Contents

List of Abbreviations

Bioversity	Bioversity International
CGIAR	Consultative Group on International Agricultural Research
DEFRA	Department of Food and Rural Affairs (UK)
EAPGREN	Eastern African Plant Genetic Resources Network
GCDT	Global Crop Development Trust
GPG2	Global Public Goods 2
ICM	Integrated Committee of Ministers
IK	Indigenous Knowledge
ITPGRFA	International Treaty on PGR for Food and Agriculture
NEPAD	New Economic Partnership for African Development
NGB	Nordic Gene Bank
NGO	Non-Governmental Organisation
NPGRC	National Plant Genetic Resources Centre
RCWG	Regional Crop Working Group
RISDP	Regional Indicative Strategic Development Plan
SADC	Southern African Development Community
SANBio	Southern Africa Network for Biotechnology
SDIS	SPGRC Documentation and Information System
SEK	Swedish Kronor (currency)
Sida	Swedish International Development Co-operation Agency
SPGRC	SADC Plant Genetic Resources Centre
SSSN	SADC Seed Security Network

Report Highlights

- The Memorandum of Understanding Between SPGRC and Bioversity International (formerly IPGRI) Signed
- Board of Directors' Ordinary Meeting Held in Gaborone, Botswana
- Zambian Minister for Agriculture Visits SPGRC
- Technical Review and Planning meeting takes place in Lusaka, Zambia

1. MANAGEMENT AND ADMINISTRATION

1.1 The 24th Ordinary Board Meeting held in Gaborone, Botswana

The 24th SPGRC Ordinary Board meeting was held in Gaborone, Botswana between 14th and 15th November 2007 to discuss and deliberate on the progress reports and other specific issues affecting the functions and operations of the SPGRC.

Attended by all SADC Member States who constitute the SPGRC network, the meeting had the pleasure to welcome the two new Board members, Dr Sithembile Kunene for Swaziland and Ms Michelle Andriamahazo for Madagascar who were attending it for the first time. The meeting was also attended by the representatives of the SADC Secretariat, NGB, Sida, Bioversity International and the hosts, SPGRC.

The Board discussed and approved annual workplans and budgets for SPGRC and NPGRCs, and also took note of proposals submitted by SPGRC to the Trust and NEPAD/SANBio for possible funding.

The Board also deliberated on the Long-Term Sustainability Strategy for SPGRC, the job evaluation conducted by SADC Secretariat, and the recruitment process of SPGRC Director, due to be completed in the first half of 2008.

Board members visiting the Botswana NPGRC laboratories

A draft report of the Second Session of the Governing Body of the ITPGRFA was presented to the Board and a call was made for each country to address the issue of implementing the ITPGRFA, particularly awareness raising and Farmers' Rights to policy makers. The Board proposed to have a workshop on the domestication of the Treaty in the SADC region.

Board members had an opportunity to visit Sebele Research Station and NPGRC after the meeting. The Board unanimously agreed to have its next meeting in October 2008, in Lusaka, Zambia.

1.2 Workshops and Meetings

1.2.1 Annual Technical Review and Planning Meeting

This meeting was held between 3rd and 7th September 2007 in Lusaka, Zambia with the objective of: reviewing implementation of the technical activities for 2006/2007 cropping season and evaluating technical plans for the 2007/2008 cropping season. It also facilitated information sharing on other technical and networking issues. It was attended by 38 participants from NPGRCs, SPGRC, NGB, Bioversity International, SANBio/NEPAD, and National Museums Board of Zambia.

Participants' group photo at the annual planning meeting, Lusaka

Updating on the SPGRC Long-Term Sustainability Strategy, the meeting was informed that following the strategy's alignment to Regional Indicative Strategic Development Plan (RISDP) and provision of other funding options as directed by the ICM, the strategy that was initially approved by the Board in February 2007, was now approved by the SADC Council in August 2007. Following the end of the project in 2009, SPGRC will be required to raise at least 10% of the total funding through projects and donor support, rising up to 30% by third year without NGB support.

1.2.2 Regional Crop Working Groups

There was no RCWGs Meetings held during the reporting period. The outputs from previous meetings were used to compile strategies for collection and conservation of plant genetic resources of various species groups.

A publication on eco-geographical studies and reviews of vegetatively propagated crop species occurring in Swaziland and Zambia was finalized, printed and distributed to stakeholders.

1.3 Visitors

SPGRC received several visitors during the reporting period ranging from primary school pupils, farmers to prominent individuals. They are listed in Appendix III below.

1.3.1 Zambian Minister for Agriculture Visits SPGRC

The Zambian Minister for Agriculture and Cooperatives, Honourable Ben Kapita visited the SADC Plant genetic Resources Centre (SPRC) on 23rd May 2007 to acquaint and familiarise himself with the institution and its activities.

On arrival, Hon. Kapita (c) in company of Dr Mwale (r) was led forth by Dr Muliokela

Accompanied by the Director of the Zambian Agricultural Research Institute (ZARI), Dr Watson Mwale, upon arrival, the Minister was introduced to the staff members of SPGRC by Dr Stephen Muliokela, who is the Chairperson of the Zambian National Plant Genetic Resources Committee (NPGRCom) and is a member of SPGRC Board, currently a Vice-Chair of the Board.

He had an opportunity to visit the farm where he was briefed on the multiplication of crop accessions, arboretum with wild fruits and medicinal plants.

Winding up his tour, Mr Kapita acknowledged for being invited and for having the opportunity to see what is happening at SPGRC. He called upon SPGRC staff to continue and improve on the work that is being done and promised to urge the SADC member states to continue supporting the facility through continued contributions that will not only maintain the facilities, but also attract and retain high-calibre scientific workforce at the centre.

Following Acting Director's (Ms Lupupa) note that not all SADC member states had ratified the International Treaty for Plant Genetic Resources on Food and Agriculture (ITPGRFA), the

Minister promised to lobby for the remaining countries to sign it so that SADC as a region, benefited from the Treaty. He commended efforts being done to ensure that all National Plant Genetic Resource Centres (NPGRCs) are being connected through the Internet so as to improve communications in the SPGRC network activities and functions. He finally appealed for maintenance of high standards at SPGRC to attract and convince donor and member states support to its work.

1.3.2 Zambia's Agriculture Permanent Secretary Visits SPGRC

The Zambian Permanent Secretary for Agriculture and Cooperatives, Dr. Isaac Phiri visited SPGRC on 31st January 2008. His mission was to get acquainted with the SADC regional centre's activities for plant genetic resources conservations, particularly given Zambia's chairmanship of SADC.

He was accompanied by the Director of the Zambian Agricultural Research Institute, Dr Mwale and Ms M Chipili of the Zambian Seed Certification Control Institute. After a short briefing Dr Phiri was introduced to technical sections as well as the farm. At the end of the tour, the PS appreciated for the briefings and the tours and expressed his satisfaction with the work and that he was in full support off SPGRC activities and promised to lure for continued support by SADC Member States.

Flanked by Dr Mwale (l) and Ms Chipili, Dr Phiri (2nd l) is briefed by the Curator (Mr Qhobela) inside the genebank

2. PERSONNEL, EQUIPMENT AND SUPPLIES

2.1 SPGRC Personnel

The Director's position is still vacant and SADC Secretariat did circulate an advert but there were very few applications received what prompted re-advertisement in January 2008. The recruitment exercise is going on with short-listing and interviewing scheduled for the first part of 2008.

2.2 Job Evaluation

Dr Simon Mwale from SADC Secretariat assisted the SPGRC staff members in revising the SPGRC Job Descriptions. There were no individual interviews carried out as anticipated.

Results of the Job Evaluation exercise presented to the ICM in March 2008 indicate a non-defined SPGRC box within the SADC structure. Further outcome of the exercise and clarifications are expected after a skills audit exercise is done, presented to and approved by the Council in August 2008.

2.3 Equipment and Supplies

The fleet of vehicles is reasonably in a fair condition though most of them are constantly taken for repairs. While two of them (Land Rover and Toyota single-cab van) require urgent replacement, a Toyota single-cab van was involved in an accident during the burial proceedings of the late Mr Ngoma.

Four (4) deep freezers were bought locally and two (2) more from Sweden. A new 4x4 double-cab pick up, a mower, a disc plough, four (4) computers, and library shelves were procured. Procurement procedures are on-going for a microscope.

3. TRAINING AND EDUCATION

3.1 On-the-Job Training for SPGRC Staff

The Receptionist/Typist attended training in Management Development Programme for Executive Assistants (Basic) from 2 to 27 April 2007 in Mbabane, Swaziland.

3.2 Training and Education for NPGRC Staff

Eleven (11) SADC nationals attended the annual short course that was held at NGB in Sweden from 23rd June to 12th August 2007 (Table 1). Other courses attended outside the network are reported under technical activities.

3.3 Regional Human Resource Capacity Building

Two members in the network have started a PhD programme at the Swedish Agricultural University of Sciences. While there are already 2 PhD students, there are also 5 positions for MSc. students, 4 of which have been filled and the fifth is pending at the same Swedish University.

Five participants from Lesotho, Malawi, Mauritius, Tanzania and Zambia finished their two-year MSc degree course at the Swedish Biodiversity Centre at the Swedish University of Agricultural Sciences and Uppsala University in Uppsala, Sweden. They presented their research findings during the SPGRC/NPGRC Planning Meeting in September 2007.

Table 1: Participants for Short-Courses in PGR Management at BNGB

No.	Candidate's Name	Country
1.	Ms Elizeth Gohinho Goncalves	Angola
2.	Ms Mercy Marope	Botswana
3.	Ms M Khaketla	Lesotho
4.	Mr Wilson Bickiel	Malawi
5.	Ms Houshna Banu Naujeer	Mauritius
6.	Mr Armando Chilengue	Mozambique
7.	Ms Irene Shilulu	Namibia
8.	Mr Percy Moila	South Africa
9.	Mr Hanson Boy Hlophe	Swaziland
10.	Ms Mulonda Kutauka	Zambia
11.	Mr Cannas Simango	Zimbabwe

Table 2: Trained Personnel under SPGRC in PGRC (1990 - 2007)

Country	Certificate* +NGB	MSc.	PhD	Total
Angola	14	3	-	17
Botswana	14	5	-	19
DRC	1	-	-	1
Lesotho	14	5	-	19
Malawi	26	7	-	33
Mauritius	11	4	-	15
Mozambique	19	3	-	22
Namibia	13	3	-	16
Seychelles	2	1	-	3
South Africa	12	3	-	15
Swaziland	21	4	-	25
Tanzania	25	5	-	30
Zambia	23	5	1**	28
Zimbabwe	24	5	1**	29
Total	**216**	**53**	**2****	**272**

* Short course at NGB or short course at the University of Birmingham in U.K., or short course in Plant Taxonomy in Sweden or SPGRC short course in Zimbabwe, or SPGRC Documentation Workshop in Zambia.

** Started in Winter 2007, expected to last 4 years, until 2011

The total number of scientists/personnel trained between 1990 and 2007 is given in Table 2 above.

3.3 Some Important Meetings Attended by SPGRC Staff

- The Senior Programme Manager–Documentation and Information attended the SADC/Sweden Cooperation Annual Consultations that was held in Gaborone, Botswana on the 26 April 2007. He presented progress made during the Fourth phase and expected outputs for the Fifth phase.
- The Acting Director attended a meeting on the formulation of the 2nd Phase of the SADC Seed Security Network (SSSN) which was held on the 28 – 29 May 2007 in Pretoria, South Africa.
- The Acting Director, the Project Supervisor, and all the Board Members except South Africa and Botswana attended the 11th Session of the Commission on Genetic Resources for Food and Agriculture meeting held in Rome from 11 - 15 June 2007.
- The Acting Director attended the ICM from 14 – 16 June 2007 held in Windhoek, Namibia, and from the 26 – 29 June 2007, she presented a paper on the SPGRC funding options to the meeting of the Ministers responsible for FANR held in Lusaka, Zambia.
- The Acting Director attended the 7th SADC Seed Security Network Steering Committee meeting held in Windhoek, Namibia on the 20th July 2007.
- The Acting Director attended the SADC Biotechnology and Biosafety Committee meeting from 8 – 9 October in Pretoria, South Africa.
- The Assistant Finance Officer attended a one-week conference for accountants in Finance Management in Livingstone, Zambia in August 2007.
- The Acting Director attended the Second Session of the Governing Body for the ITPGRFA held in Rome from 27 October to 2 November 2007.
- The SPM and Technical Officer for Ex-situ Conservation attended a workshop on improving the identification, handling and storage of 'difficult' seeds, held in Gaborone, 05 -16 November 2007.
- The SPM – Ex-Situ Conservation attended a Global Public Goods (GPG2) Project Quality Management and Performance Measurement System Design Workshop held in Lunteren, Netherlands, 16 - 19 October 2007
- The SPM – Documentation & Information attended the 8th SADC Seed Security Network Steering Committee meeting held in Johannesburg, South Africa held on the 6th December 2007.
- The Acting Director attended the Eastern African Plant Genetic Resources Network (EAPGREN) Steering Committee Meeting held in Kigali, Rwanda from 9 to 13 December 2007
- The Acting Director visited the DR Congo between 4th and 8th February 2008 as per the resolution of the Board to establish contacts with that country.

4. TECHNICAL ACTIVITIES

4.1 Germplasm Collection and In-Situ Conservation

4.1.1 Germplasm Collection

Senior Programmes Manager - In-Situ attempted to assist those countries that reported staff shortages but the offer was turned down. There was no collection mission where SPGRC participated during the reporting period.

4.1.2 On-farm Conservation

Conservation of indigenous crop diversity by farmers in their fields is an area that needs to be encouraged. This method allows for exposure of crops to the ever-changing climatic conditions, and to the forces of farmers' practices such as selection and general management.

The In Situ/On-farm Senior Programme Manager made a follow-up visit to On-Farm Conservation sites in Zambia, at Rufunsa and Lukwipa, where the NPGRC integrate with the farmers throughout their seasonal activities.

The first meeting held was on the development of a workplan to multiply groundnuts and bambara nuts in the two sites. A workplan was drawn together with the farmers, farming activities itemised from November 2006 to July 2007.

Volunteer farmers were selected to multiply one lima plots for the past season. Seed was sourced from the genebank. A field day was conducted where farmers shared information on farming practices. A seed fair was held on 13 July 2007 where Senior Programme Manager – In Situ participated as the Acting Head of SPGRC. The issue of establishing a community seed bank in Rufunsa is still pending.

In Namibia, the Senior Programme Manager – In Situ met with the Senior Officials of the Extension Service to identify communities that could be engaged in on-farm activities. Caprivi and Mahenene were sited as possible areas where on-farm conservation could be done.

The SPM could not provide technical backstopping in Malawi and Tanzania as planned due to other duties of the Director's Ofice.

4.1.3 In Situ Conservation and Under-utilized Plants

A mini- reconnaissance survey was carried out in Namibia during a trip held on 16 – 21 July 2007 where information was gathered on the distribution pattern of *Tylosema esculentum* and research work done on the plant.

Herbarium specimens were used to get the sites where *Tylosema* spp. is occurring and literature search was also done at the Library of the National Botanical Institute. More information was obtained from the SEPASAL office located in the same institution.

The University of Namibia was visited where two (2) lecturers are conducting research on the plant. The research work is more on value addition, processing and marketing of the bean and from this work, it was realized that the increase on harvesting of the Marama bean could threaten the plant since it is occurring in the wild. During the discussions, it was mentioned that at one point some preliminary work was done on the domestication of Marama and there were no tangible results realized.

SPGRC, in collaboration with NPGRCs, where Tylosema sp. is occurring, will jointly develop a project proposal and sell it out for funding.

Identified gaps:

- Phenotypic and molecular characterisation of populations
- IK on plant uses and on domestication possibilities
- Propagation using tissue culture methods
- Study on the longevity of the seed under the -18^{0}C storage conditions for conservation.

The list of Threatened and Red Listed Useful Plants has been updated in the SDIS.

4.1.4 SPGRC Seed Fair

This activity was held on 23 August 2007 and was officiated by the Zambian Minister of Agriculture and Cooperatives, Hon Ben Kapita. The theme was "Conservation of local crops through diversity." This was to encourage farmers not to narrow down the food base so as the fight the current challenges of climate change and to increase access to food.

The Guest of Honour, Hon Kapita accompanied by other guests, had an opportunity to taste local dishes specially prepared for the event

During his speech, the Honourable Minister reflected that the theme was appropriate since it reflected the need to address both the socio-economic challenges of widespread food shortages and poverty amongst most communities of the SADC countries. He further mentioned that such seed diversity fairs demonstrate the link between conservation programmes and food security enhancement, good nutrition and health. He thanked SPGRC for the occasion and requested the Acting Director to hold annual seed fairs and even in other provinces in Zambia.

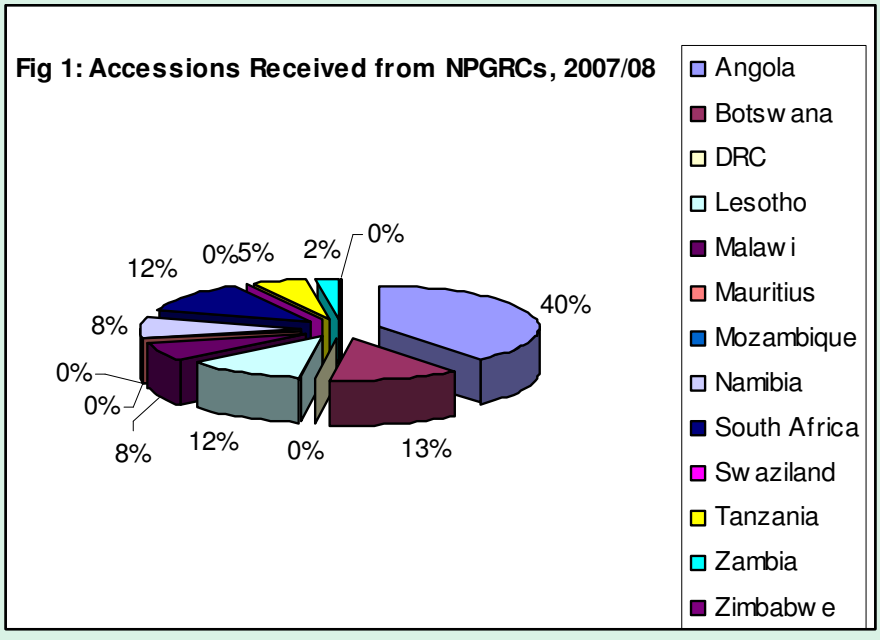
Exhibits included a diverse range of traditional crops and underutilized leafy vegetables such as cleome, amaranths, hibiscus and others. A group of women from Katuba Womens' Club provided food prepared from traditional crops, which a lot of people enjoyed. Farmers shared IK, seeds and others requested for seed samples displayed by SPGRC.

4.2 Ex-Situ Conservation

Proper seed handling continued to be given highest priority to ensure that high viability accessions are maintained for a long period and that new seed samples are registered and added to the Åke Wellving Memorial Base Collection provided they met required standards for seed quality, quantity and accompanying information.

4.2.1 Seed Handling, Storage, and Monitoring

During the reporting year, seven countries supplied germplasm for base storage amounting to 1,540 accessions (table 3 below). Of the received accessions, 439 did not meet the minimum required conditions which left SPGRC with 982 accessions to register and store in the Base Collection.



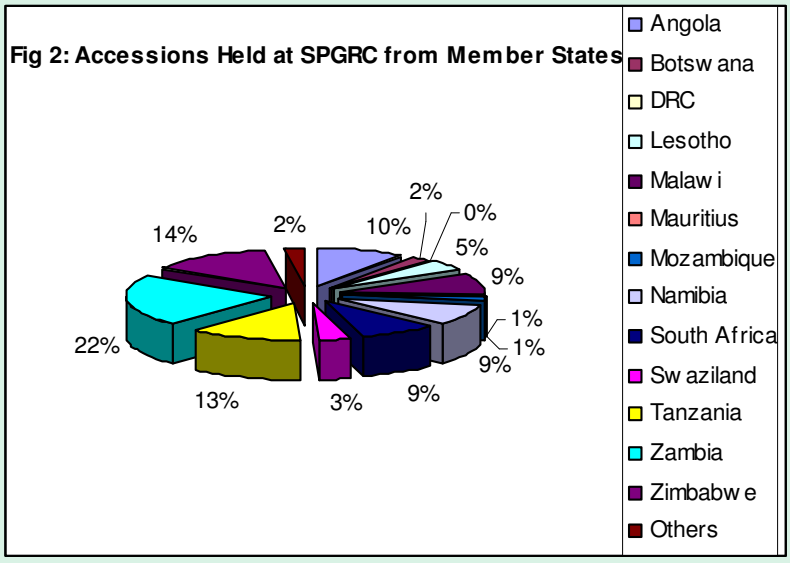
More equipment and materials for base storage were ordered through NGB and are expected to arrive in due course. However, four freezers were locally procured while other two were procured from Sweden to replace old ones.

To avoid excessive deterioration of seed quality, regular checking of samples stored in the Base Collection were done to determine whether regeneration or multiplication were required. A total of 1,072 accessions have been processed to determine their viability and germination test were conducted on fixed samples. Results showed that viability of 983 accessions remained at a level above 85%, whereas, viability results for 89 accessions was low.

The rule is to return any inadequate seed sample to donor NPGRCs whenever SPGRC receives such a sample. However, SPGRC may opt to relax the rule and proceed to regenerate such sample or temporarily store it in the genebank pending its regeneration at a later earliest time.

4.2.2 Physical Inventory of Åke Wellving Memorial Base Collection

The section initiated a full physical germplasm inventory of the Åke Wellving Memorial Base Collection as self evaluation activity. At the SPGRC staff meeting, an interest was highlighted for the inventory to go further into detailing the genebank status.



The main achievements of the physical germplasm inventory were that there were 13, 424 original samples stored in the base collection by May 2007. The figure excludes batches.

Table 3: Accessions of major species held at SPGRC

No.	Species	Common Name	Acces.
1.	*Sorghum bicolor* (L.) Moench	Sorghum	4,096
2.	*Eleusine coracana*	Finger millet	1,095
3.	*Zea mays* L.	Maize	1,805
4.	*Pennisetum glaucum* (L.) R. Br.	Pearlmillet	1,274
5.	*Vigna unguiculata* (L.) Walp.	Cowpea	725
6.	*Arachis hypogaea* L.	Groundnut	694
7.	*Phaseolus vulgaris* L.	Beans	987
8.	*Oryza sativa* L.	Rice	298
9.	*Vigna subterranea* (L.) Verdc.	Bambara nut	273
10.	*Cucumis pepo*	Pumpkin	47
11.	*Cucumis maxima*	Pumpkin	26
12.	*Cucumis* sp.	Pumpkin	190
13.	*Citrullus lanatus* (Thumb.) Matsumura & Nakai	Water melon	146
14.	*Triticum aestivum* L.	Wheat	187
15.	*Cajanus cajan* (L.) Millsp.	Pigeonpea	155
16.	*Cicer arientinum* L.	Chickpea	89
17.	*Pisum sativum* L.	Pea	117
18.	*Oryza Longistaminata* A. Chev. & Roehr.	Wild rice	55
19.	*Sesamum indicum* L.	Sesame	107
20.	*Lagenaria siceraria*	Gourd	27
21.	*Lagenaria sphaerica*	Gourd	40
22.	*Lagenaria* sp.	Gourd	7
23.	Others	Others	984
Total			**13,424**

The main achievements of the physical germplasm inventory were that there were 13, 424 original samples stored in the base collection by May 2007. The figure excludes batches.

Table 3 above shows actual numbers of major crop species found during the inventory. Figure 2 shows the numbers of accessions contributed by Member States, based on the findings of the inventory.

4.2.3 Multiplication, Regeneration and Characterisation

A total of 368 accessions of Namibian origin inclusive of pearl millet and sorghum were obtained from Namibia and multiplied at Chalimbana Experimental Station on their behalf.

Table 4 below shows the numbers of accessions that were retrieved from the Base Collection and regenerated as demonstrated by low viability when monitored.

Table 4: Accessions Multiplied at SPGRC for NPGRCs

Source	Species	No. of Accessions Multiplied	Remarks
Namibia	*Pennisetum glaucum*	349	Processed, shared and stored
Namibia	*Sorghum bicolor*	19	Processed, shared and stored
SPGRC Base	*Sorghum bicolor*	89	Stored in Base Collection (SDIS)
SPGRC Base	*Eleusine coracana*	18	Stored in Base Collection (SDIS)
SPGRC Base	*Pennisetum glaucum*	79	Stored in Base Collection (SDIS)
SPGRC Base	*Sorghum bicolor*	38	Stored in Base Collection (SDIS)
Total		**592**	

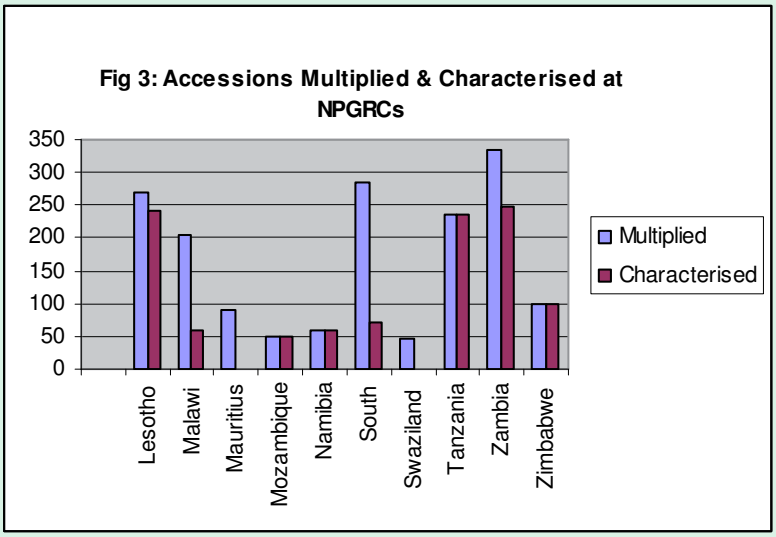
4.2.4 Herbarium

A concerted effort has been made to revitalize the SPGRC with herbarium as evidenced by procurement of herbarium materials and the processing (pressing) of specimens done in the year.

4.2.5 Status of Regional Drying Capacity

In terms of increasing and improving the drying capacity, a drier was bought for Tanzania, thus increasing its capacity to process and conserve germplasm. However, due to logistics, the Tanzanian drier was still at Dar es Salam Port, pending customs clearance. Training of the network staff for using and maintenance of the driers that could not take place during the specified implementation period with support from the Trust will now be implemented in the next financial year.

Countries that reported drying problems include Lesotho, Swaziland and Zimbabwe. These problems are yet to be fully addressed either by providing new facility or repairing the worn-out/malfunctioning parts.



Note: No accessions were multiplied or characterised in Angola, Botswana and DRC

4.2.4 Support to NPGRCs

With the advancement of the coming to an end of a 20-years project funding by NGB, the Section is triggered to reconsider its focus to ensure that credible activities of the network are sustained. As a result, the Senior Programme Manager's main objective of visiting Lesotho, Malawi, Mauritius and Zimbabwe NPGRCs was to assess the extent to which best genebank practices were applied, and advise accordingly.

Application of best genebank practices in Malawi and Mauritius were of good standard with Lesotho needing some improvements to achieve a better standard and a lot of work being needed to help Zimbabwean NPGRC to achieve a credible standard.

4.2.5 Discrepancy between Active and Base Collections

A Curators' meeting was held in Pretoria in February 2007 to verify the level of discrepancy between the numbers of accession in the active collection in the member states and the numbers of accessions deposited in the Ake Wellving Memorial Base Collection from the member states.

Curators observed two major factors that contribute to that gap as:

- Accessions held in NPGRCs because of their national importance but not mandate species;
- Vegetatively propagated accessions held by NPGRCs in field genebanks and that cannot be duplicated at SPGRC. Curators concluded there were about 9,000 accessions accounting for

the discrepancy. Curators further resolved that SPGRC should also multiply some accessions at Chalimbana experiment station in order to bridge the gap within the remaining years of the project.

4.2.6 Training Course on Processing 'Difficult' Seeds Held in Gaborone

A regional workshop aimed at addressing seed physiology-related constraints faced by gene banks, farmers and small-scale seed traders in handling and storing seeds was held at Sebele in Gaborone from 5 to 16 November 2007.

Hands-on session during the training workshop, Gaborone

Although the training was primarily aimed at NPGRC staff, a farmer's workshop was held on 14 and 15 November in conjunction with the genebank staff workshop to harmonise experiences between the two groups. The training attended by all SADC NPGRCs except Angola, Namibia and South Africa was designed to be practical in order to ease learning by participants, and practical demonstrations and experiments were carried out to reinforce the learning process.

Participants rated the workshop as a very successful training because technical seed technology problems were translated into simple solvable problems. The course outlined an understanding on how to classify seed storage behaviour, air-moisture relationships, physiology-related constraints and their solutions through good seed handling procedures. Participants stressed that viability monitoring, for certain species that they earlier on considered as difficult due to their dormant characteristics, would no longer be a problem.

Funded by UK Department for Food and Rural Affairs (DEFRA) the course was delivered by the Royal Botanical Gardens, in collaboration with FAO.

4.2.7 Course on Performance Measurement System Design

SPGRC genebank manager was among the thirty five genebank mangers from CGIAR, Sub-Regional and National genebanks that met for four days in Luntheren, Netherlands, to agree on adequate measurement indicators for performance of a genebank, and also, developed a performance measurement system for testing.

Before designing a performance measurement system, participants reviewed the background paper that detailed why it was necessary to monitor the quality of what they do, what mechanisms are there for monitoring, and how that relates to performance measurement of a genebank.

4.3 Documentation and Information

4.3.1 Hardware and Software

After upgrading the Local Area Network at SPGRC, a telephone call-log system for monitoring and generating reports on telephone usage in order to curb potential abuse of the phones was due for installation but it was recommended that this could only be done after replacement of the incompatible old exchange (PABX) machine. A call-log system was therefore put on hold, pending installation of a new compatible telephone PABX as approved by the Board.

Following a severe virus attack on computers suspiciously infected during the Documentation course in Pretoria in February 2007, new anti-virus (Symantec) software was bought and installed in all machines for cleaning and protection. Anti-virus software for NPGRCs has also been updated.

4.3.2 Database Development

The Windows-based SDIS has continued to undergo morphological and functional improvements to optimise usability by stakeholders. A new "Distribution Module" has now been appended to the system. This should enable genebank managers to efficiently track and analyse material usage in terms of quantities, recipients, timings, etc.

Additional crop descriptors for characterisation are continuously being added to the system.

4.3.3 Information and Communications

Network News

Newsletter issues for July-December 2006 and January-June 2007 were published and posted to all stakeholders in time. However, contributions by Network members have been low and countries have been persuaded to dully submit relevant articles.

Following previous Board's recommendation for relevant scientific articles, an article on global/climate change and its impact on PGRs and food security was published in the latest newsletter. Other areas of interest will be published in forthcoming issues.

With the 2006/07 SPGRC annual report published and distributed in time, there are no backlogs on network news.

Connectivity to the Internet

In anticipation for the forthcoming web-based version of SDIS, it has become necessary to have all NPGRCs connected through a proposal forwarded to the donors through the Project Technical Advisor. Some countries will need communication satellites (VSATs – Very Small Aperture Terminals) and others, servers. SPGRC was reliably informed that funds are available for this and implementation should start soon. This will also avert poor communication between the network stakeholders.

Publicity and Awareness of SPGRC

In order to step up awareness of SPGRC network activities, SPGRC participated in the Zambia National Agricultural and Commercial Show and made interviews on Radio and Television. It also partly participated (by visiting SPM – Documentation) at the Tanzanian Agricultural show and made TV and Radio interviews as well as preparing a manuscript for newspaper publication.

A DvD showing SPGRC activities complemented by its network NPGRCs was finalized and has been used for publicity. Annual updating will be done to the video.

During the year, the SPGRC brochures and booklets were updated; whereas, Christmas cards were designed, published and sent to respective network stakeholders and partners.

4.3.4 SPGRC Library

New books continued to be acquired as well as subscriptions to relevant journals so as to keep the network abreast with new developments in plant genetic resources. New subscriptions to freely available online journals through AGORA (Access to Global Online Research in Agriculture (www.aginternetwork.org) are being pursued by SPGRC. Maintenance of the library material is done through cataloguing. New Windows-based library software will be procured and installed to improve the library use and management.

In addition to publications, and given the potential overcrowding, the library was refurbished with new shelves and book cabinets.

4.3.5 Training in Novell Network Management

In order to improve the administration, management and security, of the upgraded SPGRC network running on Novell Netware, Documentation personnel underwent a two-week tailor-made training so as to build capacity in the above mentioned areas, as well as enhancing capacity for security and online publishing.

4.3.6 Support to NPGRCs

A technical backstopping mission by the Documentation & Information Officer and Technical Officer was undertaken in Mauritius and Zimbabwe in March 2007 in order to provide training to the NPGRC staff on SDIS, data/statistical analysis with data on the SDIS, and also in resolving some of the pertinent issues the NPGRC staff faced. Technical faults on hard- and software were resolved and training conducted on effective utilization of the SDIS and the information contained therein were targeted for the visits.

At both sites, NPGRC staff members were trained on SDIS and their systems updated. The SPGRC staff also had an opportunity to help in general maintenance and repairs of equipment as well as updating some software such as anti-virus. In Mauritius, the Senior Programme Officer met with senior government officials to resolve the outstanding provision of quotation documents so that a stand-by generator could be purchased for the NPGRC.

In Zimbabwe, a review and data re-entry for multiplied/regenerated accessions was recommended as batch numbering was misapplied.

In order to verify connectivity status, Malawian NPGRC was visited by the SPM – Documentation & Information in October 2007. Findings and recommendations have been incorporated into the overall connectivity proposal for the NPGRCs.

5. OTHER NEWS

5.1 Historical Signing of MoU between SPGRC and Bioversity

After reviewing and endorsing the said MoU, the Board assigned SPGRC management to facilitate the signing of the MoU between SPGRC and Bioversity. The MoU was finally signed on 19th April 2007 at the SADC Secretariat in Gaborone, Botswana.

Dr Mlambo and Dr Baidu-Forson exchanging the signed documents

The signing was conceived as formalisation of a very old relationship and both organisations should be seen as equal partners. Both parties expressed their gratitude and excitement on the finalisation and signing of the MoU.

Dr Jojo Baidu-Forson, Regional-Director of Bioversity – Sub-Saharan Africa representing Bioversity International, Dr Shadrack S Mlambo, Chairman of SPGRC Board did the signing of the Memorandum. Dr Molapong on behalf of SADC and Mrs Lupupa, Acting Director on behalf of SPGRC witnessed this occasion.

5.2 ITPGRFA Governing Body Re-Elects SADC Member to Chair

At its Second Session of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) held in Rome Italy on 29 October - 2 November 2007, the meeting/parties elected its Chair and Vice-Chairs for its Third Session.

Mr Godfrey Mwila (Zambia) who chaired the Second Session (as reported in SPGRC Network News of January-June 2006, was re-elected to the Chair while six Vice-Chairs were elected: Mr Sugiono Moeljopawiro (Indonesia), Ms Anna Somerville (Australia), Mr Campbell Davidson (Canada), Mr Modesto Fernandez Diaz-Silveria (Cuba), Mr Francois Pythoud (Switzerland), and Ms Hanaiya El-Itriby (Egypt).

5.3 Approved Long Term Sustainability Strategy for SPGRC

It would be recalled that the ICM directed SADC Secretariat in collaboration with SPGRC to revise the Strategy and align it with the priorities of the Regional Indicative Strategy and Development Plan (RISDP), as well as providing other funding options.

After approval by the Board in February 2007, the revised (aligned to RISDP and with additional funding options), the Long-Term Strategic Plan was resubmitted to ICM, which instructed it to be considered by Ministers responsible for Agriculture and Natural Resources. At its meeting (in Lusaka), the FANR Ministers approved it for submission to the Council which in turn approved it in August 2007.

The great challenge for SPGRC and the network is that following the ending of the project in 2009, it will be required to annually raise at least 10% of the total funding through projects and donor support, rising up to 30% by third year without NGB support. Meanwhile, the Council was also informed that the SADC Secretariat will commission a study in 2008 to determine the sustainability mechanisms for SPGRC after the end of a 3-year transitional period.

5.4 Global Crop Diversity Trust Proposal

A Conservation Strategy for Crop Diversity Collections in the SADC region that was developed with the Global Crop Diversity Trust has yielded purchase of Seed Driers for Angola, Namibia, Malawi and Tanzania as part of its implementation. While the Malawian drier is in place at NPGRC, the Tanzanian drier is still at the Dar es Salam port (by the time of publishing) pending customs clearance.

The activity of engaging a Technician to repair NPGRC's faulty driers was not done because of depleted funds. Advised by the Trust, the conservation strategy to GCDT was revised and updated in July in consultations with the Trust itself. The proposal was finally submitted to the Trust for funding considerations which has now been approved for funding of drier repairs, training on basic drier maintenance and production of manual for the same. The exercise will initially be carried out in six countries and extended to other countries when funds are mobilized.

At the same time, a consolidated regional regeneration/multiplication proposal was submitted to the Trust in early November 2007 and has in principle approved for funding for the forthcoming cropping season.

5.5 NEPAD/SANBio Funding Initiative

The Director of Southern African Network for Biosciences (SANBio) presented a paper during the SPGRC/NPGRC Review and Planning meeting in September 2007 where he urged participants to comment in order to improve the document. He also urged SPGRC to send an application to SANBio so that it can become the SANBio Node, literally a regional lead institution for the proposed project.

SPGRC sent an application to the SANBio Steering Committee to become a SANBio Node. Receipt was acknowledged and SPGRC was advised that there are new requirements by the Committee and therefore its proposal was being reformatted to meet the new requirements.

5.6 Farm

1021 bags of maize and 125 bags of soya beans were produced this season compared to 879 and 104.5 bags respectively for last season. Farm land will be increased by 10 hectares, bush clearing is on going. Irrigation facilities to be installed in 4 hectares and this will require two extra boreholes plus a water reservoir.

5.7 Publicity and Awareness of SPGRC

In order to step up awareness of SPGRC network activities, SPGRC participated in the Zambia National Agricultural and Commercial Show and made interviews on Radio and Television. It also partly participated in Tanzanian Agricultural show and made TV and Radio interviews as well as preparing a manuscript for newspaper publication. A newsletter was distributed during the SADC Council meeting in February 2008.

Know the Svalbard Global Seed Vault

The Svalbard Global Seed Vault is located on the Norwegian island of Spitsbergen near the town of Longyearbyen (population 2,075) in the remotearctic Svalbard archipelago. The island is about 1,120 kilometres from the Noth Pole.

The Seed Vault is managed under terms spelled out in a tripartite agreement between the Norwegian government, the Global Crop Diversity Trust (GCDT) and the Nordic Genetic Resources Centre (previously named the Nordic Gene Bank, a cooperative effort of the Nordic countries under the Nordic Council of Ministers).

The Svalbard Global Seed Vault's mission is to provide a safety net against accidental loss of diversity in traditional genebanks. While the popular press has emphasized its possible utility in the event of a major regional or global catastrophe, it will certainly be more frequently accessed when genebanks lose samples due to mismanagement, accident, equipment failures, funding cuts and natural disasters. Such events occur with some regularity. In recent years, some national genebanks have also been destroyed by war and civil strife. There are some 1,400 crop diversity collections around the world, but many are in politically unstable or environmentally threatened nations.

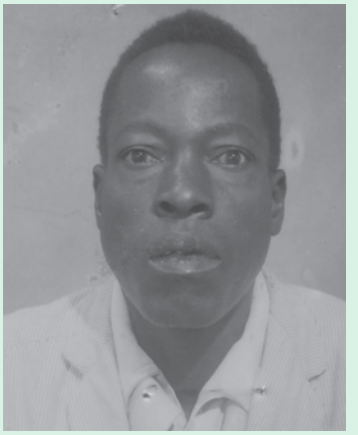
The Svalbard Global Seed Vault opened officially on 26th February 2008. Approximately 1.5 million distinct seed samples of agricultural crops are thought to exist. The variety and volume of seeds stored will depend on the number of countries participating – the facility has a capacity to conserve 4.5 million. The first seeds arrived in January 2008. Five percent of the seeds in the Vault, about 18,000 samples with 500 seeds each, come from the Centre of Genetic Sources, part of Wageningen University, Netherlands.

Entrance to the Vault

Source: http://en.wikipedia.org/wiki/Svalbard_Global_Seed_Vault

6. OBITUARY

The Management of the SPGRC regrets to announce the death of Mr Blackwell Ngoma who passed away on 25th December 2007 noon at the University Teaching Hospital in Lusaka after a short illness.



Mr Ngoma was born on 29th December 1952 in Chipata in the Eastern Province of Zambia. He went to Chongololo and Mt Makulu Primary Schools for his primary education from 1963 to 1970 and acquired his Junior Secondary Education through Luanshya Correspondence Course Unit from 1971 to 1972. Mr Ngoma joined SPGRC as a General Worker on 1st July 1990 and served in the same position up to the time of his untimely death.

He leaves behind a widow, eight (8) children and nineteen (19) grandchildren.

May God Rest His Soul in Eternal Peace

7. FINANCIAL REPORT 2006/2007

Table 5: Income Statement for the Year Ending 31st March 2007

	2006/07, US$	2005/06, US$
INCOME		
Contributions (Member States)	608,738	548,496
Donations and grants	146,122	324,715
Interest receivable	1,588	319
Exchange difference	130,546	75,060
Other income	17,196	7,832
	904,190	**956,422**
Amortisation of Capital Grants	84,737	85,279
	988,927	**1,041,701**
OVERHEAD EXPENDITURE		
Administration & office expenses	112,991	176,913
Audit fees	7,000	8,000
Communication expenses	20,898	21,849
Depreciation	84,737	85,279
Exchange losses	-	-
Financial expenses	3,807	2,822
Motor vehicle running expenses	11,830	8,496
Professional, consultancy and legal expenses	1,030	1,867
Rent	-	-
Staff emoluments	478,529	386,371
Transport travel and subsistence	38,008	30,493
	758,830	**722,090**
OPERATIONAL EXPENDITURE		
Programme and technical services	130,769	147,393
	130,769	**147,393**
TOTAL EXPENSES	**889,599**	**869,483**
Surplus/Deficit for the period	**99,328**	**172,218**
Represented by:		
Unutilised Contributions	99, 328	172,218
Other Income	-	-
	99,328	**172,218**

Table 6: Balance Sheet as at 31st March 2007

	2006/07, US$	2005/06, US$
ASSETS		
FIXED ASSETS	**1,993,011**	**2,059,156**
Current Assets		
Bank balances and cash	316,140	416,475
Accounts receivable	232,129	130,874
Deposits and prepayments	7,399	-
Other receivables	18,179	21,351
	573,847	**568,700**
Total Assets	**2,566,858**	**2,627,856**
LIABILITIES AND EQUITY		
CURRENT LIABILITIES		
Accounts payable	94,076	79,536
Accrued expenses	18,708	49,569
Provisions	7,000	8,000
Provision for leave	20,174	24,355
	139,958	**161,460**
LONG-TERM LIABILITIES		
Staff Gratuity	118,233	58,630
Accumulated Fund	176,466	136,344
Unutilised contributions	100,444	175,036
Capital grants	1,986,898	2,053,043
Other Institutional Funds		
Reserve Fund	20,110	18,719
Loan Fund	24,749	24,624
TOTAL LIABILITIES AND EQUITY	**2,566,858**	**2,627,856**

8. APPENDICES

Appendix I: Members of the Board of SPGRC

Dr S S Mlambo	- Zimbabwe (Chairperson)
Dr L Matos	- Angola
Dr P O P Mosupi*	- Botswana
Mr T Munyuli	- Democratic Republic of Congo
Dr M M Ranthamane	- Lesotho
Dr A P Mtukuso	- Malawi
Mr P Munisse	- Mozambique
Mr Y Mungroo	- Mauritius
Dr G L Maggs-Kölling	- Namibia
Dr J Jafta	- South Africa
Dr S Kunene**	- Swaziland
Dr M M M Msabaha	- Tanzania
Dr S W Muliokela	- Zambia (Vice-Chairperson)
Ex-officio Members	
Mrs M Nyirenda	- SADC
Dr Jojo Baidu-Forson	- Bioversity
Dr M B Fatih	- NGB
Mr Peter Herthelius	- Sida
Ms Thandie J Lupupa	- SPGRC (Secretary)

* Has replaced Dr S Chite

** Has replaced Ms Z Mamba (Alternate Board Member)

Appendix II: SPGRC Staff Members

Vacant	Ditrector
Ms Thandie J Lupupa	Senior Programme Manager – In-Situ Conservation (*16 May 2006*). Acting Director (1 September 2006)
Mr Barnabas W Kapange	Senior Programme Manager - Documentation & Information (*9 May 2006*)
Mr Lerotholi L Qhobela	Senior Programme Manager – Ex-Situ Conservation (*15 May 2006*)
Mrs Mary B Phiri	Assistant Administrative Officer (*1 March 2000*)
Ms Florence C Chitulangoma	Assistant Finance Officer (*8 March 1993*)
Mrs Peggy S Ng'ono	Technical Officer-Conservation (*1 June 2005*)
Mr Kennedy K Hamudulu	Technical Officer - Documentation & Information (*1 March 1994*)
Mr Ferdinand Mushinge	Technical Officer – In situ (*1 March 2004*)
Ms Phyllis M Kamitondo	Personal Secretary (*12 November 2001*)
Mr Wilbroad M Chashi	Senior Finance Clerk (*1 July 2002*)
Mr Alexius M Nyambe	Driver (*1 February 1991*)
Mr Kapelwa E Songa	Typist/Receptionist (*1 September 1989*)
Mr Gibson Zulu	General Worker (1 August 1989)
Mr John Mfwembe	Worker (*4 September 1989*)
Mr Wale Banda	General Worker (*1 April 1990*)
Mr Blackwell Ngoma*	General Worker (*1 July 1990*)

* Passed away on 25th December 2007.

Appendix III: List of Some Prominent Visitors to SPGRC (2007/2008)

Hon. Ben Kapita, MP	Minister for Agriculture & Cooperatives, Zambia
Dr Isaac K Phiri	PS, Ministry of Agriculture & Cooperatives, Zambia
Dr Ngosa Simbyakula	Director, Zambia Inst. of Advanced Legal Education
Dr Tobias Takavaraha	Team Leader, SADC, SARO Regional Advisor 44 Stoneclave, Greystone Park, Harare, Zimbabwe
Dr Simon Mwale	SADC Secretariat, Gaborone
Dr Watson Mwale	Director, ZARI, Mt Makulu, P/Bag 7 Chilanga
Dr Stephen Muliokela	Director, GART, P O Box RW 50834 Lusaka, Zambia
Ms Mary Chipili	Seed Certification Control Inst. Chilanga
Mr Ignath Rwiza	Post-graduate Student, UNZA, P O Box 32379 Lusaka
Mr Zabron Mbwaga	Post-graduate Student, UNZA, P O Box 32379 Lusaka
Mr Andrew Muyanga	Southend School, P O Box 31370 Lusaka
Ms Charity Muuma	Southend School, P O Box 31370 Lusaka
Prof P. Tongoona	Univ. of Kwazulu-Natal, Pietermaritzburg, RSA
Dr Exildah Chisha Kasumu	Copperbelt University, P O Box 21692, Kitwe
Dr Jacob Mwilwa	School of Natural Resources, CBU, Kitwe
Mr Kelly Chubili	Zambia National Broadcasting Corporation, Lusaka
Ms O Mwale (+students)	Copperbelt University, P O Box 21692, Kitwe
David Chikoye	IITA, Nampula, Mozambique
Dr Peter G Sinyangwe	MACO, DVLD, P O Box 50060, Lusaka
Mr L M Kanyuka	MACO, HRA, P O Box 50060, Lusaka
Mr M Mukelabai	MACO, NAIS, P O Box 50060, Lusaka
Mr Fred Atieno	Bioversity International-SSA, Nairobi, Kenya
Richard Chenevard	Swiss Agency for Development and Cooperation (SDC), 1185 Park Street, Pretoria, South Africa
Joss Swennenhuis	African Wildlife Foundation, P O Box 50844, Lusaka
Dr Yoshiaki Nikishawa	Grad. School of Int'l Development, Nagoya, Japan
Mr Elias E L Rhousy	Intercontinental Hotel, Lusaka
Mr Ernest Mwemutsi	SADC Secretariat, Gaborone
Mr G Morrison	SADC Secretariat, Gaborone

SPGRC is grateful to all patrons who visited and for their interest in PGRC conservation for the future genarations.

Appendix IV: SPGRC Publications in 2007/2008

Kanthungo J. (2007). On-farm Conservation and Utilization of Finger Millet in Malawi. SPGRC Network News – A publication of SADC Plant Genetic Resources Network, Vol July-Dec. 2007. Lusaka, Zambia.

Kapange, B. W. (2007). Conserving the Plant Genetic Resources of Southern Africa. Low External Input and Sustainable Agriculture Magazine – LEISA Issue of June 2007/Volume 23 No. 2. The Hague, Netherlands.

Kapange, B. W. (2007). Prosperity of Plant Genetic Resources Cuddled by Stable Climate. SPGRC Network News – A publication of SADC Plant Genetic Resources Network, Vol. January-June 2007. Lusaka, Zambia.

Kapange, B. W. (2007). Using ICTs for Managing Genebanks: the Case of SADC Plant Genetic Resources Centr. Paper presented at the World Information Technology Forum (WITFOR) 2007 held in Addis Ababa, Ethiopia.

Lezar, A. (2007). Morphological Characterization of Okra (*Abelmoschus esculentus* L. Moench) Accessions from the South African NPGRC Collection. SPGRC Network News – A publication of SADC Plant Genetic Resources Network, Vol July-Dec. 2007. Lusaka, Zambia.

Mwila G. P. and Nxumalo M. H. (2008). Eco-geographical studies and reviews of vegetatively propagated crop species occurring in Swaziland and Zambia.

Qhobela L. L. (2007). Review of Germplasm Multiplication Carried Out at SPGRC - Chalimbana Research Station in 2005/06 Rainy Season. SPGRC Network News – A publication of SADC Plant Genetic Resources Network, Vol January-June 2007. Lusaka, Zambia.

SPGRC (2007). DvD showing SPGRC activities complemented by its network NPGRCs was finalized and has been used for publicity. Annual updating will be done to the video. Lusaka, Zambia.

MSc Theses: Abstracts

i) José Pedro (2007). Uso, Manejo e Caracterização de Agricultores e de Variedades Locais Angolanas de Feijão Macunde (*Vigna Unguiculata* (L.) Walp.). Florianópolis, Santa Catarina – Brasil. Dissertação apresentada ao Programa de Pós-graduação.

Resumo: O Centro Nacional de Recursos Fitogenéticos (CNRF) tem conservado em seu banco de germoplasma cerca de 2821 amostras de variedades locais de culturas alimentares, entre os quais, 313 são amostras de *Vigna unguiculata* (L.) Walp, conhecida em Angola por feijão macunde. Esses genótipos estão esperando por estudos de caracterização para o uso e

melhoramento dessa cultura. É uma cultura amplamente distribuída no mundo, extremamente rústica, bem adaptadas a amplas condições de solo e tolerante a ampla faixa de temperatura. É fonte de proteínas de baixo custo, notadamente, para as populações carentes. O presente trabalho teve como objetivo caracterizar os produtores de feijão macunde de Angola e de variedades locais. A metodologia proposta para caracterizar as famílias produtoras desta leguminosa foi o da aplicação de um questionário semi-estruturado. Para a caracterização fenológica, morfológica e agronômica, foi realizado um ensaio no campo experimental do CNRF em Angola. Foram avaliadas 20 variedades locais de feijão macunde, em um ensaio com delineamento de blocos ao acaso, com quatro repetições. Foram adotados os descritores da cultura do feijão macunde do IBPGR (1983). Os resultados mostraram que a maior parte das famílias entrevistadas pratica agricultura de subsistência, em áreas de propriedades que variam entre um e três hectares, utilizando preferencialmente instrumentos manuais simples. O feijão macunde é cultivado em área menor de 1 hectare e geralmente consorciado com o milho, mandioca e massambala (sorgo). Em relação ao estudo de caracterização fenológica, morfológica e agronômica, os resultados mostraram que a maioria de acessos possui ciclo reprodutivo precoce com existência de diferenças significativas entre as variedades indicando a existência de grande diversidade das variedades associadas à maioria das variáveis analisadas.

Palavras-chave: famílias de agricultores, conservação on farm, *Vigna unguiculata*, feijão macunde, variedades locais.

Abstract: The National Center of Plant Genetic Resources (CNRF) conserves in its bank of germplasm about 2821 samples of local varieties of food crops of which 313 are samples of *Vigna unguiculata* (L.) Walp, known in Angola as macunde. These genotypes are waiting for studies of characterization necessary before their use in breeding programs. The species is widely distributed in the world. Because of its extreme rusticity, it's well adapted to different soil types and tolerant to a wide range of temperatures. It is a main source of proteins for poor people. The present work aimed to characterize the producers of macunde in Angola and its local varieties. The study of the cowpea growers was based on a semi-structural questionnaire. For the characterization phenological, morphological and agronomic characteristics was done in an experimental field carried out at CNRF in Angola. Twenty local varieties of cowpea were evaluated, in the experiment, in a completely randomized blocks design, with four replications. The IBPGR (1983) cowpea descriptors were used to characterize the varieties. The results showed that most of growers interviewed practice subsistence agriculture, cultivating land, an area of one to three hectares; simple instruments are mostly used. The cowpea cultivated in the area less than one hectare generally was associated with the maize, cassava and massambala (sorghum). Most of the accessions studied showed to be precocious in relation to the reproductive cycle significant differences among varieties were also observed indicating the existence of high degree of diversity of varieties associated to most of the traits studied.

Key Words: Family farmers, on farm conservation, *Vigna unguiculata*, macunde, local varieties.

ii) Kanthungo, J. I. (2007). Relative contribution of biodiversity to the overall rural livelihood security. MSc Thesis, Uppsala University, Sweden.

Livelihood security means adequate and sustainable access to income and other resources to enable them to meet basic needs, including adequate access to food, potable water, health facilities, educational opportunities, housing and time for community participation and social integration. Specific Objectives of the study were to find out perceptions of the border communities on biodiversity conservation of the Reserve and determine the current and potential contribution of the Reserve to the local rural economy. It also aimed at the assessment of current livelihood strategies and explores factors that shape them, as well as gauging the level of community involvement in the management of the Reserve. Through findings, the study concludes that use function of location, household size, education, literacy level, and livestock ownership, as well as reserve resources critical for nutrition, health, energy, educational support, income and construction are critical for overall rural livelihood security. It was also derived that while low local communities involvement was important, there is an available window of opportunity for co-management of biodiversity, and that for them to participate effectively, local communities need training in capacity, governance and rights.

iii) Motloli, M. (2007). Determination of farmers' practices for on-farm conservation of locally adapted maize (*Zea mays* L.) cultivars in traditional-type agricultural systems in Lesotho. MSc Thesis, Uppsala University, Sweden.

This research is rationalized by the fact that loss of crop varieties in agricultural systems contributes to loss of first hand knowledge and traditional cultures. It is further noted that although local cultivars of different crops still under cultivation in Lesotho whose conservation methods are not well documented though, the government policy in favour of improved cultivars. Little or no exploration of specific variables (cultural, socioeconomic and environmental) which influence farmers' attitudes towards maintaining crop diversity on-farm has been done while only little knowledge of the mechanisms which have kept the traditional farming systems sustainable and productive for generations are understood. Farmers, practices important to them, their constraints and how they can be supported need to be addressed. From the findings of the study, it was concluded that the amount and distribution of local crop diversity on-farm is associated with various social, economic, cultural, agroecological and political aspects. It is further emphasized that it is not one single set of variables, either economic, sociocultural or environmental that determines on-farm crop diversity, but rather a combination of these

iii) Ragen, P. (2007). Tree Diversity and alien Encroachment in the Native Forest of Black River Gorges National Park, Mauritius. MSc Thesis, Uppsala University, Sweden.

The study had an objective to develop complementary conservation tools and restoration strategies against the hypothesis that alien species greatly reduce species diversity, basal area and density of native species. From the findings of the study, The author recommends revision

of conservation strategy to address issues for fencing, more weeding, targeting for more than 50% of the BRGNP forest as well as consideration of the hill tops and slopes of mountains in the strategy. It was unveiled and predicted that forest encroachment in the native forest would entail huge amounts in costs for weeding ($ 1,500 per ha and long-term maintenance at $140 per ha per year). The new estimation for 3500 ha will be approx. $ 7 million.

iv) Manda L. (2007). Status and uses of *Oldfieldia dactylophylla* (Oliv.) J. Léon. in Malawi. MSc Thesis, Uppsala University, Sweden.

The study was rationalised by the need to investigating the abundance and distribution of *O. dactylophylla*, and understanding its values to the local communities will contribute to its conservation and appropriate management practices in Malawi. This was done through determination of the status of *O. dactylophylla* in Mubanga Forest Reserve (MFR), and investigation on the uses of *O. dactylophylla* by local communities around MFR. The research established that *O. dactylophylla* is rare and clustered in MFR and that its root is the most used part for medicinal purposes but improper harvesting method makes its use unsustainable.

v) Siangulube F. S. (2007). Biodiversity and Climate Change Project – Use of Local Vegetation and Traditional Conservation Methods. MSc Thesis, Uppsala University, Sweden.

The study aimed at understanding the relationship between biodiversity and people outside protected areas as a challenge to biologists and policy makers. It ascertained that there was no significant difference in the way people in the two study districts (Mongu and Senanga) use vegetation for medicines and food, but there was a difference in uses for construction and firewood. It was further learnt that although traditional conservation methods are under threat due to population increase, acculturation and commercialisation of plants with market value, these practices have substantially contributed to conservation of forest biodiversity. It was noted that the combination of species and ecosystem conservation approach through community natural resources management provide a supplementary option to traditional conservation methods already in practice.