty of Veterinary Sciences. Reportedly, it works well, and researchers obtain needed funds usually within two or three days. The auditors too have a much, much easier and faster job under this system.

[24] For the 2001 audit report, an exception was made to allow it to be submitted by 15 May 2002.

[25] In 2001, PricewaterhouseCoopers did not begin the work till the beginning of May!

[26] The finance directorate may now advance funds ahead of schedule to quick-spending projects. This was a felicitous and widely applauded change that alleviated bottlenecks, and many reported that, in 2002, the system improved greatly.

Consolidated bank accounts would also permit faculty directors to spot quickly the slow spenders and, if given full authority, reallocate funds to existing or new and worthy projects. Under the faculty open fund, the directors have full authority to distribute and redistribute funds among projects though this is a power seldom exercised. That authority does not exist all for projects financed directly by Sida/SAREC or the university-wide open fund. Under the former scheme, Sida/SAREC must approve any reallocation between projects; under the latter, the university's scientific committee retains that authority.

– *Lack of Skilled Accountants and Integrated Computerized Accounting Systems.* Largely due to the uncompetitive salaries paid by the university, the quality of the accountants employed in the faculties varies greatly and is generally far below what is, in fact, required. This slows and creates vulnerabilities in the system and, unless resolved, complicates the task of implementing a university-wide integrated computerized accounting system.[27] Alternatives need to be evaluated, including *(i)* the topping up of salaries in order to hire better qualified accountants able, in some cases, to handle more than one faculty and *(ii)* the outsourcing of accounting services.

  The university's lack of reliably available funds to supplement salaries and, thus, employ and retain key personnel in the finance directorate[28] menaces the considerable improvements achieved by its present team of talented young economists and financial managers over the last few years. The Ford Foundation's funds for salary enhancements have ceased, and, month-to-month, the financial director has to beg and dip to scrap together money for salary supplements. Either this or the team would soon disband, lured off by handsome offers from NGOs and the private sector.

– *Slow Start of External Auditors Work.* The auditors often start their work several months after the ideal date. For example, in both 2001 and 2002, they started the fieldwork in May! In part, this is the auditors' fault because they claim to be too busy auditing other institutions to be able to start the university's accounts on time. The university also bears some fault because of the difficulties it encounters getting all the documents ready for review by the auditors.

– *Insistence on Needless Documentation.* The auditors and the finance directorate also waste time trying to get receipts for the monthly subsistence allowances paid to scholarship recipients. Imagine: getting receipts for the beans and toilet paper that a student buys! Strangely, the finance directorate doubts its authority to simply declare such items exempt from accounting. Even if this were so, it could, in a flash, gain Sida/SAREC's approval to exempt students from providing receipts for items bought with funds given for their subsistence allowances and thereafter inform the auditors to ignore such items.

Cost Effectiveness: A Few Observations

Improving cost effectiveness involves reducing the unit costs of output by eliminating excessive costs, improving resource productivity, or both. Though the mission did not systematically study these issues as regards Swedish aid to the university, we did spot several ways the programme's cost effectiveness might be improved for library assistance, professional publications, and post-graduate scholarships. The entire programme could also benefit by cutting the costs of financial administration and slashing

[27] The forthcoming tender request for the computerization of the university's accounting system envisages installing an integrated computer package for the finance directorate with links to faculties and other organs. To run well, this system will need trained accountants to tend the financial activities of the major faculties and organs. In today's market, such people insist on salaries of about USD 500/month. Since an accountant can tend several small faculties, the finance directorate figures that seven good accountants would suffice for UEM's 12 faculties whereas now each faculty has a technician paid roughly USD 100/month. The difference is just USD 2 300/month to employ adequate personnel to run a modern system appropriate for a university with a multi-million dollar budget.

[28] A similar problem exists in UEM's Planning Office.

all overhead costs by reducing donor fragmentation. We also identified some key factors that increase the cost per UEM graduate or lessen the use of research facilities and the distribution of results. These issues definitely merit further study since the university is striving to improve its efficiency and, thereby, become increasingly independent of foreign assistance.

Library Assistance

Though the Documentation Centre has greatly enhanced electronic access professional journals through the campus computer network, the system is plagued by *(i)* the exasperating slowness of Internet access on the university's network and *(ii)* what for some faculties is an insufficient number of relevant electronically available journals.[29] Though UEM's Centro de Informática plans to double its bandwidth next year, concerns exist that this may be installed late, not early, next year and in the end not suffice to resolve the problem. Meanwhile, the situation is critical. Access is often so slow and painfully frustrating that many prefer to ignore a service exists to provide access to electronic journals. Thus, much of the potential benefit, though achieved at great cost, is never realized.

Resolving the problem quickly and efficiently is essential. This means **evaluating all alternatives,** including utilization of the large bandwidth and high speed already available through NetCABO and all the fibre-optic infrastructure built and being built through the National Telecommunications Infrastructure Project. Indeed, fibre optic covers most of Maputo City and using it may prove cheaper than acquiring more VSATs and installing the associated wireless technologies within the city's perimeter!

The Documentation Centre subscribes to the services of the International Network for the Availability of Scientific Publications (www.inasp.info). The centre's managers seem mostly contented with these services though they are looking for sources offering more materials in Portuguese. It would be useful, however, if the centre surveyed university professors about the adequacy of the collections it presently offers.

The centre focuses on serving mainly the UEM academic community. Outsiders can access the database only by going physically to the library or some office on campus. The centre's managers have not evaluated how to extend and, perhaps, sell their services to non-UEM individuals and institutions, even those far from Maputo though this would position UEM to provide scientific databases required by numerous entities throughout the country and eventually play a key role in the projects for a Knowledge Base for Science and Technology and the Science and Technology Network foreseen by the government's *Information & Communication Technology Policy Implementation Strategy* approved in mid 2002 (Mozambique 2002: 40 and 42). If the centre and later the university library were to wholeheartedly adopt that national perspective, it would entail a **redefinition of mission** and motivate its managers to overcome obstacles and think creatively and with enthusiasm about how to extend such services to the entire nation.

A final problem seems to be that the centre has yet to evaluate the relative costs of purchasing books and other materials in electronic versus hard copies. Among other advantages, electronic editions available over the Internet have instant acquisition, eliminate costs for transport and customs clearance procedures, and do not easily get damaged, lost or stolen.

Academic Publications

Neither the scientific director nor the Centro de Informática have analysed the viability of using electronic media to publish the scientific work of UEM researchers in peer reviewed e books and e journals, a fast, cheap, easily disseminated medium that for some disciplines (e.g., chemistry, physics

[29] This was the opinion of professors in science and agronomy.

and medicine) is far superior to hard copies.[30] Toward this end, the university might use Sida/SAREC funds to research the comparative usefulness, speed, and cost of printed versus electronic publications.

Research Supervision and Post-Graduate Scholarships

The annual costs of sending a staff member for masters or Ph.D. training in Sweden or other industrialized countries is USD 20 000 to USD 30 000; in South Africa, USD 8 000 to USD 15 000;[31] and in Mozambique, around USD 5 000 though South Africa does not offer some courses, especially for Ph.D., and Mozambique has at present few masters and no Ph.D. programmes. Whenever the quality of education is comparable, a strong case exists for channelling candidates to other African institutions. They are cheaper than those in developed countries, and the risks of losing the investment due to brain drain abroad seems to be less than in northern countries.[32] Moreover, regional sandwich programmes are more appealing to parents and married couples, especially women.

A similar argument holds for research supervision. Under the current aid programme, it costs USD 15 000 to USD 19 000, including transport costs, for a Swedish professor to supervise a research project at UEM. Again, an investigation may reveal that, often, good and cheaper options may be available within the region, thus building African scientific capability and networks.

Having said this, it should also be noted that there is a research co-operation objective in the Sida/SAREC support. Like most donors, Sida also wishes to use the Swedish resource base and to ensure that the resource base is sustained. There is a balance to be struck between somewhat conflicting objectives—cost effectiveness and the use of the Swedish resource base.

Financial Administration

Currently, Sida/SAREC converts kroner and transfers all its assistance as dollars to UEM's bank account. The conversion and wire-transfer costs money. Later, the university makes many purchases in meticais, rands, and other non-dollar currencies, including kroner, thus paying a second conversion fee. There are three issues here. *First,* money conversion and other bank charges for getting the funds into the Mozambican banks are very high: about USD 100 000 each year on Sida/SAREC aid to the university. That is, the university receives much less than Sweden sends due to these charges. *Second,* it is senseless to convert kroner into dollars and then back to kroner when the university needs to pay scholarships and other expenses in Sweden. *Third,* the initial fee for converting kroner to dollars could be avoided by keeping enough aid in kroner ready to convert when needed to pay for purchases in non-dollar currencies.

Donor Fragmentation

With a significant number of key donors—17 in 2001—the university administration faces a big task, negotiating and signing accords, keeping administrative and financial records, providing reports, responding to inquiries, and hosting numerous evaluation missions. It is an onerous, costly task guaranteed to cause delays, frustrations and immense inefficiencies if no advances can be made in integrating financial management of the university. For example, the World Bank's new aid programme for the

[30] Electronic publications may include videos (e.g., of medical procedures), graphs that can be rotated and zoomed in on, manipulatable formulas that permit readers to change parameters or simulate alternative scenarios, and the ability for readers to leave comments on sections and to have the usefulness of those comments or the entire article rated by other readers.

[31] The African Economic Research Consortium (AERC) trains economists in its 18-month masters program for about USD 12 000 p.a. (down from USD 17 000 p.a. six years ago). That program includes *(i)* two semesters at an approved university within the region, *(ii)* one semester at the program's central facilities in Nairobi, and *(iii)* thesis research in the home country under the joint guidance of local and international supervisors. — letter from William Lyakurwa, Executive Director, AERC, November 2002.

[32] Internal brain-drain within Mozambique from the university to other institutions has economic, social and administrative causes. Though such transfers cost the university, they are not always a net loss to the country.

university sets up its own seven-year USD 600 000 general open fund, which largely mirrors the Sida/SAREC fund focus and procedures. It requires parallel reports and financial administration for virtually the same activity, even though it could have been integrated into existing open-fund reporting systems with a little forethought.

Whereas our interviews with donors reveal that several may well willing to pool some of their resources with other donors and set up a unified donor pool, the driving force for this must be the university itself. It must take the initiative. Unless it coordinates the donors by getting them to support its priorities within a simplified framework, the donors will do little to coordinate themselves. Unless the agenda is clear, vague calls for a donors' meeting will not suffice.

A useful but far more timid step would be to design uniform reports and standardize reporting intervals. This would simplify the training of accountants in the faculties and the burden on the finance directorate. The finance director and assistant director estimated that such standardization would help them to save between a quarter and a half of the time required to produce such reports.

Capacity Utilization

The university's administration still lacks a sufficient business orientation to be keenly focused on improving capacity utilization, serving new markets, increasing revenues, and cutting costs while improving productivity and output. Sporadic efforts exist but not within a systematic and comprehensive business-oriented framework to improve efficiency and output. Thus, no university-wide studies exist to analyze *(i)* why so many students drop out before obtaining their degree,[33] *(ii)* the viability of expanding afternoon and evening education for new and existing disciplines, *(iii)* the viability of increasing class sizes in certain courses, *(iv)* ways to increase and standardize the course load full time lecturers should usually carry,[34] and *(v)* the extent to which the fast growing market economy and urban land market present the university with significant opportunities to physically consolidate its campuses in order to reduce recurrent and capital costs and enhance or initiate multidisciplinary approaches to teaching and research.

4.2.2 Research Administration, Orientation and Incentives

Research administration in the university is plagued by problems ranging from the conception and selection of viable research projects to the evaluation of research results and the lack of a well designed, multifaceted system to encourage research.

- Many lecturers and junior professors need help in writing proposals. Indeed, as the director of engineering noted, "those who have experience in writing proposals are always the same ones submitting proposals". In part, this may be because most faculties are staffed mainly by lecturers with merely a masters or *licenciatura* degree and lack the advanced training that would help them to conceptualize and write proposals. Inadequate methodological or writing skills may also play a part. This seems an issue worthy of research.

- UEM lacks a university-wide strategy for the development of research and research priorities. A draft for discussion was written a few years ago but was never adopted and seems to have been nearly forgotten (Direcção Científica 2000). Though a weighting system with criteria now exists to rank and help to select projects at the central level, admittedly it falls far short of a strategy for the development of research and the associated infrastructure in the university. Such a strategy should

[33] The Directorate of Pedagogy is currently compiling data about drop-outs. A related problem is that, according to a recent survey of 852 graduates in 1998, 1999 and 2000, they took 7.07 years to finish a *licenciatura*, significantly longer than ideal. That survey identified some reasons for that delay, but the topic requires more detailed research (Direcção Pedagógica 2002).

[34] Few lecturers teach two or more courses in a semester, most teach just one, and a fair number, though getting a full-time salary, share a course. Given the scarcity of lecturers in most fields, the university has found it difficult to impose discipline.

aim not just at expanding present activities but also at creating new ones that can yield the university a comparative advantage for certain types of research or training within the region. This means the conscious development of **niche areas** of specialized scientific research and training and, hence, the infrastructure to support it. Global, long-term strategic thinking is, however, all but absent in the present system, which merely seeks to juggle priorities for laboratory investment and research projects as determined by individual faculties. What is lacking is a strategic framework guiding the university toward the development of research areas where it excels and has a regional or even global comparative advantage.[35] Though, even now, good initiatives often bubble up, such a system encourages myopia and growth by swelling instead of adaptation and the acquisition of new and useful organs, a pattern of growth requiring a higher order of consciousness, namely, the strategic planning of scientific infrastructure to position the university to become excellent or even dominant in certain spheres of scientific endeavour and training.

- The university still has no system for evaluating research results.[36] With a scarcity of peer-reviewed journals in the university or even regular working-paper series in most faculties, academic recognition for a job well done is often muted, and even the system for promotion between academic ranks emphasizes time in rank while giving only vague guidance about the need to research and publish.
- Nor does the university have a well thought out and well clearly defined policy to encourage its various donors to provide significant and multifaceted incentives for researchers.

Problems also exist in the way that Sida/SAREC selects and administers research grants. Two things are happening that seem to need rethinking. *First,* Sida/SAREC has apparently taken a step backward, treating core support as if it were composed of separate projects, subject to tight monitoring, instead of being general support for the university. One reason for this apparent change in policy may be that after ten years of core support there has been the lack of progress of UEM to build a multi-donor programme.[37] *Second*, no well defined plan exists to gradually transform the funds applied as direct research grants—currently subject to the approval of SAREC's research assessment system, and eventually Sida/SAREC's Research Council—into open funds managed and supervised by the university and its faculties with properly established peer review systems.

The objectives and the manner in which this aid is administered needs to be questioned. For example, how and under what circumstances can the Swedish research officers' role be gradually reduced, shifting responsibility to the university as it builds up its research decision making and monitoring ability? How can the Swedish collaborating institutions play a more active role in the research cooperation with UEM? To what extent can objective criteria be developed to indicate when a faculty should be deemed sufficiently ready to accept that responsibility? To what extent can *ex ante* and ongoing supervision of projects by the research officers be converted into *ex post* review of a programme largely conceived and administered by the university's organs? For aid to be truly developmental, a programmed shift in responsibilities must occur. This is certainly the spirit of Swedish aid. These issues merit serious thought by all parties.

4.2.3 Recommendations

Some strategic recommendations that will profoundly affect efficiency and efficacy of Swedish UEM cooperation are listed immediately below. Appendix VIII contains detailed recommendations including

[35] The university must develop research capacity in many areas but, in doing so, it should not overlook areas of competitive advantage.

[36] Recently, the responsibility for this was passed to the faculties though it is not clear how quickly or systematically this will be done.

[37] See discussion on p. Error! Bookmark not defined.

recommendations concerning administrative details and proposed studies though, in many cases, "the devil is in the details", and those details are causing major disruptions.

- It is strongly recommended that the university resume the annual consultative meetings and, with full cooperation from Sida/SAREC, vigorously lobby to get as many donors as possible to pool all or part of their funds into a **unified programme** for general support of UEM's strategic plan. For the unified fund, Sida/SAREC could consider designating a major part of the open funds. The old Sida funding for core support would clearly belong here as well.

  Meanwhile the university should update its strategic plan, develop a realistic operational plan for its achievement, and develop a small number of quantitative verifiable indicators to monitor the main aspects of the plan's execution.

  Even if only two or three donors join the unified programme, it will become a significant pilot project, which, if successful, could well inspire others to join.

- Funds for core support should be clearly defined as funds to be freely applied as the university deems best in support of its *Strategic Plan.* The practical modalities need to be investigated further by UEM and Sida. For example, Sida has to decide on which part of Sida will be responsible for tertiary education. Until then, SAREC will be reluctant to support UEM at large and will assign priority to research capacity development.

- Given the propensity of all parties—university, government, and Sida/SAREC — to take an unpredictably variable time to approve new accords, the university and Sida/SAREC could consider starting negotiations much earlier**.** To guarantee the continuity of funding for all projects **February** of the last year of an accord seems to be an appropriate time. Moreover, to reduce the frequency of such negotiations and the consequent uncertainties and interruptions and to lessen the administrative burden on all parties, much would be gained by having the agreements cover a longer time period. A period of at least **five years,** instead of the present three, is recommended.[38]

- For disbursement of funds, it is necessary to permit greater flexibility over time. The difficulties in trying to adhere strictly to a fiscal year are many, partly due to the university, partly to Sida/SAREC, and partly to the nature of many of the expenditures. For this reason, it is recommended that the next contract between UEM and Sida/SAREC should allow UEM greater flexibility in the use of funds beyond the fiscal year.

- The university should evaluate the viability and relative benefits of sending more staff for post-graduate training and recruiting research supervisors within the region as long as the expected quality of that training is the same or better than that in Swedish institutions. Besides decreased costs, this helps directly and indirectly to build regional research capacity and networks and may well help to reduce the risk of losing staff to international brain drain. In this context, it is recommended that UEM initiate a discussion with Sida/SAREC to clarify to what extent Sida/SAREC support is tied to Swedish collaborating institutions.

- Underspending is a frequent problem for research grants under the Sida/SAREC programme in apparent contrast to the experience of other programmes that offer researchers direct and indirect incentives upon completion of their projects. We therefore recommend a study of why most research-grant recipients are slow in executing their projects. A comparative analysis of the experience of other donors who support research at UEM and in the region, in particular in regard to

[38] Reportedly, Sida/SAREC plans to extend the agreement period to four years.

the various ways adopted to motivate research could provide useful knowledge both to UEM and to Sida to enhance research performance.

– The evaluation of research results, the existence or not of peer-reviewed journals, the insistence or not upon publication as a criteria for promotion, and the existence of a conducive milieu and set of diverse incentives for research are interrelated issues requiring comprehensive study in order to assist the university to greatly enhance, quantitatively and qualitatively, its scientific output.

4.3 The University's National Role

4.3.1 Introduction

The Sida terms of reference for the evaluation refer to three key issues concerning the university's national role:

1 The university will continue to be the dominant actor in terms of qualified research capacity in the medium term. It is certainly at present the font for research and teaching capabilities in higher education. However, it must plan carefully for a key future role in the rapidly expanding higher educational environment in Mozambique. Obviously, UEM's plans must be accommodated within the overall MESCT strategy for research and training.

2 UEM is in the southern tip of Mozambique and in its most developed zone. There are questions of how it can assist with building equitable access in terms of student recruitment. Also, the question arises of how it might begin to meet the needs of the centre and north for research and qualified personnel. Distance education is one possible means as is the development of relationships with the other educational institutions, private, not-for-profit and public. Can it increase its accessability to the rest of the higher education system? Can it do this whilst developing a strategy for UEM staff retention and/or a national approach to higher education staff development?

3 More generally, what are the key stakeholder positions and scenarios for the future?

The terms of reference went on to include four questions to address these key issues:

– What are the possible scenarios for UEM's future national role in terms of meeting the research needs of Mozambique?

– What is the position of UEM in terms of the MESCT's role to coordinate and organise higher education and the autonomy of the higher educational institutions?

– What is the impact of the expansion of higher education on UEM's staff?

– What distance education provision is planned or in place?

The UEM Strategic Plan for 1999–2003 (UEM 1998), which was published before the establishment of the Ministry of Higher Education Science and Technology, does not mention the development of the national higher education system, mentioning only the alternative private universities and competition from universities in the southern African region.

The national higher education strategic plan (MESCT 2000) and its associated operational document (MESCT 2001) gives guidance on the possible wide-ranging role of UEM in the development of the higher education system. MESCT has produced various studies on the subject (http://www.mesct.gov.mz/estudos.htm). A recent Sida study (Lind and Igboemeka, 2002) has also made a serious contribution to the debate.

It is these key documents, a range of interviews, and a range of further documentation that has been used for this section on the university's national role.

4.3.2 Sida's Changing Policies

The consultancy report to Sida mentioned above (Lind and Igboemeka, 2002) has tried to present the key issues associated with the expansion of the higher education system. It is very comprehensive, except it rather skates over the danger of diluting the higher education system, given the limited available resources.

At present, as well as the Sida funds that flow to UEM for research capacity building and for various types of core support, some Sida funds flow to the Catholic University for its Agriculture campus in Cuamba, and to ISRI for peace and conflict resolution activities. In contrast to Sida's approach to research capacity building which is consistent and generous, it is not clear that there is, as yet, an overall Sida approach to higher education support.

At the same time, the World Bank has recently signed an agreement (for USD 63 million over 2000–2007) with the MESCT for the whole sub-system, and other donors seem to be moving towards supporting higher education via the ministry rather than just the UEM.

However, it is not clear that the ministry is working towards a common pool fund or a Sector Wide approach (SWAP) for higher education. Work on this idea would need to begin very quickly if each donor is not to build a culture of direct negotiation with the ministry, and the ministry completely overloaded with donor conditions.

It seems that the next funding period for Sida support to research and higher education presents an opportunity to think in an integrated way about a series of issues:

- How to support a higher education system by supporting various universities and units within each university?
- How to avoid that the Sida support from its various divisions is used to fragment the Mozambican Higher Education, HE, system? (At present, for example, the Agriculture division of Sida gives support to the Catholic University's Agriculture faculty in Cuamba, whilst SAREC is responsible for UEM support).
- How to manage the need to build research capacity (with its rather specific needs) at the same time as to build institutional support more generally, including undergraduate and postgraduate teaching, and to encourage common funding pools?

4.3.3 Coordination of Donors

The UEM went through a period where it worked hard to build a positive climate for coordination of donors. For example, annual UEM meetings were held, and an Annual Report was produced with financial and research annexes. The Rector spoke frequently at major gatherings of Vice-Chancellors of African universities and donor representatives. UEM's strategy to coordinate donors thus became very well known in the early and mid-1990s and other universities successfully used and advanced the UEM model – in the strategic plan of the University of Dar Es Salaam, for example.

In UEM, for some years, donors appeared to be responding to some extent. Sida began its core funding of the UEM, and some donors, including Ford and the Netherlands, began to fund core institutional capacity building activities of UEM as well as their chosen projects.

Coordination of donors depends on a strategic vision and process, on the university obtaining strong support for it internally, and articulating it externally and quite forcefully. The university must, there-

fore, be ready to articulate its priorities and vision and to steer and push donors to support this path. If it does not then the donors will certainly increasingly push for their own priorities.

The process to better coordinate donors seems to have run out of steam. There seems to have been little new progress and some in the university wonder why donors are not pursuing this path which they have talked about so much. We were given an example where the World Bank had set up, as part of the recent MESCT agreement, a Quality and Innovation Fund (QIF), a system-wide programme which has an institutional component for investment on equipment, minor repairs, and fellowships for lecturers, with each project a maximum of USD 250 000. It is a competitive award. This has similarities to the Sida-SAREC Open fund but with separate conditions and reporting mechanisms. It is not clear why the two funds could not have been integrated more closely at UEM. It must be dispiriting to see such fragmentation and will likely lead to lower research management capacities if it leads to parallel structures.

At the same time, positively, the 'UEM model' of coordination of donors is progressing elsewhere in Africa, even though it is not in UEM. Some donors feel that the university is not spelling out clearly enough where it is going, and what are its priorities. UEM did not, in its Strategic Plan 1999–2003, articulate any priority for the establishment of common funding systems or multi-donor core funds in function of its plan. The Annual Meeting system and the Annual Reports of the university seem to have stopped. Discussions with donors/funders suggest that a new approach may be needed to 'breathe life' into the process since 'donors cannot coordinate themselves'.

In the meantime at the national level, there have been some advances in the area of donor harmonisation, particularly those using the Sector Wide Programme approach – SWAP (Sida 2000). The Sector Wide coordination in Agriculture (PROAGRI), Health and in Education is developing slowly but surely in Mozambique. In the Education Ministry (MINED), a new memorandum of understanding to create a Common Fund with single bank account and single accounting was signed in September 2002 by Sweden, Ireland, Netherlands, Canada, Denmark, UK, Germany, Finland and some of the UN agencies including UNICEF. This is another step in a long process – it took over three years to negotiate. Even now, the MINED does not have a full-time person to take charge of the agreement.

So far, the Higher Education ministry has not begun discussions about such an initiative but some donors appear to be sympathetic. The Ministry has held two donor meetings and are planning another for 2003. The ministry thinks about coordination in the following way: The strategic plan and its various implementation plans give a strong sense of what is needed. The ministry then negotiates with internal and external partners. The ministry is also trying to ensure that reporting is basically the same format. The idea is a long term programme with phases and indicators and they try 'not to lose the necessary integration of all actions'. The ministry is aware that this requires strong and high management skills which each university needs as well as the ministry.

4.3.4 The Strategic Plan of the Ministry of Higher Education, Science and Technology

The higher education system has been expanding and diversifying. From one university (UEM) at independence, and two specialist public institutes (ISRI and UP) in 1985/6, the system had by end-2001 nine working institutions: one public multi-course and diverse university (UEM) and three specialist public HEIs; five private institutions: two non-profit and two for-profit multi-course HEIs and one specialist HEI. (See table 7)

The Ministry of Higher Education, Science and Technology (MESCT) was established in 2000 and developed a Strategic Plan: 2000–2010 (MESCT, 2000) via a major consultation process involving stakeholders and all provinces of Mozambique. Some main issues in the plan are: expansion; regional and gender equity, decrease of costs per graduate, improved internal efficiency. The plan is to make

HE available in provinces where it is not yet in existence. Distance learning systems, new admission criteria, equitable scholarship and student loan systems are to be established.

Table 7 Number of students in the higher education system 1991–2001

	1991	1993	1995	1997	1999	2000	2001
UEM	3 038	4 036	5 200	6 200	6 800	7 307	7 083
UP	1 032	1 214	1 489	1 520	1 987	1 399	2 210
ISRI	42	33	155	155	234	270	270
ISCTEM			NOT OPEN	201	644	809	809*
ISPU			NOT OPEN	371	919	1732	1 896
UCM			NOT OPEN	203	1 035	1502	1 684
ISUTC					NOT OPEN	83	141
UMBB					NOT OPEN	52	156
TOTAL	4 112	5 283	6 844	8 650	11 619	13 154	14 249

Source: Lind and Igboemeka, 2002

The Strategic Plan for Higher Education (MESCT, 2000) is divided into three main chapters, the first focusing on vision, the second on strategy, the third on strategic issues and actions.

The vision stresses: equitable access; response to needs of Mozambican society; quality and relevance of teaching and research; public-private partnership; institutional autonomy combined with accountability; efficient use of resources; diversity and flexibility in response to changing demands; cost-sharing between all stakeholders; financial support to needy students; democracy, intellectual independence and academic freedom; and, co-operation with other parts of the national education system.

The strategy focuses on expansion, regional and gender equity, decrease of unit cost per graduating student; and improved internal efficiency of the whole sub-system. Government, Civil Society and the HEIs are expected to join in efforts to implement the policy. The Government and state set national priorities and facilitate regional and international cooperation. The establishment of new HEIs is encouraged and regulated by a new Law (Nov. 2002).

More diversified training opportunities are planned, including a greater variety of course lengths and qualifications. Efficiency gains are planned through better use of human resources, space and facilities.

One key element is to provide higher education in every province, using new and existing HEIs, distance education and equitable scholarships.

An operational plan for implementation of the first phase of the strategy (2000–2004) has also been developed and approved in July 2001. In it, UEM was seen as providing a range of activities for development of the higher education national system, including: data collection; information systems; higher education management training; financial systems reform; opening new undergraduate courses and expanding others; establishing Masters courses; organizing inter-university activities; lecturer training in pedagogy; and research capacity building, including joint use of laboratory facilities.

Sida signed an agreement with the Ministry (MESCT) for the period 1/1/02 to 31/12/03 for 2m SEK for the following three purposes:

1 To assess the viability of expanding HE into regions without HEIs

2 To institutionalise methods for assessing and improving the relevance of HE supply to national demand, and

3 To define policies and criteria for access to HE, thereby improving regional and social equity.

Lind and Igboemeka's consultancy to report to Sida recommended further support:

– The expanded use of scholarships as the main vehicle for financing expansion and quality improvement plans. It is strongly recommended that donor resources are provided through MESCT for student scholarships, and post-graduate research grants for staff at public and private HEIs

– The pooling of donor funds for flexible use according to MESCT plans for strengthening management and planning capacity in all relevant areas, including support for management capacity at HEIs

– Providing technical assistance to pre-university and HEIs for pedagogical training and revision of admission criteria and procedures

– Quality improvement through a system-wide reform of teaching learning and evaluation systems.

4.3.5 The University's National Role

It is obvious that UEM plays a major role in Mozambican higher education. UEM is: easily the largest institution; is the only public Higher Education Institution, HEI, which is multi-subject and diverse; it does much of Mozambique's research; it is more globally linked; it is a national institution in the sense that it mixes students from all over the country – other are more regional or socially exclusive; and, it has found significant funding for scholarships to address inequity.

What role can it play within the HE system? Clearly, it could play an important role in many, if not most, priority aspects of development of national higher education. As we saw above, the MESCT operational plan mentions UEM in many contexts (2001). However, in the light of Sida's previous support to the university, there are five areas which seem key for future Sida support to higher education. Thus, UEM can:

1 remain the national university aiming at improved equity of access for good students from all social groups and all regions.

2 train academic (and other) staff for the whole Higher Education system (including via Masters and Doctorates), whilst collaborating with other institutions eventually to build such capability elsewhere.

3 build a research culture in higher education nationally (include staff from other institutions in research groups, new research initiatives, use of UEM labs as national labs, multi-university research units).

4 be the facilitator of information systems (library, ICT, National Archives, etc).

5 act as a point for research on higher education (assist with quality assurance, statistics, and so on).

We briefly deal with each in turn.

Equity of access to a national university

The university has focused considerable resources on reducing the regional inequalities of primary and secondary education. It is a major plank of national policy to go much further.

UEM has recently set up a 'best in province' scheme where a small number of places in UEM go to the best in each province. MESCT started the national fellowship fund, decentralised to three provinces as a pilot, and gender balance is one of the requirements.

If UEM is to continue as a *de facto* national university (located principally in Maputo) it will require more scholarships to increase equity. The Sida support to scholarship funds could be extended within core support. More support could be given to pre-university study and the early building of study skills.

Scholarship funds could also be the mechanism to support the growth of local Masters courses and their use by the whole higher education system to train staff (see below).

Train staff for all HEIs

One contribution to national development would be the training of staff of all HEIs. At present, UEM has a handful of Masters programmes started in 2001. These include courses in Agricultural Development, Education, Public Health, and Arts, with courses in Law beginning soon. Some of these were designed in function of the needs of HEIs as well as other economic and social priorities.

At present also, a large proportion of scholarship support to UEM is to send staff outside Mozambique for Masters training. For strongest faculties, this is wasteful and unsustainable. If all other HEIs had to send staff out for lower level postgraduate training (Masters) there would be a massive cost, and less resources for doctoral training programmes. Scholarships for Masters, if used internally, would generate an estimated three to six times as many qualified staff as at present (see 4.3 for cost estimates).

What are the implications of an HEI staff training initiative?

First, Masters programmes would need to be set up in a larger range of subjects – those with the greatest need. If fees were set at sustainable levels, the private institutions would use them if quality and fees were competitive. Scholarship funds would be needed to pay for the public HEIs.

Second, business plans can be established with both investment and recurrent costs (including salary costs that attract academic staff to teach seriously).

Third, quality systems would need to be put in place. For example, one possible reform would be that professors do not retain the personal control over evaluation in their *cadeira*s (courses, modules).

Fourth, credit transfer and multi-institution postgraduate programmes could be begun? The new Law on Higher Education (2002) allows this, but UEM has been reluctant to begin the process as yet.

As doctoral training begins also, UEM staff could play an important role in supervision and registration. However, this will require a big change because at present, few local staff supervise any doctoral students. Indeed, few local professors do any postgraduate supervision. Even Associate Professor staff with reasonable postgraduate experience are not supervising. A system is needed now so that staff gain experience immediately in doctoral supervision, even as second supervisors with an expatriate first supervisor. This is key if any Mozambican higher education or research institution is to build doctoral training expertise.

Build a national research system

UEM has most of the nation's research capacity, in quantity and diversity. It has a range of schemes that support research mostly funded by donors, but staff are also able to spend their own staff time on research, albeit with few incentives. Recently, the government grant has included a small research portion.

UEM's research capacity is significant but fragile, as we detailed earlier. Building a national research system depends crucially on increasing UEM's capabilities but also on using them to their full capacity – both human and other resources.

Some research capacity building ideas initiated by Sida-SAREC and UEM over the years have potential also at a national level. For example, the establishment of Open Research Funds necessitated the development of a decision making and monitoring system, albeit fragile. An Open Competitive research fund nationally (such as the QIF fund being set up by the MESCT) will similarly require a new process to judge and monitor research quality at the national level. The QIF fund and the new science and technology policy, which is close to publication, put significant emphasis on quality and competition for funds based on clear criteria.

Common donor funds could be established together with government funds for research programmes led by more senior Mozambican academic researchers, for example, with clear commitment to delivering Masters and doctoral level supervision. Similarly, multi-university post graduate and research programmes could be considered in education, languages and rural development, taking advantage of the new credit transfer system allowed by the new Higher Education Law.

Build a national information/library system

Library and related academic/research information systems have transformed dramatically and in the last decade and will continue to change rapidly as information and communication technology makes information gathering easier for locations without hard copy materials.

The Centro Informãtico UEM has already led the way in building services for clients inside and outside the university. It began the national e-mail service and also the internet services. It has sections with a multi-client perspective. It is also the pioneer in establishing e communications for schools and telecentre units outside of provincial capitals.

It already, then, has a culture in line with the idea of a national informatics system is developed. As yet, the university has no central library but one is planned. It is important that a virtual informatics system is developed so that the various locations of UEM and other higher education institutions and research institutes, have interconnect to a unified informatics system.

Be a source of research and higher educational policy advice

UEM has a new Education Faculty, which is one of the first units to offer Masters degrees – three in total. These were designed in function of national training needs, including in other HEIs particularly the Pedagogical University.

Masters dissertations themselves could well become a major input into education policy if well organised and managed. We were unable to ascertain what capacity existed for supervision of Masters dissertations and other research on higher education and post-school education policy.

Certainly, higher education policy is an area where specialists are needed, including the areas of electronic, virtual and distance education. The UEM Faculty of Education could play a leading role in building higher education policy expertise.

4.3.6 Distance Education

A clear policy decision has already been made that a national distance education system should be set up with central coordination of resource centres, quality and so on, but that all higher education institutions, public and private, can engage and collaborate on production of courses and programmes. UEM should be able to play a major role here if it wishes.

A report on distance education was commissioned by UEM in 1998 (Wield et al 1998). The report, and other materials, were used by a UEM working group to make a plan. A university Commission of Installation of Distance Education began work in late 2000. By 2001, UEM planned to produce courses by 2004. Its plans at that time were to begin to deliver courses in the Northern provinces, starting with introductory courses in Law and Public Finances. Our efforts to meet the UEM group responsible for distance education were not successful.

In the meantime, the Ministry of Science Technology and Higher Education has taken up distance education as one of its main elements in its Strategic Plan 2000–2010. The ministry has developed a plan and begun work on a system of distance education for higher education. Its plans include already funded initiatives to set up a coordinating body, train distance educators, establish resource centres, and produce pilot courses between 2002 and 2006.

The ministry chose between four potential models ranging from: allowing a free-for-all were all higher education institutions set up if they wished; to establishing a completely new institution and giving it responsibility for distance education. The model chosen was for the Ministry to give strategic and policy direction and set up a Coordination Group for Distance Education (CEAD) from higher education and other interested bodies. This group will propose activities and control implementation. The group is seen as an embryonic Distance Education Organisation, which may eventually become an Open University. A nucleus of specialists will also be set up of interested people who will be trained in Distance Education, in the expectation they will become Mozambique's core of specialists. The Coordinating Group and Specialist Group will come from the full range of institutions.

Thus, the idea is that the ministry coordinates the expensive infrastructure, which will be fully open for use by all distance educators from all interested institution, whilst the higher education institutions will have autonomy in the type of course they deliver, within the quality control systems of the ministry. The credit transfer system agreed in the 2002 Higher Education Law can also allow credits to be built up from various institutions.

Funding of USD 7 million has been agreed for 2002–2006, from the World Bank for establishing the Coordination systems, training specialists in distance education, establishing Resource Centres, and developing pilot teaching materials (in Teacher Training, pre-university courses and foundation courses in higher education).

UEM therefore now has a national policy, credit transfer system, and resource centre system, within which to build its courses, and may have a head start given its earlier work on distance education.

4.3.7 Recommendations

1 The role of UEM in supporting the expansion of the higher education system should be rewarded. There are several areas where its national role can be supported by Sida and incentives given to achieve national goals. These include:

   (i) The development of Masters programmes which can be used by other HEIs for staff development via scholarships or direct payment. A good example is UPs potential use of the Masters programmes in education.

   (ii) Support through scholarships for students from disadvantaged regions, and for female students from poorer families.

   (iii) Support for multi-university research programmes, for doctoral training, and for non-duplicate use of expensive specialist research equipment.

(iv) Support for library/informatics development to improve national use of new technologies for improved teaching and research.

(v) Support for developing higher education policy expertise within UEM's emerging masters courses, particularly those in education.

The national development of distance education presents another opportunity for UEM to play a major role in giving better regional access to higher education.

2 Support for the MESCT is required to develop research policy and higher education policy. This might include, given Sida-SAREC previous support, support for a national research fund system, based on the Open Fund principle and with clear nationally determined criteria for project and programme research.

3 Sida-SAREC has a long history and culture of supporting research capacity building, which has broadened to higher education support, in Mozambique and the other priority countries. However, the growth of the Mozambican higher education system and MESCT suggests the need for an even more strengthened higher education policy environment in Sida. Higher education is different to other education and Sida-SAREC might consider how it gains more expertise in higher education so it becomes Sida's lead for higher education as well as research.

4 The different types of core funding and institutional funding are causing confusion. They need to be put into a more coherent budget support system. Research support might be considered as a separate issue since historically research reporting has a clear and different history globally – that of telling the world what is known about it. But much of the rest of higher education funding requires a budget with more flexibility than bilateral and parallel systems can deliver. Funding of the UEM Strategic Plan and the MESCT Strategic Plan need not, and should not, be divided up among the donors with a range of parallel reporting systems. Scholarship funding is best pooled, as is teaching support funding, as is staff salaries, Open Funds, and so on. UEM coordination of donors could begin once more if a small number of donors could be persuaded to jointly fund core areas of the UEM budget. At the same time, a SWAP for higher education could be considered.

4.4 Cross-Cutting Issues

4.4.1 UEM and Gender Equality

Introduction

Gender equality in terms of access and participation has become an important target in Mozambique's strategies for higher education. It is also emphasised in the *Proposal for new agreement for the triennium 2001–2003* regarding the bilateral research co-operation between UEM and Sida-SAREC (Maputo, March 2000). But the document does not discuss how this can be done nor allocate funds for the purpose. In fact, little has been done at most quarters to change the modest representation of women at UEM, except at the Faculty of Engineering where special efforts have been made to recruit women. In the following section, the situation of gender equality is discussed in terms of baseline, progress and ambitions. Our starting point is the 1997/98 evaluation.

UEM's Strategic Plan 1999–2003

EMU Strategic Plan 1999–2003 identifies, "*poor representation of women in the university community*" (p.18) as a major EMU internal weakness, and recommends the following actions to enhance the women's *access and participation:*

a) awareness raising campaigns, particularly at secondary school level;

b) balanced accommodation for both sexes in terms of quality and quantity;

c) support to student mothers to successfully conclude their studies; and

d) combat of sexual discrimination in the teaching process.

To enhance women's participation, the plan identifies the need to:

e) improving women's access to science, technology and management posts,

f) encouraging women to participate actively in research;

g) guaranteeing equal access opportunities to senior posts;

h) combating the sprit of self-exclusion among women; and

i) assuring women equal progression and development in the career structure and equal access to post-graduate scholarships.

Strategic Plan; pp. 55–56

As will be noted, most of these recommended actions do *not* presuppose additional funding. What it takes is a conscious effort by administrative and other decision-makers to see and react to the under representation of women at all levels in the university system.

Strategic Plan of Higher Education in Mozambique 2000 2010

The MESCT Strategic Plan of Higher Education in Mozambique 2000–2010 has "T*he increase of access and of regional and gender equity*" as one of three main focuses, but neither the Plan's financial implications nor the Strategic Scenario, Goals and Assumptions have any reference to gender or women, nor do the UEM-Sida/SAREC Agreements, *Promemoria* or Agreed Minutes. One important exception is the 2002 *Overview Study of the Higher Education Sub-system in Mozambique*.

Overview Study of the Higher Education Sub-system in Mozambique

According to the Agneta Lind and Adeze Igboemeka 2002 *Overview Study of the Higher Education Sub-system in Mozambique,* the proportion of women has increased in many faculties, but is still low not only compared to neighbouring countries, but also to the private tertiary institutions in Mozambique. Still, the study found that almost one third of Mozambican university students were women (2000), and not a quarter as earlier reported.[39] For UEM the 2001/2002 figure was 27%, 1% up from the previous year.

Several donors provide women with scholarships, but only the Dutch government seem to do so on a 50% level (the scholarships are simultaneously reserved for Nampula residents, thus addressing both gender and regional equity.) Australian International Development Agency, AusAid, specify that as regards their 150 UEM scholarships, gender equity shall be pursued "whenever possible"[40].
Also Norway and the Mozambican government earmark scholarships for women, but whether on an equity basis is not known

The report founds that only 198 women from all eight universities in Mozambique were on a scholarship during 2000/2001 This figure seems to have increased considerably by late 2002. Of the 66

[39] Of 1151 graduates, 391 were women (29%).

[40] The result is that of the 100 AusAid scholarships offered in 2002, 35% went to women.

undergraduate scholarships presently funded by SAREC only 14 (21%) benefit women, while women got 361 (19.5%) of the 1 846 UEM scholarships.[41]

At UEM the number of women students rose from 2000/2001 to 2001/2002 in spite of the fact that the number of male students decreased. This increased the female student proportion from 26% to 27%. As compared to at private universities a 1% increase is not impressive. When it is taken into consideration that the proportion of women at UEM has remained virtually constant throughout the latter part of last decade, there is no reason to believe in any radical increase in women's access unless special measures are taken to that effect.

Concerning the proportion of female teachers, the disparities between the public and private universities are modest.

Table 8 Students and teachers by gender at UEM, at all public universities and at private universities in Mozambique 2000–2001

Gender composition at Mozambican Universities	Students					Teachers				
	Men		Women		Total	Men		Women		Total
	No.	%	No.	%	No.	No.	%	No.	%	
UEM[42]	5 430	74	1 877	26	7 307	585	77	175	23	760
Total public universities	6 735	74	2 241	26	8 976	785	76	245	24	1 030
Total private universities	2 269	53	2 013	47	4 282	331	75	104	25	435

UEM Efforts to Increase Gender Equity and Participation

As for gender equity, only the Faculties of Medicine and of Veterinary Science have a fair proportion of female students (Table 2). Even women-friendly subjects and disciplines such as Arts, Social Sciences and Archives have not succeeded in balancing their staff. One problem is that many women (let alone their families) hesitate to participate in sandwich- masters and PhD programmes abroad. As few will risk their marital happiness and even status in order to pursue post graduate education, sandwich programmes with host universities close to home fit women better. It should be noted that this will only be a problem as long as there are a limited number of women to choose from.

It is not only in relation to private universities in Mozambique (Table 8) that women's participation is low at UEM, but also in comparison to universities in neighbouring countries (Table 9).

Table 9 Students and teachers by gender at UEM as compared to other public universities in Mozambique 2000–2001 and in Botswana, South Africa and Madagascar 1997

Universities/Countries	Students					Teachers				
	Men		Women		Total	Men		Women		Total
UEM[43]	5 430	74%	1 877	26%	7 307	585	77%	175	23%	760
Madagascar		55%		45%			71%		29%	
Botswana[44]		53%		47%			72%		28%	
South Africa		52%		48%			63%		37%	

[41] Australian aid presently provides UEM with 100 scholarships, of which women get 35%.

[42, 43] Lind & Igboeemka, Appendix 5, Table 1, p. 96.

[44] The figures from Botswana, Madagascar and South Africa are from 1997. See: *Constructing Knowledge Societies: New Challenges for Tertiary Education*. A World Bank Report. Education. The World Bank. Undated, p. 43.

The recent World Bank Appraisal Report on the new credit for the Higher Education Project points to status quo in the proportion of women in tertiary education since 1993. *"Thus there is a need to provide incentives and programs to ensure that a greater proportion of females enrol in public institutions, especially females from distant provinces*" (p. 47). The report underlines the need to focus on the opportunities for girls at the lower levels of the educational system and for women from outside Maputo. Regional equity is however not the subject in this section.

Presently MESCT and UEM give gender equity a central place in their strategic plans. But this notwithstanding the equity objective continues to be disregarded during the admission procedures.[45] Even though the large number of available candidates indicates that if UEM wants to move towards gender equity, the Commission for Examination and Admission could opt for accepting more women at the screening stage.

Conclusion and Recommendations

Women continue to play a secondary role at UEM in terms both of access to university education and to research opportunities and resources. It is the view of the evaluation team, substantiated by the slow increase in the number of women students, researchers and teachers during the period under assessment that gender equity objectives *will not* be reached unless special effort be made to that effect. In this respect, Sida/SAREC is in a unique position as a major UEM supporter.

The Sida Country Strategy for Development Cooperation with Mozambique states that "Gender equality issues and conditions for women generally must be a major consideration in all development co-operation."[46] The Sida/SAREC "Guidelines for Applying Institutions" from June 2000 brings the gender issue in as a specific criterion at programme and project level.

As both Sida/SAREC and MESCT/UEM have gender equity as a central objective, the evaluation team recommends that this priority be reflected and concretised in the Operational Plans of UEM and budgets, and that these include verifiable indicators to monitor the implementation of the gender objective. The gender objective should also be reflected in the next Sida-UEM Co-operation Agreement. If no success is attained in this respect, Sida could consider earmarking part of Sida's support to secure the implementation of UEM's own Gender Equity Plan. Areas to be considered are outlined in Appendix V.

4.4.2 Environmental Impact Assessment[47]

According to Swedish cooperation policy, an environmental impact assessment shall be made prior to implementing a programme. It is the cooperating institution's responsibility to make this *ex ante* Environmental Impact Assessment (EIA). While UEM's proposal to Sida highlights environmental issues, there is no specific EIA made.

The Sida desk officer is responsible to ensure that an *ex ante* EIA is made. In the *Promemoria* presented to the SAREC board (1997 and 2000), no reference was made to an EIA.

The agreement between the Governments of Sweden and Mozambique for the period 2001–2003 states that:

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[45] Dr. Gregorio Filmino is the head of the commission.

[46] Country Strategy for Development Cooperation with Mozambique January 1, 2002–December 31, 2006. Regeringskansliet UD, p. 24: "Gender equality issues and conditions for women generally must be a major consideration in all development cooperation".

[47] In 1998, the Director General approved the *Guidelines for Environmental Impact Assessment in International Cooperation.* In September 2001, the Director General decided to approve the revised *Environmental Impact Assessment in International Development Cooperation.* Part of the work was to simplify Sida's Rules and Regulations, and several thousand pages were reduced to about 75.

Article XII. Environmental impact

UEM are responsible for the implementation of the agreed recommendations from the environmental impact assessment of the programme. The implementation of agreed recommendations and the environmental impact of the programme will be followed up in the agreed monitoring and evaluation activities of and within the programme.

Exactly the same clause on the environment was included in the agreement between UEM and Sida. No reference is made to implementation procedures.

According to Sida's policy, EIA policy, and Evaluation Policy, an *ex* post EIA shall be done during an evaluation.

It is probable that an *ex ante* EIA on Sida/SAREC's support would have concluded that there would be no direct environmental impact though the potential positive indirect effects are great. The research results would not by themselves have positive effects on the environment but when they are used that there will be effects.

Several Sida-supported projects have generated research results. If these results are used, positive environmental effects may result. Among these can be mentioned the research projects at INIVE, which, in the long term, might improve the health of goats and cattle. The goat projects also have a specific poverty alleviation dimension since goats are often held by peasant families.

4.4.3 HIV/AIDS

Introduction

Over 13% of the Mozambican population are HIV positive, a figure that, though high, is still much less than in the neighbouring countries.[48] In real terms, it means some 1.2 millions adults and children live with the virus, and that 500 persons are infected every day.

In many African countries the HIV/AIDS epidemics is changing the tertiary education. In Nairobi 20–30% of the students are estimated to be HIV positive and in South Africa the infection rate for undergraduates is reported to be 33%.[49] It is of course not only the students that are affected *"In some instances HIV/AIDS has robbed colleges and universities of their instructors and other personnel, crippling the institutions and further reducing the countries' development opportunities, let alone their capacity to produce local leaders, civil servants and trained intellectuals*."[50] An informal survey at UEM showed that 15% of the students in one UEM faculty were HIV positive – slightly higher than the estimated national rate of 13% (PARPA, Republic of Mozambique, 2001).

UEM's plans when it comes to address the effects of HIV/AIDS on its organisation

The importance of HIV/AIDS is forcefully spelt out in Mozambique's Strategic Plan for Higher Education.

> *"University graduates are a very scarce national resource in Mozambique. So every effort must be undertaken in order to maximize their numbers and productivity. The incidence of a threatening disease like HIV/AIDS in the country is therefore potentially devastating.*"

HIV/AIDS is now for the first time given high prominence in the *UEM-Sida Institutional Co-operation.* In the *Proposal for 2002–2003*[51] it is suggested that SEK 3.3 million is to be spent on an HIV/AIDS

[48] The figures for Botswana are estimated to 39%, Zimbabwe 34%, South Africa 20% and Lesotho 31%.

[49] *Construction of Knowledge Society, New Challenges for Tertiary Education,* A World Bank Report undated: p.48.

[50] Ibid: 48

[51] Dated Maputo September 2002

Prevention and Impact Reduction Programme during the programme period. The proposal describes the HIV/AIDS problematic over 17 pages and any detailed analysis will therefore not be repeated here. It suffices to point out that UEM is alert to the fact that the epidemic is likely to have considerable impact on the university community, not only in terms of human suffering, but also loss of qualified teaching and research manpower, decimated research and reduced cost-effectiveness, for UEM and for the nation. The proposed programme will be co-ordinated by GASD – Grupo de Activistas Anti-Sida/DTS (the Group Against AIDS and Sexually Transmitted Diseases).

The project has four components:

- Strengthening institutional capacity to assess the determinants of risk for university students and the likely entry points for programmatic, institution-based interventions.
- Change high-risk behaviour and discrimination and stigmatisation among the university population (students, staff and teachers).
- Establish a monitoring and evaluation system to assess the effectiveness of specific interventions and the impact of HIV/AIDS on various aspects of the sub-sector and the economy.
- Research and development to support innovative and grassroots approaches to HIV/AIDS prevention.

Apart from the Proposal to Sida, the World Bank's Higher Education Credit of 63 455 000 USD for the period 2002–2007 is the only substantial programmes to include HIV/AIDS prevention at university level. The programme includes financing of an HIV/AIDS Prevention and Mitigation Programme as a sub-component of the "System-Wide Reform and Capacity building" component. It will also include the provision of information and access to counselling and medical services. The programme is led by the GASD with support from Oxfam Australia.

What interventions are in place to prevent HIV transmission?

In 1993 the Government launched a HIV/AIDS prevention programme for the university population and formed GASD that targets students, Faculty and staff. A network of anti-AIDS associations (Núcleo Anti-Sida) has also been established covering several universities (UEM, UP, ISRI, ISCTEM, ISUTC and ISPU), co-ordinated by GASD at UEM. The programme includes campaigns, publishing information pamphlets and documents, debates, video screenings and distribution and sale of condoms. Also student activists are trained to raise awareness among university students, an initiative that has been translated into practice also by the University Students' Association on a few occasions. There is also the Anti-AIDS student organisation *Nacsida*.

According to the Proposal regarding the use of the University's Core Fund, there is currently only one on-going HIV/AIDS project at UEM – the Joint University HIV/AIDS Prevention and Impact Reduction Project. The project has been prepared by the Government in co-operation with the Community Aid Abroad (CAA), Oxfam, Australia with financial support from AusAid. It covers most of the tertiary institutions and is expected to reach 8 universities, 20 000 students and 2 500 staff members with information. The project is training 300 peer educators to challenge accepted behaviour and gender roles and ensure access to counselling, voluntary testing and the use of condoms.

In spite of the ongoing activities referred to above, the evaluation mission was unable to detect any advocacy or involvement at faculty level, and the UEM staff consulted reported no deaths from AIDS. The only exception was the President of the University Students' Association who identified three students who had died from the disease, in 2001 and 2002. This is likely to be a heavy underreporting and underlines the stigma attached and the dimension of the problem when it comes to address the

affected and prevent the spread of the disease. Our failure to get information may however also be due to the team's inability to go deeply into the matter.

There is currently one research project at the Faculty of Medicine focusing on HIV/AIDS, undertaken by two PhDs trained in Sweden. The project focuses on HIV/AIDS among pregnant women and is briefly described under information provided on the Faculty of Medicine. The Project is funded by SAREC 2001–2003.

What support is being given to staff and students who are HIV positive or living with AIDS?
The current activities focus on the prevention of HIV/AIDS and not on care and education for those already living with the virus or for their families.

Recommendations

In view of the fact that more than every tenth student and staff is likely to be HIV infected, Sida may consider to support UEM activities that would provide care to those already suffering from AIDS. This would be in accordance with aims and goals of Swedish development co-operation where it is underlined that: "*The fight against HIV/AIDS must be integrated into all development co-operation undertakings. Preventive, awareness raising and care efforts and measures must be supported.*"[52]

4.4.4 Poverty Eradication

One key Swedish development cooperation objective is the eradication of poverty. In order to qualify for the debt relief scheme for the Highly Indebted Poor Countries, HIPC, Mozambique had to present a programme for the eradication of poverty. The Council of Ministers approved of the Strategy Document for the Reduction of Poverty, PARPA, in April 2001. Mozambique has since qualified for a debt reduction.

Like in the case of the environment the Sida support to UEM will not have any direct effects. However, the creation of research capacity, translated into research projects and programmes to reduce poverty and increase economic growth among the poor, can in a longer perspective have an important impact. Since poverty is particularly widespread in the rural sector, research directed at solving rural problems would be strategic.

[52] Country Strategy for Development Cooperation with Mozambique January 1, 2002–December 31, 2006. Regeringskansliet UD, p. 23. Underlining done here.

5 Lessons learned

The Team included several economists and management issues were studied in some detail. The results revealed that there were many unnecessary costs and that bureaucratic procedures could be streamlined significantly. These results were somewhat surprising and suggest that future evaluations could benefit from studying the management of a programme as part of the evaluation.

As is stated in the ToR for this evaluation:

"Sida's current agreement period with UEM is from 2001 to 2003. Negotiations for a new four-year agreement period (2004–2007) will begin during the programme's mid-term review in November 2002. Sida's support to UEM was last evaluated in 1998. The time has now come for Sida and the University to take stock of the last five years and to plan for the future."

On the objectives of the evaluation it is stated that: "The evaluation will be used both as a benchmark and as a strategy document for Sida and UEMs planning for future support."

Because of the long term character of research capacity building, it turned out that it was necessary to collect and analyse information prior to 1998. In this context it became evident that much information was available but it would have required much more time than available to the Team to process it.

Another complicating factor is that with the creation of the new Sida in 1995, a major part of the archives of the Swedish public aid organisations were transferred to the Swedish national archives. Information is available but it is an enormous task to locate and process it.

Finally there is a rapid turn-over of Sida/SAREC staff. Unless there is an adequate information management system, vital data will be lost as staff members are changed.

Taken together, these pieces of information suggest that unless concerted measures are taken, the impact of Swedish aid on research capacity building will be very difficult to assess.

Appendix I.
Terms of Reference for an External Evaluation of Sida's Support to the University Eduardo Mondlane, Mozambique

Background

Sida's Department for Research Cooperation SAREC, has had collaboration with Mozambique and especially the University Eduardo Mondlane (UEM) since 1978. Early support to the university was to the consolidation of faculties and research centres, as well as to infrastructure. In the late 1980s, the emphasis of support became focussed on building capacity through research training and this programme has expanded during the 1990s. At the same time support to infrastructure, administration and the university's strategic reform plans have continued.

Key areas for Sida's research support policy to universities in low-income countries are the development of indigenous research capacity and research structures, as well as support to university administration reform. Current Sida support to UEM includes: 27 research training projects – covering most faculties, centres and institutes; four faculty funds and a university fund; plus institutional research support to administration and library services. A separate core support fund has been utilised for: research infrastructure, staff training, student scholarships, press and public relations services. Moreover, Sida has also collaborated with UEM on an extensive ICT infrastructure project, though this component is not included in the present terms of reference.

UEM is Mozambique's main centre of higher education and the only university with major research programmes at post-graduate level and above. The University is thus the focal point for Sida's support to the development of national research capacity. The university is now initiating its first Masters programmes (which are not within Sida's programme of support) at the Faculties of Agronomy, Education and Medicine. The first two masters programmes are localised, whilst the third is in cooperation with universities in the USA and Europe. Higher education is expanding generally in Mozambique. Recent years have seen rapid growth in new centres of higher learning, as well as the creation of a Ministry for Higher Education, Science and Technology (MHEST). Thus UEMs future national role must be ascertained in reference to these changes. In 2001 Sida commissioned an overview of the Mozambican higher education sub-system and the MHEST is receiving support from Sida for feasibility projects within its strategic plan.

Sida's current agreement period with UEM is from 2001 to 2003. Negotiations for a new four-year agreement perod (2004 –2007) will begin during the programme's mid-term review in November 2002. Sida's support to UEM was last evaluated in 1998. The time has now come for Sida and the University to take stock of the last five years and to plan for the future.

Objectives and scope of the evaluation

The evaluation will be used both as a benchmark and as a strategy document for Sida and UEMs planning for future support. It will be participatory in orientation and be conducted in dialogue with Sida and UEM. The study should assess the impact and relevance of Sida support to research capacity building and to the university's strategic plans for reform. It should enable UEM to assess and improve its administration, as well as to assess its future research role in relation to national research capacity, the national higher education system and Mozambique's development needs. The evaluation should

make recommendations on the scope and composition of future Sida support to UEM. It should assess implications for Sida's administration of the recommended support.

There are three main areas for investigation: research capacity building; core support, administration and management of research; the University's national research role.

1. Research Capacity Building

A major goal of Sida's support to UEM is to build-up a critical mass of researchers, which will in turn enable the University to run its own research programmes within a creative research environment. Research training is carried out through the so-called 'sandwich' process in collaboration with Swedish, and some South African, universities. The doctoral or masters candidate is supervised by the host university and spends study periods there. The previous evaluation recommended that as faculty research capacity increases, institutional development will be best served by localising to UEM components of sandwich research programmes (e.g. supervision and various courses). Current research capacity differs markedly between faculties. Some sections of the university may be ready for research support to be localised with continued support from a host university. Moreover, such localisation needs to be related to two further aspects of the sandwich system. Firstly, in terms of staff retention, there is a need for post-doctoral support that will enable staff to continue with research after their PhD degree. Secondly, there is the role and stakeholder interest of the collaborating university in the process of localising support to institutional development.

Following the recommendations of the last evaluation, Sida and UEM in the last agreement (1998–2000) increased its contributions to a university open fund for research and created a faculty fund for Engineering and a joint fund for the Social Sciences and Arts. In the present agreement period (2001–2003) two further funds were created, one for the Faculty of Medicine and one for the Faculty of Science. These funds are for: project 'seed money', small research projects, conference attendance and publications. Funds give flexibility to the university, as well as localise responsibility for research and its administration. They are a possible model to be expanded in future support. Thus the functioning and use of the funds needs to be investigated.

Within the Sida supported sandwich programmes, there is an increase in collaboration with South African universities. A few of these are tripartite collaborations between UEM, South African and Swedish universities; many are bilateral partnerships between UEM and a South African counterpart. A number of these collaborations are with universities and institutes within the Johannesburg – Pretoria area. A short period of fieldwork there is envisaged as part of the evaluation. Major questions are: what are the implications of the collaboration with South African universities for a strategy of regional capacity building? What are the implications for the Swedish resource base for development studies? Furthermore there is a gender aspect, in that female students are said by the university to prefer sandwich programmes with South Africa. Women students often have difficulty in leaving their families for longer periods. Gender analysis in terms of recruitment to research programmes and research administration is an important aspect of the evaluation's investigation.

2. Core Support, Administration and Management of Research

As well as the research-training component, there is a separate source of funding, entitled 'Sida core support'. There is a need to evaluate the effectiveness of this support and to assess how support can best serve a balance between the needs of central administration and the administrative needs at faculty level. Management and administrative capacity need to be examined generally. In particular UEMs capacity for scientific administration. Moreover, these issues need to be examined in terms of the implementation of the university's strategic plans.

The previous evaluation emphasised the need for coordination of donor funding and for flexible core support. This question is still unresolved and necessitates both strong policies at UEM to coordinate donor support and the University's administrative capacity to implement such support. A related question is the university's ability to raise own funds through institutional based counsultancies and marketing of its services. This aspect of internal income generation was broached in the previous evaluation and is also part of the strategic plan, but may be difficult to realise.

A further area of importance for future core support is the University's contingency plans for the affects of the AIDS pandemic on its organisation. Moreover, its efforts in HIV prevention and support measures for students and staff living with or affected by HIV/AIDS.

3. The University's National Research Role

Thirdly, is the question of UEMs national role. The University is likely to be the dominant national actor in terms of qualified research capacity for the foreseeable future. Nonetheless, the University is cognisant that it must plan strategically for its future role in the rapidly expanding higher education environment in Mozambique. Furthermore, UEMs plans must be accommodated within the overall MHEST strategy for research and training. Thus one question is the level of autonomy of UEM vis-à-vis MHEST.

Based, as UEM is, in the southernmost tip of the country and in the province with the fastest economic growth, there are questions of meeting equitable access in terms of geographical student recruitment, as well as meeting the needs of the provinces for research and for qualified personnel. Distance education is one obvious way of meeting these needs and its development is included in the University's strategic plans. The rapid expansion of non-governmental institutions of higher education also has consequences for UEMs staff retention.

This third part of the evaluation could well be a study its own right and the team will not be expected to do more than investigate stakeholder positions and sketch out broad scenarios. Supportive factors are the Sida commissioned study on higher education in Mozambique published in March 2002 (as well as a number of other recent documents). Furthermore, the author of the study is working at the Embassy of Sweden in Maputo.

Specific issues to be investigated

1. What has been the impact of Sida's support to research capacity building at UEM?

- To what extent have the sandwich training programmes contributed to self-sustaining research environments in and between faculties?
- To what extent can components of sandwich programmes be localised to UEM?
- Would the institution of Masters programmes, with support from host universities, be a viable policy at some faculties now supported by Sida?
- What scenarios can be envisaged for coordinated donor support to research at UEM?
- Have the research projects supported by Sida relevance for Mozambique's development needs and the future research capacity needs of a low-income nation?
- Does the increasing collaboration with South African universities represent a complement or an alternative to sandwich programmes with Swedish universities? What are the implications of this south-south collaboration for Sida's future support and the Swedish resource base?

– What is the balance between women in men within the various disciplines in terms of recruitment to research programmes and leadership of research?

2. Core support, administration and management of research

– What has been the impact of Sida's core support to UEM on improving administration and infrastructure?

– To what extent has core support enabled the implementation of strategic plan reforms?

– What constraints to implementation of the strategic plans exist?

– What is the balance between the need for central coordination versus increased administrative effectiveness through decentralisation?

– What are the administrative needs at faculty level?

– How can scientific and financial administration be strengthened?

– To what extent is consultancy work by staff institutionalised and marketed?

– What plans does the University have for the effects of HIV/AIDS on its organisation?

– What interventions are in place to prevent HIV transmission and what support is being given to staff and students who are HIV positive or living with AIDS?

3. The University's national research role

– What are possible scenarios for UEMs future national role in terms of meeting the research needs of Mozambique?

– What is the position of UEM in terms of the MHESTs role to coordinate and organise higher education and the autonomy of the higher education institutions?

– What is the impact of the expansion of higher education on UEMs staff?

– What distance education provision is planned or in place?

Methods

The evaluation is seen as a learning process and the methodology shall have a participatory orientation. Both Sida and UEM shall participate in the evaluation. Sida's research officer for Mozambique and an officer appointed by UEM shall take part in initial discussions with the team, in the planning of the fieldwork and in the interpretation of the resultant data. The fieldwork and the writing of the draft and final report shall be the unassisted job of the team. The team shall have access to Sida and UEM documentation. Desk reviews, key informant interviews, focus group discussions, workshops, and observation are envisaged as the main fieldwork methods employed. The draft report shall be presented at a dissemination workshop at UEM.

Team Composition and Requirements

– The team members shall have a good understanding of university organisation and experience of the special conditions pertaining for universities in low-income countries.

– The team leader shall have experience of participatory evaluation.

– One team member shall have a good knowledge of the natural sciences.

– One team member shall have a good knowledge of the social sciences.

– One team member shall have experience in organisational and administrative analysis.

– No team member shall have been involved in the cooperation under review (i.e. projects in the previous or current agreement period 1998 – 2000, 2001 – 2003).

– *Languages:* The report is to be submitted in English. One team member must be able to speak and read Portuguese. One team member must be able to read Swedish.

– *Activity schedule:* The tenderer shall provide a detailed time and work plan for fulfilment of the assignment, a) a manning schedule that specifies the tasks performed by and the time allocated to each of the team members, and b) estimates of the time required for the different tasks of the assignment.

– *Cost:* The tenderer shall state the total cost of the Assignment, specified as fee per hour or week for each category of personnel, any reimbursable costs, any other costs and any discounts (all types of costs in SEK and exclusive of VAT).

– The tenderer shall state and specify any minor reservations as to the draft contract and Sida's General Commercial Conditions for Service Tasks, issue 1999 (and/or Sida's Standard Conditions for Short Term Consulting Services, issue of 1998) and propose alternative wordings, which shall however not lead to material changes of the present draft contract and conditions.

Merited Competencies:

– Experience of development cooperation.

– Experience of the Swedish university system/research environment.

– Experience of UEM.

– Competence in gender analysis of organisations.

– The tender should specify the date from which it should be possible to conclude a contract to be effective and a date on from which it should be possible to commence the Assignment.

Activities and Schedule

The activities are foreseen as stretching from September 2002 until mid-January 2003. A draft report should be disseminated at latest by week 46 2002 and a dissemination workshop held in Maputo at latest week 49 2002. A final report should be submitted by mid-January 2003. The total time is estimated at approximately 16 consultancy weeks.

Activities shall include:

– Documentation reviews at Sida and UEM.

– Discussions/interviews at Sida and UEM with the participating officers.

– Interviews with Swedish collaborating university staff.

– Interviews with collaborating university staff in the Johannesburg-Pretoria area.

– Interviews and participatory methodologies at UEM.

– Discussions/interviews with the Embassy of Sweden, Maputo.

– Discussions/interviews with the MHEST.

Reporting

The draft report shall be disseminated at a workshop in Maputo. The final report shall be written by the project leader and submitted by mid-January.

The report shall be written in English and should not exceed 60 pages excluding annexes (and a summary of maximum 6 pages). The outline shall follow Sida evaluation report – standardised format (Annex 3, page 71 of the Evaluation Manual for Sida). The draft report shall be submitted to Sida, the Embassy of Sweden and UEM no later than November 10th, 2002. A final electronic version shall be sent to Sida and UEM. Subject to decision by Sida, the report will be published and distributed as a publication within the Sida evaluation series. The report shall be written in Word 97 for Windows or compatible format, and should be presented in a way that enables publication without further editing.

The report includes the production of a summary according to the guidelines for Sida Evaluation Newsletter (Annex 1) and the completion of Sida Evaluation data Work Sheet (Annex 2). This separate summary and data work sheet shall be submitted along with the final report.

Appendix II The Evaluation Team

The Team was composed of distinguished experts in their field of competence. A summary of their competence related to this evaluation follows below:

Else Skjønsberg (Norway)
Dr. Skjønsberg is by academic training a sociologist and has a wide experience of social sciences with extensive experience from developing countries. She is specialised in gender issues and has provided services to NORAD and other bi-lateral organisations and also to multi-lateral organisations such as the World Bank.

She has a thorough experience in research and research capacity building in developing countries. She has also been active in developing participatory approaches.

Berhanu Abegaz (Ethiopia-Botswana)
Professor Abegaz is presently the head of the Department of Chemistry of the University of Botswana. He is an Ethiopian national and got his PhD from the University of Vermont (USA) in 1973.

Apart from being an active researcher with a large number of publications, he has been active in international university co-operation. He has a good understanding of Sida/SAREC from having received several grants and not least from his participation in the evaluation of the SAREC supported International Science Programme in 1994.

David Wield (United Kingdom)
Professor David Wield is currently professor of innovation and development of the Open University in the UK. He has a long track record of research and research capacity building including work at the University of Eduardo Mondlane.

He was Team leader of the previous evaluation of Sida/SAREC support to UEM and will serve as a resource person in this evaluation.

Peter Coughlin (USA/Kenya-Mozambique)
Dr. Peter Coughlin got his degree in economic development from the University of New Mexico Albuquerque in 1975. He has more than twenty years of work experience in sub-Saharan Africa.

Dr. Coughlin has been professor of economics at the UEM for several years and has recently started the *EconPolicy Research Group* in Southern Africa. Devpro AB is collaborating with this group in Mozambique.

Gunnar Jehrlander (Sweden)
Gunnar Jehrlander, MA, financial expert, with a long experience in international banking with Svenska Handelsbanken in Sweden. He was the Bank's representative in Brazil for many years and subsequently responsible for the Bank's operations in the Middle East.

Thomas (Tom) Alberts (Sweden)
Dr. Tom Alberts, sole owner of Devpro AB, was the Team leader for this assignment. He got his PhD degree from the University of Lund in 1981 and subsequently successfully concluded a PhD course in environmental economics at the University of Gothenburg in 1993.

Since 1979 he has worked during different time periods in Mozambique.

He has been Team leader for several missions regarding research co-operation and research capacity building. (Sida/SAREC 2001 and 2000, NORAD 2001 and 1999).

Appendix III
Persons Met

	Cargo	Position
	Mozambique	
UEM		
Gabinete do Reitor		
Brazão Mazula	Reitor	Rector
Administração e Recursos		
Venâncio Massingue	Vice-Reitor	Vice-Rector
Secção Pedagógica		
Carvalho Madivate	Director Pedagógico	Pedagogical Director
Gabinete de Relações Internacionais		
Verónica Micas José	Gabinete de Relações Internacionais	International Relations Office
Gabinete de Planificação		
María Conceição	Directora	Director
Gabinete de Relações Públicas		
Zita Ustá	Directora	Director
Direcção de Finanças		
Mafalda Mussengue	Directora	Director
Orton Malipa	Director de Investigação	Research Director
Centro de Documentação		
Flatiel Vilanculos	Centro de Documentação	Documentation Centre
Arquivo Histórico de Moçambique		
Joel M. Das Neves Tembe	Director	Director
Registo Académico		
Gracinda Mataveia	Directora	Director
NUMAC		
Generosa Cossa	Docente no Centro de Informática	Informatics Centre
Rosita Alberto	Docente na Universidade Pedagógica	Lecturer at Pedagogical University
CIUEM		
Eng° Bila	Chefe de Sistemas operativos	Chief, Operative Systems, CIUEM
Carlos Costa	Contabilista	Accountant
Reginaldo André	Chefe de Manutenção	Chief of Maintenance
Generosa Cossa	Docente	Lecturer

Associação de Estudantes

Gerónimo Domingos	Presidente	President
Izdine Oprassa	Vice-Presidente	Deputy leader

Faculdade de Ciências

Francisco Viera	Director da Faculdade	Dean of the Faculty
Bonifácio José	Director Adjunto para Investigação	
Orlando Quilambo	Director Científico	Director for Research
Bonifácio José	Director Adjunto para Investigação	Deputy Dean for Research

Departamento de Física

Rogério Utui	Professor	Professor
Boaventura Chongo Cuamba	Coordenador do Programa de Investigação em Energia Solar	Energy & Solar Project Coordinator
Elonho	Coordenador do Projecto geofísica e geologia	Geophysics & hydro-geology Project Coordinator

Departamento de Geologia

Isidiro Manuel	Professor	Professor

Departamento de Química

Felisberto Pedro Pagula	Professor	Professor

Departamento de Biologia

Almeida Gissamula	Docente	Lecturer
Salomão Bandeira	Chefe, departamento de ciências biológicas	Head, department of biology
Tomás Muicanhila	Director do laboratório de biologia marinha	Dean of the marine biology laboratory

Faculdade de Engenharia

Alberto Júlio Tsamba	Engenheiro Químico	Chemistry Engineer
Luís Pelembe	Fundo Aberto	Open Fund

Departamento de Engenharia Civil

Marcelino Januário Rodrigues	Director do Fundo Aberto	Dean of Open Fund
Nélson Matsinhe		

Departamento de Engenharia Mecânica

Fabião Manuel a. Cumbe	Fundo Aberto	Open Fund
Atílio Armando	Fundo Aberto	Open Fund

Faculdade de Medicina

João Leopoldo da Costa	Director adjunto para Investigação e Extensão	Deputy Dean for Research and Extension

Departamento de Obstetrícia e Ginecologia

Nafissa Bique Osman	Professora e Ginecologista	Lecturer and Gynaecologist

Departamento de Microbiologia		
Elena Folgosa	Chefe do departamento de microbiologia e Professora Assistente	Head of the department and Assistant Lecturer
Faculdade de Veterinária		
Luís das Neves	Director da Faculdade	Dean of the Faculty
INIVE		
Rosa F. da Costa	Directora Nacional	National Director
Alsácia Atanásio	Coordenadora de Projectos	Project Coordinator
Faculdade de Agronomia & Engenharia Florestal		
Inácio C. Maposse	Director da Faculdade	Dean of the Faculty
Alfredo Nhantumbo	Chefe do Departamento de Engenharia Agraria	Head Agricultural Engineering
José Negrão	Director Adjunto para Investigação	Deputy Dean for Research
UFICS		
Faculdade de Letras		
Inocêncio Pereira	Director Adjunto	Deputy Dean
David Hedges		
Ana Maria Loforte		
Faculdade de Ciências Sociais		
Obede Baloi	Director da Faculdade	Dean of the Faculty
José Macuane	Chefe do departamento de Ciências Políticas e AdministraçãoPública	Head of the Department of Political Science and Public Administration
Faculdade de Direito		
Taímo Caetano Mucubora	Director da Faculdade	Dean of the Faculty
Luts Britone Nahe	Director Adjunto	Deputy Dean
Albino Nhassengo	Administrador	Administrator
Luwano Jerissimo	Administrador	Administrator
Comissão para a Política de Informática		
Salomão Manhiça	Secretario Executivo	Executive Secretary
CTIA		
Muhamud Harun	Secretario Executivo	Executive Secretary
MINED		
Direcção de Planificação		
Virgílio Juvane	Director	Director
Universidade Pedagógica		
Rosita Alberto	Profesora	Lecturer
Cooperação Italiana para UEM		
Tiziano Cirillo	Coordenador para Cooperação Italiana	Coordinator for Italian Aid

Luleå University of Technology

Departamento de Matemática

Håkan Ekblom	Professor	Visiting Professor

Banco Mundial

Noel Kulemeka	Economista Sénior	Senior Economist

NORAD

Tore Hem	Conselheiro	Counsellor
Tahia Carim	Secretaria	Secretary

Embaixada da Suécia

Magnus Lindell	Conselheiro	Counsellor
Karin Sverkén	Coordenadora de Programas Educacionais	Coordinator of Education Programs
Lars Carlsson	Antigo Responsável ao Apoio a Universidade	Ex responsible for SAREC support
Miquelina Marins	Assistente de Programas	Program Assistant
Agneta Lind	Conselheiro Regional para Educação	Regional Adviser, education

Embaixada de Portugal

Sara Martins	Secretaria da Embaixada	The Embassy Secretary

Embaixada do Reino dos Países Baixos

Ana Rochkovski	Primeira Secretária para Educação	First Secretary Education

Embaixada da França

Cooperação Francesa

Jacques Szalay	Adido Cultural	Cultural Attaché
Laurence Parry	Projecto de Apoio a Formação de Professores de francês	Project Support for Training of French Teachers

South Africa

University of Pretoria

Veterinary Faculty

Jacob Boomker	Professor	Professor
Estelle Venter	Professor	Professor

Rand Afrikaans University – Johannesburg

Department of Physics

Manuel Engelbrech	Doutor	Doctor
Herman Alberts	Professor	Professor
Name unknown	Candidato Moçambicano para o Ph.D.	PhD student from Mozambique

University of Witwatersrand – Johannesburg

Schonland Research Centre for Nuclear Sciences

Simon Connell	Professor	Professor

Sida/Sarec		
Tomas Kjellqvist	Responsável para Apoio Universitário	Head, University Support
Paul Dover	Investigador Sénior	Senior Research Officer
Zinaida Iritz	Investigador Sénior	Senior Research Officer
Claes Kjellström	Investigador Sénior	Senior Research Officer
Maija Lindros	Investigador Sénior	Senior Research Officer
Royal Institute of Technology, Stockholm		
Department of Metallurgy		
Wladzimierz Blasiek	Professor	Professor
Carlos Lucas	Candidato Moçambicano para o Ph.D.	Ph.D. student from Mozambique
Department of Organic Chemistry		
Anna-Karin Borg-Karlsson	Professor	Professor
Uppsala University		
Faculty of Law		
Lena Olsen	Professor	Professor
Solid Earth Physics		
Laust Pedersen	Professor	Professor
Niklas Linde	Candidato Sueco para o Ph.D.	Swedish Ph.D. student
Agricultural University, Uppsala		
Alfredo de Toro	Docente	Lecturer
Johan Toborn	Cooperação Internacional	International Cooperation
Karolinska Institute		
Department for Microbiology & Tumorbiology Center		
Roland Möllby	Professor	Professor
Sara Achá	Candidato Moçambicano para o Ph.D.	PhD student from Mozambique
Kristineberg Marine Biological Station		
Lars Hernroth	Professor	Professor
Lund University of Technology		
Department of Nuclear Physics		
Klas Malmqvist	Professor	Professor
Gothenburg University		
Department of African and Oriental Languages		
Karsten Legère	Professor	Professor
Earth Science Centre, Department of Oceanography		
Lars Rydberg	Professor	Professor
Others		
Bror Morein	Professor, supervisor de Claudia Baúle	Professor, supervisor for Claudia Baúle
Claudia Baúle		Sarec funded Ph.D. candidate

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Appendix V
UEM and Gender

Gender equality in terms of access and participation has become an important target in Mozambique's strategies for higher education. It is also emphasised in the *Proposal for new agreement for the triennium 2001–2003* regarding the bilateral research co–operation between UEM and Sida-SAREC (Maputo, March 2000). Neither does the document address the issue of how this is to be accomplished nor are [1] funds allocated for this purpose. In fact as will appear from below, little has been done at most quarters to change the modest representation of women at UEM. One very encouraging exception is the Faculty of Engineering where special efforts have been made to recruit women. In the following section the situation of gender equality is discussed in terms of baseline, progress and ambitions. Our starting point is the 1997/98 evaluation.

The 1997/98 evaluation

The 1997/98 evaluation report only briefly mentions the issue of gender equality in terms of number of women among UEM students and staff. Thus it makes no point of the findings that women students have a much higher rate of "success" in terms of graduation, than male students. Though only 25% of the student intake is women and 24% of the students mass are women, the report states that 40% of those graduating between 1994 and1996 were women (p.13).

Engineering with only 6% women students had by far the lowest proportion of female students in 1996/97, while the faculties of Medicine and Veterinary had 54% and 45% women respectively. The Arts Faculty and the Social Sciences Unit had only 26% and 22% female students, though they teach subjects that elsewhere tend to draw more women than men.

Of the 59 UEM staff undertaking Ph.D. training in 1995/96 29% were women, and of the 60 doing Masters Degree 25% were women. It was reported that a significant number of women preferred the sandwich system because it shortened their absence away from home.[2] Though the staff development plan included equal opportunities for women, the evaluation team was not clear on whether there was any special programme to reach this objective. Still without specifying, it is reported that a number of "policies" had improved the situation of women. It also concluded that because the proportion of women intake was only 25%, further action was needed – from the University and elsewhere. In spite of this only one of the report's 29 recommendations concerns women's access and participation:

> *"Gender issues need to be addressed explicitly as a key mainstream topic in the university present strategic planning exercise." (p.67)*

The evaluation does not, however, indicate how this is to be accomplished.

UEM Strategic Plan 1999–2003

EMU Strategic Plan 1999–2003 that followed almost immediately after the evaluation identifies, "*poor representation of women in the university community*" (p.18) as a major EMU internal weakness. As a result, equity as well as respect for diversity, in terms of gender, social class and regional disparities, is one of the Strategy Plan's 8 guiding principles.

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[1] Nor does the: *Continued Institutional and Research Support for Mozambique.* Sida Promemoria 2000-05-19

[2] At the Faculty of Medicine, this system seemed favoured by the faculty leadership, as two of four women on a long term scholarship abroad had opted to stay in Sweden and Norway, thus considerably contributing to the Faculty brain drain.

The Strategic Plan identifies the following actions to enhance the women's access to EMU:

a) awareness raising campaigns, particularly at secondary school level

b) balanced accommodation for both sexes in terms of quality and quantity

c) support to student mothers to successfully conclude their studies

d) combat of sexual discrimination in the teaching process.

To enhance women's participation, the plan identifies the need to:

e) improving women's access to science, technology and management posts,

f) encouraging women to participate actively in research,

g) guaranteeing equal access opportunities to senior posts

h) combating the sprit of self-exclusion among women

i) assuring women equal progression and development in the career structure and equal access to post-graduate scholarships
(Strategic Plan; p.55–56)

As will be noted, most of these recommended actions do *not* presuppose additional funding. What it takes is a conscious effort by administrative and other decision-makers to see and react to the under representation of women at all levels in the university system.

Strategic plan of Higher Education in Mozambique 2000–2010

Also the MESCT: Strategic plan of Higher Education in Mozambique 2000–2010 addresses gender inequalities both in its vision and as a guiding principle. In fact "*the increase of access and of regional and gender equity*" is one of Plan's three main focuses, but not further developed. Neither the financial implications nor the Strategic Scenario, Goals and Assumptions have any reference to gender or women, nor do the UEM-Sida/SAREC Agreements, Promemoria, Agreed Minutes and the like to which the present Evaluation team has had access. One important exception is the *Overview Study of the Higher Education Sub-system in Mozambique* which provides an overview also of the participation of women students in higher education.

Overview Study of the Higher Education Sub-system in Mozambique

According to the Agneta Lind and Adeze Igboeemka 2002 *Overview Study of the Higher Education Sub-system in Mozambique,* the proportion of women has increased in many faculties, but is still low not only compared to neighbouring countries, but also to the private tertiary institutions in Mozambique. Still, the study found that almost one third of Mozambican university students were women (2000), and not a quarter as earlier reported.[3] For UEM the 2001/2002 figure was 27%, 1% up from the previous year.

Several donors provide women with scholarship, but only the Dutch government seem to do so on a 50% level (the scholarships are simultaneously reserved for Nampula residents, thus addressing both gender and regional equity.) AusAid specify that as regards their 150 UEM scholarships, gender equity shall be pursued "whenever possible"[4], whatever that means. Also Norway and the Mozambican government earmark scholarships for women, but whether on an equity basis is not known. The report

[3] Of 1151 graduates, 391 were women (29%).

[4] The result is that of the 100 AUSAid scholarships offered in 2002, 35% went to women.

founds that only 198 women out of the female students from all 10 universities in Mozambique were on a scholarship during 2000/2001[5], a figure seems to have increased considerably by late 2002 (see below).

At UEM, the number of women students rose from 2000/2001 to 2001/2002 in spite of the fact that the number of male students dropped, thus increasing their proportion of the student mass from 26% to 27%. As compared to the female proportion of students at private universities in Mozambique a 1% increase is not impressive. When it is taken into consideration that the proportion of women at UEM has remained virtually constant throughout the latter part of last decade, there is no reason to believe in any radical increase in women's access unless special measures are taken to that effect.

Concerning the proportion of female teachers, the disparities between the public and private universities are modest.

Table 1: Students and Teachers by Gender at UEM, at all public universities and at private universities in Mozambique 2000–2001

Gender composition at Mozambican Universities	Students					Teachers				
	Men		Women		Total	Men		Women		Total
	No.	%	No.	%	No.	No.	%	No.	%	
UEM 2000–2001[6]	5 430	74	1 877	26	7 307	585	77	175	23	760
Total public universities	6 735	74	2 241	26	8 976	785	76	245	24	1 030
Total private universities	2 269	53	2 013	47	4 282	331	75	104	25	435

UEM efforts to increase gender equity and participation

The 2002 status of gender equity at UEM is as follows.

Table 2: UEM students in terms of faculty and gender

Faculty	UEM Students			
	Male	Female	% Females	Total
Agronomy	529	170	24,3%	699
Science	981	265	21,3%	1 246
Law	816	314	27,8%	1 130
Economics	665	197	22,9%	862
Engineering	1 437	82	5,4%	1 519
Arts	662	279	29,6%	941
Medicine	328	346	51,3%	674
Veterinary	135	94	41,0%	229
UFICS	298	156	34,4%	454
Architecture	154	16	9,4%	170
Education	72	50	41,0%	122
TOTAL	**6 077**	**1 969**	**24,5%**	**8 046**

Source: UEM

[5] Lind & Igboemka, p. 38

[6] Lind & Igboemka, table 1 – Students and Teachers by Gender at UEM as compared to other public universities in 2000–2001.

Presently it is only at the Faculties Medicine and Veterinary Services that women make out a fair proportion of the students. Even subjects and disciplines such as Arts, Social Sciences and Archives that have a substantial proportion of women among students and staff world wide, have not succeeded in balancing their staff. One problem in this respect is that many women (let alone their families) will hesitate to participate in sandwich- and more so full time masters and PhD programmes abroad. In this respect sandwich programmes with host universities close to home fit women better, as few will risk their marital happiness and even status in order to pursue post graduate education. It should be noted that this is, however, only a problem as long as there are a limited number of women to choose from. When the number of women student increase, there will always be some who will be thrilled to pursue an academic career with studies or courses abroad.

Table 3: Students and Teachers by Gender at UEM as compared to other public universities in Mozambique 2000–2001 and in Botswana, South Africa and Madagascar 1997

Universities/Countries	Students					Teachers				
	Men		Women		Total	Men		Women		Total
UEM 2000–2001[7]	5 430	74%	1 877	26%	7 307	585	77%	175	23%	760
Madagascar		55%		45%			71%		29%	
Botswana[8]		53%		47%			72%		28%	
South Africa		52%		48%			63%		37%	

It is not only in relation to private universities in Mozambique (Table 1) that women's participation is low at UEM, but also in comparison to universities in neighbouring countries (Table 3).

The recent World Bank Appraisal Report on the new credit for the Higher Education Project points to a constancy in the proportion of women in tertiary education in Mozambique since 1993. *"Thus there is a need to provide incentives and programs to ensure that a greater proportion of females enrol in public institutions, especially females from distant provinces*." (p.47) In the report the need to focus on the opportunities for girls at the lower levels of the educational system is also emphasised, as is the very low number of women from outside Maputo accessing the universities. Regional equity is however not the subject in this section. Here it suffices to underline that there is no contradiction between gender and regional equity.

It is possibly that it is with such data in mind that MHE and UEM have given gender equity a central place in their strategic plans (see. 4.1.1.2).

But the equity objective has not been followed up and continues to be disregarded even during the admission procedures, carried out by the Commission for Examination and Admission[9]. The large number of candidates indicates that if UEM wants to move towards gender equity, the Commission could simply open up for more women at the screening stage. It may be noted that presently there are no special programmes or earmarked funds to increase the proportion of women among the student mass, except at the Faculty of Engineering. The result, as underlined in the World Bank report (see above) is a continuous low participation of women since 1993.

[7] Lind & Igboeemka, table 1 – Students and Teachers by Gender at UEM as compared to other public universities in 2000–2001.

[8] The figures from Botswana, Madagascar and South Africa are from 1997. See: *Constructing Knowledge Societies: New Challenges for Tertiary Education*. A World Bank Report. Education. The World Bank. Undated, p. 43.

[9] Dr. Gregorio Filmino is the head of the Commission.

It seems that even the low proportion of women presently studying at UEM get less than "their share" when it comes to scholarships. This is the case both as regards the Sida scholarships and UEM scholarships for undergraduates. Of the 66 undergraduate scholarships presently funded by SAREC only 14 (21%) benefit women, while women get 361 (19,5%) of the 1846 UEM scholarships.[10]

The exception – Faculty of Engineering

The efforts made by the Faculty of Engineering to promote gender equity deserves special attention.

Faculty of Engineering had only 9 female students in 1998, i.e. 6% of the student mass. In 2002 the figure had risen to 24 (10%). With the attitude that "*Bringing more women into engineering is the best contribution that our faculty can provide to the development of the society without prejudice*" the Faculty embarked upon a programme to promote women's participation "*so to benefit and enrich human kind.*"[11] The process has been described in some detail in the Faculty report on the *Open Fund UEM-SAREC 2001/2003 Agreement* (p. 7.)

According to the report, one quarter of the Open fund, i.e. SEK 150 000, has been reserved for the equity programme for the three years duration of the fund (2001–2003). The activities initiated are:

- Awareness courses on gender related issues in the Faculty of Engineering. The courses are organised in collaboration with the Centre for African Studies and the Women's Forum. Course participants are faculty members, personnel and students. Focus is on human diversity as a factor of richness to culture and civilisation
- Twice a year Faculty Open Days –in fact one week – for pre-university female students who are provided with the opportunity to familiarise themselves with the various departments, and with female engineers.
- A Follow-up system, where students at the faculty are appointed as "god fathers and -mothers" to help new female students solve their academic problems if they feel a need for it.
- A Free-of-charge course, the Saturday School, takes science and technology to the community to show how suitable engineering can be for women. The focus is on using engineering skills to solve community problems.

One weakness of the programme was that due to lack of funds, the effort to recruit more women students had to be limited to the Maputo area. But the Faculty run a national competition to identify the best secondary school girl student in maths and physics. 11 pre-university schools participated and the winners were brought to Maputo and the Faculty. They stayed for one week and received prizes in the form of books.

To meet the UEM equity objective where gender is concerned, the concern and efforts of the Faculty of Engineering is well worth noting and could be used as a model by other faculties,.

Conclusion and Recommendations

Women continue to play a secondary role at UEM in terms both of access to university education and to research opportunities and resources. It is the view of the evaluation team, substantiated by the slow increase in the number of women students, researchers and teachers during the period under assessment that gender equity objectives *will not* be reached unless special effort be made to that effect. In this respect Sida/SAREC is in a unique position as a major UEM supporter.

[10] Australian aid presently provides UEM with 100 scholarships, of which women get 35%.

[11] Eduardo Mondlane University, Faculty of Engineering: *Open Fund Project* UEM-SAREC 2001/2003 Agreement, Maputo. P.

In the Sida Country Strategy for Development Cooperation with Mozambique it is stated that "*gender equality issues and conditions for women generally must be a major consideration in all development co-operation*." [12] The Sida/SAREC "Guidelines for Applying Institutions" from June 2000 brings the gender issue in as a specific criterion also at programme and project level.

In view of the fact that both Sida/SAREC and MHE/UEM have gender equity as a central objective, the evaluation team recommends that this priority be reflected and concretised in the Operational Plans of UEM and budgets and that these include verifiable indicators to monitor the implementation of the gender objective. The gender objective should also be reflected in the next Sida-UEM Co-operation Agreement. If no success is attained in this respect, Sida could consider earmarking part of Sida's support to secure the implementation of UEM's own Gender Equity Plan. Areas to be considered are:

- awareness raising campaigns, particularly at secondary school level
  The University Open fund and the Faculty Open Funds in faculties with less than 30% women student could be used for promotional activities among secondary school girl students on the model worked out by the Faculty of Engineering.
- balanced accomodation for both sexes in terms of quality and quantity
- support to student mothers to successfully conclude their studies
  The University Open fund could be used for accommodation for female students including the establishment of child care/kindergarten facilities for student and teaching staff mothers.
- combat of sexual discrimination in the teaching process
  A professional Counselling Unit for women students and teachers could be set up at the UEM campus. The Unit could advice on study issues, medical issues and provide counselling on sexual harassment issues. The Unit should be established in close co-operation with Nucleo da Mulher Academica – NUMAC, drawing upon their 10 years experience of women status and role at UEM.
- improving women's access to science, technology and management posts
  The University Core fund could be used for preparatory course in subjects like maths, physics and chemistry, for women seeking entry to the university.
- encouraging women to participate actively in research, assure women equal progression and development in the career structure and equal access to post-graduate scholarships
  The proportion of women students selected for donor funded, including SAREC, sandwich programmes and full time studies at a collaborating university should be increased
  It is also recommended that a certain share of SAREC scholarships for undergraduates be earmarked for women
- combating the sprit of self-exclusion among women
  UEM might consider making a small fund available to help female students organise themselves in order to discuss and address their minority status at UEM. A small fund may also be made available for NUMAC to enhance their counselling role vis-à-vis students and secondary school girls, and to keep up their gender advocacy role.

[12] Country Strategy for Development Cooperation with Mozambique January 1, 2002–December 31, 2006. Regeringskansliet UD, p. 24: "*Gender equality issues and conditions for women generally must be a major consideration in all development cooperation*."

Appendix VI
Exchange Policy, Money Transfers and Disbursement of Funds

Background

Over the years (i.e., from 1995 to late 2002), various problems have been associated with the transfers of funds and the respective reconciliations. In January 1998, the auditors, Coopers & Lybrand, were unable to provide an unqualified report because, amongst other things, it was impossible to reconcile the amounts disbursed by Sida to UEM during 1995–1998. This, in turn, was due to *(i)* costs related to the exchange transactions between Swedish kronor (SEK) to US dollars (USD) or British pounds sterling (GBP) onward to meticais and sometimes even back to SEK and *(ii)* the delays involved in the different transactions that resulted in losses due to exchange-rate fluctuations.

During most of the period from 1998 to 2001, the purchasing power of the kroner weakened progressively against the dollar. This meant a loss for Mozambique since, under the Sida program, the university imports equipment, much of which is paid for in dollars, and pays fellowships for its staff studying in the US or other countries with currencies that move with the dollar. To avoid this slide in the value of the Swedish contribution and to safeguard its value in dollar terms, university usually requests Sida to effect remittances to the university's local USD account.

Exchange Policy: Present Situation

Given that the university must deal with large sums in multiple currencies, three issues should be considered: *(i)* transfer and foreign-exchange fees, *(ii)* the consequent exchange-rate-fluctuation risks, and *(iii)* the simplicity or complexity of the reconciliation of these transactions for audit purposes.

Transfer and Foreign-Exchange Fees

The university has many dollar accounts with Banco Internacional de Mozambique (BIM), a bank owned by the government, the Banco Commercial Português, and the International Finance Corporation (IFC), a World Bank organization. BIM, in turn, maintains a kroner account with Svenska Handelsbanken, one of the largest financial institutions in Sweden, a fact bearing strongly on the conclusions and recommendations below. We are not certain, but BIM probably holds its dollars in a big US bank in New York.

Remittances from Sida are exchanged, *for a fee,* from kroners into dollars and remitted, *for another fee,* to the university's BIM account. The university then distributes these funds to the separate accounts for the individual projects except those that it still administers, and the finance directorate performs the general financial supervision of the projects and their bank accounts. Unless payments are made in dollars, this implies *two more fees* to exchange dollars for another currency and then to remit then to the recipient. Moreover, the banks charge additional implicit fees in the differentials between foreign-exchange buying and sell rates. So, what can the university do to *reduce drastically the money lost* due to these *multiple commissions*, commis-sions that are often much higher in Mozambique than in industrialized countries.[13]

[13] Theoretically, the university might set up a SEK account in Sweden and a USD account in the United States and control it through the Internet. This would be the cheapest option since it would avoid the typically high money-conversion charges, wire-transfer fees, and taxes on wire-transfers sent abroad (0.4%) applied by Mozambican banks. It would, however, incur insurmountable problems for security and control and is **not recommended.** Moreover, such a solution may well be illegal for a government institution like UEM.

Exchange-Rate and Inflation Risks

During the period between receiving and disbursing funds, the university incurs exchange-rate-fluctuation risks unless the money is converted in the beginning to the currency to be used later when purchasing goods or services. For example, in the late '90s, the university lost money because it kept the Swedish aid in kroner, a currency that at that time was rapidly losing value against the dollar, the main currency for the university's international payments. During that period, the dollar was getting stronger. Now it is weakening but who knows what it will do in the near future.

Wanting to avoid that risk, the university asked Sida/SAREC to remit all funds in dollars. That is fine for an amount up to the total expected dollar expenditures, but the remaining expenditures are made in kroner and other non-dollar currencies. For kroner expenditures, changing from kroner to dollars and back to kroner is senseless and expensive. For non-dollar, non-kroner expenditures, the exchange first to dollars just incurs fees for the exchange and transfer of funds while merely substituting the *unknown risks* of keeping money in kroner to that of keeping it in dollars. The only way to guard against that is to buy the target currency immediately. With some currencies (e.g., rand and metical), that strategy can lose big due to the high inflation suffered if the gap is large between the conversion and disbursement dates and the interest rates do not compensate for inflation.

Reconciliation: Simplicity and Transparency

To reconcile this for auditing purposes and get the figures to agree in a consistent way, Sida and UEM have fixed the SEK/USD exchange rate at that prevailing at the time of the first disbursement and used this rate to calculate all future transactions during the program period. Given the numerous money transfers, exchange transactions, and time spans, it is difficult and tedious to reconcile the figures. The auditors, UEM and Sida, all spend many man-hours reconciling the accounts.

It is simpler and more transparent to keep all the money in kroner, exchanging it only when ready to pay a supplier. This simplifies tracing the flow of money and avoids various transaction costs. On the other hand, it incurs the exchange risks that are easily avoidable, especially for dollar expenditures.

Recommendations

Though many ways exist to minimize foreign-change risks and transaction costs, the simplest solution is for the university to utilize the fact that BIM has a kroner account with Svenska Handelsbanken. Thus, the university can request BIM to set up a kroner account for the university. The university would then request Sida/SAREC to transfer kroner to BIM's account with Svenska Handelsbanken in favor of UEM for an amount equal to the non-dollar expendi-tures projected under the program. This will be a simple transaction in kroners only. No **foreign-exchange transaction** will have occurred and **no fees** should be charged. The rest of the aid would go to the university's dollar account in BIM, ready to cover purchases made in dollars. This would avoid the conversion fee to dollars at least for the total non-dollar purchases made during the program.

The number of accounts with BIM should continue to be reduced, a process that the finance directorate has already begun.

Appendix VII
Agricultural Research and Swedish Support

Immediately after Independence involving the massive departure of the Portuguese settlers, the Nordic countries decided to prevent the possible collapse of the agricultural sector in Mozambique. To this end a joint Nordic/FAO mission was sent to Mozambique in 1976 and soon after MONAP, the Mozambican Nordic Agricultural Programme was borne. This was a unique endeavour involving all the Scandinavian countries including Iceland. Sida managed the Programme on behalf of the Scandinavian countries.

While the UEM was responsible for academic research training in the agricultural sector, applied research, was carried out at:

INIVE (Veterinary Institute)

INIA (Crop Production Institute)

These two institutes were under the Ministry of Agriculture (MINAG). In addition two other research entities existed, CEF, Forestry Experimentation Centre and IPA, Institute for Animal Promotion, also under MINAG. For many years MONAP accounted for more than ninety percent of the foreign exchange of MINAG. Support to agricultural research and research training involving INIVE and INIA was included in the MONAP programme.

At the middle of the 80s the Nordic countries decided to discontinue their support through MONAP and ongoing programmes and projects were continued in various bi-lateral agreements or phased out.

Apart from this Sida support to agricultural research, SAREC, which at that time was an independent public entity, commenced supporting the UEM in 1978. This support was at that time mainly confined to the social sciences. Sida[14] took over support activities which had been provided through MONAP to agricultural research and research training.[15]

Since the merger in 1995 SAREC has taken over most of the activities previously supported by Sida, though within the new organisation the core support provided by the previous Sida was mainly handled by the Swedish Embassy in Maputo. In 2002 it was decided that SAREC would be responsible for this part. Thus in this year SAREC assumed responsibility for the support provided by Sida to UEM. Meanwhile Sida had initiated support to higher education through the newly formed Ministry of Higher Education, Science and Technology, MESCT. Support has also been provided to the faculty of agronomy of the Catholic University, located in Cuamba in the Niassa Province in northern Mozambique. The Catholic University has its main premises in Beira.

Swedish Support to Mozambique is governed by a Country Strategy for Development Cooperation. The ongoing Strategy ended this year and a new one commenced for the period 1 January 2002–31 December 2006. In 2000, The Institute of Social Studies in The Hague made a comprehensive evaluation of Swedish support to Mozambique. It highlighted the need for providing more support to the rural sector as a means of alleviating poverty.

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[14] In 1995 the various Swedish public aid entities were merged into Sida and the previous Sida ceased to exist. SAREC became a department within the new organisations. To what extent Sida/SAREC has an over-all responsibility for higher education is still subject to discussion.

[15] Danida also took over some activities related to agricultural research.

In this context agricultural research is an essential component for increasing labour productivity in agriculture. A series of studies has been produced since the beginning of the 90s highlighting the need for profound changes.[16] All studies pointed out that Southern Mozambique has a relatively low developmental potential vis-à-vis the central and particularly northern Mozambique. A major part of the agricultural researchers were concentrated to Maputo and having four "research institutes" was not compatible neither with the weak research capacity nor with the need to have a farming system approach to address the needs of the peasants.

Consequently, these studies all recommended a decentralisation of agricultural research to the provinces and that the existing institutes are merged into one. The implementation of this has been slow, jeopardising the implementation of the national poverty alleviation programme.

As was mentioned in the previous evaluation, Sida withdrew support to support to public entities providing support to agricultural sector as a result of irregularities in the use of funds provided to a National Emergency Seed and Tools Programme after the signing of the peace agreement in 1992 ending the civil war. Sweden then opted for providing support to development and poverty alleviation outside the realm of the Central Government and focus more on regional development in one province. It was finally decided to choose Niassa in northern Mozambique.

Sweden has recently commenced providing support to a major sector wide programme (SWAP) in the agricultural sector. It is called PROAGRI. While Sida originally did not participate in PROAGRI it monitored its development closely.

Sida is providing support to agricultural research through PROAGRI and within Sida responsibility is with the Department of Natural Resources and the environment, NATUR. There is not yet any decision of who is responsible for Swedish support to higher education. Finally SAREC has a major mandate for supporting research capacity building. This support has primarily been given to UEM.

Agricultural research and research capacity building has a major bearing on Mozambican development and poverty alleviation. Sida has yet to formulate a coherent strategy in this respect. While experiences with PROAGRI are mixed, there is a need to reach a broad agreement with key donors on agricultural research and research capacity building in line with the policy agreements of the OECD DAC committee. Sida can play an important role in this respect.

In general the SAREC model for research capacity building has proven to be more successful, though not cost effective, than the Sida budget support to various activities of UEM.

INIVE

Support to INIVE was taken over by SAREC. It included 4 female post graduate students.

- Claudia Alice Baúle. Commenced her MSc studies in 1991 and got her PhD degree in 2001. She has remained in Sweden where she works as a senior scientist at the National Veterinary Institute of Sweden. If the right research environment would be available in Mozambique, she would return to Mozambique.
- Alsácia Atanásio. In 1989 she commenced studying for a MSc with MONAP funding. She commenced her PhD studies in 1995 and got her degree in May 2000 (Medical University of Southern Africa). She has returned to Mozambique.

[16] See for example 1992 study and the KIT study from 2000.

– Rosa Felizarda da Costa. Commenced her PhD studies in 1995. For the SAREC support 2001–2003 she got a final grant to conclude her degree. In the plans for 2001–2003 it was stated that she would get her PhD degree in 2001. She has still not concluded her training.

– Sara Achá. Commenced her MSc studies with MONAP funding in the UK in 1989. Money for her PhD studies was allocated already during the fiscal year 1995/96. Apart from the usual difficulties faced by Mozambican students there were problems in securing adequate supervision. One of her previous supervisors left the university in Sweden and another one retired. For the SAREC support 2001–2003 she got a final grant to finish her degree. Her present supervisor in Sweden considers that she is a very good student and that her research is in many ways unique and that she should get the opportunity to conclude her studies.

All four professionals have published their research internationally and their research results have a potential for making an impact in Mozambican development.

All of the students finished their MSc degree within a normal time frame. This was an important accomplishment of MONAP/Sida/SAREC support. The PhD training has been prolonged for many years. After many years of studying two of the candidates have not yet concluded their degree. One of the students remained in Sweden after finishing her degree. The only one who has returned finished her studies in South Africa. The results cannot be considered as satisfactory.

The research themes address problems important to Mozambique.

Recommendations

No new support to INIVE through Sida/SAREC. Provide incentives for the students to conclude their PhD degrees and return to Mozambique. This has to be done within the framework of the Agricultural research institute to be established. Sida would need to monitor this development. Some flexible funding might be necessary.

Faculty of Veterinary

The project from the previous period, 1998–2000, was abandoned. A new ambitious project has been started involving many researchers. Contacts have been made with South Africa.

Some 13 students visited the University of Pretoria at the beginning of the year. The Team met with Prof. Jacob Boomker and Prof. Estelle Venter. According to their information there is a need for English training of Mozambican students. They were concerned that none of the students had registered for the MSc programme. In fact, they felt that the Mozambican students were not sufficiently motivated. (Prof. Boomker who had been supervisor for Dr. Alsácia Atanásio commended her for her commitment.) The University has students from many African countries and they were particularly impressed with the good quality of the Ethiopian students.

Faculty of Agronomy

Since the end of MONAP the faculty of agronomy has received a lot of support from Sida – Sida. This has been funded through the country frame (landramen).

Sida support to the faculty of agronomy
(1000 SEK)

Agreement	Spent 1999	Planned 1999	Planned 2000	Balance
15 000	3 318	3 318	5 000	6 682

What has been accomplished?

According to the 1998 Evaluation, two Masters programmes were to be started at UEM with support from SLU (Swedish University of Agricultural Sciences), based on a project document dated December 1996. Two specific areas of support were identified, Agricultural Economics and Agricultural Engineering. These programmes were never implemented.

Meanwhile, the Faculty of Agronomics decided to start a MSc programme in Agricultural Development. The programme contains four major areas:

- Economic and agrarian policy analysis;
- Agribusiness management;
- Communication and rural transformation; and
- Natural resource management.

It is a two year course and the last year is dedicated to writing a MSc thesis. The course aims to *produce a 'practical academic' who is capable of applying theoretical perspectives while analyzing the complex agricultural reality and who has developed appropriate skills in the four specified areas of agricultural development.*

The MSc course is cooperating with Wageningen University and Larenstein University in the Netherlands, Sokoine agricultural university in Tanzania and Lund University in Sweden. It has also plans to establish contacts with India since the farming systems are much more similar to Mozambique than the experiences from the North.

The transfer of the responsibility from Sida, NATUR to Sida/SAREC involved a fundamental change in methods of work and institutional culture. For the Swedish Agricultural University, SLU, it meant that the payment for services was much reduced in scope. This complicated matters since the budget frames of Swedish universities went through various structural reforms. At SLU pressures were high that costs had to be covered.

While the original intention of UEM and SLU was to establish research cooperation, it soon became evident that there was a very limited research capacity at UEM. While SAREC's experiences 1975–1985 led to a policy of research capacity building, SLU became more involved in undergraduate teaching. The previous Sida support had a strong focus on teaching and on providing infrastructure support, books and also providing field experience to the undergraduate students.

With the transfer to SAREC more emphasis was laid on research capacity building and teaching of undergraduate students was out of the question. Funding a Masters programme with a focus on training professionals was also out of the question for SAREC because of its focus on research capacity building. Having SLU acting as an institutional consultant was alien to SAREC's culture. SAREC's focus on research capacity building somewhat clashed with the faculty's belief that it would be possible to obtain funding for relatively loose research projects.

The Team met with Alfredo Nhantumbo, Agricultural Engineering Research Program at UEM and also with Alfredo de Toro presently at SLU. He taught many years at UEM. We also met with Johan Toborn at SLU.

In the light of these discussions, at UEM, at SLU and with SAREC officers, it seems very unfortunate that these mainly Sida problems, involving the transfer of responsibility from NATUR to SAREC, were not adequately dealt with. Decisions were delayed, misunderstandings were frequent and expectations were frustrated repeatedly.

Appendix VIII
Management of Research and Core Support

Sida/SAREC aid to UEM comprises open funds, core support, and direct research-project support (Annex Table 1). Though overlapping, each component has its own objectives and management system. A second overlap—that with the support activities of the government and numerous donors (17 in 2001) — creates additional inefficiencies as the university administration tries to cope, responding to the divergent managerial and financial reporting demands of numerous donors (Annex Table 2). On top of this, the university has few funds (e.g., own receipts, the Swedish open funds) that are truly free to be applied where needed (Annex Table 3).[17] Thus, while suffering from overlapping administrative systems for different funds, the university frequently confronts dire gaps where funds are urgently needed but not available despite the existence of underutilized funds tied to other activities.

These gaps, overlaps and binds—in large part the result of donor exigencies—create a ponderous bureaucracy invigilating activities, responding to and hosting donor delegations, and churning out reports with different formats and timing but often similar content. Moreover, restrictions on paying competitive wages to key personnel (teachers, managers and accountants) undermine the university's ability to implement more efficient, technology-intensive solutions for financial and academic management and to enhance the lecturers' and professors' dedication to teaching and research. Under such strictures, financial management becomes expensive and cumbersome, and strategic thinking and analysis, incomplete and slow to respond to needs. And the donors complain, often not perceiving that the creature some accuse of being slow moving, slow eating and slow reporting is partly their conception, good but tightly trammelled—largely by the donors themselves.

This restrictive framework also inhibits the administration of the funds from Sida/SAREC. Thus, despite significant improvements, the university's financial and academic management of Sida/SAREC funds reveals inefficiencies, some of which derive from the rules and procedures that Sida/SAREC imposes. Below, we discuss financial and academic management separately though each has numerous repercussions on the other.

Financial Management: Questions of Delays, Underspending and the Efficient Utilization of Funds[18]

At different stages of the Sida/SAREC program, various organs are involved. The most problematic step, the initial approval of each three-year program, involves many stake-holders— Sida/SAREC, the University Eduardo Mondlane, and the Mozambican Ministry of Foreign Affairs and Cooperation— and the approval process is largely sequential, encompassing often unforeseen delays. Later, during the implementation phase, the issue of whether the university is able to spend the available resources arises and, if not, whether the subsequent remedial measures are appropriate. These issues—initial delays, subsequent underspending, and interim remedies—are interrelated. A fourth issue is belated reporting, and a fifth, the efficiency with which funds are utilized.

[17] In 1996, own receipts financed only 4.6% of expenditures and, in 2001, just 10.1%, an increase but still small. Most other funds are tied to specific budget lines (Annex Table 3), and even Sida/SAREC's core support has only marginal lattidude as presently administered.

[18] This section focuses on delays, underspending and efficiency instead of the detailed issues of accounting, prevention of fraud, and the protection of assets.

Delays in Disbursals, Underspending of Resources, and the Applied Remedies

Detrimental delays can be caused by any or all agents involved in approving, disbursing and using the initial or subsequent annual grants, i.e., Sida/SAREC, the Mozambican government, the university's central administration and faculty directorates, and the individual researchers or ultimate organs receiving funds. In this regard, an examination of the recent problems arising in 2001, the first year of the latest Swedish accord with the university is illustrative, a year when, despite numerous problems, 76% of the available funds were spent in the program year (Direcção de Finanças 2002:20).

Negotiations for the 2001 to 2003 Sida/SAREC assistance for the university finished in February 2001 though it took the Ministry of Foreign Relations till May to agree formally and allow the accord to be signed and sent in proper form, on June 26th, to the Swedish embassy and Sida/SAREC.[19] Then the Swedish embassy delayed till *mid August* in sending the first tranche of the core-support funds for 2001 to UEM, and Sida/SAREC delayed till *mid September* in sending first tranche of the project-support money for 2001. The long hiatus in the program's continuation caused many research[20] and core-support projects to halt though some projects did continue because they still had funds left over from 2000.

Having just received the first tranches for core and project support in September 2001, the finance directorate faced a dilemma. According to the UEM-Sida contract, the university could not request the second tranches for core and project support till 70% of the first ones had been spent. Though that clause was eventually waived, the finance directorate was only able to request the second tranche in late November that year. That delay plus the frequent three-to-four-month disbursement delays by Sida/SAREC guaranteed that the second tranches (for 2001) would not be received till sometime in 2002, a delay that would gravely prejudice that year's disbursements.

With the request submitted, the directorate imagined that the second tranches for 2001 were forthcoming and, obeying the 70% rule, delayed requesting the first tranche for *project support* for the next year, 2002. Given this delay, in early 2002, Sida/SAREC decided, in consultation with the university, to redistribute the second project-support tranche for 2001, paying it out in four equal amounts for the first and second halves of 2002 and 2003. More time was lost, and the funds for the renegotiated second tranche of 2001 (i.e., one quarter thereof) plus the first tranche of 2002 only arrived in May, *six months* after the initial request of late November 2001, a delay that imposed a financial drought and stopped many projects (Annex Table 4).

And then lightning struck. Complaining of underspending and a failure to get the revised proposal for Core Support till September 2001, Sida/SAREC suspended all Core Support for 2002, apparently not recognizing *(i)* that its *own delays* and *administrative reorganization*[21] had created new problems and greatly inhibited the university's ability to spend the funds in a timely fashion and *(ii)* that, with a little more time, the university could have used the funds productively. Indeed, despite severe delays in the transfer of funds largely caused by miscommunication and Sida/SAREC's (three-months delay till September

[19] It remains to be seen whether the autonomy granted the university under the 2002 law on higher education will shorten the approval cycle on the Mozambican side.

[20] Such problems were confirmed, for example, by researchers in engineering and physics.

[21] Before the consolidation of SAREC into Sida, core support was channeled through the Swedish embassy, and it continued thus for one extra year, 2001. "For the remaining two years [2002 and 2003], a proposal should [have been] submitted by UEM during 2001." Despite reminders, the proposal was only received "in late September 2002 and was deemed in need of revision by Sida. As the proposal needs to be approved by Sida/SAREC's preparatory committee and then by Sida's Research Council (whose last meeting for 2002 was in the beginning of November), it was judged … that the proposal could … [not] be revised and then approved in time for payment to be made before the end of the financial year. Moreover, as the money was not agreed upon, it could not be put forward for payment during 2003" (letter from Paul Dover, 1/1/2003).

2001, then six till May 2002), the university had spent or committed 90% of the funds[22] by the end of October 2002, a period of 13 months, and expects to spend 100% by year end (Annex Table 4).[23] At that rate, even with the big delays in the receipt of the funds, the university demonstrated its ability to use the money. Thus, the argument that the university is underspending its Swedish aid is valid only in the most legalistic sense, an interpretation that insists on adhering strictly to the program year when Sida/SAREC itself contributes significantly to the delays that push spending into the next year and make the funds for the program year *appear* to have been underspent. In these circumstances, *denial of all core support* for 2002 was an *unfortunate outcome* for all parties and should have been *avoided.*[24]

Between 1998 and 2002, the overall spending/receipts ration has been *97.8%.* The yearly rates were 97% in 1998, 78% in 1999, 117% in 2000, and, for 2001, 90% (including commitments) by end of October 2002,[25] a year in which the first tranche came in September 2001 and the second tranche, in mid May 2002, i.e., nearly a year late. These figures reveal considerable absorption capacity though, for various reasons, sometimes the funds are applied *outside* the *original program period.* For diverse reasons—many not of its own making—the university is sometimes slow in getting and consuming core-support funds, but consume them it does. Thus, for these funds, the accusation of underspending is mostly an illusion. Slowness, sometimes yes, but not underspending.

One fund that *has* been slow in utilizing its resources is that for laboratory support. But the problem can be exaggerated. For this fund, the university is often slow in the beginning, but has always ended up utilizing nearly all the available resources. Nevertheless, an evaluation of the causes for this slowness is warranted. Presently the allocation of funds for laboratories involves a two-tier bureaucracy. Faculties devise and submit proposals, and the university's scientific committee rates them and selects what it deems best. Given this procedure, the bulk of the money is not spent till nearly the end of the relevant period. Three complementary solutions might help to reduce the delays and cut the system's administrative overheads. *First,* UEM's scientific director should inspect the laboratories in the faculties and centres and encourage directors to turn in proposals for the purchase of laboratory equipment well before the start of each new program year. *Second,* part of these funds could be distributed to the faculties as additional, open funds free to be spent on anything, including laboratory equipment. This increase in the fungibility[26] of resources would be useful, especially in some faculties, since freely

[22] Both the university and Sida/SAREC should count major expenditure commitments—e.g., for laboratory equipment—when calculating the expenditure ratio for a period. This is analogous to using accrual instead of cash accounting.

[23] Data from the finance directorate.

[24] The present contract between UEM and Sida/SAREC states: "Allocations for each year should be used for activities the same year. The balance will be deducted from next year's allocation." Given the difficulties of programming expenditures on a calendar basis due to problems caused by both parties and due to nature of certain expenditures, this clause should be rewritten to eliminate the drastic implications incurred if expenditures are delayed into a second year. Indeed, though not written anywhere, SAREC *does* allow expenditures to run over six months into the next year. This praxis should be formalised in the contracts and extended to a full 12 months, till both sides can reliably streamline their request, approval and disbursement procedures.

[25] A letter, dated 17/10/2002, from Sida/SAREC to the rector of UEM, complains that "the financial statement of 4/9/2002 shows a balance of 4.7m SEK, which is **7%** utilization of funds". But that statement was for balances as of 30/6/2002, that is, just a few days after UEM got the first tranche for 2002 plus a quarter of that for the second semester of 2001. To complain about underspending a couple of days after the money was sent seems, perhaps, a little unfair. Four months later, the situation was nearly the opposite. As of 31/10/2002, UEM had achieved a 76% utilization rate on a cash basis for core support and **90%** on an accrual basis.

[26] Resources are *fungible* when they may be allocated freely to any purpose. *Fungibility,* however, describes a situation where an institution has more projects than funds and some of its funds are **tied** to specific projects while other resources may be allocated freely. For example, when it receives additional funds that must be used to finance X, a project previously financed by freely allocatable funds, that new money is also said to be fungible. This means that, though the financier may think that it is paying for project X, in fact, its money frees up resources that enable the institution to pay for a totally different project Y that was previously denied funds. Thus the new money gives **birth to Y, not X,** despite the financier's illusion. His supervision may help or hurt X, but his money created Y. When an institution has a large amount of freely allocatable resources, it

applicable funds have great utility in an overly constrained system replete with categorical and temporal restrictions. *Third,* a portion of the laboratory funds could still be distributed centrally, especially if a medium- and long-term strategy for the development of such infrastructure were adopted.

Evidence also reveals that many research coordinators are quite slow in spending their resources. Available data, however, may exaggerate this since the planning horizon for projects often goes beyond a year and the planned expenditure stream is seldom uniform over the years. Still, as of 30 September 2002, *only 31%* of the faculty-level research and open funds had been spent (Annex Table 6). Though the results vary from faculty to faculty (e.g., science, 46%; engineering, 17%; veterinary science, 7%), the overall situation is dismal. This data suggests the need for more latitude to *shift funds quickly* from slow to fast spending projects or even to new ones. In our opinion, this would best be the responsibility of the faculty directors albeit with clear guidelines for how to determine when delays are excessive and unjustifiable.[27]

The low spending rate for research projects also points to another problem. Nearly everyone we talked to at the university stressed the need for incentives to encourage research because the high wages and consultancy fees available in the private and NGO marketplace divert staff from academic research for which they earn little or nothing. As one eminent local researcher pointed out, people working for a masters or Ph.D. are often motivated to initiate and finish research in order to get their degrees. But, as the university succeeds in getting more of its staff to obtain a Ph.D., that very success causes a new problem. Upon getting their Ph.D.s, such staff lose the "degree anxiety" that once propelled them to conduct and finish research. Without that and lacking other incentives to do research, many shift their attention to remunerative, non-university endeavours.

What is the solution? Would honorariums help? Some donors seem to think so. For example, to partly counter those tendencies, the Italian aid program pays researchers an honorarium of USD 250 to USD 500 per month for *completed* research projects, and the local Italian manager believes that this stimulus has been very helpful. Initially the Italian program gave researchers a flat monthly honorarium, which proved insufficient to motivate recipients to finish their research. Some took the money and then did not produce. Now the honorarium is only paid for *completed research.*[28] Similarly, the International Food Policy Research Institute offers research grants, including a USD 100/day honorarium upon *completion* of the research, and the African Economic Research Consortium pays researchers "between USD 500 and USD 1500 depending on the size of the grant and the number of researchers per grant", but only upon completion of their project. AERC's "grants are paid in two tranches and are peer reviewed within specified time periods and, hence, pressure [exists] to complete within the period in addition to the honorarium. The evidence is that our projects are completed on time with a *failure rate* at the final stage of *less than 2%***."**[29] One aspect that surely contributes to AERC's success in producing good research by young professionals throughout sub-Saharan Africa is the intense evaluation by peers that the proposals and research results undergo before acceptance, payment and publication. Under such a system, quality shines and is widely recognized, and fraud is nearly impossible.

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has great flexibility though some financiers may tie their funds to specific activities. Tying is only completely effective when the financier insists on funding a **low priority projects** that would otherwise **not** exist.

[27] In May 2002, a Sida/SAREC-UEM workshop vested faculty directors with more authority to manage projects but, in our opinion, they should have even wider authority so long as they are given the required managerial resources, e.g., good accountants and infrastructure.

[28] Interview with Tiziano Cirillo, Cooperação Italiana, UEM, 29/11/2002.

[29] Letters from William Lyakurwa, executive director, African Economic Research Consortium, November 2002 and 4 October 2002.

A further problem arises if the university wishes to promote expensive, integrated research programs. For example, Sida/SAREC grants, though sometimes large, forbid honoraria. This restriction, however, can only discourage people from presenting large research proposals because, if nothing else, of the difficulty in agreeing to coordinate such programs for *gratis*. Truly, the issue needs a reevaluation.

Another factor that may hamper faster spending, especially toward the end of a program year, is the present interpretation applied for the administration of core support by Sida/SAREC. Though, originally under Sida, core support was supposed to be funds that the university could use as it saw best, core support is perceived increasingly as a program comprising various projects whose funds may not be reallocated without the donor's approval, more in the spirit of SAREC's traditional practices for funding research projects. Each line is now treated like a separate project. Administrative arthritis has set in, distorting the original concept of flexible aid. Unfortunately, the university has passively ceded to this interpretation though, we believe, it should be challenged and, indeed, reversed since it represents an unwarranted step backward toward less trust and more donor controls rather than the gradual turning over of most aspects of administration to the university. This rigidity inhibits the university from applying the funds quickly and more productively, especially when critical shortages develop that cannot be covered despite the existence of idle funds tied to specific projects.

Late Reporting

The recent decision to allow the university to submit its semi-annual and annual reports even if some data is missing has helped to focus attention on the audit reports, apparently the main culprit for the delayed submissions. The delays in the preparation of the external audit reports are worrisome. By agreement, they are supposed to be submitted in March together with the annual report for the previous year.[30] As of November 2002, however, the audit report for 2001 was only in draft form still subject to a round of reviews before submission. In this regard, two questions arise. Why the delays? And is the March submission deadline realistic?

Given how the university functions, with many staff taking vacation during January, it is not reasonable to expect the auditors to begin work in early March.[31] Once started it takes them two months to do the fieldwork, two to communicate and verify preliminary results through numerous contacts with individual researchers and others, and one month to write the report. So, at earliest, the fully audited report for the previous year can be ready by August, not March. Setting March or even May as the deadline only causes friction, frustrations and wasted time in communication about the inevitable "delay". *Unaudited* reports can and have been presented at a far earlier date, for example in April or May, and that practice can continue.

Though a revised date is needed, that would not fully resolve the problem. Even if the date were August 31st, recent practice suggests that the university would not generate the report on time. Why? The answer points to *(i)* the terrible organization of the accounting for research-project funds by project coordinators, *(ii)* the lack of skilled accountants in the faculties, *(iii)* the lack of a computerized accounting system integrating the finance directorate with the faculties and other organs, *(iv)* the often belated start of the auditors' work, and *(v)* their waste of time due to insistence on unnecessary documentation.

– *Poor Organization of Accounting for Research Funds.* The research funds have three administrative systems (research projects funded directly by Sida/SAREC, others by the university-wide open fund, and others by the faculty open funds). Moreover, in an effort to speed up disbursements, as of 2001, the finance directorate set up more than a 100 individual bank accounts, one for each project coordina-

[30] For the 2001 audit report, an exception was made to allow it to be submitted by 15 May 2002.

[31] In 2001, PricewaterhouseCoopers did not begin the work till the beginning of May!

tor. From an accounting perspective, this was a disaster. Moreover, the new system both pleases and irritates researchers. Though happy with having ready access to their money, they are academics, not accountants, and often loathe the associated paperwork.[32] As a result, the finance directorate spends much time communicating with them to extract the required accounting and documentation and, when that fails, with the faculty directors to get them to pressure the project coordinators to cooperate. Albeit laborious and very difficult work, the directorate usually gets what it needs from all but two or three coordinators given grants directly or from the faculty-administered open funds. The directorate attributes this to the faculty directors' ability to persuade or coerce reluctant coordinators to conform.

That leverage is absent for the grants given out by the university-wide open fund and, without pressure, many of the research coordinators just do not provide the required documentation. The situation is so bad that the finance directorate doubts that the audit of these funds for 2001 will ever be fully complete. For that reason, the directorate itself advocates—and we concur—that all these individual bank accounts should be **consolidated** into **one account** for each faculty, supervised by the faculty administrator and accountant. Thus, research coordinators would requisition funds directly from the accountant, who would demand the requisite documen-ta-tion, write the check, and present it together with the petition and documenta-tion to the administrator for authoriza-tion and signature. This system is used in the Faculty of Veterinary Sciences, and reportedly, it works well. After turning in a request, researchers obtain their funds usually within two or three days. The auditors too have a much, much easier and faster job under this system.

Consolidated bank accounts would also permit faculty directors to spot quickly the slow spenders and, if given full authority, reallocate funds to existing or new and worthy projects. Under the faculty open fund, the directors have full authority to distribute and redistribute funds among projects though this is a power seldom exercised. That authority does not exist all for projects financed directly by Sida/SAREC or the university-wide open fund. Under the former scheme, Sida/SAREC must approve any reallocation between projects; under the latter, the university's scientific committee retains that authority.

– *Lack of Skilled Accountants and Integrated Computerized Accounting Systems.* Largely due to the uncompetitive salaries paid by the university, the quality of the accountants employed in the faculties varies greatly and is generally far below what is required. This slows the system, creates vulnerabilities in the system and, unless resolved, complicates the task of implementing a university-wide integrated computerized accounting system.[33] Alternatives need to be evaluated, including *(i)* the topping up of salaries in order to hire better qualified accountants able, in some cases, to handle more than one faculty and *(ii)* the outsourcing of accounting services.

The university's lack of reliably available funds to supplement salaries and, thus, employ and retain key personnel in the finance directorate[34] menaces the considerable improvements achieved by its present team of talented young economists and financial managers over the last few years. The Ford

[32] The finance directorate may now advance funds ahead of schedule to quick-spending projects. This was a felicitous and widely applauded change that alleviated bottlenecks, and many reported that, in 2002, the system improved greatly.

[33] The forthcoming tender request for the computerization of the university's accounting system envisages installing an integrated computer package for the finance directorate with links to faculties and other organs. To run well, this system will need trained accountants to tend the financial activities of the major faculties and organs. In today's market, such people insist on salaries of about USD 500/month. Since a good accountant can tend several small faculties, the finance directorate figures that seven skilled accountants would suffice for UEM's 12 faculties whereas now each faculty has a technician paid roughly USD 100/month. The difference is just USD 2,300/month to employ adequate personnel to run a modern system appropriate for a university with a multi-million dollar budget.

[34] A similar problem exists in UEM's Planning Office.

Foundation's funds for salary enhancements have ceased, and, month-to-month, the financial director has to beg and dip to scrap together money for salary supplements. If the problem is left to fester, the team may well disband, lured off by handsome offers from NGOs and the private sector.

– *Slow Start of External Auditors Work.* The auditors often start their work several months after the ideal date. For example, in both 2001 and 2002, they started the fieldwork in May! In part, this is the auditors' fault because they claim to be too busy auditing other institutions to be able to start the university's accounts on time. The university is also at fault because of the difficulties it encounters getting all the documents ready for review by the auditors.

– *Insistence on Needless Documentation.* The auditors and the finance directorate also waste time trying to get receipts for the monthly subsistence allowances paid to scholarship recipients. Imagine: getting receipts for the beans and toilette paper that a student buys! Strangely, the finance directorate doubts its authority to simply declare such items exempt from accounting. Even if this were so, it could, in a flash, gain Sida/SAREC's approval to exempt students from providing receipts for items bought with funds given for their subsistence allowances. Thereafter, the finance department would merely inform the auditors to ignore such items.

Recommendations

Crucial recommendations that will profoundly affect the efficiency and efficacy of Swedish aid to UEM are listed immediately below. A separate section contains recommendations concerning administrative details and proposed studies though, in many cases, "the devil is in the details", and those details are causing major disruptions.

Financial Management: Questions of Delays, Underspending, and the Efficient Utilization of Funds

Delays, Underspending and Remedies

– Funds for core support should be clearly defined as funds to be freely applied as the university deems best in support of its *Strategic Plan.* Though the university should duly account for their use, it should not have to negotiate with Sida/SAREC every time it wants to reallocate funds for a new purpose. Rather, it should make one annual report justifying their application.

– To unify and simplify the administrative systems for research grants and laboratory equipment, all funds allocated for this directly by Sida/SAREC or by the university-wide scientific committee should be transferred, preferably, to a single bank account in each faculty. The faculty director will then be responsible to ensure the efficient use of these funds and should have full authority, under guidelines to be developed, to redistri-bute funds from projects unable to utilize their resources to others—existing or new—that are scientifically meritorious and show promise of being properly managed. Faculty-level open funds should also be deposited into that account, thus ending the present anarchy of around 150 bank accounts for individual projects.

– Given the propensity of all parties—university, government, and Sida/SAREC—to take an unpredictably variable time to approve new accords, the university and Sida/SAREC should *start negotiations in February* of the last year of an accord to guarantee the continuity of funding for all projects. Moreover, to reduce the frequency of such negotiations and the consequent uncertainties and interruptions and to lesser the administrative burden on all parties, the agreements should be for at least *five years,* instead of the present three.[35]

– The 70% rule pertaining to the timing of a request for an additional tranche should be reduced to 50% and, further reduced *ad hoc* whenever Sida/SAREC itself is largely responsible for delays in

[35] Reportedly, Sida/SAREC plans to extend the agreement period to four years.

the disbursements to the university.[36] Furthermore, when calculating the usage ratio, an accrual not a cash basis should be used for major purchases of equipment or services, thus including not just cash expenditures but also firm commitments made.

Cost Effectiveness

– *Financial Administration and Donor Fragmentation*

– The university should resume annual consultative meetings and, with full cooperation from Sida/SAREC, vigorously lobby to get as many donors as possible to pool all or part of their funds into a *unified program* for general support of UEM's strategic plan. For the unified fund, Sida/SAREC could consider designating a major part of the open funds. The old Sida funding for core support would clearly belong here as well.

  Though the university would present its yearly budget for the unified fund, it would have complete authority to reallocate funds as needed within the year by merely informing the donors' representative of the intended reallocation. No approvals should be required. One annual report about the application of the funds would be sent out by March 31st of the following year and discussed at the annual consultative meeting. Thus, supervision of this ongoing program would be mainly *ex post*, not *ex ante* as is done presently. The audit report would be distributed by August 31st.

  Meanwhile the university should update its strategic plan, develop a realistic operational plan for its achievement, and develop a small number of quantitative verifiable indicators to monitor the main aspects of the plan's execution.

  Even if only two or three donors join the unified program, it will become a significant pilot project, which, if successful, could well inspire others to join.

– The university should explore ways to greatly reduce the various bank charges applied in the transfer and administration of Sida/SAREC funds (see Appendix VI).

– *Capacity Utilization*

– The rector and vice rector for administration should seek periodic professional economic and business advise about how to improve the university's efficiency, capacity utilization, output, and revenue. Toward this end, the university should commission studies about how to

  – decrease the drop-out ratio;

  – expand course offerings and the utilization of its infrastructure;

  – increase class sizes in some courses;

  – augment and standardize teaching loads; and

  – consolidate the university's campuses, especially considering the new possibilities given the growing market for urban land.[37]

[36] While the abolition of the concept of tranches at the project level helped to alleviate spending bottlenecks, the system for requesting disbursements in tranches for the overall program still imposes the risk of an awkward hiatus in funding thus jeopardizing the smooth running of projects.

[37] The new World Bank project for UEM envisages a study of how to reorganize the university's physical infrastructure.

– *Document Acquisition and the Publication of University Research*

– The Centro de Informática should give urgent priority to improving quickly the speed of the university-wide network's access to the Internet. The entire system needs to be critically evaluated. Are the solutions presently being sought really the best? The university should commission a study by independent experts to make appropriate contacts and evaluate quickly the most reliable and cost effective way to improve its computer network's access speed to the Internet. This means making an objective techni-cal and financial comparison of the options offered through Telecomunicações de Moçambique and the Centro de Informática.

– The Documentation Centre and eventually the central library need to adopt as their *mission* service to the *entire nation,* not just UEM. Accordingly, it should actively seek ways to extend services—especially access to books, journals, newspapers, and other scientifically relevant material—via the Internet to individuals and institutions throughout the nation though most probably charging for such services. The technical and legal aspects of how to execute this need to be researched, perhaps with support from Sida/SAREC research funds.

– *Research Supervision and Post-Graduate Scholarships*

– The university should evaluate the viability and relative benefits of sending more staff for post-graduate training and recruiting research supervisors within the region as long as the expected quality of that training is about the same or even better than that in Swedish institutions. Besides decreased costs, this helps directly and indirectly to build regional research capacity and networks and may well help to reduce the risk of losing staff to international brain drain.

– *Research Administration, Orientation and Incentives*

– The university and Sida/SAREC should study and discuss how best to program a shift in the orientation of Swedish aid from *ex ante* approval and close ongoing monitoring to *ex post* review and constructive criticism within the framework of a long-term assistance program. That shift would diminish the supervisory functions of the aid donor while increasing the university's *scientific* and *managerial independence.* In the context of UEM, it would mean shifting ever more funds from project-oriented to general support for the university's strategic plan, whose priorities and execution would be determined by the university itself.

  As now, some money would go for research capacity-building at the graduate level, and some for general capacity-building. Unlike now, Sida/SAREC would *pass, not grasp* the reins. By providing general support for the strategic plan (ideally, with money pooled by other donors), Sida/SAREC would assist the university to move faster to an *efficient, mature* and *independent* academic and managerial system. Surely, that is the goal of Swedish aid.

Administrative Details and Proposed Studies

Financial Management

– *Delays, Underspending and Remedies*

– The deadline for the annual audit report should be changed from March to August 31st. Moreover, the university should not allow its contractor to give it second priority in the queue for audits. It should insist that the external auditor start work, as agreed, in March and, if that is not possible, consider changing auditors.

– For disbursement of funds, it is necessary to permit greater flexibility over time. The difficulties in trying to adhere strictly to a fiscal year are many, partly due to the university, partly to Sida/

SAREC, and partly to the nature of many of the expendi-tures. For this reason, the next contract between UEM and Sida/SAREC should allow funds allocated for one year to be spent any time in the next without penalizing the university by cutting aid. A run-over into a third year should not be permitted.

- Using Sida/SAREC research funds to finance part of the costs, the university should commission a study of how best to:
  - improve faculty-level accounting;
  - guarantee the continued presence of well qualified staff in key organs such are the finance directorate and the office of the director of planning; and
  - improve the technical and cost effectiveness of alternative destinations for post-graduate education needs study, including the impact of *(i)* differential brain drain according destination and *(ii)* the candidate's socio-economic status. The study's results would give UEM a scientific basis for choosing where best to train a specific candidate.
- A significant portion of the laboratory funds under core support should be distributed as faculty open funds. The remaining, centrally distributed laboratory funds should be allocated within the framework of a strategic plan for the development of regional comparative advantages in research and training. Once allocated these monies should pass to the faculties' bank accounts for administration there.
- Underspending is a frequent problem for research grants under the Sida/SAREC program in apparent contrast to the experience of other programs that offer researchers direct and indirect incentives upon completion of their projects. We therefore recommend *(i)* a fast study of why most research-grant recipients are slow in executing their projects and *(ii)* a compara-tive analysis of the experience of other donors who support research in at UEM and in the region, in particular in regard to the various ways adopted to motivate research. The results of this study should be used to evaluate the efficacy of Sida/SAREC's current ban on direct incentives and, if justified by the study's results, explore better ways to motivate research.
- *Cost Effectiveness*
- The finance directorate should quickly determine a plan to slash the bank charges for money conversions and transfers that currently cost more than USD 100 000 per year.
- The university should also explore the possibility of adopting a unified reporting format and schedule for donors outside the unified scheme.
- The Documentation Centre should evaluate the cost effectiveness of buying more materials in electronic rather than printed form. Similarly, university's scientific director should evaluate the relative cost and technical benefits of electronic rather than the printed publication of much of the university's scientific output. It should also survey users to judge the adequacy of its current offering of electronic journals and thus avoid unnecessary expenditures.
- The university should push forward with its new system for student evaluation of lecturers as one of several ways to help to ensure that they are dedicated and perform well in training the nation's next generation of professionals. This plus other efforts will help screen out or reform bad lecturers and reward good ones while making the university more competitive and able to use its resources.

– Do the entrance examinations for new university students measure what they really need to perform well in the university? If not, the university may be rejecting good talent unnecessarily, thus damaging itself as well as the nation. This requires a careful examination.

Analogous problems with student evaluations and examination procedures exist in the high schools, where less than 20% pass in most high schools. This represents a massive waste of government and donor funds and should be studied by the Ministry of Education because what happens in these schools affects the entire society, including all the universities.

Research Administration, Orientation and Incentives

– The evaluation of research results, the existence or not of peer-reviewed journals, the insistence or not upon publication as a criteria for promotion, and the existence of a conducive milieu and set of diverse incentives for research are interrelated issues requiring comprehensive study in order to assist the university to greatly enhance, quantitatively and qualitatively, its scientific output.

– With Sida/SAREC funds, the university should *(i)* study why so few academic staff present research proposals and *(ii)* try to identify how to assist them. It should also commission a study on how to improve project management, including monitoring, evaluation, and reporting. A tangible result of this would be a manual with guidelines, forms, timelines, and other templates to be strictly adhered to by all project coordinators and managers.

Annex Table 1. UEM-Sida/SAREC research cooperation 2001–2003: Summary of project budgets (1 000 SEK)

		2001	2002	2003	Total
Social Sciences		**2 596.0**	**2 761.0**	**2 421.0**	**7 778.0**
1	Social linguistics survey of Mozambican languages	645.0	550.5	335.5	1 531.0
2	The Zambezi valley: Identities and the handling of space	1 031.0	980.0	960.0	2 971.0
3	War, economy and transition in Mozambique, 1964–1994	220.0	550.5	525.5	1 296.0
4	Open fund in humanities and social sciences	700.0	700.0	600.0	2 000.0
Faculty of Science		**6 725.0**	**6 685.0**	**5 775.0**	**19 185.0**
5	Photovoltaics applications in Mozambique	700.0	700.0	700.0	2 100.0
6	Coastal and marine physical processes for management	585.0	455.0	455.0	1 495.0
7	Application of accelerator based ion beam analysis methods	970.0	750.0	750.0	2 470.0
8	Geophysics and hydrogeology research program	560.0	560.0	560.0	1 680.0
9	Environmental impact of mining industry in Mozambique	380.0	380.0	380.0	1 140.0
10	Whiteware ceramics	440.0	440.0	420.0	1 300.0
11	Natural products chemistry	710.0	710.0	710.0	2 130.0
12	Assessment of the teaching and learning of mathematics	260.0	270.0	170.0	700.0
13	The development of biological research capacity	1 820.0	2 070.0	1 280.0	5 170.0
14	Open fund for the faculty of science	300.0	350.0	350.0	1 000.0
Faculty of Engineering		**3 210.0**	**3 110.0**	**2 800.0**	**9 120.0**
15	Open fund for Faculty of Engineering	500.0	500.0	500.0	1 500.0
16	Extended biochemistry cassava project	340.0	330.0	330.0	1 000.0
17	Supercritical carbon dioxide extraction of essential oils and lipid	400.0	320.0	130.0	850.0

18 Efficient and environmentally friendly combustion of biomass	750.0	750.0	750.0	2 250.0
19 Systems analysis of Mozambican process plant	380.0	370.0	250.0	1 000.0
20 Integrated water quality/quantity management	840.0	840.0	840.0	2 520.0
Center of Informatics	**1 700.0**	**1 710.0**	**1 700.0**	**5 110.0**
21 Internet-based Learning Activities in Mozambique	230.0	240.0	230.0	700.0
22 ICT in academic development training component (6 students)	1 470.0	1 470.0	1 470.0	4 410.0
				0.0
Faculty of Medicine	**1 764.0**	**1 764.0**	**1 764.0**	**5 292.0**
23 HIV1 and HIV2 infections among pregnant women	1 264.0	1 264.0	1 264.0	3 792.0
24 Open fund for faculty of Medicine	500.0	500.0	500.0	1 500.0
				0.0
Veterinary Sciences	**1 130.0**	**1 500.0**	**1 500.0**	**4 130.0**
25 Study of causes of diseases in Mozambican goats	180.0			180.0
26 Study of calc diarrhea in Mozambique	400.0			400.0
27 Joint INIVE-Veterinary Faculty program	550.0	1 500.0	1 500.0	3 550.0
Historical Archives	**1 000.0**	**1,000.0**	**1,500.0**	**3,500.0**
28 Core support for historical archives	1 000.0	1,000.0	1,500.0	3,500.0
Faculty of Law	**135.0**	**600.0**	**600.0**	**1,335.0**
29 Judicial research	135.0	600.0	600.0	1,335.0
Faculty of Agronomy	**1,060.0**	**860.0**	**860.0**	**2,780.0**
30 Agriculture engineering research program	1,060.0	860.0	860.0	2,780.0
Institutional Research Support	**3,080.0**	**3,080.0**	**4,080.0**	**10,240.0**
31 University open research fund	2,000.0	2,000.0	2,400.0	6,400.0
32 Library Services	650.0	650.0	1,250.0	2,550.0
33 Scientific Directorate	250.0	250.0	250.0	750.0
34 Administration	180.0	180.0	180.0	540.0
Sida external evaluation		**630.0**		**630.0**
35 Sida external evaluation		630.0		630.0
Sub-total of Sida/SAREC research support	**22 400.0**	**23 700.0**	**23 000.0**	**69 100.0**
36 Core Support Country Frame	10 000.0	suspended	to be defined	10 000.0
Grand Total for UEM	**32 400.0**	**23 700.0**	**23 000.0**	**79 100.0**

Source: Sida/SAREC

Annex Table 2. Donations to UEM: Estimated and received, 2001

Donor/Counterpar	Estimated receipts		Available funds		Difference
	million MT	USD	million MT	USD	USD
Austrália (Aus Aid) (Mzm)	**1 790**	**86 452**	**1 790**	**86 452**	0
UEM (bolsas de estudo)	1 790	86 452	1 790	86 452	0
FNUAP (Mzm)	**0 752**	**36 304**	**0 752**	**36 304**	0
Centro de Estudos da População	0 752	36 304	0 752	36 304	0
Franca (USD)		**37 977**		**37 977**	0
Fac. de Medicina		37 977		37 977	0
Fundação Ford (USD)		**917 880**		**1 290 794**	372 914
UEM (Reforma curricular + outros)		30 768		30 768	0
Fac. Agronomia e Engenharia Florestal		245 000		397 093	152 093
Fac. Agron. Eng. Flor. (na Dir. Fin.)		315 000		315 000	0
Fac. Letras		1 324		1 324	0
Ufics		54 100		54 100	0
Direcção de Finanças		77 758		77 758	0
Centro de Estudos Africanos		80 874		80 874	0
Núcleo de Estudos da Terra		60 000		64 264	4 264
Museu de Historia Natural		3 056		3 056	0
Arquivo Historia de Moçambique		50 000		266 557	216 557
Fundação Kellogg (USD)		**337 393**		**432 596**	95 203
Centro de Informática da UEM		225 393		225 393	0
Núcleo de Estudos da Terra		112 000		207 203	95 203
Holanda (NLG/USD)		**926 404**		**547 276**	–379 128
UEM (Ruma)		52 965		51 731	–1 234
Fac. Agronomia e Engenharia Florestal		112 220		60 000	–52 220
Fac. Ciências		180 031		27 622	–152 409
Fac. Educação		255 045		228 00	–27 045
Fac. Engenharia		68 876		31 500	–37 376
Fac. Medicina		4 931		4 931	0
Direcção de Registo Académic		39 136		15 000	–24 136
Centro de Informática da UEM		213 200		128 492	–84 708
Itália (USD)		**1 469 531**		**1 469 531**	0
UEM (to be transferred to the 2nd academic semester)		701 178		701 178	0
Fac. Agronomia e Engenharia Florestal		294 993		294 993	0
Fac. Arquitectura e planeamento físico		157 331		157 331	0
Fac. de Economia		198 664		198 664	0
Fac. Medicina		102 575		102 575	0
Gabinete de Relações Públicas		14 790		14 790	0

Micoa (USD)		**16 660**		**16 660**	0
Museu de História Natural		16 660		16 660	0
Noruega (NUFFU) (USD)		**126 143**		**126 143**	0
Fac. de Ciências		66 018		66 018	0
Fac. de Medicina		60 125		60 125	0
OXFAM Austrália (Aud)		**190 399**		**177 435**	–12 964
Direcção dos Serviços Sociais		190 399		177 435	–12 964
OXFAM Bélgica (USD)		**10 364**		**10 301**	–0 063
Fac. de Agronomia e Engenharia Florestal		10 364		10 301	–0 063
Portugal (Pte)		**65 210**		**65 210**	0
Fac. de Medicina		65 210		65 210	0
Suécia (SEK)		**2 733 381**		**2 707 807**	–25 574
UEM		895 994		1 182 041	286 047
Fac. de Agronomia e Engenharia Florestal		61 793		30 332	–31 461
Fac. de Ciências		454 756		413 334	–41 422
Fac. de Direito		4 586		2 251	–2 335
Fac. de Engenharia		225 930		209 294	–16 636
Fac. de Letras		203 144		156 576	–46 568
Fac. de Medicina		170 316		83 602	–86 714
Fac. de Veterinária		70 965		34 834	–36 131
Gabinete de Relações Publicas		105 210		50 127	–55 083
Gabinete de Imprensa		48 276		23 604	–24 672
Direcção Cientifica		24 138		11 848	–12 290
Direcção dos Serviços de Documentação		217 240		350 051	132 811
Centro de Informática da UEM		154 482		53 187	–101 295
Arquivo Histórico de Moçambique		96 551		106 726	10 175
União Europeia		**51 310**		**21 024**	–30 286
Fac. de Agronomia e Engenharia Florestal		51 310		21 024	–30 286
USAid (USD)		**7 848**		**7 848**	0
Fac. de Medicina		7 848		7 848	0
UNESCO (USD)		**11 430**		**12 359**	0 929
Fac. de Ciências		6 118		6 118	0
Fac. de Letras		0		0 929	0 929
Fac. de Medicina		5 312		5 312	0
Total donations and contracts	**2 542**	**7 024 686**	**2 542**	**7 045 717**	21 031

Annex Table 3. UEM receipts and expenditures 1996 to 2002

Available resources

	1996	1997	1998	1999	2000	2001	2002 budget
Government	7 960	10 337	11 525	15 630	14 690	12 759	n.a.
Donations	4 222	2 418	489	4 813	6 838	7 015	n.a.
Loans	2 525	4 602	5 117	8 157	4 378	2 365	n.a.
Own receipts	700	724	764	2 687	2 169	2 559	n.a.
Total	15 407	18 080	17 895	31 288	28 075	24 698	n.a.

Expenditures

	1996	1997	1998	1999	2000	2001	2002 budget
Government	7 096	8 374	11 331	14 888	13 834	12 754	15 775
Donations	3 702	2 111	1 078	4 189	4 957	3 688	6 044
Loans	2 525	4 602	5 117	8 157	4 378	2 365	4 677
Own recipts	650	652	688	2 221	1 700	2 110	2 169
Total	13 973	15 739	18 214	29 455	24 869	20 917	28 665

Source: UEM Department of Finance

Annex Table 4. Sida/SAREC timetable for 2001–2003

Description	Amount		2001												2002											
	Requested (SEK)	Received[1] (USD)	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Program should have started			1																							
Agreement signed							3																			
Request of 1st installment 2001	9 010 250						31																			
Received of 1st installment 2001		854 037									11															
Request of Core support, 1st of 2001	5 000 000						31																			
Received of Core support, 1st of 2001		472 070								15																
Request of 2nd installment 2001[2]	8 275 250												30													
Request of amendment funds to ICT	5 000 000												14													
Received amendment funds to ICT		392 076												20												
Request of 1st installment 2002 (+1/4)	10 993 187																	22								
Received of 1st installment 2002 (+1/4)		1 061 597																	13							
External auditing for year 2001 (fieldwork)																										
Sending of the report of 1st 2001													30													
Workshop between UEM and Asdi[3]																		11								
Sending the report 2001																			14							
Sending the report 1st semester 2002																							4			
1st Request of core support, 2nd of 2001	5 000 000												30													
2nd Request of core support, 2nd of 2001																				13						
Received of core support, 2nd of 2001		525 732																		26						
Request of 2nd installment 2002 (+1/4)	11 046 537																						7			
Received of 2nd installment 2002 (+1/4)		1 170 631																						30		
Total	**54 325 225**	**4 476 145**																								

Note: Two financial reports go to Sida: annual, covering the period 1st January to 31th December, no later than 31st March; semi-annual, covering the period 1st January to 30th June, no later than 31st August. For year 2001, the report should be submitted no later than 15th May 2002.

[1] The amount received is, in each case, the dollar equivalent, after bank charges, of the amount requested in Swedish kroner.[2] This installment has been redistributed and will be paid by Sida in four equal parts for the first and second halves of 2002 and 2003.

[3] In this Workshop was discussed new procedures and introduced new deadlines to report and request.

= delay caused by UEM, MINED or both

= delay caused by Sida/SAREC directly or by imposing unrealistic rules

= delay caused by UEM and Sida/SAREC

= delay caused by Sida/SAREC directly or by imposing unrealistic rules

Annex Table 5. Core Support, 1998–2001 (SEK)

Budget line	1998			1999			2000				2001		
				Period from 29.01.99 to 13.11.01							Period from 15.08.01 to 31.10.02[4]		
	Approved	Received	Expenses	Approved	Received[2]	Expenses	Approved[2]	Received[1]	Received[3]	Expenses	Approved	Received	Expenses
Scholarship fund	1 000 000	1 000 000	1 000 000	1 000 000	997 996	512 225	1 000 000	960 579		1 458 566	1 000 000	1 000 000	495 402[a]
Training staff	800 000	800 000	800 000	800 000	798 397	800 000	1 524 000	1 463 922	69 717	1 585 077	2 000 000	2 000 000	2 057 145
Library support	2 000 000	2 000 000	2 000 000	2 000 000	1 995 992	2 000 000	1 500 000	1 440 868		1 500 000	1 600 000	1 600 000	1 601 567
Laboratory support	3 000 000	3 000 000	2 784 062	3 000 000	2 993 988	1 937 179	2 776 000	2 666 567		3 620 911	2 600 000	2 600 000	1 206 131[b]
Email	800 000	800 000	800 000	800 000	798 397	800 000	800 000	768 463		400 000			
Administration	400 000	400 000	345 619	400 000	399 198	191 197	400 000	384 232		492 794	1 500 000	1 500 000	869 240[c]
Public relations											800 000	800 000	897 638
Support to the Press Office											500 000	500 000	472 391
Total	8 000 000	8 000 000	7 729 681	8 000 000	7 983 968	6 240 602	8 000 000	7 684 631	69 717	9 057 348	10 000 000	10 000 000	7 599 514

Source: Direcção de Finanças[1] During the transfer of the funds we lost SEK 16 031.62, in the year 1999, and SEK 315 369.11, in the year 2000.

[2] Reallocations between the budget lines were approved, from budget line 3 (SEK500 000) and budget line 4 (SEK 224 000) to budget line 2.

[3] This fund was received from the project "Environmental Impact of the Mining Industry in Mozambique" by an approved reallocation.

[4] The expenses of the budget line 3 and 8 are related to 30.09.02.[a] This fund is for scholarships that will be paid out monthly throughout the academic year till June 2003.[b] By early November 2002, though not fully spent, all the funds for laboratory support were committed with suppliers of equipment and would be spent before the year end.—interview with Mafalda Mussengue and Horton Malipa, 7/11/02.[c] The remaining portion of this fund is mostly committed to pay the auditor, PricewaterhouseCoopers.

Annex Table 6. Sida/SAREC funds for research and core support for period, 2001–2003 (USD)

Sector	Approved for entire period (1)	Approved for 2001 & 2002 (2)	Expenses till 30.09.02 (3)	% (3)/(2)
Social Sciences	**613 602**	**413 507**	**151 682**	**37%**
Open fund	189 573	132 701	30 125	23%
Sociolinguistics survey of Mozambican languages	112 180	80 379	27 710	34%
The Zambezi Valley: Identities and the handling of space	189 005	127 393	66 512	52%
War, economy & transition	122 844	73 033	27 335	37%
Faculty of Science	**1 263 507**	**896 682**	**414 560**	**46%**
Open fund	94 787	61 611	10 496	17%
Photovoltaics	153 555	102 370	57 668	56%
Coastal and marine physical processes for management	69 194	50 237	25 842	51%
Accelerator based ion beams	195 261	136 493	78 447	57%
Geophysics and hydrogeology	68 246	45 498	25 535	56%
Mining	85 308	56 872	31 885	56%
Whiteware masses	66 351	45 498	22 358	49%
Natural products	130 806	87 204	33 638	39%
Assessment of the teaching and learning of mathematics	66 351	50 237	26 978	54%
Department of biology	333 649	260 664	101 713	39%
Faculty of Engineering	**639 810**	**442 654**	**73 796**	**17%**
Open fund	142 180	94 787	17 132	18%
Cassava research	94 787	63 507	11 205	18%
Carbon dioxide extraction	53 081	45 498	5 507	12%
Combustion of biomass	122 275	81 517	29 464	36%
Process plant	56 872	43 602	0	0%
Integrated water quality/quantity management in a multi-purpose	170 616	113 744	10 488	9%
Centre of Informatics	**80 569**	54 028	**19 117**	**35%**
Internet-based learning activities in Mozambique	37 915	25 592	14 550	57%
ICT in academic development: Training component (6 students)	42 654	28 436	4 567	16%
Faculty of Medicine	**501 611**	**334 408**	**60 674**	**18%**
Open fund	142 180	94 787	20 257	21%
HIV1 and HIV2 infections among pregnant women	359 431	239 621	40 418	17%
Faculty of Veterinary	**354 028**	**211 848**	**15 050**	**7%**
Study of causes of diseases in Mozambican goats	1 896	1 896	0	0%

Study on calf diarrhoea in Mozambique	15 640	15 640	4 080	26%
Joint INIVE – Veterinary Faculty Program	336 493	194 313	10 970	6%
Historical archives	**331 754**	**189 573**	**97 947**	**52%**
Core support for Historical Archives	331 754	189 573	97 947	52%
Faculty of Law	**85 184**	**48 185**	**15 463**	**32%**
Juridical research	85 184	48 185	15 463	32%
Faculty of Agronomy	**144 076**	**102 370**	**9 462**	**9%**
Agriculture engineering research program	144 076	102 370	9 462	9%
Central Administration	**937 441**	**583 886**	**201 377**	**34%**
University open research fund	606 635	379 147	119 949	32%
Library services	208 531	123 223	67 988	55%
Scientific directorate	71 090	47 393	13 385	28%
Administration	51 185	34 123	55	0%
Subtotal Sida/SAREC	**4 951 582**	**3 277 142**	**1 059 128**	**32%**
Core support country frame	944 140	944 140	634 034	67%
Amendment to the agreement (ICT)	473 934	473 934	308 585	65%
Grand Total for UEM	**6 369 656**	**4 695 216**	**2 001 746**	**43%**
*Percentage (expenses/receipts till 30/9/2002)**			*61%*	
Percentage (expenditures to 30/9/02)/(approvals for 2001 and 2002) for faculty research and open funds				*31%*

* Receipts do not necessarily equal approved allocations.

Appendix IX Methodology for Researching and Organising Data on Publications Produced in International Journals

Our objective (refer to section 4.1 in the Report) was to show how many Mozambican publications appeared in international journals over the last two or so decades.[38] The purpose of this Appendix is to briefly show how data on these publications were searched and organised.

(i) Choosing databases

Data on publications produced in international journals are held in different forms such as in printed materials, online databases and CD-ROMs. We have chosen to search online databases because this source has distinctive advantages: it is regularly updated, saves time to search and organise data, and produces more results as it covers both electronic and print publications. However, note that access to online databases may be on a subscription basis.

A number of online databases produce data on publications that have been printed in international journals. Some of these databases are multidisciplinary and others cover only one discipline. Based on our own experience and consultations with specialist librarians, we used the following databases:

- The International Institute for Scientific Information (ISI) database: http://wos4.mimas.ac.uk/isicgi/CIW.cgi. This is a multidisciplinary database on sciences, social sciences and arts and humanities citation indices. It was also the most useful source of data for our purpose.
- Medline: http://newfirstsearch.oclc.org/ (covers all areas of medicine).
- Georef: http://newfirstsearch.oclc.org/ (this site covers geography and earth sciences). Medline and Georef databases produced results that were used to cross check with ISI results.
- We have searched other subject specific databases (such as Agricola (agriculture), mathsciNet, PsycINFO, MLA International Bibliography/for languages) but these produced no or very limited results.

(ii) Searching for data

Searching for data requires using keywords, setting dates, author address/affiliation, language categories, etc. Phrases for searching publications that originated in Mozambique and produced in international journals were in some sense limited. For example, searching by topic was not ideal because some topics did not include references specific to or place names of Mozambique. On some databases (example Agricola), we were not able to collate data by author address and/or affiliation. In spite of the fact that its data are aggregated, the ISI database enables some of these problems to be overcame, and offers data that range from 1981–2002.

Hence the ISI database was searched based on:

- separate data on sciences, social sciences and arts and humanities citation indices
- data by author address and/or affiliation – specifically we have used terms 'Mozambique OR Maputo OR Eduardo Mondlane'
- data search covered all language categories, and

[38] This means that this Appendix and our findings do not refer to books, conference papers/proceedings, theses, consultancy reports, etc.

– data range covered from 1981–2002. We were also able to limit data range to one, two, five, ten years or 1981–2002. With a view to analysing developments over time, data were collated over five year intervals.

Then. with the above specification, we have run full/advanced searches.

(iii) Organising and analysis data

Our search resulted in a list of over 560 publications. This was printed and inspected. The inspection showed some double counting within and between subgroups (that is sciences, social sciences and arts and humanities). Articles that have been double counted were deleted. A related problem was categorising articles that were simultaneously counted in more than one subgroup. As much as possible we have looked at discipline based databases (particularly Medline and Georef) to guide the reclassification of articles in sciences, social sciences and arts and humanities.

Finally data were summarised in a table based on five year intervals and aggregate data for 1981–2002. The tabulated data were analysed and reported (as given in X part of this Report).

Seife Ayele

December, 2002

Appendix X
Some Key Elements in SAREC's Policy

In the report, the evaluation Team noted the lack of objectives and verifiable indicators for Sida/ SAREC's support to UEM. The Team was informed that the objectives are clearly spelt out in SAREC's policy and that there was consequently no need to present them in the various Promemoria. These notes provide background information on SAREC's policy.

Prior to 1975, Swedish support for development-related research was primarily through international research programmes. Recognising the importance of research for development, in 1975, a commission proposed the establishment of SAREC, and it was created in the same year as a special agency for research co-operation. It had two major objectives:

- to support the development of research capacity in developing countries; and
- to support research which generates results of importance to development.

During the early years, SAREC channelled much support through national research councils. In 1985, an independent review of SAREC concluded that more emphasis should be given to research training. With the protracted economic difficulties in the 80s, universities, not least in Africa, were confronted with serious problems, and sustaining viable research environments proved difficult. Out of this grew the necessity not only to provide support to capacity building but also broader support – university support.

Until the beginning of the 90s, SAREC had a loose administrative set-up but, as SAREC grew, it became necessary to have a formal structure. Four sections were created along scientific disciplines.

- Agriculture and the Environment
- Health
- Social Sciences and the Humanities
- Natural Sciences and Technology

Though a separate section for University Support was not created, a person was assigned the responsibility to co-ordinate University Support.

SAREC was retained in the merger of Swedish public aid organisations in 1995, and was named Department for Research Cooperation, SAREC. Its organisational structure was revised, and two divisions were created, namely:

- University Support
- Thematic Research

Thus, it can be concluded that University Support was strengthened.

In 1998, the *Guidelines for Research Co-operation* were adopted by Sida. A slightly modified version was published in English in 2000 as *An Outline of Policy, Programmes and Practice*. This Appendix is based on the English version.

This policy document retained the overall objectives:

> *"The overall objective of research co-operation through SAREC is to strengthen the research capacity of developing countries and to promote development-oriented research" (Sida 2000: 10).*[39]

An inherent tension exists between the two objectives. How much resources should be allocated to strengthen research capacity, and how much to development-oriented research? It should be noted that support to tertiary education is not a Sida/SAREC objective.

The review made of SAREC in 1985 pointed to the need to focus more on research training. The creation of a Division of University Support within SAREC can be seen as a logical decision to implement the shift in policy commencing in 1985. Meanwhile, the overall issue of support to tertiary education has been largely neglected within Sida.

The 1998 SAREC policy states that:

> *"Sida shall focus on support to research universities with a central position in the national system for research and education" (p. 12)*

Prior to 1995, Sida's primary focus was on primary education while SAREC's was on research training. Support to tertiary and secondary education was not a priority. Still, Sida supported UEM through both core funding, agricultural research and undergraduate training (see Appendix VII on agricultural research). Within the new Sida, SAREC has taken over agricultural research from NATUR and core support which was managed by the Swedish Embassy in Maputo.

SAREC's main thrust is research training, and here it has played an important role. But Sida also needs to develop a policy for tertiary education and create the necessary institutional framework for this support.

In 1985, research capacity was defined:

Research capacity involves the ability to independently

- identify and define researchable problem areas
- plan and implement research tasks
- participate in and utilise international research
- evaluate, select and adapt research findings
- offer attractive research environments.

Later was added "The capacity to reproduce its own capacity" (p. 23). Five levels of research capacity are identified: individual, institutional, national, regional and international.

The policy document neither discusses nor provides guidelines for the collection and processing of verifiable indicators to monitor progress. The number of PhD and MA/MSc degrees concluded with the financing of SAREC should be important indicators. The need for such indicators was also discussed during the presentation of the Draft Report to Sida and Swedish collaborating institutions on 6 February 2003. Subsequently, Sida/SAREC contacted the Swedish collaborating institutions to obtain the needed information. Most of the Swedish institutions promptly replied but the data was

[39] The Sida policy document, *An Outline of Policy, Programmes and Practice*, can be downloaded from http://www.sida.se/Sida/articles/5500–5599/5503/policy1.pdf.

inconsistent with other pieces of information. The UEM did not respond to the Team's queries. Another set of indicators would be scientific publications. There is a reporting system for Sida/SAREC and the Scientific Directorate has a major responsibility here. Each year there should be a report listing activities such as articles and reports published, conferences attended, exams passes, equipment and other main infrastructure purchased or set-up. Thus basic information is available in the Sida/SAREC files for recent years. However, information is not readily available e.g. on the number of scientific publications on a yearly basis. As is discussed in section 4.2.1 on Financial Management and in Appendix VIII systematic monitoring is undertaken with regard to spending Sida/SAREC funds but this has little direct relation with the impact of the programme.

In the end, the Team concluded that, at this stage, Sida/SAREC has not yet developed an adequate monitoring system to *monitor* the *attainment* of Sida/SAREC's main objectives, at least in Mozambique.[40]

Given the rapid turn-over of Sida/SAREC staff, it is necessary to institutionalise a monitoring system so that it survives the frequent departure of officers responsible for a particular country. Against this background Sida/SAREC might consider reviewing its present monitoring system for University Support, not least because this support will be a long-term endeavour in many countries.

This review might include updating the present information available at SAREC. SAREC's co-operation with UEM commenced at the end of the 70s. It is probable that this co-operation will continue for a long time period. To assess the impact of the support it is necessary to select a few key variables and systematically collect and process the data. Some of these can be found in Sida/SAREC's archives. However, with the creation of Sida in 1995, a new archive system was introduced. A major part of the information will not be found at Sida and can only be found in the national archives of Sweden. To collect and systematise these pieces of information would be beyond the capacity of SAREC.[41]

[40] The lack of an adequate monitoring system is not unique for UEM-Sida/SAREC co-operation. A review of Sida's evaluations during 1994 and 1995 noted that many evaluations pointed out that there was a lack of a monitoring system (*The Environment and Sida's Evaluation* Sida Studies in Evaluation 96/4). Similar conclusions were reached in a forthcoming study, *Environmental Considerations in Sida's Evaluations Revisited. A follow-up and analysis six years later.*

[41] In the year 2000, a study was made to assess whether it was possible to evaluate Swedish co-operation with Tunisia during the period 1962–1982. This work involved several visits to the Swedish national archives. It was no easy task to identify the key documents needed for the study.

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