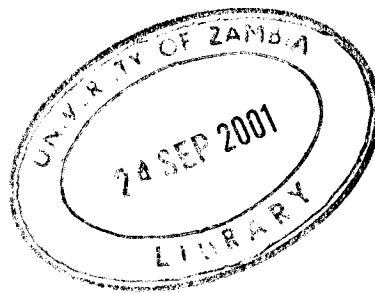


THE SADC PLANT GENETIC RESOURCES CENTRE

A REGIONAL PLANT GENETIC RESOURCES MANAGEMENT NETWORK



by

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Communication for Development offered by the Department of Mass
Communication, The University of Zambia

DECLARATION

I declare that this Practical Attachment Report has not been submitted for a degree in this or any other University.

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ABSTRACT

This eight-chapter report describes the activities of the SADC Plant Genetic Resources Centre (SPGRC) located at Chalimbana in Zambia. It results from the student's four months attachment to the institution from 5th July to 9th November 2000, the attachment being part fulfillment of the requirements for the degree of Master of Communication for Development (MCD) of the University of Zambia. The attachment was intended to acquaint the student with the organisational structure of the SPGRC, its aims, objectives and functions, and more so, the type and role of communication in the network.

The student relied heavily on participant observation and one-on-one interviews to gather information. There was also considerable recourse to SADC and SPGRC documents, as well as other relevant literature. In the process, the student discovered that over a period of slightly more than a decade since 1989, the SPGRC has establishment a SADC regional network of plant genetic resources management in about all member countries. This has been done in collaboration with donors from mostly the Nordic community.

While successes have included not just the establishment of the network but equipment of the National Plant Genetic Resources Centres (NPGRCs), training of personnel in the relevant expertise and reaching fairly acceptable staffing levels, inadequate funding, especially as a result of lack of full understanding of the benefits of the project by member states, has served as a huge impediment to progress. Additionally, there appears to be no deliberately planned and sustained communication programme, which may be a direct result of the heavy concentration of agricultural experts at the expense of other professionals, for instance, communication experts or anthropologists. To cap it all, modern development theory strongly argues for full participation of target groups in their own development, a phenomenon that is clearly absent in the formulation and implementation of this plant genetic resources conservation project. The report ends with recommendations on how the network can deal with the noted problems.

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S.S.K.

June, 2001

The University of Zambia

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ABBREVIATIONS/ACRONYMS

| | |
|-------|---|
| AD | Anno Domino |
| BA | British Airways |
| CBD | Convention on Biological Diversity |
| CBOH | Central Board of Health |
| COPs | Conference of Parties |
| FAO | Food and Agriculture Organisation |
| IARCs | International Agricultural Research Centres |
| GER | Great East Road |
| IBPGR | International Board for Plant Genetic Resources |
| IPGRI | International Plant Genetic Resources Institute |
| MAFF | Ministry of Agriculture Food and Fisheries |
| MCD | Master of Communication for Development |
| MSc | Master of Science |
| NGB | Nordic Gene Bank |
| NGO | Non-Governmental Organisation |
| NPGRC | National Plant Genetic Resources Centre |
| PA | Practical Attachment |
| PAR | Practical Attachment Report |
| RCWG | Regional Crop Working Group |
| SABF | Southern Africa Biodiversity Forum |

| | |
|--------|---|
| SACCAR | Southern African Centre for Cooperation in Agricultural Research |
| SADC | Southern African Development Community |
| SADDC | Southern African Development Coordinating Conference |
| SBTTA | Subsidiary Body in Scientific, Technical and Technological Advice |
| SDIS | SPGRC Documentation and Information System |
| SIDA | Swedish International Development Agency |
| SPGRC | SADC Plant Genetic Resources Centre |
| SPO | Senior Programme Officer(s) |
| SRGB | SADC Regional Gene Bank |
| UK | United Kingdom |
| UN | United Nations |
| UNEP | United Nations Environmental Programme |
| UNZA | University of Zambia |
| USA | United States of America |
| USAID | United States Agency for International Development |
| ZAMTEL | Zambia Telecommunications Company |
| ZESCO | Zambia Electricity Supply Corporation |
| ZIHP | Zambia Integrated Health Project |

CHAPTER 1

BACKGROUND

1.0 Introduction

This is a report based on a four months attachment at the Southern African Development Community Plant Genetic Resources Centre (SPGRC) at Chalimbana in Zambia. The attachment was from 5th July to 4th November 2000 as part fulfillment of the degree of Master of Communication for Development (MCD) offered by the Department of Mass Communication at the University of Zambia. The attachment was aimed at providing the Student with an opportunity to acquaint himself with the structure of the SPGRC, its objectives and functions, and in the final analysis, how communication is conducted and what its role is in the regional network. Based on the student's observations and findings, recommendations are made in the final chapter.

1.1 Profile of the Southern African Development Community (SADC)

The Southern African Development Community (SADC) was first established in 1980, through a declaration by an initial nine member states. The Community was at inception known as the Southern African Development Coordination Conference (SADCC). The nine members were Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe, but also closely targeting Namibia, which was fighting for independence from South Africa then, and was later to gain it in 1990.

This regional grouping was established to break the heavy dependence of the Southern African countries on the then apartheid Republic of South Africa (RSA). As noted by Bhagavan (1985) the RSA was by far "a focus for transport and communications, an exporter of goods and services, an importer of goods and cheap labour". It was the region's consensus that this dependence was "not a natural phenomenon" nor was it "simply the result of a free market economy". Rather, the nine states as well as Namibia, the occupied territory, "were in varying degrees, deliberately incorporated – by metropolitan powers, colonial rulers and large corporations – into the colonial sub-

colonial structures centring in general on the Republic of South Africa". Southern Africa had no integrated programmes, was fragmented and "grossly exploited and subject to economic manipulation by outsiders". (Bhagavan, 1985: 6)

For tangible development to occur, the region needed to reduce dependence on the RSA and/or any other single external state or groups of states. Hence the declaration by the nine states by which was born the SADCC was aptly titled "Southern Africa: Towards Economic Liberation".

The late Botswana President, Sir Seretse Khama, (quoted in Bhagavan, 1985) argued that achieving economic liberation must be a regional as well as a national struggle. Of the nine founder states of SADCC, six were landlocked and only in coordinated action could the small independent states of Southern Africa achieve the economic strength and power necessary to resist those who were tempted to continue to exploit and perpetuate economic fragmentation and dependence.

Another late leader, Samora Machel of Mozambique, underscored the need for regional integration and said the economic plans had to be conceived locally because there was no one who knew better the region's needs and priorities. In Michael's view, the habit of accepting plans made outside the region had to discontinue (Bhaghavan, 1985).

The main idea underlying the creation of the regional body was the realisation that no single independent southern African state was large enough to go it alone, whether economically or otherwise. One strong foundation on which the SADCC idea firmly rested was the positive experiences of close cooperation among the governments and people of southern Africa. During the struggle for political independence in the region, strong bonds of solidarity grew out of a sense of common purpose and collective action against colonialism and racism. The need for cooperation to be able to survive politically, economically and for social advancement became clear to the leaders (Bhaghavan, 1985).

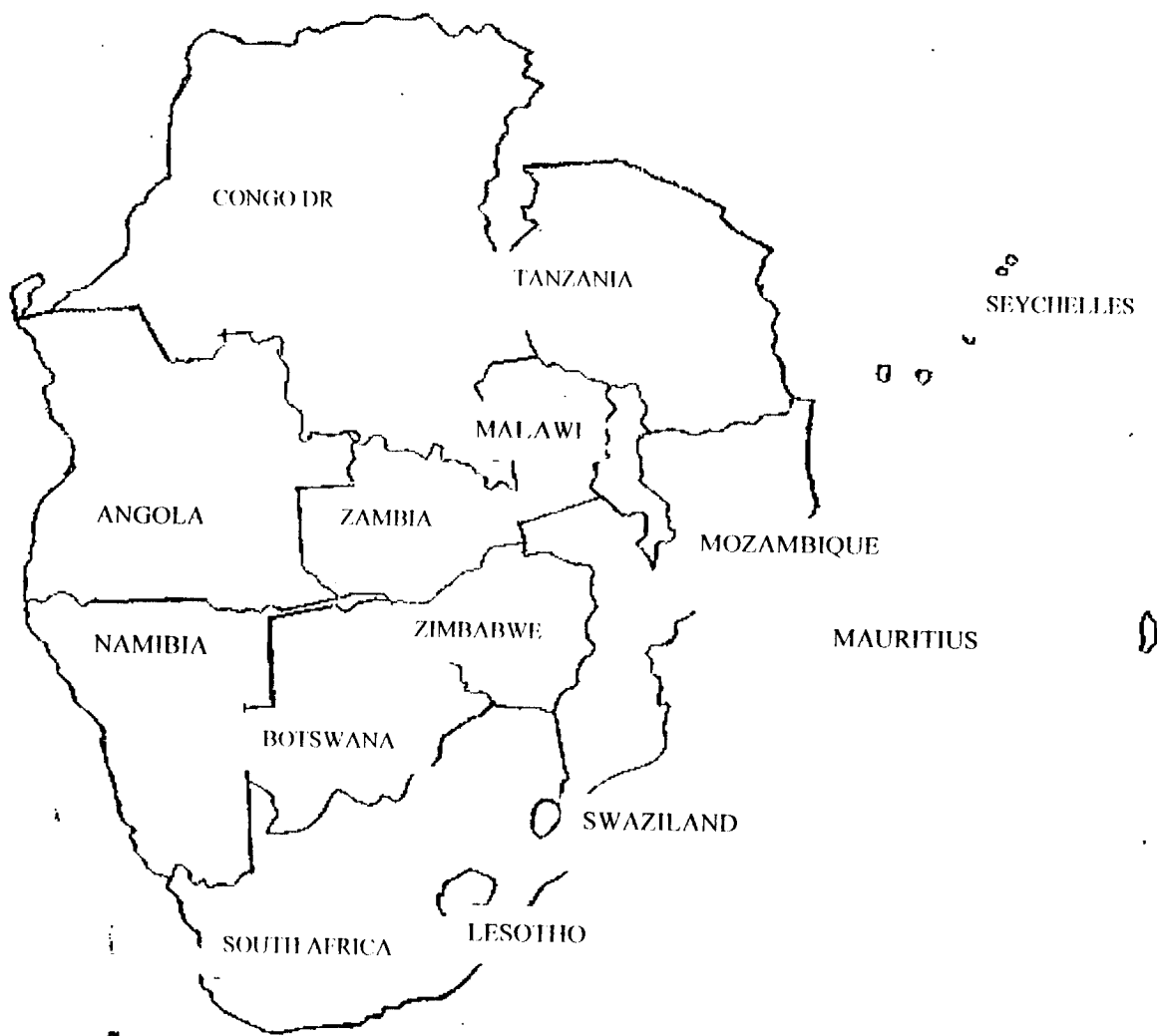


Fig. 1 Map of the SADC

The SADCC thus became reality with the adoption of the “Lusaka Declaration” at a Heads of State Summit held in the Zambian capital on 1st April 1980. The leaders of the nine founding member states agreed to coordinate their economies so as to accelerate their development, and reduce their dependence on the RSA. They approved a programme of action which, among other things, included:

- (a) The creation of a Southern African Transport and Communication Commission to be based in Maputo, Mozambique.
- (b) Measures to control foot and mouth disease in cattle throughout the region.
- (c) The preparation of a food security plan for the region.
- (d) The establishment of a regional agricultural research centre specialising in drought-prone areas.
- (e) Plans for the harmonisation of industrialisation and energy policies.
- (f) Sharing of national training facilities within the region.
- (g) Studies leading to proposals for the establishment of a Southern African Development Fund.

A lot was achieved by the SADCC, especially in regard to transport and communications, energy and agricultural research. Arguably the greatest success of SADCC was that it established a foundation for regional integration in southern Africa.

1.1.1 From Coordinating Conference to Development Community

In 1989, at the Summit of Heads of State or Government in Harare, Zimbabwe, it was decided that SADCC should be given an appropriate legal status, taking into account the need to replace the Memorandum of Understanding with an Agreement, Charter or Treaty. In August 1992, in Windhoek, Namibia, the Heads of State or Government signed the Declaration and Treaty transforming the SADCC to SADC.

The SADC objectives as listed in the treaty are to:

- (i) Achieve development and economic growth, alleviate poverty, enhance the standard and quality of life of the peoples of Southern Africa and support the socially disadvantaged through regional integration.
- (ii) Evolve common political values, systems and institutions.
- (iii) Promote and defend peace and security.
- (iv) Promote self-sustaining development on the basis of collective self-reliance, and the inter-dependence of member states.
- (v) Achieve complementarity between national and regional strategies and programmes.
- (vi) Promote and maximise productive employment and utilisation of resources of the region.
- (vii) Achieve sustainable utilisation of natural resources and effective protection of the environment.
- (viii) Strengthen and consolidate the long-standing historical, social and cultural affinities and links among the peoples of the region.

In 1994, after abandoning apartheid, the RSA was admitted as a member of SADC. It was anticipated then that the entry of South Africa into SADC would greatly enlarge the overall size of the regional market and create new opportunities for cooperation in many areas.

It was, however, acknowledged that the same economic imbalance that led to the establishment of SADC would continue with the current dominance of the South African economy over the rest of the region. This was unacceptable and undesirable even with the new South Africa as a member of the organisation. It was therefore necessary to

create a new framework for a mutually beneficial, equitable and interdependent regional order in southern Africa.

Other later entrants into SADC are the Indian Ocean islands of Seychelles and Mauritius, bringing total membership of SADC to 14.

1.1.2 Sectoral committees and commissions

One of the many ways in which SADC functions is through commissions and sector coordinating units. These guide and coordinate regional policies and programmes in specific areas. Each sector is allocated to an individual member state to coordinate and provide leadership. Sectoral activities are supervised by sectoral committees of ministers. Each sectoral committee is chaired by a minister from the country coordinating a particular sector. For example, Zambia is responsible for the mining, employment and labour sectors of SADC. Zambian ministers will chair the sectoral committees overseeing the two areas in question.

Table 1: SADC country sectoral responsibilities.

| Country | Responsibility | Country | Responsibility |
|------------|--|--------------|--|
| Angola | Energy | Namibia | Marine Fisheries and Resources |
| Botswana | Agricultural Research, Livestock Production & Animal Disease Control | South Africa | Finance and Investment, and Health |
| Lesotho | Water, and Environment & Land Management | Swaziland | Human Resources Development |
| Malawi | Inland Fisheries, Forestry & Wildlife | Tanzania | Industry and Trade |
| Mauritius | Tourism | Zambia | Mining, Employment and Labour |
| Mozambique | Culture and Information, Transport & Communications | Zimbabwe | Food, Agriculture and Natural Resources, Crop Protection |

Sector coordinating units operate as part of national governments and are manned mainly by civil servants from the country coordinating a particular sector. Both sectoral committees and commissions report to the Council of Ministers.

1.2 The SADC Plant Genetic Resources Centre (SPGRC)

The SADC Plant Genetic Resources Centre (SPGRC) was established in 1989 as a donor funded project, the donors being the Nordic countries, Sweden, Denmark, Norway, Finland and Iceland. The project, at inception known as SADC Regional Gene Bank (SRGB), was to last for an initial 20-year period. The SADC member states would provide counterpart funding and eventually, systematically take over even the funding part of the project.

Owing to the fact that SRGB was a donor project, it did not necessarily have to fall under any of the sectors operated by SADC member states. Had it fallen under a sector, it would most probably have been located in Zimbabwe, under which the agricultural sector falls. The primary objective for establishing the gene bank was to preserve, first of all, the indigenous plant genetic resource materials and natural crop heritage of the region. This was an important component towards the implementation of the broader 20-year regional programme of agricultural research to increase per capita agricultural output. It was thus initially proposed that the Botswana-based Southern African Centre for Cooperation in Agricultural Research (SACCAR) be the implementing agency, the Nordic Gene Bank (NGB) the executing agency and the International Board for Plant Genetic Resources (IBGR) and International Agricultural Research Centres (IARCS) provide technical assistance in establishing the facilities.

The SRGB would be an independent institution governed by a board to provide policy guidelines. Each participating member state would establish National Plant Genetic Resource Committees (NPGRCs), whose chairpersons would constitute the board. The Director of SACCAR would chair the board while a representative of the Swedish International Development Agency (SIDA) would sit on the board to represent Nordic interests.

1.2.1 Objectives of the SPGRC

The overall goal of SPGRC, as clearly defined in all official literature, is to provide service to plant breeders and researchers in the SADC region through a system of NPGRCs. SPGRC and NPGRCs contribute towards:

- (i) training a cadre of highly skilled specialists in plant genetic resources management in the region;
- (ii) development of national plant genetic resources management programmes; and
- (iii) preventing erosion and loss of plant genetic resources of the SADC region through collection and conservation efforts.

1.2.2 Functions of the SPGRC

The major functions of the SPGRC are as follows:

- (i) to hold, maintain and manage the long-term Base Collection of the SADC member states;
- (ii) to arrange and provide for the collection to be safely duplicated in a Safety-Base Collection;
- (iii) to develop, maintain and manage the regional central accession and inventory database, for the *ex-situ* and *in-situ* indigenous plant genetic resources of the SADC countries.
- (iv) to coordinate the “inventorying”, collection, characterisation, evaluation, rejuvenation and multiplication of indigenous plant genetic resources of the SADC member states;
- (v) to coordinate the introduction, evaluation and documentation of introduced exotic plant genetic resources materials in the SADC countries;

- (vi) to maintain and manage a medium and long-term storage facility of such introduced exotic plant genetic resources materials as deemed to be of common interest to SADC member states;
- (vii) to keep records in a regional central database of introduced exotic materials for SADC member states;
- (viii) to issue catalogues of plant genetic resources material available at SPGRC and National Plant Genetic Resources Centres (NPGRCs); and
- (ix) to publish a SADC Plant Genetic Resources Newsletter with particular attention to the role of plant genetic resources management for relevant problems in plant breeding as well as in seed and crop production.

1.2.3 Location of SPGRC

The SPGRC is located at Chalimbana Research Station, some 25 kilometers east of Lusaka. As you drive towards the Eastern Province on the famous 554 Kilometre trunk route named Great East Road, you are greeted by the serene and rustic centre on your right, and, on your left as you are heading into the Zambian capital, Lusaka, from the East.

The Centre is situated on an 87 hectare farm, completely surrounded by perimeter wire fencing and a ten metre wide fire-breaker. The complex houses the administration and financial section, the technical section, a gene bank for long and short-term seed storage, seed drying, packaging and handling rooms, aside to a herbarium. There is adequate land for “regeneration” and “multiplication” of germplasm.

Facing towards the Lusaka International Airport, with which it shares the status of being nearer to Lusaka while actually being in the small rural district of Chongwe, 37 kilometres away from Lusaka, the place has just been expanded to include staff housing units. The units were yet to be occupied at the time of writing this report.

1.2.4 Technical activities of SPGRC

The SPGRC, as a regional network activity is responsible for several technical activities as discussed below.

Germplasm Collection: Representative seed samples of populations of indigenous species are collected in all the SADC member states. This is done through what are known as collection expeditions which visit farms or villages or any (forest) areas that may have the targeted germplasm. Apart from collecting indigenous species, other introduced species that have been in the region long enough and have developed unique adaptive features can also be targeted. However, priority in collection is given to species deemed to be under immediate threat of extinction. Plans for collection are developed regionally though actual collection is done by the NPGRCs in their own countries.

Conservation: Conservation of seed is of two types. One is known as *ex-situ* while the other is *in-situ*. Ex-situ conservation is also divided into two types, namely *ex-situ* Seed Conservation and Ex-situ Field Conservation. In the former case, seed samples are maintained in triplicate: One sample known as “active collection” is kept at the NPGRC in a country where it is collected; another sample called “base collection” is kept at the SPGRC; and a third sample referred to as “safety base collection” is maintained outside the region, in the current instance, at the Nordic Gene Bank. The “active collection” is kept in small distribution bags and is used for research and for use by future generations. The “safety base collection” is a back-up or some form of re-insurance against unforeseen adverse conditions like wars and natural disasters like floods which could damage the collection of SPGRC.

***Ex-situ* Field Conservation:** Applies to species whose mode of propagation is vegetative rather than seed. It also applies to species whose seed may not be kept alive for long.

Ex-situ field conservation is done predominantly at NPGRCs where sweet potato, cassava and similar crops are planted on small plots.

In-situ Field Conservation: Refers to the conservation of genetic resources of wild crop relatives and wild plants which are important to food and agriculture through improved management of the same resources in protected areas and on other lands not listed as protected areas. Many such plants are of extreme value to local communities but are not managed sustainably.

On farm-conservation: In much of the SADC region, farmers consciously select plants whose seed they save for planting. It is said that over 50 per cent of people in SADC live in farming families where responsibilities for managing plant genetic resources rests with the family itself. The SPGRC currently undertakes an on-farm conservation project to support as well as build farmers' ability to manage the plant genetic resources. Apart from the above stated reason, the project also aims to improve farmers' livelihood.

Multiplication and Regeneration: During collection expeditions farmers may not readily supply seed in sufficient or desired quantities. In such instances, the collected samples are planted at the SPGRC and NPGRC in the country where a sample is collected. The required quantity of seed is then harvested and stored, and/or used for research.

Both at the SPGRC and at NPGRCs seed is stored under long-term conditions (generally thought at about 100 years). However, seed is still considered to have a limited life span and so at intervals of 5 to 10 years, the samples from the gene bank are tested for viability using germination tests. If the viability is below 85 per cent, seeds from the particular sample are planted again. The resultant harvest is returned to storage in the gene bank.

Special attention is given to ensuring that the genetic integrity and identity of the sample is maintained during multiplication and regeneration. This is done by growing each sample on its own plot and ensuring that pollen from other plants of the same species does not come into contact with it.

Characterisation and Evaluation: The SPGRC houses as many traditional varieties grown within the sub-regional grouping as is possible. There are, for instance, over 1,000 types of sorghum in the gene bank and in order to give further identity to each type, samples

are planted in small plots and the agronomic and morphological characters are recorded. These include plant height, colour of grain, size etc. This means that each sample kept in the gene bank carries a descriptive identity apart from its data where it was collected.

The SPGRC, in conjunction with any other interested parties, particularly other researchers, promote the use of this material by recording and providing information regarding such attributes as resistance to diseases and adaptability. Such evaluation provides a basis for the decision on whether a type of seed will be used in plant breeding or other crop development programmes.

Documentation and Information: The SPGRC has developed and maintains a reliable documentation system to account for the large number of seed types (accessions) and its accompanying data. This system is called SPGRC Documentation and Information System (SDIS) and has been installed on computers at all the NPGRCs. Such standardisation of data recording and maintenance among all the NPGRCs and SPGRC enhances the use and exchange of information. The main objectives of the programme are:

- (i) to register all necessary data of each accession and that of the plant genetic resources of the region, the geographical distribution, usage and other relevant information in to the information system;
- (ii) to coordinate documentation activities of the SPGRC and the NPGRCs; and
- (iii) to disseminate pertinent information to publicise the SPGRC and its activities through leaflets, catalogues and other publications.

The system is also used for information retrieval, data storage, data updating and data processing and analysis.

1.2.5 The structure of SPGRC

Administratively, the SPGRC is a relatively small institution with a fairly straightforward echelon of command. The overall head is the Director. He is the Chief

Executive to whom all staff are finally answerable. He is the Secretary of the SPGRC Board, which formulates policy, the policy whose interpretation and implementation he must oversee at the institution.

Reporting to the Director as his next immediate subordinates are Senior Programmes Officers, each of whom heads a particular component of the plant genetic resources management programme. There is thus a Senior Programmes Officer for Conservation; a Senior Programmes Officer for *In-situ* and Collection; and a Senior Programmes Officer for Documentation and Information. One portfolio, that of Senior Programmes Officer for Finance and Administration was scrapped recently. This has meant that two fairly junior officers now report directly to the Director. These are the Finance Officer and the Administrative Assistant respectively.

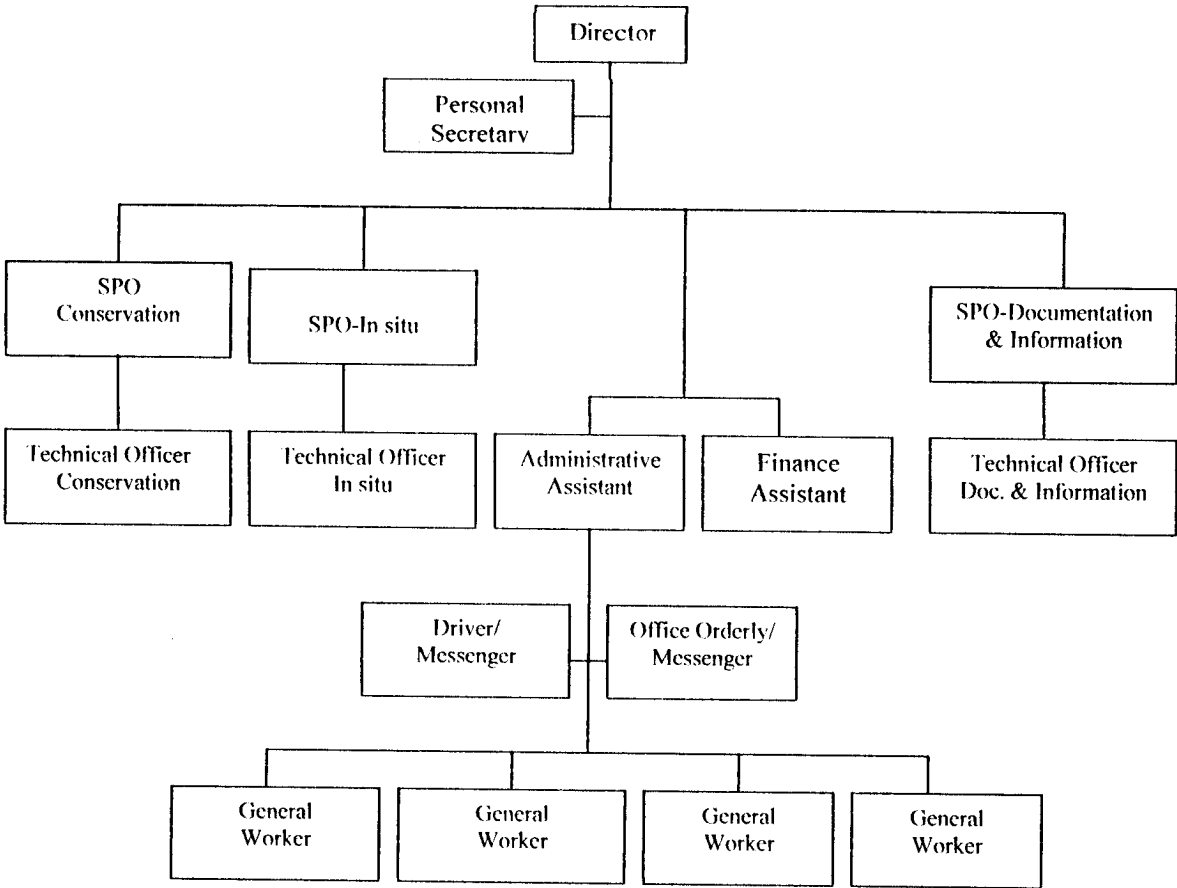


Fig. 2 SPGRC organisation chart

Three Technical Officers, each a specialist in their right, report to each of the Senior Programmes Officers and handle various aspects of the programme on a day to day chore by chore basis. The total full-time SPGRC establishment is just about 15 staff while casual labour is employed as and when the need arises. A non-resident SIDA Programme Manager, who is based in Sweden is the overall overseer of the project, though the Director does not report to him.

As a network, the SPGRC is at the nerve centre of all the NPGRCs. All project plans pertaining to collection and conservation activities of individual NPGRCs are worked out collectively at the SPGRC. While each NPGRC makes their own plans, there is an annual planning meeting where such plans are discussed and approved. Representatives of all NPGRCs attend and present and defend their plans. Approval is done at the meeting and funds, which are controlled by the SPGRC are disbursed, depending on availability, thereafter.

NPGRCs are largely autonomous and most, if not all, are part of government departments or government controlled organs or agencies. The Zambian NPGRC is stationed at Mount Makulu Research Station in Chilanga, Lusaka, and it falls under the Ministry of Agriculture Food and Fisheries (MAFF). Plant Genetic Resources Management will therefore just be one among other government funded activities, topped up in good measure by the donor funds. Each NPGRC is managed by a local NPGR Committee whose Chairperson is a member of the SPGRC Board. The SPGRC is therefore not a supervising organ of NPGRCs. The latter remain the domain of individual SADC member government policies on agriculture and research. Rather, the SPGRC is a coordinating body for the regional network.

In terms of staffing the SPGRC, the four senior-most positions are open to any individuals from the member states who hold the appropriate qualifications. At the time of the Practical Attachment, there were two Malawians and two Zambians holding these positions. By design, the rest of the positions are only open to Zambians. All these positions are on fixed contract terms, each term lasting four years and renewable on expiry.

CHAPTER 2

SCOPE OF ATTACHMENT

2.0 Background of the Attachment

The Practical Attachment (P.A.) is an obligatory undertaking in part fulfillment of the degree of Master of Communication for Development (MCD) offered by the Department of Communication, of the University of Zambia. It will generally last to about four months, during which a student focuses on one or more aspects of the operations of a chosen project, institution or organisation.

This student was attached to the SPGRC for a period of four months from Wednesday 5th July to Friday 3rd November, 2000. The central focus of the P.A. was to study the communication process of the SADC plant genetic resources network i.e. the SPGRC as an institution, and the SPGRC as it related to the NPGRCs.

2.1 Terms of Reference

The specific mandate of the student was as follows:

- (i) to participate, as much as possible, in the routine daily activities of the SPGRC for purposes of familiarisation with operations;
- (ii) to observe through such participation how individual officers and sections or departments communicate with each other at the official level or in the discharge of their duties;
- (iii) to discover how SPGRC communicates with NPGRCs and the general subject of communication; and
- (iv) to contribute, where necessary and/or possible to improvements in the communication process by suggesting changes based on communication theories.

2 Objectives of the Attachment

The objectives of the P.A. were as follows:

- (a) To study the institutional structure of the SPGRC and its internal communication systems;
- (b) To examine the aims, goals and objectives, and the type and role of communication utilised to achieve them;
- (c) To examine its functions and the extent to which communication enhances them; and
- (d) To determine where and how current development communication theories (if any) like participatory approaches, are applied.

Justification of the Attachment

The attachment to SPGRC was justified since it would serve the important purposes discussed below.

The student would be provided with an excellent opportunity to critically examine how (development) communication theories could be applied to large-scale international development collaborative efforts. It would in short provide a practical learning opportunity to add to the theories encountered in the two-semester course work.

The student's ideas and input, coming from a communication scholar, would hopefully contribute to an enhanced and more effective communication system for the institution and its networks.

As a scholarly work, the resultant Practical Attachment Report (PAR) would add significantly to the wealth of literature on communication strategies as applied to existing development programmes, especially that the conservation of plant genetic resources is a

specialist area in the fields of agriculture and the environment. The communication aspect should be a new and interesting, if vital, element of study.

2.4 Methodology

Information collection relied on both secondary and primary sources. Personal interactive processes formed the base for the participant observation method. The student visited each department or section, participating in some of the routine activities where possible, and observing where he could not participate. The unstructured and largely impromptu personal interview was used a great deal to clarify matters where need arose. One Senior Programme Officer was assigned by the Director to deal with all queries by the student.

In addition to this, the student was availed a large volume of literature, mostly papers by the senior staff, on the SPGRC. The library also had some information on plant genetic resources management in general.

2.5 Limitations

There were several limitations which were encountered during the Practical Attachment and which have a direct bearing on some aspects of the Report. First and perhaps most significant is the highly technical nature of operations at SPGRC. The few members of staff on hand are all specialists in their areas of operation, such that for them to entrust this student with the actual practical participation in their day to day chores was difficult. In most such cases, it would have required a specific period of training for the student to become conversant with and effective in performing such assignments. Because of the above-explained situation, the student relied quite heavily on one-on-one interviews and had thus only minimal hands-on experience.

Secondly, the student was not invited to any of the management meetings, which are held on a monthly basis, and which are attended by the Senior Programmes Officers and the

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Secondly, the student was not invited to any of the management meetings, which are held on a monthly basis, and which are attended by the Senior Programmes Officers and the

Director. How these meetings are conducted and what is discussed therefore remain a mystery to the student. It must henceforth be noted that this constitutes a huge minus to the findings as these meetings most probably play a very, very important role in the internal and other communications of SPGRC, as well as having a bearing on the networking with the NPGRCs.

Thirdly, visits to a number of NPGRCs to acquaint the student with their daily operations would have been most ideal. Although arrangements were made for such visits to Chitedze Research Station at Lilongwe in Malawi and another to the NPGRC at Harare in Zimbabwe, financial constraints made it impossible for the tours to materialise. A two-day stay at the Zambian NPGRC at Mount Makulu Research Station lasted only for the first day as the student fell ill and could not return the second day. The first day was usefully spent conducting unstructured verbal interviews consequent upon some briefings from the NPGRC senior staff. As such the student was unable to inspect facilities at the station as had been planned for the second day's activities.

Fourthly, one of the most interesting and informationrnative exercises would have been for the student to accompany SPGRC or NPGRC staff on one (or more) seed collecting expedition(s). This would have been a great opportunity to visit farms, villages or forest reserve areas and observe and participate in one of the core activities of both the SPGRC and NPGRCs. However, the timing of the Practical Attachment between July and November unfortunately did not coincide with the collecting period, which normally falls within the first quarter of the year.

Fifthly, though the student was allowed entry into the Year 2000 Regional Planning Meetings, where all the NPGRCs presented their plans and budgets for the coming year, he was only accorded observer status. He could not, therefore, participate by way of raising queries or making contributions of any kind on any of the issues under discussion. And due to a breakdown in communication, the student missed an equally important activity on the annual itinerary for the SPGRC i.e. the Regional Crop Working Group Meeting. The meeting occurred during a week when the student had asked to stay away

from SPGRC to attend to some pressing personal matters, and unfortunately, was not alerted of the forthcoming event.

2.6 Literature Review

The review of literature is divided into two. The first part reviews literature pertaining to the significance of plant genetic resources conservation and/or management. The second reviews what has been written in specific reference to the SPGRC.

2.6.1 Why conserve plant genetic resources

Agriculture and household food security are dependent upon the availability of, among other things, plant genetic resources, soil and constituents, and a conducive environment for crop production. The term 'plant genetic resources' refers to the genetic diversity present in a plant or crop species as indicated by different traditional varieties, popularly known as landraces, wild relatives and modern varieties (Mwale, unpublished).

Meeting the food needs of the world's ever growing population depends on the collection, conservation and sustainable utilisation of the genetic resources that are presently available. As Mwale further observes it is generally accepted that the use of improvised varieties is necessary to meet the world food demand and the need for plant breeding work in this respect is well appreciated. Some of the main users of genetic resources are in fact plant breeders. The entire range of genetic resources has to be conserved for the present and future generations because they also have value as sources of food, pharmaceutical and industrial products.

Mwale argues that despite being so important, genetic resources are continually being lost due to various natural occurrences (e.g. droughts and floods) and also due to human activities such as civil strife, over exploitation of resources and replacement of landraces

by improved varieties in farming systems, leading to genetic erosion. *Hawtin (1996) notes that genetic erosion in the far past used to occur due mainly to natural factors* within the realm of evolutionary processes, but that human activities have now accelerated this process “beyond acceptable levels.”

As observed in Guarino, Rao and Reid (eds.) (1995), for thousands of years previously, wild habitats and farmers with their fields, orchards and home guards were sufficient to ensure the conservation, within the framework of change dictated by natural and artificial selection, of the vital natural resource that is the genetic diversity of plants. These systems, it is argued, have come under increasing pressure from demographic, socioeconomic and technological change. The results have been habitat fragmentation and even destruction, the abandonment of traditional agricultural and natural resources management practices, and the replacement of farmers’ landraces by modern cultivars.

A further result is the loss of genetic material, and irreversible erosion of genetic diversity. This has necessitated active measures to ensure conservation of plant genetic resources. One other good reason for collecting and conserving germplasm is that the demand is dynamic and unpredictable, without a way to tell what tomorrow’s needs could be and what plants may be able to fulfill then (Engels, Arora & Guarino, 1995). The more diversity is conserved, the better the chances of fulfilling future demand. However, collecting and conservation is most effective when there is a clear and specific need for the material, whether for research or exploitation (von Bothmer and Seberg, 1995). Collection and conservation of germplasm also serves as sources of information on varieties, for purposes of research and plant breeding (Perry and Bettencourt, 1995; Mkamanga, 1999).

The Food and Agricultural Organisation (FAO) (1996) documents eleven causes of genetic erosion, i.e. legislative policy matters, civil strife, population pressure, pests/weeds/diseases, environmental degradation, land clearing, overgrazing, reduced fallow, over exploitation of plant species, changes in agricultural systems and the replacement of landraces by improved varieties.

Two strategies are followed in conservation. One is called *in-situ*, which is conservation applied mainly to wild plant species including those related to cultivated plant (in Guarino, Rao and Reid, (eds.) 1995; Mkamanga and Chirwa, 1999; Mnyenyembe, Mkamanga and Chirwa, 2000). The method entails the preservation of genetic resources in their natural habitats, through protection of selected areas or nature reserves. The second, called *ex-situ* conservation involves conservation of parts or whole plant material in a place far removed from the area where they normally occur. The method normally takes the form of seed storage. It also extends to the storage of vegetative material or as field collections (in Guarino, Rao and Reid (eds.) 1995). In seed storage, the strategy is to keep the seed in such a way that it remains viable over a long period of time. Certain conditions are necessary and are normally applied to achieve this low moisture content in the seed and low temperature condition of the storage space (Muliokela, Mwila, 1995). This second method is the one that clearly calls for the establishment of institutional bases where such activities will be carried out, hence the creation of gene banks, or as they have come to be frequently called lately, plant genetic resources centres.

2.6.2 Literature on SPGRC

A background to the establishment and role of SPGRC has been given adequate attention in Chapter 1 of this Report. A more general discussion of the establishment of genetic resources programmes at the international level is given in Guarino, Rao and Reid (eds.) (1995). In 1972, the United Nations (UN) Conference on Human Environment gave FAO the responsibility of establishing an International Genetic Resources Programme, in addition to leading to the setting up of the United Nations Environment Programme (UNEP). FAO then submitted a proposal, which eventually led in 1974 to the establishment of the International Board for Plant Genetic Resources (IBPGR). Its mandate was to help coordinate plant genetic resources activities worldwide. This was succeeded in 1991 by the International Plant Genetic Resources Institute (IPGRI), which seeks above all to work with and strengthen the collecting and other conservation

activities of national plant genetic resources systems in developing countries. National plant genetic resources systems are said to be 'the building blocks' of the global conservation effort and usually collaborate in collecting (Guarino, Rao and Reid, (eds.) 1995). In some cases, such collaboration is supported, technically and financially by regional organisations, for instance, the SPGRC, the subject of this Report (Blixt, Fatih and Mkamanga, 1998).

The most comprehensive single item of literature on the SPGRC appears to be the Plan of Action (SIDA, 1989) which led to the setting up of SPGRC. This publication details the plans, the funding, the aims and objectives of setting up of the regional gene bank. By far the greater bulk of literature on SPGRC consists of papers by the institution's senior staff presented to various international fora. By and large it tends to be repetitive in nature, dealing with background to the establishment of the SPGRC (Mkamanga and Ruredzo, 1991); and objectives, functions and funding of the SPRGC (Mkamanga and Ruredzo, 1992).

Mkamanga (1993) deals with the above-stated issues but more concisely also includes other aspects of operation like the Regional Crop Working Groups, Forage Genetic Resources Activities of the SPRGC Programme, Plant Genetic Resources Inventory and other activities. Significantly, he also covers collaboration with other (international) organisations. Mkamanga (1997) is interesting in the sense that the literature, aside to other issues dealt with in other works (as cited above) catalogues and discusses experiences, achievements and lessons learned (also Blixt, Fatih and Mkamanga, 1998) at SPGRC. The work enlightens the reader on the operation of the regional network; the development of the policy making mechanism; the training of plant genetic personnel for the region; the documentation and information system; the contributions of the Nordic Gene Bank to SPGRC; the staffing of NPGRCs; Regional Planning Meetings; and collaboration with Non-Governmental Organisation (NGOs) working on plant genetic resources.

The current status and activities of SPGRC are also well dealt with by Mitawa (1999) while Mkamanga, Chirwa and Mnyenyembe (1999) deal with the interesting and highly topical subject of the role of the SPGRC in the new millennium including plant genetic resources policy development; revision of the FAO International Undertaking on Plant Genetic Resources; Farmers' Rights; Ownership of Plant Genetic Resources; Biotechnology and Biosafety in SADC Agriculture; African Draft Model Legislation on Community Rights and Access to Biological Resources, and African Model Legislation for the Recognition and Protection of the Rights of the Local Communities, Farmers and Breeders (also Mkamanga and Chirwa, 1999); and Regulation of Access to Biological Resources.

Since the activities of the SPGRC are subsequently reported to and discussed by the Council of Ministers of the SADC, considerable space in the Minutes and Proceedings is given to the SPGRC (SADC, 1996 Vol. I and II; 1997 Vol. I and II; January 1998 and September 1998; and 1999).

Last but not the least significant, there are SPGRC Annual Reports for 1989 – 1999 which also account for very valuable readings on the SPGRC.

CHAPTER 3

CONCEPTUAL FRAMEWORK

This chapter attempts to deal with the important concepts or theories which will be crucial for any discussion on communication processes in an organisation. There is identified an immediate need to discuss some of these, not in isolation, but as they will relate to the overall analysis of the SPGRC and the recommendations which will follow.

Granted that the key concept is communication, a few theories on the same, inclusive of definitions are discussed. But because, specifically, it is communication in an organisation that is the subject of discussion, organisation as a concept is also defined and briefly discussed. The SPGRC is, however, not just an organisation but is the nerve-centre of a network of several other organisations, hence the concepts of networks, and inter-organisational networks are also discussed.

3.0 What is Communication?

There exist many definitions of the term communication, with some scholars preferring simple ones that appear basic, and other scholars settling for more detailed ones. It is equally true that these attempts at a definition have evolved over a long period of time, attracting debate and criticism of some of the definitions. It is, therefore, appropriate to state from the outset that this report does not attempt to take sides on the debate but merely refers to these definitions to show the diversity of thought on the subject. Perhaps the easiest definition of any word is readily found in the dictionary of a particular language.

Dance (1967) defines communication as the eliciting of a response through verbal symbols while Stevens (1950) suggests that communication is the discriminatory response of an organism to a stimulus. Other definitions include Berelson and Steiner (1964) who view communication as the transmission of information, ideas, emotions, skills, etc., by the use of symbols -- words, pictures, figures, graphs, etc.

The idea of a source (sender) and receiver(s) comes to the fore in Miller (1966) who suggests that communication has as its central interest those behavioural situations in which a source transmits a message to a receiver(s) with conscious intent to affect the latter's behaviour.

Diffusion theorist Everett Rogers (1997) defines communication as the process by which participants create and share information with one another in order to reach a mutual understanding. Another fairly recent definition is in Rancer et al. (1997) where it is stated that communication occurs when humans manipulate symbols to stimulate meaning in other humans. Kasoma (1994) suggests that communication is the sharing of human life experience and the environment between persons.

3.0.1 Role and contexts of communication

Communication is a fundamental social process which is deeply integrated into society and when we study it, we study people and societies (Schramm, 1967). Communication answers the same needs in all societies, pre-industrial and modern. As noted by Peck (1964) when some great event threatens society, for example, it arouses a storm of communication, just as when a society is making an important public decision, like electing a president, the communication channels overflow.

Infante et al. (1997) elaborate a number of contexts within which communication occurs. They are:

- Interpersonal - communication between two people
- Small group - communication involving several people
- Organisational - communication within and between organisations
- Public - a speaker addressing a large audience
- Mass - communication which is mediated by electronic or print media
- Intercultural - communication between people of different cultures
- Family - communication between family members

- Health - communication involving health care providers and health care receivers.
- Political - communication involving the governing part of our society. (Infante et al. 1997:12)

Needless to say that this is not all inclusive and one can cite various other contexts, of equal significance to the above. Mwiya (2000) refers for instance to intrapersonal communication, which is communication with or within oneself. This type can be mental (as in thinking), as well as physical (as in noting down something in one's diary).

Other scholars also refer to channels or media of communication. A communication channel is "the means by which messages get from one individual to another" (Rogers, 1995:18). In discussing communication media, Rogers (1995) refers to mass media channels, which are all those means of transmitting messages that involve a mass medium such as radio, television, newspapers, etc., and interpersonal channels, which involve a face to face exchange between two or more individuals.

All the above-cited contexts and channels of communication are relevant to and can form an integral part of communication in organisations, of which the SPGRC is one. Before going into detail on the same, just as we have defined and briefly discussed communication, it is important to now turn to the concept of organisation.

3.1 Organisation

Just as was the case with communication, there are as many definitions of (and debate on what constitutes) an organisation. Massie (1979) defines organisation as "a structure and process by which a cooperative group of human beings allocates its tasks among its members, identifies relationships and integrates its activities towards common objectives" (Massie, 1979:67).

On the other hand, Barnard (1962) sees organisation as an integrated aggregate of actions and interactions having continuity in time. The material of organisation is thus personal

services, i.e., actions contributing to its purpose. Schein (1976) cited in Butler (1986) writes thus of an organisation:

An organisation is the rational coordination of the activities of a number of people for the achievement of some explicit purpose or goal, through division of labour and function, and through a hierarchy of authority and responsibility (Schein, 1970:9)

Butler (1986) argues strongly for this definition because it brings into focus the element of hierarchy as an essential part of organisation. Rogers (1995) also alludes to this element of hierarchy when he writes thus:

Organisational structures are highly centralised, almost like a paramilitary unit. There is no equal authority. They are organised in a hierarchical authority structure that specifies diffusion, who is responsible to whom, and who can give orders to whom (Rogers, 1995:376).

What Schein (1970) refers to in his above-cited definition as “the rational coordination of the activities of a number of people ... through division of labour and function” is what Hodge and Johnson (1970) call “a complex of relationships among human and physical resources and work, cemented together into a network of systems” (Hodge and Johnson, 1970:7).

The idea that organisations are systems or networks of systems is also supported by Reus and Sylvis (1985). Quite significantly, Hall et al. (1981) bring into the picture the element of communication when they state that “the elements of organisation are, therefore, (1) communication; (2) willingness to serve; and (3) common purpose (Hall et al., 1981:479). They state earlier that an organisation comes into being when there are persons able to communicate with each other, who are willing to contribute action to

accomplish a common purpose. This tallies well with Reus and Sylvis (1985), cited above, who see organisation as the exchange of information, ideas and feelings.

What comes out from all the above definitions and discussions of organisation is that it is a process of ordering and coordinating functions (Bwalya, 2001). An organisation is, therefore, a group consciously put together to perform certain well-defined tasks (Senger, 1980). The organisational structure enables groups of people to work more effectively together in achieving stated goals than they would probably do working as individuals (Foster 1972, cited in Bwalya, 2000).

It is obvious that communication is a vital function in any organisation. This is why it is important to discuss separately what constitutes organisational communication.

3.1.1 Organisational communication

It has already been stated above that communication is an integral part of the overall activities of any organisation. In fact it is inconceivable that even a first step in any direction can be made without communication playing a critical role. In this regard, obviously, communication will occur in a variety of contexts and how effectively it is used can determine whether the organisation will progress or stagnate.

Scholars have written variously on organisational communication. To quote Foltz (1985:3) "There are probably as many definitions of the term as there are practitioners in the field". In his view, organisational communication is the exchange of information, ideas and feelings.

A comprehensive definition of organisational communication is that given by Infante et al. (1997) and also cited in Bwalya (2000) which refers to it as:

Exchanging messages to stimulate meaning within and between organisations and their environments. Organisational

communication involves one to one communication (such as communication between superiors and subordinates), small group communications (meetings, for example), public communication (including public speeches by a chief executive officer), and mass communication (press releases, company newsletters, new product announcements using teleconferencing, perhaps even internal corporate television programmes). Each of these forms of communication may occur between members of the same organisation, or between organisations to coordinate behaviour with each other or with their environment (customers, the government or competitors) (Infante et al., 1997:323).

In effect communication can mean the ultimate success or failure of an organisation and such communication must project the personality of a particular organisation to its internal and external audiences.

Foltz (1985) argues that the key to gaining support for organisational objectives, policies and programmes is to serve the organisation's audiences, knowing what they want and how they prefer to get it. He correctly observes that it is impossible to group audiences into a single group having the same interests and similar information needs because they come from different environments and have different backgrounds and points of view.

The organisation must paint a clear picture of itself and its views to its many diversified audiences, be they employees, the general public, customers (and potential ones), suppliers, government officials, etc., and must listen to their views and comments. Organisational communication must not just consider the audience needs and interests but also the media for communication. These can include employee publications, informal media, "upward" media and other "downward" media. Downward media can consist of letters, booklets, bulletin boards, posters, etc. Others are the computer, video tapes, closed circuit television and a lot of other technology-aided gadgets. All this should constitute a deliberately worked out programme of communication activities in

which both high and low ranking employees are involved and it must have the support from the top.

Listed below are 12 potential communication objectives in an organisation as seen by Foltz (1985):

1. Establish a formal programme of regular communication with all employees.
2. Establish one regular channel of downward printed communication to all employees to inform them about all aspects of issues pertinent to the company and industry and distribute at least once a week.
3. Issue a publication that will permit more in-depth coverage of internal and external issues. Distribute to all employees and other appropriate audiences on a bimonthly or quarterly basis.
4. Issue a special management publication that will address the special needs of managers.
5. Emphasise subjects that relate to corporate objectives. The subjects include competition, government regulations, marketing plans, productivity, pay and benefits.
6. Hold regular meetings between management and employees. Encourage questions from and discussion with employees on problems, and opportunities, and explanations of how employees fit into the bigger picture.
7. Give the employees an annual state-of-the-business review, of corporate as well as local matters.
8. Encourage supervisors to meet regularly with employees to discuss issues, problems and opportunities. Ideally, specific communication responsibilities should be written into supervisory position descriptions.
9. Communicate information about the organisation to employees no later than it is distributed to outside news media.
10. Install methods and procedures that encourage employees to ask questions, such as telephone hotlines and "speak up" programme.

11. Conduct surveys every other year to evaluate the effectiveness of the communication programme and to determine audience needs and interests.
12. Re-examine these objectives annually to be sure they are in line with organisational objectives (Foltz, 1985:7-9).

3.1.2 Inter-organisational relations and networks

Inter-organisational relations are the variety of interactions between two or more organisations designed to enhance organisational goals (Hasenfeld and English 1978). It is, according to Hasenfeld and English (1978) important to study these relations among other reasons, so as to become sensitive to consequences of these relationships on the inter-organisational structure, process, and clientele, as well as to become aware of the forms of linkages which effectively join organisations to each other. One way of approaching analyses of inter-organisational relations is by studying a set of networks of organisations in interaction with a focal organisation or a class of focal organisations (Hasenfeld and English, 1978). The focal organisation is in an environment of input and output organisations with which it has interactions. Input organisations provide various types of resources for the focal organisation, including personal, legitimisation, clients, and capital, while output organisations receive a product, new knowledge, a service, or a client system from a focal organisation.

Mwiya (2000), citing Hasenfeld and English (1978) refers to other approaches to the study of inter-organisational relations as being:

- (i) relations between an entire network of organisations;
- (ii) the interactions between a pair of organisations within a network; and
- (iii) the forms of linkages organisations use to relate to organisations

At this point, the question that remains to be answered is what a network is.

Anonymous (<http://www.labs.bt.com/people/callagjg/ion/conceptu.htm>), quotes Easton (1992) as defining a network as a model which describes a number, (usually a large one) of entities which are connected. And quoting Van de Ven and Ferry (1980) and

Easton (1992), the anonymous writer further suggests that networks are a total pattern of relationships within a group of organisations acting in order to achieve common goals. Anonymous (2001), quotes Mitchell (1969) as defining networks as a specific type of relations linking a defined set of persons, objects or events, the set of persons, objects or events of which the network is comprised, being called actors or modes. And further quoting Anderson, Hakanson and Johnson (1994), networks are defined as the exchange dimension in two or more connected relationships, where exchange in one relationship is contingent upon exchange in another. The components of exchange within the relationship can include the product or service, information, and financial and social elements. Anonymous (2001) also quotes Aldrich (1979) and Lundgren (1995) agreeing that networks are the bonds or social relationships that link loosely-connected organisations.

Anonymous (2001) describes an inter-organisational network as a number of connected business relationships between organisations. These can be business firms, associations, universities, shareholding institutions, regulatory agencies, consultants, etc. Inter-organisational networks, by definition, refer to external cooperation, i.e. internal networks. They can be regarded as business to business networks (Anonymous, 2001). Such networks consist in the main of exchange relationships. An understanding of relationship characteristics as well as the interactive process within which they are developed is very important.

Citing Hakansson and Snehota (1990), Anonymous (2001) describes the interaction approach as being based on continuous exchange relationships occurring between a limited number of identifiable actors. The approach provides a picture of relationships and exchange within them and is an important conceptual work in trying to understand long-term bonding, various forms of adaptation and the development of trust and mutuality (Anonymous, 2001).

Exchange can be a short-term exchange of goods, services, payment and information, or long term exchange within relationships that institutionalises and adapts (Hakansson,

1982). Transaction of physical goods need not take place as information or technical knowledge may suffice, as long as such exchange is recognised as being important by the organisations involved. Thus relationships can be with research institutions, consultant firms, and service-related organisations (Torvatn, 1996).

Anonymous (2001) citing Johansson and Matsson (1987) distinguishes relationship from interaction. A relationship is defined as a contact between two organisations which is acknowledged by both organisations. Relationships need to have mutual orientation, mutual dependence and bonds tying the actors. Reciprocity is identified as being very important. Relationships result from exchange processes between the parties, which exchanges become routinised depending on their frequency. Such contacts in the end become institutionalised.

The importance of routinisation lies in the fact that the relationship thus becomes a question of expectation and a behaviour pattern which is taken for granted. Thus when a relationship is institutionalised, whatever the circumstances, it consists of routine, explicit and implied rules of behaviour and rituals in conduct. From a network perspective, relationships are parts of a larger whole i.e., a network of interdependent relationships (Anonymous, 2001) and these relationships are connected since what happens in one relationship affects the interaction in others (Blankenburg and Johanson, 1990, in Anonymous, 2001). The key elements of any network are actors, activities and resources, all of which are equally important and mutually inter-dependent (Easton, 1992, in Anonymous, 2001). Activities can be linked in terms of technical, administrative, commercial, and other activities while resource ties connect various resource elements, such as technological, material, knowledge resources and other intangibles. Actor bonds, on the other hand, can be technical, planning, knowledge, socio-economic, and legal bonds. The importance of actor bonds is that they influence how actors perceive each other. Resource ties, activity links and actor bonds are the substance of relationships and relationships make it possible to access and exploit the resources of other parties in the network.

3.1.2.0 Planning for inter-organisational networks

Hancock (1992) describes network planning as essentially inter-institutional or cross-institutional planning which is based on information transmission and exchange, and upon interest grouping, as a means of connecting users and audiences with some shared, if not identical priorities. It seeks to arrive at a loose form of controlled association, without affecting the sovereignty and integrity, inclusive of the organisational and decision-making structures of the network members.

In essence, network planning is to optimise and realise common interests through a form of creative dialogue, negotiation, and shared but limited decision-making (Hancock, 1992). Further, such planning seeks to obtain consensus and a strategic platform by finding a common denominator where there is agreement to sacrifice some elements of specificity and sovereignty, so as to reap the benefits of a shared programme (Hancock, 1992).

3.1.2.1 Networks and diffusion theory

Diffusion is a communication theory popularised by Everett Rogers. According to Rogers (1962), diffusion is the process by which an innovation is communicated through certain channels over time among members of a social system. What distinguishes this type of communication is that it is primarily concerned with dissemination of new ideas. The essence of diffusion process, as argued by Rogers (1995) is the information exchange through which one individual communicates a new idea to one or several others. In its most elementary form, the process involves (1) an innovation, (2) an individual or other unit of adoption that has knowledge of the innovation or experience with using it, (3) another individual or other unit that does not yet have experience with the innovation, and (4) a communication channel connecting the two units (Rogers, 1995:).

Despite appearing to deal more with inter-personal relations, the relevance of some elements of diffusion theory to the SPGRC will be illustrated in the discussion in Chapter 7 of this Report. Of particular interest is the idea of homophily. A commonly-held

thought about human communication is that the transfer of ideas occurs most frequently between individuals who are similar or homophilous (Rogers, 1995). This similarity is on the basis of certain attributes such as beliefs, education, social status, etc. In situations where an individual has a choice on who to interact with among any one of a number of other individuals, there is a strong tendency to choose one who is similar.

Communication with people who are markedly different may create cognitive dissonance. An attempt will be made to argue for diffusion in inter-organisational networks on the basis of homophily.

3.1.2.2 Communication network analysis

According to Rogers (1995), a communication network consists of inter-connected individuals who are linked by patterned flows of information. He suggests that networks have a certain degree of structure, of stability, which creates predictability to human behaviour. The study of networks helps illuminate communication structure, which structure is so complicated that in any but a small system, even members of the system do not understand the communication structure of which they are a part. A computer becomes necessary for any such analysis of communication structure. Communication network analysis is the method of research that identifies the communication structure in a system by using inter-personal communication relationships as the units of analysis in analysing network data on communication flows (Rogers, 1995).

A personal communication network consists of those inter-connected individuals who are linked by patterned communication flows to a given individuals. Each individual is thought of possessing such a personal network, consisting of the set of other individuals to whom the focal individual is linked in network relationships.

According to Rogers (1995) some personal networks consist of a set of individuals, all of whom interact with each other; these are interlocking personal networks, which contrast with radial personal networks i.e. those that consist of a set of individuals linked to a focal individual but not interacting with each other. Says Rogers (1995):

Such radial personal networks are less dense and more open, and thus allow the focal individual to exchange information with a wider environment. Obviously, such radial networks are particularly important in the diffusion of innovations because the links reach out into the entire system, while an interlocking network is more ingrown in nature (Rogers, 1995:308-9).

Communication network analysis is mentioned in this chapter to show that the student is aware of its existence as a possible way of analysing the SPGRC network. However, because of its complicated nature, this Report will approach the SPGRC communication network rather along the lines of other concepts discussed earlier in this chapter.

CHAPTER 4

PERSONAL EXPERIENCES

4.0 Location of the Attachment and Facilities

The SPGRC, as already noted in Chapter 1, is located in Chongwe District of Lusaka Province. It consists of offices that accommodate administrative and technical staff, and also the actual storage facility which is the gene bank. In the gene bank are several large deep freezers in which are stored thousands of seed varieties, known as accessions, collected from virtually all SADC member states.

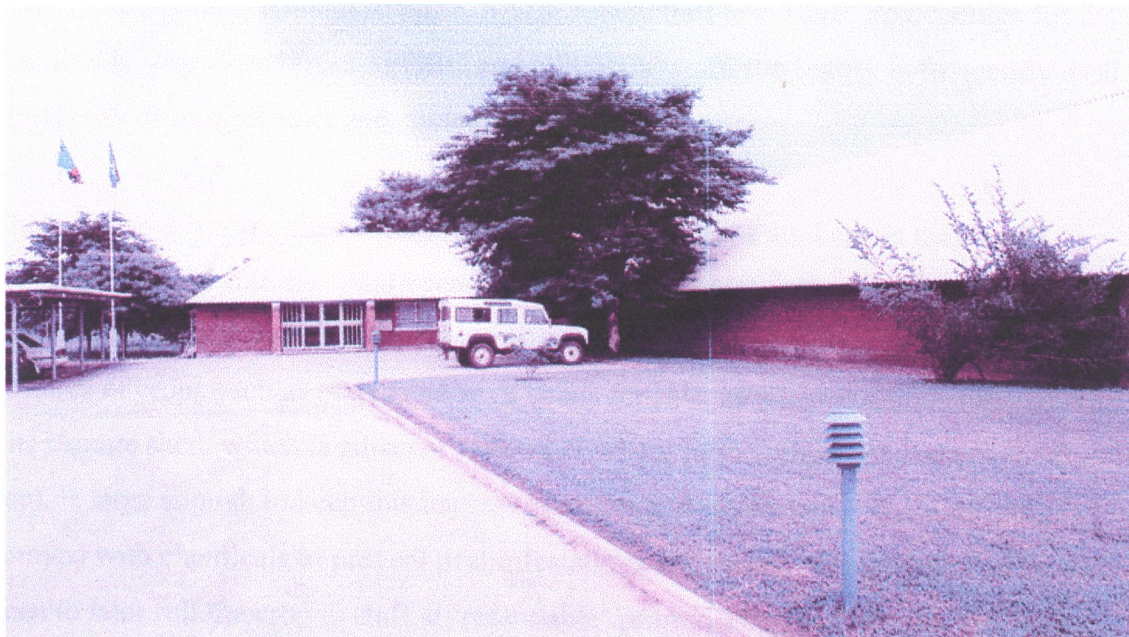


Fig. 3 SPGRC administrative centre at Chalimbana

Since this collection of seeds must be maintained at a certain moisture level, no chance is taken about the temperatures under which this storage is done. Thus, the SPGRC maintains a standby electricity generator which switches on automatically as soon as there is a cut of supply from the Zambia Electricity Supply Corporation (ZESCO).

There is a laboratory where technical personnel determine the moisture content of all seeds that are collected before packaging them and assigning them accession numbers and other identification criteria. The accessions are packed in bottles which are sealed and 'branded' in such a manner that it is not possible to erase the critical identification information. As soon as this is completed, the accessions are stored in the deep freezers, on which are stuck labels indicating what seed accessions are therein stored.

The Ake Welving library, named after a member of staff who was killed in a road accident, contains books and other materials which are relevant to agriculture in general and conservation in particular. Under the direct portfolio of the Senior Programme Officer, Information and Documentation, the library also stocks publications on the SADC, the SPGRC, Annual Reports, SADC Council of Ministers' Proceedings for the last decade, etc. Apart from SPGRC and NPGRCs' staff, the library is frequently used by University of Zambia staff and students for research purposes.

There is also a storage shed where recently harvested crops are kept as they await classification and storage. And because the 87-hectare plot is too large to be used only for seed regeneration and in situ conservation purposes the SPGRC does cultivate several hectares of crops such as maize and soya beans for sale, as a non-core-business activity. The storage shed, which is adjacent to another where farm equipment and machinery are kept, is large enough to keep this harvest of maize and soya beans. The harvest is sprayed with chemicals to prevent pest infestations and decay. The practice so far has been to later sell the crop to staff at 'reasonable' prices. There is also a motor vehicle garage where non-personal-to-holder institutional vehicles are parked overnight and weekends.

Members of staff generally find it costly and inconvenient to go to their homes or into town for lunch as the SPGRC is located halfway between Lusaka and Chongwe, a distance of 37 kilometers. They thus tend to each bring their own packed lunch, store it in any of the two refrigerators in the kitchen and later at lunch time use a warmer to prepare the food for consumption in a small restaurant available at the centre. Twice a

day, in the morning and in the afternoon, tea is served to members of staff, which is made in the kitchen.

In terms of communication, the SPGRC is connected to the Internet (though only one computer at the reception is used for Internet access and e-mail). Other facilities like direct telephone and facsimile lines exist and are used freely by staff. And although virtually all staff have computers in their offices, there is a computer room which operates as a data network control centre, also under the portfolio of the Senior Programmes Officer, Information and Technology. A Technical Officer mans this room.

At the time of the P.A., Minestone Zambia Limited construction company were putting final touches to the construction of housing units to accommodate all full-time technical and administrative staff. This is designed to reduce on perceived huge costs of transporting staff to the SPGRC from different parts of the city of Lusaka, and back home after 17:00 hours.

While the Director and the Programme Manager (who is stationed outside Zambia and visits SPGRC as and when necessary) have personal-to-holder motor vehicles, the three Senior Programmes Officers have one vehicle, which they use on official errands. There is a van, normally used by accounts personnel, and a Land Rover Discovery for SPOs while the rest tend to use an 18-seater mini-bus for official errands out of the SPGRC.

The SPGRC itself is situated on a vast 87 hectares farm, formerly the government-owned Chalimbana Research Station. It is also reputed to have once been a snake farm, thereby accounting for a large variety and number of venomous vipers which sometimes are even reputed to stray onto the neatly kept verandahs of the SPGRC buildings. (The chill down this student's spine can just be imagined when this information was disclosed after he had already undertaken a more than hour-long, unaccompanied around-the-farm tour of the SPGRC. Fortunately indeed, and by the grace of God, even in the most densely wooded areas, he did not encounter any of the reputed venomous reptiles).

Several metres out beyond the ploughed field is a small dam teeming with fish but to which access potentially spells doom for anyone attempting to do so since it is located in the most densely wooded areas of the farm. One is always in danger of provoking cobras, mambas, etc. Staff of SPGRC have, however, had plenty of difficulty keeping away people who believe they have tattooed themselves with charms that neutralise snake fury, and who trespass into SPGRC for illegal fishing expeditions. And this is despite the fact that SPGRC is completely surrounded by perimeter barbed wire fencing.

4.1 Initial Contacts

It had all along been this student's desire to be attached to the Zambia Integrated Health Programme (ZIHP), run by the John Hopkins University of the United States of America (USA) in conjunction with the Ministry of Health through the Central Board of Health and USAID. The student was particularly keen on this project because initial investigations had shown that ZIHP was using most of the communication, planning and development approaches which made the core of the course work of the Master of Communication for Development degree programme. The reaction of the ZIHP to the student's request for internship was less than enthusiastic and after being kept in suspense for several months, by which time fellow students on the programme were in fact already done with their attachment proposals, initial contact for attachment was made to the SPGRC through the efforts of a sympathetic Lecturer in the School of Agricultural Sciences at UNZA.

Whereas the general mood and indications from the authorities at SPRGC appeared welcoming, this student was informed that a meeting would be necessary between the Director and the student's Supervisor. Sadly, the Supervisor had left for Europe and would not return until after several months. The Head of the Mass Communication Department at UNZA intervened by writing an introductory letter for the student and a meeting was thus arranged for a face-to-face chat between the student and the Director.

The meeting took the form of an unstructured interview and was attended by the Director and two Senior Programme Officers. The student was requested to speak to his proposal and elaborate more on his expectations. It was conducted in an open, relaxed and welcoming manner, and the student was, thereafter, assured that he could come whenever he was ready. One Senior Programme Officer was put in charge of the student because, by the nature of his job, the Director would often be out of station. It was agreed that the attachment would be for a period of four months, from 5th July 2000 to 9th November 2000.

4.2 Reception and Orientation

The student reported at the SPGRC a day later than agreed, due to some bereavement in family circles. The Senior Programme Officer assigned to the student took him around and introduced him to all staff present, as a Masters student from UNZA, who would be at SPGRC for four months on attachment.

The student was also shown basic facilities like the toilets and was later taken to the library and advised that he should feel free to use it any time. He was also availed pamphlets, leaflets, and brochures on SPGRC, and Annual Reports and Minutes of the SADC Council of Ministers, to browse through and begin to get familiar with operations. At this initial meeting, the student was advised to work out his own work schedule, and confirm it with individual departmental heads. On the basis of the schedule, a contract would be prepared by SPGRC to be co-signed with the student.

The reception by all at SPGRC was very warm and the student was made to feel welcome and at home from the first day.

4.3 Office Accommodation

The SPGRC has adequate office accommodation for all full-time staff. There are at least three offices which at most times are vacant and are occupied by visiting consultants, and auditors. One such office was given to this student for the entire duration of the P.A.

It was furnished with a big writing desk, a computer table, three chairs (including a typing one) and two filing cabinets. There was a paper bin, a four-bar electric heater and propeller-type ceiling fan. The office was well ventilated with two huge windows that opened upwards, in what the student was told was Swedish-style architecture. At that time of the year, it was quite chilly and the windows were seldom opened. It was largely anticipated at that time that the student would be shuttling from one department to another and would, therefore, scarcely have much need for a computer. He was advised to use any in the computer room if need arose.

4.4 Work Hours

The student's work hours were not tied to the SPGRC work hours. The latter work Monday to Friday, reporting by 08:00 hours, breaking off for lunch at 13:00 hours and returning for the afternoon period at 14:00 hours. They break off for the end of day's work at 17:00 hours.

The student had initial problems fitting into this arrangement because of transport complications. As he was based at the UNZA Highrise Flats in Fairview right in the centre of Lusaka, the student needed to board a bus destined for Chongwe every morning to get to SPGRC. Such buses are only found at the City Market. Because the bus crews insist on having all seats on the bus being taken up before departing for Chongwe, the student would always reach SPGRC after 09:00 hours. Additionally, bus fares were hiked shortly after the student's budget had been approved by his sponsors and paid out. This created a shortfall in available cash for transport.

Taking all the above problems into account, the student requested and was allowed a three and half day working week as follows:

| | | |
|------------|---|-------------------|
| Mondays | - | Full day |
| Tuesdays | - | Full day |
| Wednesdays | - | Mornings only |
| Thursdays | - | Full day |
| Fridays | - | Absent completely |

This arrangement later proved convenient for another unanticipated reason altogether: the limited involvement the student had in the actual day to day routine of the SPGRC (refer to 2.5 above), which meant he had a lot of free time to himself. The transport issue was soon recognised by SPGRC management as a serious inconvenience to the student and he was allowed to board the institutional mini-bus to and from work. He was thus picked from his home around 07:00 hours in the mornings and later dropped around 18:00 hours, at no cost at all to him.

In line with the general practice at SPGRC, the student was always served with tea at about 10:00 hours and sometimes (but not always) around 15:00 -- 16:00 hours. He carried his own pre-packed lunch and joined others in the restaurant at 13:00 hours to eat.

4.5 Organisation's Expectations and Perceived Role of Student

The student was seen by SPGRC as just that: a student who had come to conduct some research at the institution and who needed to be based there for the duration of four months. The institution really perceived their role as that of putting at the disposal of the student whatever facilities he needed to make the best findings about the SPGRC. No other student had been attached to them before and they were keen to make this particular research successful.

In the words of the Senior Programme Officer who was made responsible for the attachee, "We see you as an external auditor whose report will provide an independent analysis and views of our institution and its operations."

As such, the SPGRC exercised no controls whatsoever on the routine or schedules of the student although he made himself available on the agreed days and at the agreed times. He similarly sought official permission whenever he had to leave early or report late, or indulge in any activity other than that which was officially agreed upon. Thus the official designation was that of student or attachee though he was accorded the respect accorded to the Senior Programme Officers.

The student did make a tentative schedule, indicating when he would prefer to be attached to particular departments and, by and large, this was readily facilitated, although as stated more than once before, the nature of operations virtually everywhere he went at SPGRC was so technical that he could not fully get involved without some prior practical experience or training. For instance, in the laboratory where moisture levels of seeds was being determined, this student could just watch and ask questions. One session was, therefore, enough for observation and interviewing. Any further sessions just tended to be boring and a waste of time.

At one time, while attached to the Information and Documentation department, the student requested for something practical to do and was allowed some time to record some data about plants, according to the criteria that was available. This was most interesting and useful because this student learned more that way than through just observing and inquiring.

A detailed tour of plant and equipment was organised by the SPO responsible for the attachee and a lot of detailed explanations were made, which were really eye-opening. One Technical Officer also conducted the student around the fields, allowing him to observe as they demarcated the land in readiness to plant seeds for regeneration. As for the Administration and Accounts sections, the student visited and had lengthy informal chats with personnel there too, which also provided some insights into their operations.

In all this, the biggest limitation remained the lack of practical involvement in the routine activities of the SPGRC.

4.6 Work Environment

Work environment can be taken to refer to the atmosphere prevailing within the geographical location of the work place, inclusive of the surroundings, the relationships among the staff and those they interact with while there, and also the dos and don'ts of the organisation's system. Many organisations go to great lengths to create what has come to be commonly referred to as "conducive atmosphere", meaning the environment perceived to be pleasant and positive enough for staff to achieve optimal production levels. Clean, airy offices, with all requisite paraphernalia to make occupants not just comfortable but able to execute tasks without much ado; efficient communication facilities and methods; ability to have personal and other problems solved in the shortest possible time; whether the physical location of the work place affords the staff a serene, peaceful time to do their routine tasks, etc., can all contribute to the "work environment".

Physically, the location of the SPGRC, out in the Kapwelyomba Farming Block, makes it one of the quietest places one can work. The busy Great East Road is some 200-300 metres away and only big, heavy-duty trucks sometimes create the kind of engine noise to cause disturbance. The real 'noise' occurs during take-off by big aircraft at the nearby Lusaka International Airport. For the first few days, this student was often startled into momentary fright by the noise of the planes as they took off but, like the staff at SPGRC, soon got accustomed to it. It became just part of the routine to hear and take no note of the aircraft.

The South African and British Airways jumbos, taking off at lunch time on some week days often provided for a watchable spectacle. The huge bird-like creatures, suddenly roaring and emerging from just above the tree-tops and heading nose-first into the skies, would make the mostly casual staff outside stare in amazement at technology. It nevertheless did not constitute a disturbance to work.

The work force is considerably small, which generally provides for a lot of cohesion and cooperation, unlike when there are so many people. Mwiya (2000: 52), citing Brown (1971) appears to agree with this assertion when she writes: "In small employment hierarchies.... Tension and hostility seem to occur much less often than in those

employing large numbers". At the time of the P.A. there were only 12 full-time staff (i.e. excluding two cleaners/messengers and the driver), and two part-timers.

The student got the impression that either everybody was a workaholic, or there was too much work, or simply that an excellent work culture existed as one seldom found groups of individuals whiling time away chatting on matters unrelated to their work. People were either locked up in their offices, pounding away at their computer keyboards, or running around facilitating this or that activity. More often than not, lunch break for most staff started as much as 30 minutes late but still ended promptly such that 14:00 hours found them behind their desks in their offices.

A jovial joking relationship across the ethnic divides appears to exist (especially) among the (junior) staff, inclusive of the part-timers. Whereas it is common in Zambia for particular ethnic groups to maintain what is known as traditional cousin-ship and tease each other, at SPGRC, it was not uncommon to encounter such relations between a Southerner and an Easterner. The bus rides to and from work, and the brief lunch breaks provided for a lot of cousin-ship-oriented light moments. The unusual absence of grumbling and gossip, especially about superiors, which is very common in many places of work was conspicuously absent at SPGRC. Perhaps this is a direct consequence of the fact that the SADC conditions of service, inclusive of salaries that are paid in US Dollars, are very good. "Ever since I came to SPGRC," joked one colleague one day, "I have never received the same salary in two different months. My pay is always going up with the continuous decline of the Zambian Kwacha." Additionally, most departments are two-person entities, meaning that juniors are interacting with their superiors almost on a daily but definitely very frequent basis. They can thus discuss and sort out problems as and when they arise. Even for this student, seeing the Director was merely a matter of whether he was in the office or not. In short, there exists a very cordial relationship among all staff and, generally speaking, most if not all factors that add to creating a conducive working environment appear to be in place at SPGRC.

4.7 Overall Impressions

For a long time, local political and other leaders have be-cried the poor work culture among Zambians. On their part, the workers have generally blamed it all on poor conditions of service, rotten infrastructure, absence of equipment, and even poor personal relations between superiors and their subordinates. This has sometimes led to strikes and huge losses, both in terms of human-hours and projected gains.

This student tended to consider the SPGRC as a model organisation on all the above aspects. The environment is good because the individual employee's personal welfare is catered for, work is readily facilitated by the presence of all the necessary tools, the place is quiet and clean, personal relations are warm, and of course the remuneration of workers is good. In short, the SPGRC passes for a model of good work environment in more than many ways as it also has an 'open' management that is readily accessible to staff even on what elsewhere would be considered 'flimsy' matters, etc. It left this student very envious and wishing his own work place could be like that too.

CHAPTER 5

CHALLENGES AND CONSTRAINTS OF SPGRC

5.0. The Role of SPGRC

5.0.1 Background information

The SADC region is made up of 14 tropical and sub-tropical countries which lie between six degrees north and 35 degrees south of the equator. The SADC countries share a range of similar rainfall patterns, natural vegetation and agro-ecological zones which support a rich diversity of wild and cultivated plant species which are used for food, feed, medicines, timber, soil amelioration and various social and commercial purposes (Mkamanga, 1997).

With a population of over 160 million, three-quarters of whom depend on agriculture, more than one-quarter of the region's export earnings were from the agriculture sector (Mkamanga, 1997, citing Wilson et al., 1998). The plant genetic resources of the region have been exploited to varying degrees in different member states. Exploration is still a necessity for purposes of adequately documenting the diversity of plants and producing a comprehensive inventory of their geographical distribution, known uses, and local names.

Citing Murdoch (1959), Mkamanga (1997) asserts that agriculture in the region can be traced to the arrival of the Bantus who migrated from Central North Africa between the first and third century A.D. with Sudanic agriculture and crops of African and Malaysian origin. Thus some of the earliest cultivated plants were millet, sorghums, cowpea, bambara groundnut, cucurbits, okra and sesame, most of whose origin was from Africa north of the equator.

Plants whose origins were outside of Africa were introduced into the region by Arabs and Portuguese from the fifth to 15th Century A.D. respectively (Mkamanga, 1997, citing Murdoch, 1959). The main staple food of the region is maize, which originated from the

Americas alongside beans, groundnuts, cassava, sweet potato and potato. All these are very widely cultivated in the SADC region. Other food crops including rice, sugar cane and wheat, which enjoy popularity among farmers, were introduced into the region.

Mkamanga (1997) observes that most of these crops have been in the region for a long time such that the region is a rich centre of diversity for some of the species. Through deliberate breeding, and mutation for some vegetatively propagated species, landraces which are adapted to local conditions have evolved and African varieties have arisen from seed (Mkamanga, 1997, citing Gulick et al.,1983).

Mkamanga (1997) further observes that most of the indigenous species like pearl millet, finger millet and bambara nut are grown on a very small scale and are in danger of genetic erosion because farmers prefer the high yielding species introduced from elsewhere. The region is a rich centre of diversity of some introduced species, which have been in the region long enough as to have adapted to local conditions. Since farmers are encouraged to grow high yielding varieties and hybrids, these landraces are now also threatened with genetic erosion or extinction.

Citing Guarino (1996) and Annon (1996b), Mkamanga (1997) lists some possible causes of genetic erosion in the region as:

- (i) insect pests and diseases
- (ii) frequent droughts
- (iii) flooding
- (iv) changes in agricultural practices
- (v) dam and road construction
- (vi) overgrazing of grasslands especially in dry areas
- (vii) modification of habitats
- (viii) repeated late bush fires
- (ix) high population growth rates
- (x) over-exploitation of natural resources
- (xi) increasing specialisation of farms and replacement of crop

products with artificially produced substitutes
(Mkamanga, 1997: 3)

5.0.2 Plant genetic resources activities in SADC

While the biodiversity of large areas of SADC is well conserved and protected in forest reserves, national and game parks, and the botanic gardens of the individual countries have custody to numerous genera found in the region, very little effort has been invested in the conservation of the genetic diversity of crop plants and their wild and weedy relatives, and other indigenous wild plants with economic potential (Ruredzo and Mkamanga, 1992). Germplasm collection commenced only in the late 1970s focusing on cultivated plants. Many collection trips were coordinated by the IARC's, in collaboration with local scientists.

Most of these expeditions are said to have covered very small areas, leaving much of the region still unexplored. Due to lack of proper storage facilities and lack of attention, most of the duplicate samples left by the IARC's in host countries deteriorated. There was similarly a noticeable shortage of trained scientists in plant genetic resources. At the end of 1990, only Zambia, Botswana and Tanzania had full-time scientists working on plant genetic resources (Ruredzo and Mkamanga, 1992).

5.0.3 A regional plant genetic resources centre

It is the above-noted dearth in plant genetic resources activities and trained personnel that led to the establishment of a SADC regional plant genetic resources centre in Zambia in 1989. As already stated elsewhere in this Report, the objectives of the SPGRC are:

- (i) to establish a network of local germplasm programmes to support plant research in the region;

- (ii) to conserve indigenous plant genetic resources and crop genetic resources; and
- (iii) to train plant genetic resources personnel for the region.

Other specific areas of interest and concern have been adequately covered in Chapter 1 and need not be repeated here.

5.1 Achievements of SPGRC

5.1.1. Establishment and coordination of network

As already stated, there was previously a marked absence of serious, well-planned and coordinated plant genetic resources management activities in the region. The SPGRC has since establishment in 1989 effectively coordinated either the establishment and/or strengthening of NPGRs. Nearly all, if not all SADC member states are now part of the network and are connected to the internet. The SPGRC is itself well established and well staffed with a full calendar of plant genetic resources activities in progress.

The network structure is such that the NPGRs are manned by staff from individual SADC member countries where they are located and the salaries are paid by their governments. The latter also contribute the bulk of resources for operations and maintenance of buildings. Each member state has put in place a National Plant Genetic Resources Committee to provide leadership to the NPGRs. The chairperson of each NPGR Committee is a member of the Board of the SPGRC, which formulates plant genetic resources policies that are in the final analysis overseen by the SPGRC. Thus, though each NPGR maintains autonomy as well as its own sovereignty, their activities are to a large extent coordinated through SPGRC.

| NPGRC | Location | NPGRC | Location |
|--------------|--|--------------|---|
| Angola | Centro Nacional de Recursos, Luanda | Mozambique | Institute of Agricultural Research (INIA), Maputo |
| Botswana | Department of Agricultural Research, Gaborone | Namibia | National Botanical Research Institute, Windhoek |
| Congo DR | Yet to be set up | Seychelles | Yet to be set up |
| Lesotho | Agricultural Research Division, Maseru | South Africa | Roodeplart, Pretoria |
| Malawi | Malawi Plant Genetic Resources Centre, Chitedze Research Station, Lilongwe | Swaziland | Seed Services, Malkerns |
| Mauritius | Division of Horticulture, Le Reduit | Tanzania | National Plant Genetic Resources Centre, Arusha |
| Zambia | Mount Makulu Research Centre, Chilanga | Zimbabwe | Genebank of Zimbabwe, Harare |

Table 2 Network members and NPGRC locations

The recruitment policy for senior staff of SPGRC is that any qualified person from the SADC member states can be hired while Zambia, in which it is located, provides the rest, also recruited on merit directly by SPGRC. The two categories are placed on four-yearly contracts. These are the staff that ensure the network headquarters and the network machinery keep running smoothly.

5.1.1.0 Information and documentation system

The many NPGRCs in the region altogether collect a large number of accessions and the accompanying data for each and every accession necessitates a reliable documentation system. SPGRC has to this effect developed the SPGRC Documentation and Information System (SDIS) which has been installed on computers at all the NPGRCs. This standardisation of data recording and keeping among all the NPGRCs and SPGRC enhances use and exchange of information (Mkamanga and Chirwa, 1999).

This system is also used for information retrieval, data storage, data updating, processing and analysis. It is also currently being integrated with Geographic Information Systems (GIS), which will make it possible to carry out a number of analyses important to managing and using germplasm collection, gap filling and planning for further collections.

5.1.1.1. Regional planning meetings

Plant genetic resources personnel from all the NPGRCs and those from SPGRC hold annual meetings in Lusaka to discuss project activities for the previous year and plans for the following year. Each NPGRC presents its activities for the previous year and those forecast for the next year. The methodologies for seed multiplication, characterisation and rejuvenation are discussed and standardised. The agreed joint activities are funded by the project. According to Mkamanga (1997) such joint planning of plant genetic resources activities has improved both the quality and quantity of accessions being delivered to SPGRC base collections.

5.1.1.2 Regional Crop Working Groups

Regional Crop Working Groups comprise top scientists from the region who derive their mandate from SPGRC and its Board. Ordinarily, these are seed specialists who add

expertise to the SPGRC and also carry out specific tasks identified by the Working Groups. In addition to developing strategies and priorities for plant genetic resources activities, they have developed (and continue to develop) a mandate species list for materials to be collected and conserved in the region. They have also carried out surveys on indigenous vegetables, developed lists of varieties in SADC and those to be included on the SPGRC mandate list. The Cereals and Food Legumes and Forage and Fodder Regional Crop Working Groups have concluded their tasks. Still in existence are (a) in situ and under-utilised Regional Crop Working Group; (b) Vegetables Regional Crop Working group; (c) Vegetatively Propagated Species Regional Crop Working Group; (d) Tree Fruits and Tree Nuts Regional Crop Working Group; and (e) Oilseed and Industrial Crop Working Group.

5.1.2 Collection and conservation activities

Chapter 1 of this Report dealt in detail with the objectives and technical activities of the SPGRC. These in fact are the core business of the network. To what extent have these been fulfilled? One can safely say that the story of SPGRC is a success story to a very large extent.

The SPGRC has thousands of seed samples maintained as base collections. Seed samples are kept in triplicate with base collections, as already stated, kept at SPGRC, the active collections, at NPGRCs and a safety base collection at a gene bank outside the SADC region. Currently, all such safety base collections are maintained at the Nordic Gene Bank. Researchers and plant breeders have benefited greatly from the active samples kept at NPGRCs while the base collections are for long-term conservation and use even by future generations. The safety base collections are kept as back-up against unforeseen events like wars or natural disasters that might damage the collection at SPGRC.

The NPGRCs have established field gene banks where species whose mode of propagation is vegetative rather than seed, or whose seed may not be kept alive for long,

are planted in small plots. This is *ex situ* conservation. The network is also actively involved in *in-situ* conservation through improved management (in protected areas and others not listed as protected) of genetic resources of wild crop relatives and wild plants of importance to food and agriculture. In many parts of the region, farmers consciously select plants for various characteristics and save seed for re-planting. According to Mkamanga (1999), over 50 per cent of people in SADC live in farming families where responsibility for managing plant genetic resources rests with the family itself. SPGRC supports and builds farmers' ability to manage plant genetic resources through an on-farm conservation project.

Mkamanga and Chirwa (1999) further observe that it is not often possible to collect the desired quantities of seed from farmers during expeditions. To make up for the shortfalls, the collected samples are planted at SPGRC or NPGRCs in the country of origin of the sample. The desired quantities are thereafter harvested for storage or use in research. At five to 10 year intervals, the seed samples from the gene bank are tested for viability using germination tests and if their viability has gone down, they are re-planted, re-harvested and stored again. These processes are called multiplication and regeneration.



Fig. 4 Seed multiplication field at SPGRC

The SPGRC has been able to characterise and evaluate each sample kept in the gene bank by recording its agronomic and morphological characters such as plant height, grain colour, size, where it was collected, etc. Information about other attributes like disease resistance, adaptability, etc., is recorded in conjunction with other researchers. Mkamanga and Chirwa (1999) argue that such evaluation provides for a basis for the decision on whether or not to use an accession in a breeding or crop development programme.

5.2. Other Activities

The SPGRC has been involved in other activities than those cited and discussed above. Such other activities, and in some cases their impact, are discussed briefly below.

5.2.1. Workshops, conferences and international conventions

In collaboration with the African Traditional Leaders Council for the Management of Natural Resources, the SPGRC hosted an African Regional Workshop on Understanding Biodiversity-Related International Instruments in Lusaka, Zambia. The objective was to bring together negotiators of the various international instruments which impact on conservation and sustainable use of biological resources. A task force has since been formed to develop an African model *sui generis* protection system. Mkamanga and Chirwa (1999) note that this is the first step Africa is taking to create its own special legislation to protect farmers and local communities, and their contribution to conservation and development of genetic resources in the context of Article 8(j) of the Convention on Biological Diversity (CBD), and their obligations to protect new plant varieties in the context of the TRIPS agreement Article 27.3(b).

This conference noted that most SADC member states do not have legislation which protects their biological resources and this has led to biopiracy (Mkamanga and Chirwa, 1999). The Task Force set up by the SPGRC has since drafted and formatted a draft

African Model Legislation for Recognition and Protection of Rights of Local Communities, Farmers and Breeders and Regulation of Access to Biological Resources. Some plant genetic resources workshops have been held in almost all the SADC member states to create awareness on the need to conserve plant genetic resources. Various SPGRC Board members have participated in international and regional forums such as the FAO Commission on Genetic Resources for Food and agriculture; the Subsidiary Body on Scientific, Technical and Technological Advice (SBTTA); the Conference of the Parties (COPs) to the Convention on Biological Diversity; and the Southern Africa Biodiversity Forum (SABF). Two Board members participated in the negotiations by the Contact Group of the FAO Commission on Genetic Resources for Food and Agriculture (Mitawa, 1999).

Board members similarly participated at the 4th FAO International Technical Conference on Plant Genetic Resources in Germany in 1993. This is the conference that led to the adoption of the Global Plan of Action for Conservation and Sustainable Utilisation of Plant Genetic Resources for Food and Agriculture. Mkamanga (1997) records a workshop for the formal and informal sectors to discuss ways and means for incorporating Non Governmental Organisations (NGOs) plant genetic resources activities into the SPGRC network. Also, that the SPGRC management is represented at the organs of SADC such as the Board of SACCAR, the Sectoral Committee of Ministers of Food, Agriculture and Natural Resources, and the SADC Council of Ministers, thereby ensuring that policy makers in the region are aware of SPGRC activities.

5.2.2. Collaborations and partnerships

From inception, SPGRC has maintained close working relationship with SACCAR, which was initially designated as the implementing agency. The current diminishing role of SACCAR is as a result of the fact that it is being phased out. Its role was that of facilitating negotiations of agreements between SIDA and SADC, and SADC and Zambia. It also recruited staff for SPGRC, prepared the Memorandum of Understanding

establishing SPGRC as well as facilitation of the formation of the Board of SPGRC. Whereas the formal reporting to the Council of Ministers is, according to SADC Procedures, done through a Sector Coordinating country, SPGRC use to report through SACCAR, the Commission which used to coordinate agricultural research in SADC.

Another very noteworthy relationship is that maintained with the Nordic Gene Bank, which is the project executing agency. It performs the role of a backstopping institution in managerial, administrative and technical aspects of running the SPGRC network. This is aimed at ensuring that the professional quality of SPGRC is not just built up but maintained at the intended levels (Mkamanga, 1997). As a result of such collaboration, the NGB has assisted in various aspects including solving the SPGRC telecommunication problems. Even some of the international visits to overseas conferences as referred to above were facilitated through NGB efforts and financing. Mkamanga, Nkhoma, Mnyenyembe and Chirwa (2000) list other international agricultural research centres which also participate in the SPGRC network, for instance ICRISAT, IRRI, CIMMYT, ITTA, ILRI, ICRAF, CIAT and IPGRI. The International Rice Institute has been directly involved in wild rice collection expeditions in the region. Of particular interest and importance is the fact that NPGRCs have started to incorporate NGOs and traditional healers working on plant genetic resources into their NPGRC Committees and national Crop Working Groups (NCWPs).

5.2.3. Contribution to national food basket.

The SPGRC is situated on a vast 87 hectares of arable land, which has proved to be more than adequate for all the purposes it was established for. Rather than keep land idle, some of it is cultivated and cash crops like maize and soya beans are grown for sale on commercial basis.



Fig 5 Maize grown for sale at SPGRC

The money realised is ploughed back into the SPGRC coffers. Some of the harvest is sold to staff, who either resale at a profit or consume it. And, as already stated elsewhere in this Report, seeds kept at SPGRC and NPGRCs are accessed by plant breeders and other such scientists who come up with better yielding varieties for farmers. This, in a way, is a contribution to the national food basket of Zambia.

5.3. Constraints

The SPGRC, as already stated elsewhere in this Report, is a success story. Mkamanga (1999) notes that it is the only plant genetic resources centre of its kind in the entire continent of Africa, as modeled after the Nordic Gene Bank. As such, it also has unique problems that may be viewed as teething ones. They are briefly outlined below.

5.3.1 Staffing and training problems

Not all network members are adequately staffed despite all the efforts made to train staff locally and abroad. The recommended number of staff per NPGRC is at least three: a curator, an agronomist and an in situ officer. Not all the NPGRCs have successfully met this requirement though the majority of them are adequately staffed as per this recommendation. But as observed by Mkamanga (1997), expansion of the mandates of the NPGRCs to include on-farm conservation and storage of vegetatively propagated crops, which require tissue culture, in-vitro and cryo-preservation calls for collaboration with scientists in other organisations.

In short, there is a dearth of expertise in some areas of conservation that requires to be addressed. In some instances, such dearth or failure to adequately staff NPGRCs (and in one or two cases even the SPGRC itself) has resulted from the departure of the trained personnel for the so-called greener pastures or through re-deployment by parent ministries in individual SADC member states. Note must be made here of the fact that while SPGRC personnel enjoy SADC conditions of service, which are highly competitive, NPGRCs personnel are generally civil servants whose conditions of service are not that competitive. It is, therefore, very easy to lure them away once they obtain higher qualifications desired by competing or similar projects.

The problem of inadequate properly-trained staff in the area of plant genetic resources is compounded by the fact that local universities and other institutions in the SADC region do not offer such courses. Mkamanga (1997) observes that although an Msc programme in this area of expertise was approved to be offered by the School of Agricultural Sciences at the University of Zambia, lack of funds has delayed the start of the programme. Thus the degree programme offered at Birmingham University in the United Kingdom, to which most of the Msc graduates manning NPGRCs have been sent, and through funding by the Nordic countries, remains the only source of properly-qualified staff. The mere fact that people have to travel overseas to acquire the degree makes it an expensive venture which limits the number of those who benefit from such scholarships.

5.3.2 Dwindling financial resources

There are not enough financial resources to adequately carry out as much conservation-oriented activities as both the SPGRC and NPGRCs would prefer. NPGRCs are largely funded by individual states and as most of them fall under government ministries or agencies, funding can be and does get to be erratic at times. Although those activities that are jointly planned at regional planning meetings are supposed to be funded through the SPGRC, this has over the years also been dwindling in real terms. In short, approval of the plans does not necessarily entail funding. As a good illustration of the level of financial problems currently being encountered by SPGRC, delegates to the Regional Planning Meeting of the year 2000 were accommodated at the lush Hotel Intercontinental, all meals were catered for, but they had to do without any per diems whatsoever.

The shortage of funds also affects maintenance works at NPGRCs. They rely for efficiency and efficacy on equipment that is always in functional order. A simple breakdown can lead to seed samples losing their required moisture content and/or even dying. It is not always possible to maintain equipment in perfect working order without a steady or ready flow of cash. The inadequacy of cash is also said to directly result from the reduction in funding by the project's donors to allow member states contribute more.

5.3.3 Absence of experts from other fields

It would appear that by policy and design, the SPGRC and NPGRCs have concentrated on recruitment of staff who are experts in agricultural areas, with emphasis on plant genetic resources. Such experts are thus believed to be capable of effectively handling other areas of operation within SPGRC and NPGRCs, which would ordinarily call for alternative expertise. In short, there are no staff specialised in administration, in communication, and such other social science-related fields. This can be viewed as a

serious limitation. As an illustration, the absence of communication experts at SPGRC and NPGRCs would perhaps account for the fact that many ordinary citizens and even farmers in SADC member states are not aware of the existence of the SPGRC and NPGRCs. There are no deliberately planned publicity programmes for these very important institutions. That, indeed, is an area which would be well taken care of by expertise from other fields.

5.3.4 Limited communication facilities within the network

For all the years that the SPGRC network has existed, there has been no direct telecommunication facility linking members of the network. This has meant relying on costly telephone, fax and email facilities. Information on accessions maintained by individual NPGRCs is for instance recorded on diskettes and mailed by post to SPGRC for their records. There are dangers of loss or damage involved. This problem will, however, come to an end as SPGRC will soon benefit from direct satellite communication links with all NPGRCs. Work to this effect is already in progress.

Suggested solutions to all the constraints discussed above are given among the recommendations in Chapter 8.

CHAPTER 6

STUDENT'S INPUT

6.0. Intended Purpose of Student's Attachment

Student attachment to a project or institution of one's choice is a requirement of the MCD programme. As already stated elsewhere in this Report, this student's attachment was aimed at studying the institutional structure of the SPGRC and its internal communication systems. It was also aimed at studying the aims, goals and objectives of the SPGRC, and the type and role of communication utilised to achieve them. During the attachment, the student would also examine the SPGRC's functions and the extent to which communication enhances them and determine where and how current development communication theories, if any, are applied.

Since the SPGRC is at the centre of a regional network of plant genetic resources conservation centres, the student would examine the network and how it operates, especially with regard to communication. The above was to be achieved, as much as possible, through student participation in the routine daily activities of the SPGRC. It was a major desire of the student to be able in the process to contribute, where necessary and/or possible to improvements in communication and other routine administrative procedures by suggesting changes based on current scholarly thought.

6.1 Student's Assignments

As observed in 2.5 above, several factors mitigated against any serious input by the student. An ideal situation would have been for the attached student to be designated a position, for instance, Programme Officer, Technical Officer, etc., and assigned specific routine activities for the duration of the attachment period or part thereof. This would

have enabled the student to make concrete inputs. However, due to the highly technical nature of operations, there was little, if anything at all, that the student could be assigned to do without prior training of some sort.

In this regard, the student spent a couple of days with the Technical Officer, Information and Technology, mastering how to record plant morphological and geographical data. This was initially done manually on a record sheet before being transferred onto the database. In this assignment, there was more learning for the student than input. The student was, by the same token, also availed an opportunity to conduct unscheduled on-the-spot interviews on matters pertaining to storage of conservation and other information on the databases and its accessibility to all network members, which will be discussed in the next chapter.

A potentially exciting time in the laboratory, testing moisture levels of freshly harvested seed, drying it to required levels, packaging it in storage bottles and labeling was similarly reduced to an exercise in observing the processes. In here too, rather than input, the student clarified several issues with the officers on hand on matters of procedure and rationale.

The student formed part of the technical team, which for several days demarcated the ploughed farmlands at SPGRC into plots for the regeneration of some varieties. The actual physical labour was provided by hired part-time farm hands, under the supervision of a Technical Officer. The Technical Officer himself did no actual work other than directing the activities. As such, even in this exercise, the student's input was as good as naught, but as in the other efforts, he learned a lot from the inquiries he made on the spot.

6.2. Student's Input during Meetings

Again, as observed in 2.5., the student was not invited to any of the management or staff meetings that may have occurred during the attachment period. A grand opportunity for

him to participate fully in decision making and contribute through suggestions based on scholarly thought was thus scuttled. There was always going to be a big opportunity at such meetings to register some input, especially that meetings are recorded by communication scholars as among many ways of communicating.

Even when the student was allowed into the Regional Planning Meeting, which brought together all the NPGRCs, the observer status accorded him restricted him from making any contribution whatsoever. This annual gathering is another heavily utilised communication tool in the SPGRC network and the student input would have come by full participation.

6.3. Student's Suggestions on Selected Issues

The student was availed an opportunity to discuss with the Director of the SPGRC on any issues related to the attachment topics. The openness of the meeting enabled the student to not only ask questions on points of clarification but to also make suggestions on matters of interest. During the course of the attachment, the student also had the opportunity to observe and make suggestions to different persons as he familiarised himself with different departments. In this regard, some of the student's observations and suggestions are discussed below.

6.3.1 Concentration of agricultural specialists

The student observed that virtually all senior and decision-making staff are people who have had technical training in the field of agriculture. This is as it should be, really. The SPGRC is an agricultural-based project and even its major activities and functions all require specific technical training in agriculture to be successfully carried out. The question arises though whether there are no areas in the operations of SPGRC which require the expertise from other fields. The Director was specifically advised to consider

recruiting communication experts or utilising their services to design and implement workable, efficient communication programmes for the project. It was suggested that even one of the already recruited and established Programmes Officers could study a programme like the MCD and later serve the SPGRC in the additional role of communications expert.

It was pointed out that while the agricultural scientists and such technically based persons may be fully aware of the SPGRC, its activities and its perceived benefits, the vast majority of the citizens and residents of the SADC region were unaware of the existence of SPGRC. This tended to indicate that there was no information flow to some of the institution's publics.

The Director, however, felt there was no need for specialists from other fields. He pointed to the fact that on a number of occasions that journalists had been to the SPGRC, even when they had been accorded an opportunity to fully explore its activities, its potentials, and even its problems, all they did thereafter was cover the speeches of whichever politician or dignitary they had accompanied on such visits. He felt that the so-called communication experts were not really interested in the SPGRC but in personalities (politicians).

He cited an example of a project in one of the SADC countries which was thriving until the major donors decided that there was need for economists, communication (and such other) experts, and which he said collapsed shortly after.

6.3.2. SPGRC publications

The student noted that much of the literature available on the SPGRC is by senior staff at the institution, and comes in the form of seminar presentations at various international fora and tends to be repetitive in nature, i.e., it is the same information over and over that the papers carry. The papers are very informative in nature and cover project formulation

and implementation through to successes and challenges for the future. They, however, are limited in the sense that they do not cover discoveries that arise from experimentation by users of the SPGRC, inclusive of plant breeders, seed control and certification experts, etc.

The SPGRC has introduced a newsletter but from the limited scope of its content (the first issue almost solely dealt with the newly installed SDIS and Geographical Information System), it is obviously targeted at the minimal readership found only at NPGRCs. One gets a feeling of it being a top-down information tool. The student felt and suggested that being the centre of a regional project, the SPGRC should consider introducing or cause to be introduced a scholarly journal on issues of plant genetic resources conservation, and other seed related activities. Contributions to such a publication could come from NPGRCs, SPGRC and other stakeholders including scholars from universities within the region and outside. Such a publication would have the advantage of carrying valuable plant genetic resources information across to a wider international audience than is currently the case. The newsletter could continue but widen its coverage to include plant genetic resources activities, staff movements, training, successes and failures at NPGRCs, SPGRC and so on, while contributions should also come from many more than just the personnel in the Information and Documentation department of the SPGRC (i.e. bottom-up as well).

Scholarly publication can be a quite involving and specialised activity. To effectively venture into such an exercise, the SPGRC might have to fall on the expertise of scholars in the field, from within the region or outside, with editorial and journals management experience.

6.3.3. Participatory approaches to conservation

As observed in Guarino, Rao & Reid (eds.) (1995), participatory approaches to plant genetic resources management are now widely used. The obvious rationale for such

approaches is that they safeguard against embarking on projects or activities that consequently do not benefit the targeted populations. Participatory approaches involve the target populations in project conception, project formulation and eventual implementation. The populations, as beneficiaries, play a much more significant role in the project than the donors or benefactors.

The student took advantage of the Regional Planning Meeting to randomly discuss with some members of NPGRCs on whether they have considered using participatory approaches to plant genetic resources conservation in their countries. Whereas most showed some understanding of the concept of participation, there were a few to whom the subject was obviously alien territory. The suggestion was made by the student that they consider familiarising themselves with this concept and effecting it in their activities at NPGRCs.

The Malawi delegation leader was particularly enthusiastic about it and indicated that they had in fact already started using the approach in their work. Since at the time of this discussion a trip to the Malawi NPGRC had already been agreed upon, the student was excited about the prospects of discovering how the NPGRC were employing participatory approaches. Had the trip materialised, it would have served as a good learning point and would have provided an opportunity to compare possibilities with other NPGRCs. However, as noted in Chapter 2, this trip failed and all that can be said at this point is that in terms of input, the student attempted to encourage the use of participatory approaches in plant genetic resources conservation at NPGRCs.

CHAPTER 7

DISCUSSION OF FINDINGS

This chapter discusses the findings and attempts to relate them to the conceptual framework in Chapter 3.

7.0 The SPGRC as an Organisation.

In chapter 3, it was clearly brought out what most scholars thought about what constituted an organisation. In that regard, some cardinal issues were that an organisation should be structured (Massie, 1979) to perform an integrated aggregate of actions and interactions (Barnard, 1962) through division of labour and function, and through a hierarchy of authority and responsibility (Schein, 1970, Rogers 1995).

The SPGRC has a fairly simple structure but in which the hierarchical authority indicating who is responsible to who also stands out easily. The Director is the head of the organisation, the overall supervisor and having authority over the sixteen full-time employees. No other officer can discharge his duties unless so determined by the Director himself, in most cases, for administrative convenience only. This will usually occur when the Director is out of the station. He is in charge on such matters as administration, discipline, contracts or in short the total efficacy of the organisation.

Hierarchically, and in regard to seniority, the three senior programme officers are placed at the same level with each one specialising in some area of operation. The specialisation works well and is good for the overall performance of the organisation as each officer has maximum time and attention for his portfolio. Each of the three reports directly to the Director though seniority among them is determined only by the length of service. Thus, the longest serving Senior Programme Officer among the three is the most senior and

most appropriate and likely to act as Director in the absence of the incumbent. This kind of set-up applies in many other organisations and appears to be working well at SPGRC.

The set-up allows for each of the senior programmes officers to have a de facto assistant in the three technical officers on hand. The technical officers are trained in specific areas and, therefore, like their respective immediate supervisors, also specialise in their duties. For instance, despite bearing the title technical officers, the one falling under the Information and Documentation section cannot perform his function under In situ and Collection or Conservation sections. He is specialised in information systems. The technical officers will always report to the senior programme officers.

This well-working hierarchy of authority is disrupted in the area of finance and administration. Due to financial constraints (as already observed in 1.2.5) the portfolio of Senior Programme Officer, finance and administration has been scrapped. Instead there are two junior officers (administration) and (finance) who do not report to senior programme officers but directly to the Director. The nature of their duties necessitates that they do so because anything else would create unnecessary bureaucratic bottlenecks. For as long as it is recognised that the two are juniors to the programmes officers despite reporting directly to the Director, there is no undermining of authority and the system works well.

7.1 Communication within SPGRC

Hall et al. (1981) list communication as being among the elements of organisation. In their view, an organisation comes into being when there are persons able to communicate with each other, while Reus and Sylvis (1985) see it as the exchange of information, ideas and feelings. The idea that groups of people are enabled to work together to achieve stated goals in an organisation (Bwalya, 2000) is of a particular interest.

Being a fairly small organisation of just 16 full-time staff, and because of the fairly straight-forward hierarchical structure, the SPGRC communication network is equally straight-forward. Out of the Infante et al. (1997) definition of organisational communication, in regular use at SPGRC are one-on-one communication, such as between supervisors and subordinates; and small group communication (e.g. meetings for staff.

Much of the intra-organisational communication at SPGRC occurs in direct relation to and in the execution of the official daily routine. The Director told this student in an interview that the most frequent mode of communication was one-on-one, either face-to-face or through the telephone. There was no fixed routine or specially-designed communication programme, allowing affected staff to visit each other's operational posts or utilize the phone to communicate as and when it becomes imperative. Geographically, the visits for communication purposes between one operation post and another (generally between different offices) are rendered very easy because all officers are housed within the same building. At the most, it would take only two minutes walking between the offices furthest from one another. In like fashion, the senior programme officers generally communicate one-on-one with the technical officers below them and vice-versa. Because of such regular though informal verbal interactions, the need for staff meetings is rendered largely unnecessary. Supervisors and their subordinates have curved such a strong informal communication relationship that structured staff meetings would by and large be dealing with matters already taken care of during the daily routines.

For purposes of forward-planning and review of progress, the Director does hold management meetings with his three senior programmes officers, usually at monthly intervals. Such meetings are utilised to communicate the current status while also reviewing progress and planning for the future. Other forms of communication occur in the written form, for example application for and granting of any official leave from duty; application for and granting of salary advances and loans; the occasional memorandum or circular to staff; and the "carbon copies" of correspondence to outside or internal sources,

for purposes of reporting what is happening. In most cases, the "carbon copies" are made for the attention of seniors by subordinates. The email facility is hardly ever used for internal communication because only two computers are connected for the purpose. It would, therefore, be a more time-consuming exercise to adopt than communicating one-on-one, verbally.

7.2 The SPGRC, NPGRCs as a Network

As stated elsewhere in this Report, each member state of SADC has established a national plant genetic resources centre. Each of these NPGRCs is in some kind of relationship with the SPGRC, whose purpose Hassenfeld and English (1978) would argue is "to enhance organisational goals". The NPGRCs and the SPGRC were all established to achieve one major goal, namely, the conservation of plant genetic resources of the region. All the NPGRCs, like the SPGRC itself, operate autonomously of each other even though they co-operate in various aspects of their operations. Van de Ven and Ferry (1980) and Easton (1992) quoted by Anonymous (2001) would qualify these as inter-organisational relationships because they foster cooperation within a group of organisations that are acting in order to achieve common goals.

As autonomous entities, each NPGRC, like the SPGRC, has its own complement of staff and its own calendar of conservation-related activities. Much of the funding of NPGRC activities is supposed to come from individual member states, with additional funds from donors. Routine running costs are also the full responsibility of individual member states. While each NPGRC has its own conservation activities, planned autonomously according to priorities, the SPGRC plays the role of coordinator and facilitator in that all such plans must be discussed and approved at one annual forum: the planning meeting. These meetings are convened and facilitated by the SPGRC and take place right at the SPGRC. Each NPGRC is represented by senior staff, who participate in all deliberations, inclusive of those which appertain to the plans of other NPGRCs. Every single plan for the following year is presented to the meeting and is fully debated and approved before it

can qualify for any donor funding, as facilitated by the SPGRC. The approved plans are presented to the SPGRC Board and onward to the donors, who release funds as and when available, through the SPGRC.

At inception, all NPGRCs benefited from funding through SPGRC for renovation of buildings to accommodate the national gene banks; to procure equipment such as computers, deep freezers, driers, four-wheel-drive motor vehicles most suitable for collection and related activities, etc. Most of the staff, both at NPGRCs and SPGRC are trained at the same institutions in similar disciplines. And ideally, samples of each accession collected by NPGRCs must be deposited at SPGRC for safe-keeping.

All the above confirms the status of the SPGRC and the NPGRCs as a network. Anonymous (2001) quotes Mitchell (1969) as defining networks as a specific type of relations linking a defined set of persons, objects or events of which the network is comprised. As quoted elsewhere in this Report, Anderson, Hakanson and Johnson (1994) suggest that for a network to exist there must be an exchange dimension in the relationship, the components of which can include the product or service, information, and financial and social elements. These relationships comprise, in the main, of interactive processes based on continuous exchange relationships between a number of identifiable actors. Such exchange must be acknowledged as being important by the organisations concerned.

The key elements of a network are actors, activities and resources, all of which are mutually dependent (Easton, 1992). The exchange dimension and interaction of SPGRC and the NPGRCs occur at the following clearly identifiable levels:

- (a) A sample of each accession collected by NPGRCs is deposited into the SPGRC. This is by mutual agreement between the organisations involved.

- (b) The information and documentation system which SPGRC has put in place by installing SDIS on computers at each NPGRC not just provides a standard way of recording data on the large numbers of accessions collected by NPGRCs but also enhances information exchange among all NPGRCs and SPGRC. Some of the information exchanged relates to the agronomic and morphological characters of plants e.g. plant height, grain colours, where collected, etc.
- (c) At the annual planning meetings at SPGRC and attended by all NPGRCs, methodologies for seed multiplication, characterisation and rejuvenation are discussed and standardised. Joint activities are agreed here and follow-up action is funded by the project. This in part tallies with Hancock's (1992) assertion that network planning is based on information transmission and exchange and upon interest grouping in order to arrive at a loose form of controlled association without affecting sovereignty of network members. He further states that such planning seeks to obtain consensus and a strategic platform by finding a common denominator where there is agreement to sacrifice some elements of specificity and sovereignty, so as to reap the benefits of a shared programme.
- (d) There is collaboration, mostly between SPGRC and individual NPGRCs on what are termed rescue missions. This occurs when emergency collection expeditions are organised to collect accessions which are in danger because they occur in areas earmarked for developments like dam or road construction, or because of some anticipated problem like floods. The most recent recorded such joint rescue mission was between SPGRC and the Lesotho NPGRC when the Katse hydroelectric dam was being constructed in Lesotho.

(e) Information is exchanged and there is collaboration on specialised training of staff for both SPGRC and NPGRCs. Additionally, SPGRC usually organises workshops and conferences on matters related to conservation. These are held as and when funds permit. As already noted elsewhere in this Report, SPGRC has in some cases facilitated the participation of staff from NPGRCs in workshops and conferences abroad or overseas, or organised by other collaborating partners like FAO or the Nordic Gene Bank.

(f) By the mere fact that each NPGRC chairperson is also a member of the SPGRC board, there is in a way, a large measure of NPGRC involvement in the policy formulation of SPGRC.

As Johansson and Matsson (1987) suggest, for a relationship to exist, there must be mutual dependence and reciprocity, resulting from the exchange processes between the organisations concerned. It is when such exchanges become frequent that they become institutionalised. The relationship thus becomes a question of expectation and a behaviour pattern that is taken for granted.

7.2.1 Communication in the network

By and large, the SPGRC and NPGRCs communicate via email. There are some instances when they have to correspond through the official letter and also through telephone conversations though the favoured mode of communication is the email. At the time of the P.A., the SPGRC was in the process of installing direct and ultra modern satellite communication facilities which would make it even easier and faster for SPGRC and NPGRCs to make telephone and Internet-based communications. Prior to this, for instance, it was not always possible to access information on the number of accessions stored at NPGRCs except by receiving it on computer diskettes. This method meant sending information via other means of communication like the express mail or courier

services, which were not always reliable. Delays in delivery could occur while there was always the outside chance of loss of materials. However, as observed by the SPGRC's Director, the new facilities are coming at great cost both in terms of procurement as well as rentals to the Zambia Telecommunications Company. Over and again, insufficient funds have been mentioned as one of the factors inhibiting progress, so the huge expenditure on modern communication facilities alone could be brought to question.

Other modes of communication within the network include the already referred to planning meetings when all NPGRCs converge at the SPGRC to discuss matters of common interest. It must be noted that much of the communication pertains to official matters and is, therefore, formal in nature.

7.2.2 Communication with farmers/local communities

Apart from communicating among the network members, the network also communicates with farmers and the local communities where they go for their collection expeditions. There is no doubt that great advances have been made in the area of communication in the world at large. Today, one can opt for facsimile, telephones and Internet-based communication like email to reach others within the shortest possible time. However, the greater majority of the people the network has to deal with in regard to collection expeditions are rural based. It is a fact that most rural areas in the SADC region do not yet have such communication facilities at their disposal. Only a small percentage of the rural population, usually the commercial farmer, has access to electricity and an even smaller percentage, to the telephone. Internet-based communication that requires that one owns a computer is even more of a novelty, if not yet unknown among the rural communities. This generally leaves the network with one type of communication: the letter.

The tragedy remains that the road networks are poor and post offices can be far and wide apart. Long delays, therefore, tend to occur in the delivery of mail to such places. The

letter as an option of communicating with the farmers and other local communities becomes unreliable, given the limited time within which expeditions must take place. This has given rise to the one-on-one verbal communication as the preferred alternative. The need to communicate with these people is not in question at all. While the network staff may be executing a duty that is eventually of benefit to all by conserving seed (which seed is also used in plant breeding by other scientists to produce better and higher-yielding varieties of seed), and while they may be performing government duties, etiquette requires that they notify the local communities about their activities. Even if collection will occur in bushes or forests that are largely uninhabited by people, there always is the likelihood that someone will lay claim to ownership of the area in question. As such, prior research is usually conducted by advance or reconnaissance teams, which also make formal agreements with farmers or local communities about what can be done and what cannot be done during the impending expeditions. One other reason for not ignoring the local communities is that they have vast knowledge about the plants in their areas. Indigenous knowledge about food or medicinal value of the plants is usually passed from one generation to another and this is information that can be of great value to collectors and scientists at large. The local communities are also better positioned to explain about the occurrence of particular plant species in the areas they inhabit. This saves the collectors time looking in the wrong places.

Additionally, the network staff need to contact the farmers or local communities because they sometimes have to collect seed of domesticated plants. This will inevitably not occur in the wild but will have been planted and harvested by the farmers, whether peasants or commercial. Whether buying or merely receiving free of charge, the collectors must negotiate with the farmers to collect, and secondly, on the quantities they can collect.

In all this, the role of communication, and especially effective communication, cannot be underestimated. However, as already observed, and because of the negotiation with and explanations to farmers who may not fully grasp and appreciate the concept of conservation of germplasm, one-on-one verbal communication is the most appropriate

and is widely applied. Communicating with farmers and other locals is not always easy. The SPGRC Director intimated his wish, in an interview, that such exercise perhaps be handled with the help of other professionals like anthropologists. The opinion of this student is that in fact development communication specialists would even be better placed to deal with the situation in question. The whole issue of participatory development arises in this case as the failure to communicate might arise from the fact that the farmers and other locals do not see the importance of the conservation exercise; in their collective opinion, it does not benefit them directly and so they can resist it. On the basis of the huge number of accessions collected in the decade since the establishment of the SPGRC network, the greater majority of them from the rural communities of the SADC region, it can nonetheless be argued that to a large extent, the communication is effective.

7.2.3 Communication with SADC governments

As already stated elsewhere in this Report, most of the NPGRC fall directly under government ministries or are agencies of government in the respective member states. The immediate implication is that they are part of the government system, and are vulnerable to the usual civil service bureaucracies that can terribly inhibit communication. The general structure of the NPGRC, in relation to the respective governments, is not of particular interest here. There is a recommended and approved way in which all the NPGRCs communicate with their respective governments through appropriate channels of communication. What is of interest is the fact that all governments of SADC member states are required to contribute finances for the smooth operation of the SPGRC/NPGRCs network. In an interview, the SPGRC Director stated that communication with governments is at most times one-way; the governments hardly ever respond to communication especially in regard to funding. He disclosed that he had to constantly send reminders, which were equally ignored. Whenever he resorted to physically contacting the concerned parties or phoning them, they still tended to come up with excuses for either delaying or not effecting the disbursement of funds. They counter

accuse SPGRC of not communicating or doing one or another thing as a way of creating excuses. In his view, the biggest problem is perhaps failure to communicate the importance of conservation activities to governments. It is the opinion of this student that the failure to communicate the importance of conservation activities is related to the failure, already referred to elsewhere in this Report, to fully appreciate the role of planned and effective communication activities. It has already been argued that little effort has been made by SPGRC to sell itself to the public at large, which in this case includes the very important public: the governments and part sponsors of the project. Communication at such a level cannot be accidental or incidental. It has to be planned and must not occur spasmodically but must flow all the time.

7.2.4 Homophily and diffusion in the network

Rogers' (1995) assertion that in its most elementary form, diffusion involves an innovation; an individual or other unit of adoption that has knowledge of the innovation or experience using it; another individual or other unit does not yet have experience with the innovation; and a communication channel connecting the two units, appears like a tailor-made description of some of the communication relationships among the SPGRC/NPGRC network. This is particularly when the homophilous relationships among the network staff are taken into consideration. It is Rogers' argument that the transfer of ideas occurs most frequently between individuals who are similar on the basis of attributes such as beliefs, education, social status, etc. Most members of staff within the SPGRC/NPGRC's network are peers in many respects, but more especially with regard to their training (education) and the nature of their work. Though they rarely meet within the year except during the annual planning meetings, whatever innovation individuals or NPGRCs may have will likely be diffused to other individuals and NPGRCs they interact with. Innovations will most likely be in the areas of conservation, either those that are a direct consequence of research or those that originate outside of the region but within the realm of scholarship or professionalism. The communication mechanisms put in place currently, where to be able to access the data bases of any

NPGRG, one need only switch on a computer and touch some specified keys, means that diffusion can occur very frequently and readily. The planning meetings present a rare occasion for direct exchange of ideas during the formal discussions but also as and when the delegates sit and discuss outside of the official meetings. Verbal discussions with some of the delegates to the 2000 planning meeting did confirm that indeed some measure of influence on the adoption of new ideas comes from the peers from the other NPGRGs. The new ideas diffused could be in areas of conservation methodologies, personal experiences while on missions, the use of modern or latest equipment, and so on. Much as the network may not be aware of it, diffusion plays an important communication role among them.

7.2.5 The case for mass communication

As already stated (3.0.1), mass communication is mediated by electronic or print media (Infante et al., 1997) and involves mass media such as radio, television and newspapers, (Rogers, 1995). The question that can be raised at this point is whether at all SPGRG needs to employ mass communication and for what purpose(s).

The SPGRG needs to project a personality to both internal and external audiences to gain support for organisational objectives, policies and programmes. The conservation programmes they run are very important, what with the highly topical issue of 'food security', and 'agricultural research', both being beneficiaries of conservation activities. There arises a need for information dissemination on the activities of SPGRG so that as many possible beneficiaries of the project know about it. The most readily applicable form of communication to reach out to many thousands, if not millions, who are intended to benefit, in the long-term, from the SPGRG is mass communication. Such communication reaches out to many at a single given time. Doubtless, this has not been employed and a simple survey would reveal that very few people in Zambia, where it is located, let alone other SADC states, know of the existence, objectives and functions of the SPGRG. This student only became aware of and interested in the SPGRG when a

need for research into a development project arose. Even then, it took a lecturer in agriculture at the University to make the proposal. Even for the majority of the people who drive past the institution as they head into or out of Lusaka to and from the east, they merely know the place as “pa SADC”, a local route ‘bus stop’. When this student interviewed mini bus crews who daily pass by the place and tried to find out whether they knew what goes on in there, not a single one ever got it right or even came anywhere near the truth. The fact that SPGRC and some NPGRCs have sometimes encountered problems convincing farmers and/or local communities to cooperate with them on their collection missions, as well as government officials’ low prioritisation of the project for reasons already given above (7.2.2 and 7.2.3) adds credence to the call to utilise mass communication. A specially designed and well-implemented multimedia approach would publicise the project adequately enough for all stakeholders to be left in no doubt as to its true value.

Although SPGRC has limited dealings with what can be referred to as the ‘general public’, it is important that a deliberate communication strategy is designed that targets to disseminate information to them. By general public is here meant external publics other than those with which the SPGRC has direct dealings, e.g. scientists, farmers, government departments, suppliers and other customers, etc. The occasional press release on some important dates; fairly detailed reading in the form of newsletters; the commissioned newspaper feature article; television and radio documentaries; interviews with the press etc., are all important and workable ways of mass communication that the SPGRC can use to project their image and gain the support of the public for their programmes. Unfortunately, hardly any of the above is utilised. The existing newsletter comes out only too infrequently and mostly targets NPRGCs. Even the style of presentation is specialised such that the man/woman in the street would encounter problems to decipher meaning out of the readings. There could be many among the ‘general public’ who could benefit from the project or its research findings but who may not do so because information has not been effectively disseminated. The gains from an informed citizenry on important issues like the SPGRC project may not be readily predictable, thus underlying the need for constant mass communication with them.

7.3 Assessing Progress

Finally, looking at the stated objectives of the SPGRC, the question arises what progress has been made over the more than a decade of its existence in regard to the same. Three objectives stand out and are assessed below.

7.3.1 Training highly skilled specialists in plant genetic resources management in the region.

Prior to 1989 when SPGRC was established, there were very few scientists trained to specialise in plant genetic resources management in the SADC sub-region. Ruredzo and Mkamanga (1992) state that as late as 1990, only Zambia, Botswana and Tanzania had any full-time scientist working on plant genetic resources.

The picture has changed a great deal since. Through the efforts of SPGRC, and working hand in hand with partners like the Nordic Gene Bank and the Nordic sponsors of the SPGRC project, the target of a minimum three trained specialists per every NPGRC has nearly been attained. By 1997, 23 SADC nationals had attained the degree of MSc in Plant Genetic Resources while a further 113 had gone through short certificate courses.

It is noteworthy that much, if not all, of the requirements in terms of training are being met with input from external rather than SADC resources. The University of Birmingham in the U.K the Royal Veterinary and Agricultural University in Copenhagen, the NGB at Alnap in conjunction with the Swedish University of Agricultural Sciences, are the major destinations for SADC plant genetic resources personnel who require specialised training. Much as the figure of those currently trained appears to be impressive, it would probably be double or treble if such training were to be offered by universities and other institutions within the SADC. It would be cheaper to train professionals within the sub-region as access becomes restricted when such training is done overseas. Local universities should be encouraged to offer such programmes to their nationals.

| Country | Certificate | MSc | Total |
|--------------|-------------|-----|-------|
| Angola | 8 | 2 | 10 |
| Botswana | 9 | 3 | 12 |
| Lesotho | 9 | 3 | 12 |
| Malawi | 15 | 4 | 19 |
| Mauritius | 4 | 2 | 6 |
| Mozambique | 12 | 3 | 15 |
| Namibia | 8 | 3 | 11 |
| South Africa | 5 | 2 | 7 |
| Swaziland | 13 | 3 | 16 |
| Tanzania | 18 | 4 | 22 |
| Zambia | 13 | 4 | 17 |
| Zimbabwe | 15 | 3 | 18 |
| Total | 129 | 36 | 165 |

Table 3. Personnel trained under the SPGRC Programme in plant genetic resources, 1990-1998

7.3.2 Development of national plant genetic resources management programmes

As Ruredzo and Mkamanga (1992) observe, as late as 1990, there was minimal plant genetic resources activity within the sub-region. There were not even storage facilities for *ex situ* conservation except those for breeders' collections and those provided by the IBPGR to two of the member states.

The SPGRC has helped to establish NPGRCs in virtually all the SADC member states. These NPGRCs are the fulcrums on which rotate the national plant genetic resources management programmes. As already noted, the NPGRCs are fully equipped to conserve seed for long periods of time, to safeguard against loss of species, as well as for posterity. They have also established programmes for ex students on-farm conservation as well as in protected forest areas. The large numbers of accessions collected by individual NPGRCs, some duplicates of which are stored at SPGRC and the Nordic Gene Bank attests to the extent of ground covered towards achieving this particular objective.

| Country | No. of accessions at SPGRC | No. of accessions at NPGRCs |
|--------------|----------------------------|-----------------------------|
| Angola | 173 | 1139 |
| Botswana | 257 | 2926 |
| Congo DR | - | - |
| Lesotho | 81 | 648 |
| Malawi | 576 | 2058 |
| Mauritius | - | - |
| Mozambique | 44 | 1486 |
| Namibia | 368 | 2114 |
| Seychelles | - | - |
| South Africa | 178 | 1307 |
| Swaziland | 481 | 524 |
| Tanzania | 1301 | 2231 |
| Zambia | 1250 | 4751 |
| Zimbabwe | 1846 | 1042 |

Table 4 Accessions held at NPGRCs and SPGRC (as at last update)

The above observations also account for progress in regard to the third objective i.e. preventing erosion and loss of plant genetic resources of the SADC region through collection and conservation efforts. Clearly, even with several constraints, the SPGRC has gone a long way towards achieving the objectives for which it was established.

7.4 Reporting Procedures

The SPGRC Director is the Secretary to the SPGRC Board and reports to it. As already noted, the Board formulates and reviews policy and strategy, considers management, administrative and financial matters and recommends for approval to the SADC Council of Ministers. But in between the Board and the Council is SACCAR, which has been converted into a sector coordinating unit under the government of Botswana and through which the SPGRC Board reports.

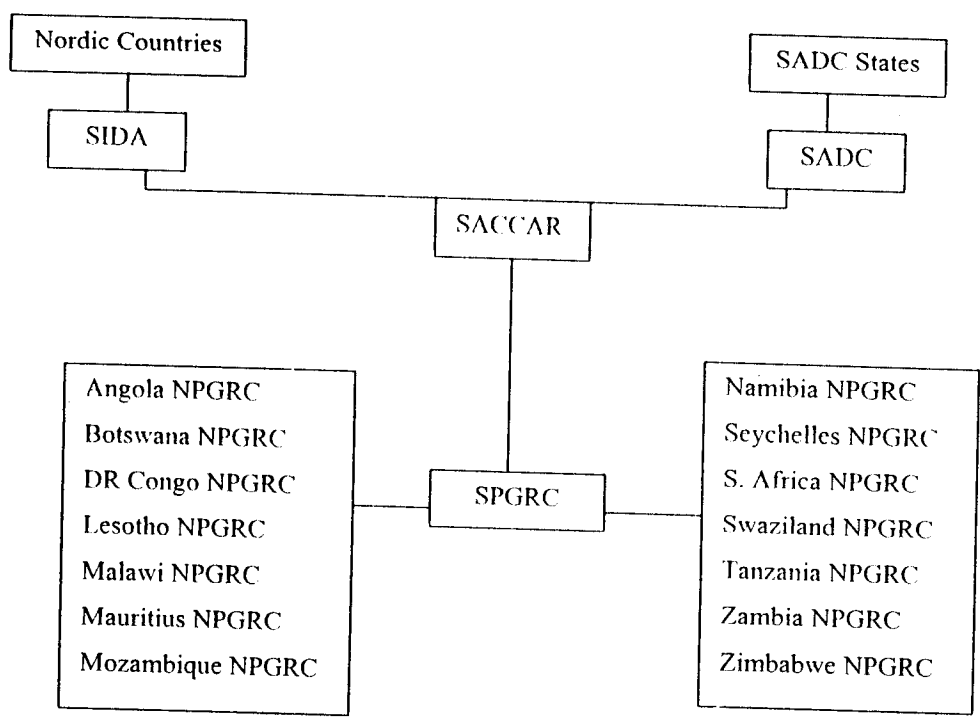


Fig. 6 Organisation chart of the SPGRC network [Source: Mkamanga (1997)]

But SACCAR also reports to the Nordic Countries who are the major donors. This appears like a fairly normal if not straightforward reporting hierarchy. However, there are too many bodies to report to. The more complicated a channel of communication is, the more the possibility of distortions occurring in the communicated information or ideas. Additionally, the channel makes “the journey much longer, as though travelling through a maze”. It creates bureaucratic bottlenecks that easily affect the pace at which (i) policy decisions receive approval; (ii) requisite funds get disbursed; and (iii) implementation effected. Indeed the SPGRC Director, when interviewed, was unequivocal in stating that the SPGRC network is ‘over-administered’ with the reporting procedures unduly cumbersome.

He noted that it is particularly difficult to get funds released by SADC member states to the effect that he sometimes has to literally chase payments. Either there is deliberate apathy or this is one direct consequence of communication procedures that are not fluid.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

8.0 Conclusions

This chapter draws conclusions on the SPGRC, as discussed in the earlier chapters. It also makes recommendations which the student deems necessary if the problems of the network are to be resolved. In general terms, one can safely state that the SPGRC has, to a very large extent, achieved the major objectives for which it was established. The network is a unique first in Africa and provides useful lessons to any other regional groupings that may wish to establish similar projects. However, this is not to say that everything is going well as there are several issues that require to be revisited for corrective or ameliorative purposes. These are discussed below.

8.0.1 Participatory approach to conservation

There can be no doubt, going through the earlier chapters of this Report, about the usefulness of the SPGRC project. A lot has been achieved and a lot more is yet to be achieved in conserving seeds for different uses now and in the future. However, it comes out clearly that the SPGRC is one project whose conception and formulation does not fit in with the development theory that strongly recommends that the target groups for any development project must themselves be fully involved in formulation, implementation and all the other phases of the project. The SPGRC must, in the final analysis, benefit the great majority of the citizens of the SADC. From its inception to date, the SPGRC appears to be an elitist project, only fully understood and appreciated by scientists. The existence of the project and its full value are hardly known by the citizens of the SADC member states. The highly technical nature of the project would appear to justify the lack of participation of the target populations, but the negative effect is still felt when collection expeditions encounter difficulties in their missions resulting from a lack of understanding and appreciation of the project objectives by the target populations.

On what appears to be a light note but which some members of staff brought out in informal discussions, even the design of the buildings at SPGRC is based on Nordic or Scandinavian architecture, which may not necessarily be the best-suited to local weather patterns. The staff complained, for instance, that the office windows, which open upwards, as unlike the usual sideways of most Zambian buildings, do not allow in enough fresh air and the offices become extremely stuffy during the hotter months of the year. There is sufficient literature on participatory methods to conservation and, indeed as confirmed by one NPGRC staffer (Malawi), at least even within the network, these have been adopted and utilised though the extent appears to be minimal.

One other problem that comes out very clearly, and which is of direct relevance to this Report, is the fact that both SPGRC and the NPGRCs have tended to experience communication problems with farmers and the local communities where they go for collection expeditions. These problems have already been discussed in the previous chapter. Suffice to mention that they are in a way, an off shoot of the unparticipatory nature of the project. The farmers and local communities may be resisting to communicate and/or cooperate because they were never consulted at formulation and other earlier stages of the project.

8.0.2 Inadequate finances

The original plan of action for the SPGRC was that inside the first decade of operations, the network should cease to rely heavily on donor funds. The governments of the member states were to take over the larger chunk of funding. The status, however, is that the donors have continued to be the more reliable in the disbursement of funds while the member states remain constantly in arrears. The Director of the SPGRC, as observed in the previous chapter, complained that he has to constantly send reminders to the governments of the member states on their financial obligations. And because even such communication is usually ignored, the network operations are to a large extent hampered

due to inadequate finances. Programmes cannot always run on time because funds are not readily available. The reduced funding by the donors and the lack of commitment by the member states are, therefore, a huge impediment to progress of the network.

As regards the funding of NPGRCs, which in large part falls directly under individual governments of member states, the same problem of unreliable funding is prevalent. Apart from those programmes that are jointly formulated at the annual planning meetings and whose funding may come directly from donors, other efforts are largely similarly hampered because of the civil service inefficiencies and bureaucracies. This is not to suggest that all NPGRCs are similarly affected. The South African NPGRC appears to be very well-funded and efficiently run. Staff at SPGRC disclosed that sometimes, this NPGRC has even assisted operations at the SPGRC. There could well be other NPGRCs which are well off but the general picture for the majority is that funding is erratic and unreliable.

The Zambian NPGRC at Mount Makulu in Chilanga is funded through the Ministry of Agriculture Food and Fisheries (MAFF). Much as they prepare an annual budget, they have to depend on government goodwill for release of funds. Aside to their connections with SPGRC and the financial benefits that accrue as a result, the conservation project has also sourced extra funding from a number of other external donors. The picture painted by this NPGRC is that if they were to depend solely on government resources, even as they are fully recognised as a government department, there would be very little progress made for the same reason of inadequate funding.

What comes out clearly from discussions and interviews with SPGRC and NPGRCs staff is that the majority of governments in the SADC do not have a clear understanding and appreciation of the conservation efforts being spearheaded by the network. As such, they can hardly be expected to be too enthusiastic in promoting and supporting its programmes. This is one of the major reasons for the erratic and unsystematic disbursement of funds to the project because it falls too lowly on the priority list.

8.0.3 Limited training facilities and staff

Not all members of the SPGRC network are adequately staffed, and similarly, not all staff are properly trained for their conservation jobs. Reasons for the shortage of staff include (i) the re-deployment of qualified staff to other projects or departments by parent ministries, again according to their own perceived priority rankings; and (ii) departure of qualified staff to competing projects within the sub-region or elsewhere, or merely departure in search of the so-called greener pastures. It must be noted that except for the SPGRC itself where staff enjoy good SADC conditions of service, the general picture obtaining at most NPGRCs is that of poor civil service conditions of service.

Owing to the fact that locally, i.e. within the sub-region, the SPGRC network can only manage limited training, largely by way of seminars and workshops, the best training is invariably only obtainable overseas. There are limited training facilities in the member states and so all training requirements are targeted to be obtained overseas. This is obviously costly and tends to limit the number of people that can be trained.

8.0.4 Absence of experts from other fields

The SPGRC network has so far concentrated almost all its staffing complement on scientists with an agricultural leaning. This presupposes that all aspects of conservation can be effectively handled and executed by experts from one field. The large spectrum of cross-field interactions would clearly show that such is a fallacious idea. Unless the agricultural experts are equipped with other expertise from other fields like communication, anthropology, sociology and even administration, there are bound to be lapses, failure and similar bottlenecks that will continually negatively affect operations of the network. This absence of experts from other fields is felt greatly in no more than the area of communication where there is an obvious lack of specially designed communication programmes

8.0.5 Limited scope of available publications

Much as the SPGRC publishes a quarterly newsletter, it is very limited in scope. The number of pages is so small while the print runs are minimal such that the publication hardly has room for much information and/or extensive discussion, while the targeted audience appears to be no more than the staff at SPGRC and NPGRCs.

There are numerous seminar and workshop papers by senior staff of the SPGRC and these are very detailed and informative about the activities of the SPGRC. However, despite their fairly reasonable numbers, they tend to be repetitive in nature because they almost invariably all deal with the same subject. There is very little evidence of *participation by NPGRCs staff in information collection, supply or other related activities to the SPGRC publications, inclusive of the newsletter targeted at them. They, it appears, are no more than passive recipients of information.*

8.0.6 Haphazard communication

There is a near absence of planned communication within the SPGRC and between the NPGRCs network and its many audiences. The communication tools by way of memoranda, circulars and staff meetings are used to such a limited extent, in an as-and-when-need-arises fashion. The only staff meetings that appear fixed on the calendar are the monthly management meetings.

Similarly, communication between SPGRC and the NPGRCs is limited to situations and circumstances, in the words of the Director, “when the NPGRCs have problems which they want to be solved by the SPGRC”. The only predictable form of communication within the network is in respect to the annual planning meetings, which must take place anyway. As for the network and the ‘masses’, it is a clear indictment of the communication procedures that the greater majority of the SADC citizens know nothing about the project, despite its obvious importance. If any efforts have been made to

rating of the project on the priority list for funding by governments, information, education and communication programs should be designed and targeted at, if not, concentrated on government personnel.

- (iii) In respect to training and maintaining a cadre of professionals for the network, funding must be sourced to introduce sustainable courses at local institutions of learning. This will have the net effect of reducing costs of training the single professional and increase the number of those who can have access to such training. Training overseas is obviously more costly and sometimes passes as a luxury. In addition to localising the courses and facilities, conditions of service for such professionals need to be improved if they are to be dissuaded from seeking the so-called greener pastures. This should inevitably include elimination of bureaucratic red tape at all levels of their operations.
- (iv) The need for the use or involvement of experts from other fields cannot be ignored. The network should embark on a needs assessment and arrive at a conclusion regarding those areas that can benefit from expertise outside of the field of agriculture and the natural sciences. This will most likely be in the area of the social sciences. Where such needs are identified, the network has the option of establishing such new positions as would provide the needed expertise; providing additional training to existing staff in such areas as the needed expertise is identified; or hiring such expertise only as and when the need arises.
- (v) To deal with the limited scope of publications, the newsletter must address more issues than it currently does. One way would be to open it up by inviting contributions from NPGRCs staff and other scientists. Similarly, the publication must target to reach a wider

audience than currently. There is also wide room for the introduction of a regionally-based scholarly journal which would provide a discussion forum for conservation and related issues. Through such a journal, adventures arising out of expeditions, as well as new discoveries, would be discussed while latest literature on conservation, controversies etc., could be reviewed and settled. The advantage of such a publication, which for a start could be annual, is that it would fit into the international market. No full-time staff would be required for such as, apart from an editorial board, expert publishing advice or services could be accessed from professionals (for instance those at this student's base the UNZA Press).

- vi) Finally, the SPGRC must seriously consider the use of outside communication experts to design and assist in the implementation of communication strategies. There appear to be none in existence at the moment and the effects are obviously negative. In the long run, they might find it cheaper to equip some of their own staff in communication expertise. This student is left in no doubt that a qualification like the Master of Communication for Development (MCD) locally obtainable at UNZA would not be too costly for selected SPGRC staff but would be an invaluable addition to the success of the SPGRC conservation project. Communication in an organisation should not be haphazard and left to chance. It must always be planned and sustained. Such communication should be targeted at all possible audiences of the SPGRC. There will be need to use as many of the available media like radio and TV (documentaries), newspapers (features, press releases) and specially organised trips to SPGRC for selected people. To do all this effectively, it is emphasized that communication experts are needed.

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APPENDIX I

Members of SADC and brief profiles

| Member | Area in sq. kms | Capital city | Population (1998) estimates | Language(s) |
|--------------|-----------------|---------------|--------------------------------|---------------------------------------|
| Angola | 1247000 | Luanda | 12.6 million | Portuguese & Indigenous |
| Botswana | 582,000 | Gaborone | 1.6 million | English & Setswana |
| Congo DR | 2,435,409 | Kinshasa | 49 million | French & Indigenous |
| Lesotho | 30,355 | Maseru | 2.1 million | English & Lesotho |
| Malawi | 118,484 | Lilongwe | 11.2 million | English & Cichewa |
| Mauritius | 1,968 | Port Louis | 1.5 million | English & French |
| Mozambique | 799,380 | Maputo | 16.5 million | Portuguese & Indigenous |
| Namibia | 824,268 | Windhoek | 1.62 million | English & Indigenous |
| Seychelles | 455.3 | Victoria | 76,000 | Creole, English & French |
| South Africa | 1,221,000 | Pretoria | 43.2 million | Africans, English & Indigenous |
| Swaziland | 17,364 | Mbabane | 970,000 | English & Siswati |
| Tanzania | 945,200 | Dar-re-salaam | 32 million | Kiswahili, English & Indigenous |
| Zambia | 752,612 | Lusaka | 10.1 million | English & Indigenous |
| Zimbabwe | 390,757 | Harare | 11.9 million | English, Shona & Ndebele. |

APPENDIX II

Introductory letter from Head of Mass Communication Department



THE UNIVERSITY OF ZAMBIA DEPARTMENT OF MASS COMMUNICATION

Telephone: 290035
Telegrams: UNZA LUSAKA
Telex: UNZA ZA 44370
Fax: +260-1-290035

PO Box 32379
Lusaka, Zambia

The Director
SADC
Plant Genetic Resources Centre
LUSAKA

Dear Sir,

RE: ATTACHMENT FOR SAMUEL KASANKHA

Samuel Kasankha is a full time Masters student of the University of Zambia, Department of Mass Communication and need to do an attachment.

Mr. Kasankha's attachment is in part fulfilment of the Master of Communication for Development (MCD) Programme.

He is fully sponsored by the University of Zambia and will not need financial assistance from your office. Your office will be given a copy of his written report upon completion of the attachment.

The duration of the attachment will be a minimum of four (4) months and will not exceed (6) six months.

Your accepting Samuel to be attached to the Plant Genetic Resources Centre will put a special mark in our academic field of communication for development.

Thanking you in advance.

Yours faithfully,


Sr. Rose Nyondo

**HEAD
DEPARTMENT OF MASS COMMUNICATION**

APPENDIX III

Acceptance letter from SPGRC

FAX TRANSMISSION

DATE: 27 June 2000

TO: Sr Rose Nyondo
UNZA
Dept. of Mass Communication
P O Box 32379
LUSAKA

Fax: 290035

FROM: SPGRC, Lusaka, Zambia
Fax No. 260 1 233746

NO. OF PAGES (Including this one):

If you do not receive all pages as indicated, please telephone 260 1 233815/6 or 233391/2

Dear Sr Nyondo,

RE: ATTACHMENT FOR MR SAMUEL KASANKHA TO SPGRC

This serves to inform you that Mr Samuel Kasankha has been accepted as an attached student at SPGRC. Mr Kasankha is invited to commence as soon as he is ready. A formal agreement will be prepared for signing by both parties.

We look forward to working with Mr Kasankha.

Yours sincerely,
SADC Plant Genetic Resources Centre


C N Nkhoma
SPO-Conservation

/for Director

APPENDIX IV

SPGRC
SADC PLANT GENETIC RESOURCES CENTRE
Student attachment agreement
STUDENT ATTACHMENT AGREEMENT

This agreement is between the SADC Plant Genetic Resources Centre (SPGRC) and Mr Samuel Kasankha, a University of Zambia Master of Communication for Development (MCD) student on attachment to SPGRC. Mr Kasankha's attachment to SPGRC and consequent submission of report of study done will form partial fulfilment of his MCD degree. Mr Kasankha will spend up to four months at SPGRC working full day on Mondays, Tuesdays and Thursdays and half day on Wednesdays. He will spend Fridays on activities normally outside SPGRC. Mr Kasankha may alter the working timetable as and when need arises, in consultation with SPGRC.

Mr Kasankha will arrange with individual sectional heads on a timetable for him to work with a particular section. Mr Kasankha will also spend some time at the NPGRC of Zambia and where resources are available at least one other NPGRC.

All costs/expenses incurred during the student attachment at SPGRC will be met by the student.

At the end of the study, Mr Kasankha will submit a draft report to SPGRC, which shall only be finalised and allowed for external circulation with authority by SPGRC.

SIGNED:



DIRECTOR
SADC Plant Genetic Resources Centre

SIGNED:



Mr Samuel Kasankha
University of Zambia

Date: 19 July 2000

Date: 13th July 2000

APPENDIX V

Introductory letter to Zambian NPGRC

SPGRC/7/9A

24 July 2000

The Curator
NPGRC
Mount Makulu Research Station
Private Bag 7
CHILANGA

Dear Sir,

VISIT OF MR S. KASANKHA TO THE NPGRC

Mr Samuel Kasankha is a University of Zambia Master of Communication for Development student, currently on attachment to SPGRC. Mr Kasankha's attachment and consequent submission of report of study done will form partial fulfilment of his Master's degree.

This is a letter of introduction and request to allow Mr Kasankha to familiarise himself with the operations of the NPGRC.

Your usual co-operation is highly appreciated.

Yours faithfully,
SADC Plant Genetic Resources Centre



Dr Godwin Y Mkamanga
DIRECTOR

/gsb