SPGRC

SADC Plant Genetic Resources Centre

Twenty Fifth Annual Report
2014/2015

SPGRC
Lusaka, Zambia
2015

Under the MSBP *Afromontane* project, seeds were collected from different parts of Tanzania including the top of Africa's highest mountain Kilimanjaro where a Senior Collections Officer from NPGRC is seen recording a collected sample
(*Photo courtesy of L. Mapunda*)

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Abbreviations

APPSA	Agricultural Productivity Programme for Southern Africa
CCARDESA	Centre for Coordination of Agricultural Research & Development in Southern Africa
COMESA	Common Market for Eastern and Southern Africa
CTA	Technical Centre for Agricultural and Rural Cooperation
CTDT	Community Technology Development Trust, Zimbabwe
CWR	Crop Wild Relative
DRC	Democratic Republic of Congo
EAC	East African Community
FANR	Food, Agriculture and Natural Resources Directorate, SADC
FAO	Food and Agriculture Organisation (United Nations)
GB	Governing Body (of the Treaty)
IIAM	*Instituto de Investigação Agrária de Moçambique*
IITA	International Institute for Tropical Agriculture
INERA	*Institut National pour l'Etude et la Recherche Agronomiques* (National Institute for Agronomic Study and Research), DRC
ITPGRFA	International Treaty for Plant Genetic Resources for Food and Agriculture
Kbps	Kilobits Per Second
LCD	Liquid-Crystal Display
Mbps	Megabits Per Second
NPGRC	National Plant Genetic Resources Centre
NPGRCom	National Plant Genetic Resources Committee
PGRFA	Plant Genetic Resources for Food and Agriculture
RISDP	Regional Indicative Strategic Development Plan
RUFORUM	Regional Universities Forum
SADC	Southern African Development Community
SANBio	Southern African Network for Biosciences
SDC	Swiss Development Cooperation
SDIS	SPGRC Documentation and Information System
Sida	Swedish International Development Co-operation Agency
SPGRC	SADC Plant Genetic Resources Centre
SPO	Senior Programme Officer, SADC
TCP	Technical Cooperation Programme
TEEAL	The Essential Electronic Agricultural Library
TO	Technical Officer, SPGRC
UNZA	University of Zambia

SPGRC Profile

Vision, Mission and Objectives and Objectives

Vision: *To be the lead institution in the conservation and sustainable use of plant genetic resources, contributing to the enhancement of food security and livelihoods in the SADC region*

Mission: *To mobilise, conserve and make available plant genetic resources using state-of-the-art technologies and standards, contributing to sustainable development, environment and food security for the well being of the people of SADC*

Objectives:

- *To reduce plant genetic erosion and increase options of PGR and seed systems to enhance productivity*
- *To promote generation of knowledge and exchange of information on PGR*
- *To influence policy environment so as to improve access to and use of PGR in the region*
- *To mobilize adequate financial resources for conservation and sustainable use of PGR in the SADC region*

Background

The Centre was established in 1989 as a 20-year project, initially funded by Nordic donors and, later supplemented with SADC member country contributions on an increasing scale - until the end of the project in 2011 when Member States started to fully fund SPGRC.

Located about 25 Km off Great East Road in Lusaka on an 89ha land, generously provided by the Government of Zambia on a 99-year lease, the Centre has been entrusted and mandated with the conservation and evaluation for sustainable utilization of regional plant genetic resources for the present and future generations, thus contributing to food security and improved livelihoods; and coordination of all activities through the network of National Plant Genetic Resources Centres (NPGRCs).

Achievements and challenges

Though challenged by lack of adequate funds, low germplasm utilization and domestication of the ITPGRFA, outstanding construction of the biotechnology facility at SPGRC; the Centre has trained staff up to PhD level, collected over 45,000 germplasm seed samples from the region, implemented several projects in developing policies, strategies, provided equipment o NPGRCs, *etc*.

Our motto

"Safeguarding plant diversity for sustainable livelihoods"

1. Management and Administration

1.1 31ST SPGRC BOARD MEETING

The 31st SPGRC Board was held in Benoni, Johannesburg, South Africa on 29th and 30th October 2014. At its opening, the SPGRC Board Chairperson, Dr Julian Jaftha started by requesting the Board to observe a minute of silence for the passing on of the former President of the Republic of Zambia, Mr Michael Chilufya Sata. The Chairperson then welcomed everyone to South Africa.

The Chairperson said one of the key performance areas of South Africa was agriculture. He said the Departments were discussing ways and means to implement National Development Plans. He encouraged the Board to focus on the Agenda ahead of them and hoped that the Board will find common grounds as they discussed the lined up issues.

The Director of Food, Africulture and Natural Resources Directorate, SADC (FANR), Mrs Margaret Nyirenda expressed great appreciation for the warm welcome to South Africa and thanked SPGRC Management for the good logistical arrangements. She informed the meeting that SADC now has a new first-ever female Executive Secretary and reported that the top management of SADC was almost all new and that there were a lot of expectations from the new team. Mrs Nyirenda went on to congratulate SPGRC for some of the works done and mentioned that SPGRC was very well acknowledged in presentations made at a meeting she attended in Rome, Italy.

Board Members 2014

The Director re-affirmed SPGRC's uniqueness and relevance and urged SPGRC Management to ensure that the germplam materials in the SPGRC Genebank were kept professionally for the future generations. She urged the Board to guide and advise SPGRC on its scientific work, workplan and budget throughout the year.

The official opening remarks were delivered by the Chief Director – Plant Production and Health in the South African Ministry of Agriculture. Besides welcoming delegates to South Africa and wishing them a happy stay, Dr Jaftha wished the Board fruitful deliberations.

On behalf of the other Board Members, Ms Mary Molefe thanked the Board Member for South Africa for representing the Deputy Director of Agriculture and Fisheries who could not come to officiate the 31st SPGRC Board Meeting. Ms Molefe said she was happy that Dr Jaftha in his speech highlighted the need to shift from conservation to utilisation . She said SPGRC was indeed responding to the call on utilisation through FAO TCP which trained regional personnel on utilisation of germplasm conserved in

genebanks. She then wished the Board fruitful deliberations during the meeting.

The Board elected Zambia to be the Chairperson of the SPGRC Board taking over from South Africa; and Swaziland was elected the Vice Chairperson.

During its deliberations, the Board agreed on the need for restructuring SPGRC Board and instructed SPGRC to prepare *Rules and Procedures* for coming on to be members of the Board. A Task Force was appointed to determine frequency of Board meetings as well as develop a structure that should be reported at the next Board meeting.

The Board noted that the US$499,000 FAO-TCP project had been successfully concluded and that the National PGRFA Strategies were officially handed to the six participating countries during the Planning Meeting. It was also informed of the US$200,000.00 secured from the Programme on Climate Change Mitigation and Adaptation in the Eastern and Southern Africa (COMESA-EAC-SADC) Region. The Board was also informed that SPGRC has developed a generic project proposal entitled "Enhancing Capacities for Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture in the SADC Region (2015 - 2020) that will be submitted to prospective donors after its approval by the Board and Ministers Responsible for Agriculture and Food Security.

The Board noted that SPGRC Management has now prepared a Draft Sustainability Strategy based upon the updated SPGRC Financial Sustainability Study Report. The Draft Sustainability Strategy will be submitted to SADC Ministers Responsible for Agriculture and Food Security for approval at their next meeting.

1.2 WORKSHOPS AND MEETINGS

1.2.1 2014 Annual Technical Review and Planning Meeting

The regional stakeholders' meeting on information exchange of national strategies on PGRFA was held on 7th – 8th October 2014, at Protea Hotel – Cairo Road in Lusaka, Zambia.

The meeting brought together twenty one (21) representatives from all SADC Member States (NPGRCs) with the objective to:

- Discuss FAO-TCP project activities with regard to developing national PGR conservation strategies in selected SADC countries
- review the implementation of the technical activities for 2013/2014 cropping season;
- evaluate the technical and budgetary plans for the 2014/2015 cropping season; and
- facilitate information sharing on technical and networking issues.

In his opening remarks, the Head of SPGRC welcomed participants to Lusaka and wished them a happy stay. The Head mentioned some notable achievements registered during the year under review, and also listed some of the many challenges the network faced.

The network continued implementing the FAO-TCP on the development of National Strategies for PGRFA for six participating countries, namely: Botswana, Lesotho, Malawi, Mozambique, Tanzania and Zambia. The network managed to upgrade some of its PGR conservation equipment at SPGRC and the six NPGRCs.

Delegates' group photo, 2014

In its efforts to mobilize resources, SPGRC secured US$ 200,000 from the Programme on Climate Change Mitigation and Adaptation in the Eastern and Southern Africa (COMESA-EAC-SADC) Region, 2010-2016. It initiated collaboration with the University of Zambia, as a pilot activity, to promote the use of materials in genebanks by making available small grants to graduate students to augment their research budget. SPGRC also developed a generic project proposal with potentially standalone components that can be funded separately.

The Centre was engaged in developing the web-based SPGRC Documentation and Information System, anticipating having the running module ready by mid-2015.

The Head noted major challenges faced by the network, including: inability to carry out many activities (collection, multiplication, characterization, regeneration, duplication to base collection and others) at national level due to lack of funds; continued challenges of inadequate germplasm utilization; slowed down or completely stopped activities on domestication of the ITPGRFA; outstanding construction of the biotechnology facility at SPGRC; and inadequate financial resources for new long-term training at Master's and PhD levels, amongst others.

Participants discussed many important things of interest to the network. SPGRC reported that it was doing all it could to assist with the full establishment of NPGRCs in DRC and Seychelles.

In response to some of SDIS queries, SPGRC informed the participants that the next version (web-based) of SDIS will address many of the existing deficiencies in the current version that include the ease of data entry and search in the characterization module, standardized data entry in modules to avoid mistakes such as spellings, etc. The new system will among other features, enable Curators to add/delete district and provinces if necessary. It was also reported that the website was undergoing re-branding and that the next version will now include space for Discussion Forum on different themes.

With regard to bridging the gap between "Base" and "Active" collections, SPGRC reported that it has continued scouting for resources for a multiplication project to close the existing gap including sale of a generic proposal "Enhancing Capacities for Conservation and Sustainable Utilization of PGRFA in the SADC Region".

In order to have more or less common access rights to germplasm materials, the meeting

Planning meeting session in progress

requested countries that already have the sharing/access mechanisms in place, to forward them to SPGRC where modalities for harmonised accessibility can be worked on.

Given that for the time being, SPGRC cannot sponsor more than one participant per country to attend the planning meeting, it was resolved that all member countries who can afford to sponsor more people are free and encouraged to do so.

It was recalled that SPGRC promised to share with NPGRCs its equipment replacement plan and list of suppliers since last year. This was not promptly done as SPGRC was refining its plan to be in line with the new RISDP focus. During the meeting, SPGRC once again promised to share the said documents with NPGRCs with immediate effect.

It was observed that NPGRCs were lagging behind in characterizing the germplasm materials held in their genebanks which in a way fails to attract its utilization by potential users. The meeting agreed that there was need to target characterization as an important activity and that SPGRC should develop a project focused on characterization. Further evaluation of material must be done to add value to it through characterization, evaluation, *etc*. While there is a general outcry for inadequate packaging materials such as aluminium foil bags, it was noted that frantic efforts are being done to ensure funds are sourced for the same. It was reported that some foil bags will be provided by SPGRC through FAO for the TCP project participating countries.

Hon. Monde, Deputy Minister of Agriculture

1.3 VISITORS

During the reporting period, SPGRC received many visitors including school pupils, university students, scientists, farmers and prominent individuals. These are listed in the Appendix III.

SPGRC had the honour to be visited by the Deputy Minister of Agriculture and Livestock, Hon. Grayford Monde during the launching of the SADC Harmonized Variety Release System, a function held at SPGRC and attended by stakeholders from the SADC region.

1.4 RESOURCE MOBILIZATION FOR SPGRC

During the period under review, SPGRC concluded the US$499,000 FAO-TCP project that saw development of national strategies for conservation and sustainable utilization of PGRFA for six participating SADC Member States namely Botswana, Lesotho, Malawi, Mozambique, Tanzania and Zambia.

Meanwhile, SPGRC developed a generic proposal that was approved by the Board on enhancing conservation and sustainable utilization of PGRFA. The proposal is due for endorsement by SADC Ministers Responsible for Agriculture and Food Security during their forthcoming meeting.

The Centre prepared and submitted a project proposal on Climate Smart Agriculture that will be overseen by SADC-EAC-COMESA Tripartite arrangement. It also prepared and submitted a project proposal to the Swiss Development Cooperation and USAID for funding of the improvement of seed systems in the region.

1.5 SPGRC STRATEGIC SUSTAINABILITY PLAN

SPGRC Management developed a strategic sustainability plan for the years 2016-2020 and presented it to the Board in October 2014. The Board approved the strategy with minor comments and the plan will be updated and presented to the SADC Ministers Responsible for Agriculture and Food Security during their forthcoming meeting.

2. Personnel, Equipment and Supplies

2.1 SPGRC PERSONNEL

There was no change in the staff compliment at SPGRC as reflected in Appendix II.

2.2 STAFFING IN NPGRCS

There were generally no changes in the staffing of NPGRCs. However, in some instances like in Angola, Domingas Tomás left the NPGRC in April of 2014 and is now working with the Extension Service (IDA) at Agriculture Ministry, but she still collaborates with the Centre. While there is a vacant position for *In-situ* /On-farm/Field Genebank Officer, Lesotho workforce was reduced by one more staff following retirement of a Field Attendant.

A number of staffs are doing further studies within and beyond the region. Dr Lawrent Pungulani (Malawi) successfully completed his PhD in New Zealand and is back in Malawi serving the genebank. Mr Chiyapo Gwafila from Botswana is pursuing an MSc in Crop Science at Botswana College of Agriculture; and Ms K. Kgokong joined NPGRC as Technical officer with a Diploma from the same college. At Malawi NPGRC, of the 4 technical staff, 2 went for studies in October 2014 leaving behind a gap. Meanwhile, Mr. Francisco Reis is still pursuing his degree studies (BSc. Hons. in Agronomy) at Universidade Pedagógica (UP) in Maputo, Mozambique.

Miss Fatima Sinon who in 2014 received training at the SPGRC facility in Zambia is currently working on establishing the seed-testing lab and will be instrumental in the setting up of the Genebank in Seychelles. The Seychelles Curator is currently pursuing PhD studies in the UK.

While Mr. S. M. Kabululu, a Multiplication and Characterization Officer in Tanzania is attending a PhD programme at Mandela University, Arusha, his colleague, Mr E. Mausa, a Molecular Biology Scientist is attending a MSc. programme at Sokoine University of Agriculture, in Morogoro. Ms G. Kanyairita from Tanzanian NPGRC is attending a M.Sc. programme in USA.

While Zimbabwean Mrs R. Musango is doing distance MSc in Biosafety at an Italian University, Ms F Chinosengwa is doing BSc in Agronomy at Midlands State University of Zimbabwe.

2.3 EQUIPMENT AND SUPPLIES

Funds were sourced for upgrading of PGR conservation equipment at SPGRC and in six NPGRCs. This is part of the initiative to ensure that genebanking physical facilities are expanded at SPGRC through acquisition of new and replacing the worn-down facilities.

2.4 SPGRC BUILDINGS (OFFICES AND STAFF HOUSES)

There has been no change in status of SPGRC buildings during the year under review. SPGRC continued to pay heavily for frequent and expensive maintenance of office buildings due mainly to initial poor workmanship, for example poor plumbing materials were used. Major maintenance work on buildings including replacement of substandard materials is required to solve the problem of frequent breakdowns of infrastructure once and for all.

More rational and economical way of maintaining and repairing staff houses is being sought through various organisations and institutions such as Zambia National Housing Authority and others in the construction and estate management industry.

3. Meetings, Training and Education

3.1 TRAINING AND EDUCATION FOR NPGRC STAFF

The traditional annual PGR Management Short Course could not take place during the reporting period due to financial constraints.

There are a number of scientists who successfully finished their graduate studies during the year thus returning to their respective countries with enhanced skills and expertise. There are also a number of other scientists pursuing studies at all degree levels in various universities in the region and abroad.

SPGRC established close collaboration with the Coordinating Centre for Agricultural Research and Development in Southern Africa (CCARDESA). This collaboration with

CCARDESA is aimed at developing and implementing joint research projects as well as training programmes. SPGRC is already involved in the Agricultural Productivity Programme for Southern Africa (APPSA) being implemented in Malawi, Mozambique and Zambia. SPGRC is jointly exploring PGRFA management training opportunities at Masters and PhD levels and short courses to be conducted in the region and abroad.

SPGRC is also exploring collaborative arrangements with the Regional Universities Forum (RUFORUM) on training programmes at Masters and PhD levels.

The network is reliably informed that Dr Lawrent Pungulani, the Malawian Genebank Curator graduated with his PhD from Massey University in New Zealand in 2014.

In preparation for a fully functioning NPGRC, two Seychelles staff members were trained in Genebank management for one week at SPGRC and at the Zambian Seed Certification and Control Institute through a COMESA-funded project. Meanwhile, the Seychelles Senior Genebank Officer made a scientific visit to SPGRC.

Dr. Pungulani and supervisors at graduation
You are welcome back Dr. Pungulani

3.2 TRAINING OF SPGRC STAFF

Due to financial constraints, no training of staff from SPGRC took place during the reporting period. However, three Technical staff participated in a two-week pre-breeding course held in Lusaka and funded by FAO through the TCP project.

3.3 SOME IMPORTANT MEETINGS ATTENDED BY SPGRC STAFF

Table 3.1: Meetings attended by SPGRC Staff

Apr 2014	– SPO *Ex-Situ* took expert visit to Seychelles to provide technical backstopping to Seychelles/COMESA project for establishing a functional NPGRC. – SPO *Ex-Situ* travelled to conduct a 'Fact finding mission' in DRC and provided expert advice on the establishment of an NPGRC. – SPO *In-situ* attended a farmers' field day in Malawi on the promotion of sorghum, millets, cowpea and yams.
May 2014	– SPO-*In Situ* assessed the exploitation of edible ground orchids in Serenje, Zambia. Designed mitigation plans to combat uncontrolled harvesting, discussed with Extension Workers and the communities.

	– The Head and SPO *In-situ* attended stakeholders' workshops in Malawi and Lesotho on the finalization of the development of national strategies for PGRFA. – SPO *Ex-Situ* travelled to Angola to conduct evidence based genebanking evaluation and provided technical backstopping.
June 2014	– SPO-*In Situ* attended a meeting in Dar es Salaam on cassava collection, processing and action plan for South, East and Central Africa. Samples from the south will be collected and conserved *in-vitro* at the IITA institution in Dar es Salaam, Tanzania. – The SPO – Doc. & Info. travelled to attend a workshop on national strategies development on PGRFA , NPGRC technical backstopping in Arusha, Tanzania. He also attended the Zambian national workshop on developing the national PGRFA strategies in Lusaka. – The Head and SPO *in situ* attended the national stakeholder's workshops on the finalization of PGRFA strategies in Botswana and Mozambique. – SPO *in-situ* participated in a germplasm collection mission in the Nyimba District, Zambia. – SPO *Ex-Situ* attended a meeting with Driers for Africa June in South Africa in search of drying equipment suitable for PGR long-term conservation. – SPO *Ex-Situ* provided technical backstopping to South Africa National Genebank management team – SPO *In- situ* attended a crop diversity fair in Sinazongwe, Zambia. – TO *In-situ* participated in a rice collection mission and assessment of edible orchids and *Munkoyo* in the Northern Province of Zambia. – SPO *In-situ* attended a fund mobilization meeting with SDC and USAID Donor Agencies in Pretoria.
July 2014	– SPO *Ex-Situ* travelled to Malawi to provide technical backstopping and APPSA project monitoring. – SPO *Ex-Situ* visited CopperBelt University in Zambia for a meeting to explore opportunities that promote capacity building for PGR conservation and use – SPO *Ex-situ* visited Mozambique to conduct evidence based evaluation and provide technical support to NPGRC and APPSA project. – SPO *In-Situ* led a cassava collection mission in collaboration with the INERA Kipopo Research Station in Lubumbashi, DRC. – TO – Documentation & Information travelled to Windhoek, Namibia to resuscitate the malfunctioning SDIS.

	– SPO *Ex-Situ* attended APPSA meeting in Malawi. – SPO I*in-situ* participated in a germplasm collection mission and on-farm management in Namibia
Aug 2014	– The SPO – Doc. & Info attended the SADC Council of Ministers and the Summit in Victoria Falls, Zimbabwe – SPO *In-Situ* attended a crop diversity/seed fair in Lusitu, Siavonga, Zambia – The Head attended the 5th Session of the Governing Body of the ITPGRFA in Muscat, Oman. – SPO *Ex-Situ* travelled to Swaziland and Lesotho to conduct evidence based evaluation and provide technical backstopping
Sept 2014	– SPO – Doc. & Info. went in Web-SDIS development and NPGRC backstopping mission in Gaborone, Botswana – SPO – Doc. & Info. attended the BioFISA Phase I programme closure conference in Centurion, South Africa – SPO *Ex-Situ* met with Climate Control (Z) Ltd to assess and recommend on upgrade of SADC Regional Genebank structures for air conditioning, power conditioning and cooling system – SPO *Ex-Situ* organised and facilitated SPGRC/UNZA meeting to reconvene their working partnership – SPO *In-situ* attended the joint meeting of the Ministers of Agriculture and Ministers of Health on the finalization of the regional food and nutritional strategy – SPO – *Ex-Situ* participated at the Genebank Managers organized by the Global Crop Diversity Trust in Arusha, Tanzania
Oct 2014	– SPGRC Management Team attended 30th Board meeting in Johannesburg, South Africa
Nov 2014	
Dec 2014	– SPO – Doc. & Info. provided technical backstopping service on SDIS to the Zambian NPGRC
Jan 2015	
Feb 2015	– SPO – Doc. & Info. provided technical backstopping service on SDIS to the Angolan NPGRC – SPO – *Ex-Situ* travelled to Mauritius to conduct Evidence-Based Evaluation of the genebank

4. Technical Activities

4.1 GERMPLASM COLLECTING AND *IN-SITU* CONSERVATION

4.1.1 Germplasm Collection

This activity is mainly done by *in situ*/Collection Officers at country level. SPGRC provides technical assistance when and where need arises. A total number of 689 seed samples and 282 seedlings were collected. The table below reflects where collection missions were done, target species and the number of collected material.

Table 4.1: Germplasm Collection

Country	Collection Sites	Target spp.	Number of Samples
Angola	Cunene, Lunda Norte and Lunda Sul Provinces	Mixed crops	77
Botswana		Mixed crops	40
Lesotho	Metolong Catchment	Rescue expedition of seedlings for wild plant species, ornamental, medicinal and other threatened plant species	282 Seedlings
Malawi	Collection sites not specified	Maize, cultivated and wild rice, crop wild relatives for cowpea	201
Mauritius	Around the country	Mixed crops and spices	22
Mozambique	Province of Zambézia: 6 sites per district for all 5 districts	Local rice germplasm for conservation and crop improvement programs	45
Namibia	Zambezi region	Maize, melon, Lagenaria	21
South Africa	Gauteng province (West rand and JHB metro districts), North-West (Bojanala district).	Mixed crops	22
Swaziland	Kalanga	Amaranthus gap filling	11
Tanzania	Mount Meru and Kilimanjalo region	Wild species	123

Country	Collection Sites	Target spp.	Number of Samples
Zambia	Northern Luapula, parts of Muchinga provinces	Cultivated rice	103
Zimbabwe	Uzumba, Pfungwe districts	Mixed crops	24
Total Samples			**689**

Angola postponed the planned collection mission due to lack of storage packaging bags (aluminium foil bags). Mozambique failed due to financial constraints. Planned missions for the next year include mixed crops, grasses by Botswana, mixed crops by Mauritius, maize gap filling by Malawi, mixed crops by Seychelles, spices and vegetables by Tanzania.

The status of field genebanks is reflected bellow:

- **Angola:** Material of various crops and fruit trees are conserved in specialised institutions.
- **DRC:** Cassava collections are conserved in Kipopo, M'vuazi and other specialised institutions. There is need to conduct an inventory to take stock of all locations and conserved materials.
- **Lesotho:** NPGRC's field genebank holds 64 accessions of medicinal plants.
- **Malawi:** Field genebank holding 110 sweet potatoes, 70 bananas, 98 sugar cane. 377 accessions of cassava and sweet potato were lost due to diseases and water stress.
- **Seychelles:** An *in-situ* conservation site has been identified. Activities are to be carried out in collaboration with the Plant Conservation Action Group (NGO). Target crops and other useful plants have already been identified.
- **Zambia:** 100 accessions of cassava are conserved at the NGPRC field genebank

4.1.2 Conservation of Wild Fruits and Medicinal Plants

SPGRC continues to maintain wild fruit trees and medicinal plant species. A total of 105 plants consisting of 25 species are conserved at the SPGRC Arboretum.

4.1.3 On-Farm Conservation

This is an initiative aimed at strengthening the maintenance of crop diversity by farmers to achieve the conservation and sustainable use of traditional crops, improve access to food and household livelihood. Target crops are identified, multiplied, samples of seed distributed to participating farmers, demonstration plots established for information sharing, seed fairs held to facilitate seed exchange and for monitoring of the flows of the promoted crops, exhibiting of traditional food, exchange of recipe of local food and maintenance of cultural heritage encouraged. Progress on crop management activities is reflected below.

Table 4.2: On-farm conservation activities in selected countries

Country	Site(s)	Target crops	Activities
Botswana	Serowe	Local crops	Farming of crops continued. No seed fair held
Lesotho	Semonkong area in Maseru District	All cultivated crops ranging from cereals to legumes	NPGRC collaborates with the Majakathata Farmers Association *Aims:* promote and maintain all cultivated local crops; establish Community Seed Bank. Farmers participate in agricultural shows
Malawi	20 sites	Sorghum, finger millet, pearl millet, yams, cowpea, bambara	34 demonstration plots, 3 field days conducted at Salima, Chipoka and Chikwawa, 6 seed multiplication groups established and 400 lead farmers trained. Over 2,000 farmers participating on crop diversity management
Mozambique	Northeast Zonal Centre (CZNE – Lichinga) and South Zonal Centre (CZS-Inhambane)	Cowpea (trials and multiplication), beans and cassava	Field days held to share information through exhibitions of different varieties and food dishes prepared from the crops. About 150 participants per site included researchers from IIAM, small and medium scale farmers and representatives from the NGOs, universities and Agriculture Services
Namibia	Omusati, Kavango East and Zambezi region	Pearl millet, sorghum, maize, melons, cow pea. Lost crops to be restored: cassava, livingstone potato, white sorghum, short sorghum types	Survey carried out on the farmers. Most farmers still traditional crops. Conservation agriculture to be promoted to cope with climate change. NPGRC distributed *Sorghum bicolor* and *Pennisetum glaucum* seeds. Establishment conservation of PGRFA of use of on-farm conservation groups were identified in Bukalo, Linyanti, Kasheshe, Kongola,

			Ngoma and Masokotwane Rural Development Centres Other identified areas in the Zambezi region: Bukalo, Masokotwane, Linyanti, Sikangu and Kasheshe Maize, sorghum, pearl millet, beans, bambara, ground nuts, melons (oil seed and cooking melon), pumpkins, Lagenaria Data on Indigenous Knowledge associated with seed selection and storage was collected.
Swaziland	KaShewula, Mafucula bambara	Sorghum, maize, cow pea,	No report for the season.
South Africa	Mbombela, Mpumalanga province, Sterkspruit, Mutale in Limpopo	Maize, millets, sorghum, cowpea, bambara groundnuts, pumpkins,melons & calabash	124 seed samples distributed to 54 farmers in Training on seed management and a seed fair conducted in Mutale in Limpopo. Farmers still working as individuals, there is need to establish working committees to form well organized farmers' groups. A building to be rehabilitated in Sterkspruit to house a Community Seed Bank.
Tanzania	Liwale, Mtwara Rural, Newala and Mbinga	Finger millet, Curcubits, yams	Activities involved strengthening conservation and sustainable use and districts awareness raising on their value in food security, nutrition and adaptation to climate change
Zambia	Rufunsa, Sithumbeko	Maize and cow pea	Evaluations were done with the participation of farmers to select preferred traits.
Zimbabwe	Uzumba, Pfungwe districts	Diversity of different crop species	Seed fairs were held. Incentives provided as prizes for farmers with a variation of crops. Communal Area, Resettlement Area and Small Scale Commercial Farming Area of

Zimbabwe	Mutoko district Characterisation and biodiversity conservation of bambara *Aim:* contribute to food, nutrition and seed security of traditional landraces, making bambara nut to be a source of improved livelihoods. Interviews held with 17 host farmers. Field and laboratory characterization done. Analysis of results indicated diversity in quality and quantity of landraces across farming sectors and households. High loss of diversity observed in light coloured landraces in comparison with dark coloured landraces mainly due to market and farmer preferences of fresh bambara nut. Two field days held for information sharing.

During the reporting period, no information received from Seychelles on the status of 'Every Home a Garden" concept.

Countries like Malawi, Namibia, Tanzania and Zambia are implementing donor supported on-farm management activities that involve characterization of farmers' varieties, strengthening of the capacity for local seed systems and the mitigation of effects of climate change. Traits that are generally of major importance to farmers include early maturing, drought tolerant, yield, grain size, reliability, grain colour and disease resistance.

SPGRC participated in seed fairs and field days in Malawi and Zambia. In Zambia, the Seed Diversity Fairs were held in the Zambezi-Gwembe Valley, a drought prone zone (Lusitu, Sulwegonde, Sinazongwe) where small holder farmers vulnerable to challenges of climate change displayed their crop diversity to showcase their drought tolerant traditional varieties. Farmers shared information and exchanged seeds, which is a common practice in the informal seed systems. Farmers were also asked on preferred traits for sorghum, gathered information included: grain colour, grain size, height, tolerance to pest and diseases, flour value, sweetness, insipid – that is good for alcohol, not eaten by birds and duration to maturity. These preferred traits are important for sorghum breeding purposes.

Distribution of sunhemp seed was done in some Zambian groups through

the CTDT NGO for soil improvement purposes.

Dr. Moçambique (left), Curator of the Angolan NPGRC

4.1.4 Field Genebanks

This activity contributes to the maintenance of vegetatively propagated material and some of the materials are the source of food and income generation in the region. Characterisation of cassava was only carried out in Zambia at the NPGRC field genebank.

Table 4.3: Conservation of vegetatively propagated material in Field Genebanks

Country	Material Conserved	Field Genebank sites
Angola	Roots and tubers	Malange (Malange province) and Mazozo (Bengo province)
	Mango and banana	IIA Benguela, Fruit Research Station
	Robusta coffee	Huambo and in national coffee research stations in Kwanza Sul and Uige provinces
DRC	Cassava, coffee, cocoa, rubber. 17 local cassava varieties conserved in Kipopo and monitored against Mosaic Virus (3 were tolerant) (Ndudumа, Kasanana, Kalundwe).	Kipopo, and the Eastern region
Lesotho	282 seedlings of medicinal, ornamentals and plants of economic importance collected and transplanted, rescued from a dam construction site. NPGRC field genebank has 64 plants consisting of mainly medicinal plants	NPGRC field genebank

Malawi	Cassava, air and ground yams	NPGRC
Mauritius	40 accessions of various crops: sweet potato, spices, Musa sp.	Nouvelle Decouverte PGRU and Curepipe and Richelieu ES
Mozambique	Cassava, sweet potato	Umbeluzi Research Station
	Cashew and mango trees	South Zonal centre
Swaziland	Cassava, sweet potato (Material re-planted)	Malkerns Research Station
South Africa	27 sweet potato (*in vitro*), 3 used for the development of protocols for cryopreservation. Taro and other vegetatively propagated species and medicinal plants are maintained in single/double shade- and glass houses.	Pretoria
Tanzania	Root & tuber crops, fruit trees, spices	Specialized institutions
Zambia	100 accessions of cassava	Mount Makulu - NPGRC
Zimbabwe	Root & tuber crops, fruit trees	Specialized institutions

4.1.5 SADC *In-situ* Crop Wild Relatives Project

South Africa, Mauritius and Zambia in collaboration with International Plant Genetic Resources Institutes and the University of Birmingham with support through ACP-EU cooperation programme in science and technology are implementing the project for *in-situ* conservation and use of Crop Wild Relatives (CWR). The objective of the project is to enhance scientific capacities within the partner countries of the SADC region to conserve CWR and identify useful potential traits for use to adapt to climate change and to develop exemplar national strategic action plan for the conservation and use of CWR in the face of challenges of climate change across the SADC region.

All project partners were invited to attend CWR inception workshop in Zambia from the 14-16 April 2014 in order to understand the contents /expectations/ details of the project. It was in this workshop that the objectives of the workshops were discussed, work plan developed for implementing work packages, discussions on the outcomes of the training need assessment surveys conducted per country and clarification of administrative and management procedures of the project.

4.1.6 *In-situ* Conservation

The *in-situ* unit in collaboration with the Zambian NPGRC conducted an assessment of genetic erosion of the Orchids and Munkoyo (*Rhynchosia*) in Zambia. Some communities gather wild edible plants such as orchids (*Herbanaria, Satyrium, Disa*) and *Rhynchosia sp.* for their livelihood. An assessment on the status of these plants was done in the marshy areas of the Central and Northern Provinces of Zambia. The economic value of these plants was found to be very high such that the sales do not match the demand. At some sites, deposit cash payments were done before the tubers were even mature to be harvested; leading to unsustainable harvesting. This is posing a serious threat to the survival of the wild plants.

The collected data was useful to formulate measures for mitigation plans that could be implemented to combat the genetic erosion, mainly on sustainable harvesting. In all visited sites, the community members were very much aware that the edible ground orchids were declining, disappearing, and something need to be done to improve the situation. Communities stated that the uncontrolled harvesting is due to the fact that they are a source of food and income.

The optimal harvesting period ranges from February to August but in January, at most sites, the plants were already harvested and those that were found around April were transplanted plants that had no tubers; thus already harvested. In the past, it was taking 2-3 days to fill up a 50kg bag and now it takes 3–4 weeks due to the scarcity of the orchids. At some sites, the communities were planting cassava and livingstone potato at the edges of the *dambos* and reducing the habitat for the ground orchids.

A follow-up trip to revisit the sites and to come up with mitigation plans to

promote sustainable harvesting methods was carried out in early 2014. Meetings were held with Extension Workers and some of the community members to discuss sustainable harvesting methods.

4.1.7 Domestication of Marama bean

Vegetative Marama

Marama (*Tylosema esculentum)* is prized by people of the Kalahari Desert for the protein and oil content of its large seeds (20-30g). The seeds are not eaten raw as they are tasteless with an unpleasant slimy texture, but after roasting, they have a delicious nutty flavour, resembling roasted cashew nuts.

Marama tubers

At SPGRC, the wild bean was planted in January 2011, with seeds sourced from Botswana. The vegetative growth is very vigorous during the summer months; sprouting from a formed underground tuber. It is dormant in winter and the leaves dry off; regenerating again after the first rains around October/November. The plants have long running stems that enable them to creep along the ground. The plants have clocked three years but still no flowering observed. In the wild, they take 3 – 4 years before flowering. In its native area, marama bean flowers from October to March. Observations are ongoing and growth habits documented.

Tylosema esculentum plants are monitored and developmental stages documented. Tubers were replanted in August 2013. Plants are three years old

4.2 DOCUMENTATION AND INFORMATION

4.2.1 Hardware and Software

During the year, SPGRC updated anti-virus, library management software, telephone management system and other application software.

To improve information sharing and exchange, SPGRC has installed two new servers (file server, mail exchange server), new heavy duty UPS, and has upgraded Internet access to optic fibre in readiness for the new web-based SPGRC Documentation Information System (SDIS) database that is under development. Since more information is being developed from the materials that are currently held in network's genebanks in order to attract germplasm users such as scientists, breeders, and researchers, the online SDIS seems to be a solution for enabling real-time access to information.

4.2.2 Database Development

SPGRC has been developing a web-based documentation and information system with view to replacing the current standalone SDIS that has been delaying updating and access of databases across members. The database development was being done in collaboration with SADC-AIMS programmer whose contract ended in mid-2014 and his availability became unreliable and unpredictable. A local programmer was outsourced and to date, database design and logic have been completed, tables populated from old system and data clean-up and tables loading scheduled to commence soon, with operational database pegged to start around mid-2015.

4.2.3 Sharing and Dissemination of Information

4.2.3.1 Network News

The SPGRC Annual report for 2013/14 was compiled and edited and delivered for printing. It was distributed in August 2014. There were too few articles to publish the biennial newsletter. Efforts to solicit for articles from the network scientists are underway.

The SPGRC network scientists continued using updated The Essential Electronic Agricultural Library (TEEAL) database (stationed at SPGRC), to query and have access to full-text articles from more than 250 world-renowned journals in agricultural research and production. The scientists would usually make request for information from SPGRC on an interested topic of their choice and SPGRC would query the TEEAL on their behalf and download appropriate literature in full-text and send it to scientists within two working days. The library management software (*Surpass*) has assisted in effectively managing the SPGRC library and is due for updating in October 2014 before license expiry.

ZAMTEL technicians burrowing under the Great East Road to pass optic fibre cable

4.2.3.2 Connectivity to the Internet

The Internet access at SPGRC was upgraded from 256 Mbps to 512 Mbps in July 2013. However, this speed was found to be low given the many operations that need rather higher bandwidth. In anticipation of increased Internet traffic following migration to web-SDIS, the Centre is finalizing the upgrading of Internet to 1,000 Kbps using optic fibre.

4.2.3.3 Publicity and Awareness of SPGRC

Due to financial constraint, little was done to publicise SPGRC for enhancing its visibility during the year. The missed publicity occasions include Zambia International Trade Fair, Zambian Agricultural show, and other national and regional shows/exhibitions, as well as media coverage.

SPGRC continued to purchase new books, and journal and serial titles as well as other publications while renewing the existing ones. Five new titles related to biodiversity management were purchased and added to the library collections that serve network scientists to keep themselves abreast with new information, technology and other developments in PGR conservation, management and utilization.

4.3 EX-SITU CONSERVATION

Ex-situ conservation is meant to ensure SADC food security needs are met in future without compromising current food security needs by maintaining a working regional genebank that conserves SADC Base collection supplied by Member States.

4.3.1 Seed Handling and Storage

Two Member States contributed 73 accessions from October 2013 to September 2014 as shown in the table below.

Table 4.4: NPGRCs that contributed materials to SPGRC in 2013- 2014

Country	Number of Accessions	Date Received
Mauritius	42	16 December 2013
Namibia	31	25 November 2013
Total	**73**	

Twelve Member States did not contribute PGR for long-term conservation at SPGRC in the period under review

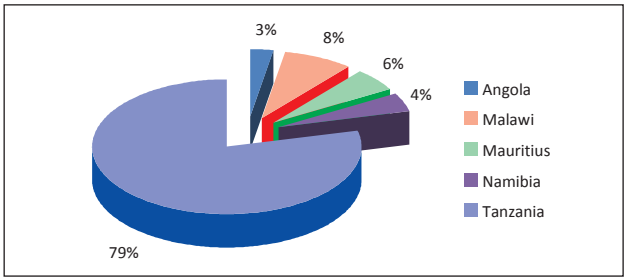
Table 4.5: Accessions received by SPGRC from MS over the past 10 years

Accessions Received per Year

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Angola	50	43	590	71	140	68	65	45	35	20
Botswana	-	-	199	-	159	130	-	216	284	-
DRC	-	-	-	-	-	-	-	-	-	-
Lesotho	64	75	183	169	-	490	-		-	-
Malawi	34	113	-	126	95	14	30	13	9	56
Mauritius	-	23	-	38	-	-	-	38	-	40
Mozambique	27	38	-	28	158	-	311	-	-	-
Namibia	500	714	95	192	-	-	-	-	-	31
Seychelles	-	-	-	-	-	-	-	-	-	-
RSA	256	-	189	-	-	-	-	-		-
Swaziland	-	20	-	36	-	-	51	-	-	-
Tanzania	68	-	84	-	126	-	358	72	-	545
Zambia	162	22	34	-	293	-	-	-	-	-
Zimbabwe	30	-	-	-	-	-	281	-		-
Accessions received by SPGRC	1191	1048	1374	660	970	702	1092	384	328	692
MS Contributed	9	8	7	7	6	4	6	5	4	2

Five Member States provided PGR for long-term conservation at SADC Regional Genebank in 2014 as depicted in the table below.

Figure 4.1: Accessions received from NPGRCs in 2014(by percentage)



4.3.2 Facilities and Equipment

SADC Regulations and Procurement Policy were followed to effect equipment replscement. The recent developed freezers' replacement plan was also followed and 10 freezers were replaced. The replacement plan was developed and its successful application will depend largely on base fund ($20,000) annually to ensure that all old freezers are in place on time and some laboratory equipment were also replaced.

4.3.3 Regeneration and Multiplication

A total of 300 samples that were received at SPGRC with quantities inadequate to meet standards for conservation in genebanks and to meet the quantities for base at SPGRC and safety at Svalbard or that lost viability during storage in genebanks were regenerated at SPGRC's experimental farm. These included five major crop species of 100 maize samples that were characterised. Malawi, Mozambique, Zambia, Tanzania and Botswana were also engaged in characterisation of collected genebank materials.

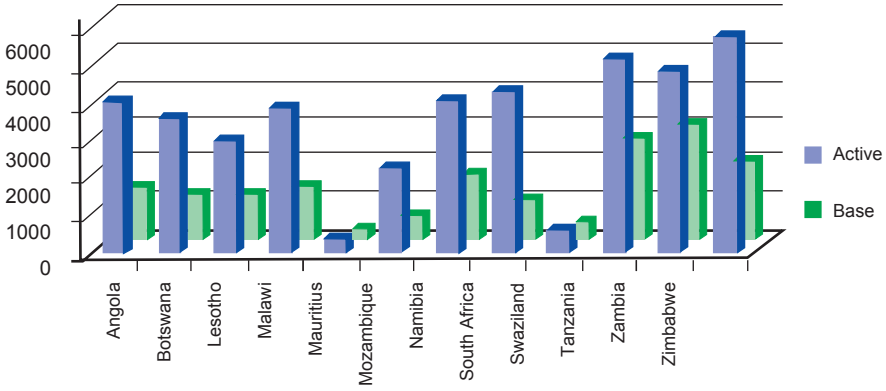
4.3.4 Status of Collections in NPGRCs and at SPGRC

During the year, total collections held in NPGRCs remained the same at 44,795 as reported last year; whilst, that of SPGRC rose from 16,590 to 17,329 as reflected in Table 4.4.

Table 4.5: Status of collection: 2013/14

Country	Collections in Country	Collections held at SPGRC
Angola	4098	1381
Botswana	3561	1088
Lesotho	3015	1206
Malawi	3961	1445
Mauritius	417	251
Mozambique	2331	590
Namibia	4117	1753
South Africa	4433	1108
Swaziland	669	483
Tanzania	5266	2717
Zambia	4841	3121
Zimbabwe	5864	2133
Total	**42573**	**17276**

Figure 4.2: Number of accessions by country and duplicates at SPGRC



During the reporting period, the accessions holdings and major species at SPGRC are as shown in table 4.5 below.

Table 4.5: Accessions of Major Species held at SPGRC

Species	Common Name	Number of Accessions
Sorghum bicolor (L.) Moench	Sorghum	5238
Eleusine coracana	Finger Millet	1164
Zea mays L.	Maize	2229
Pennisetum glaucum (L.) R. Br.	Pearl Millet	1641
Vigna unguiculata (L.) Walp.	Cowpea	1535
Arachis hypogaea L.	Groundnut	805
Phaseolus vugaris L.	Beans	1132
Oryza sativa L.	Rice	335
Vigna subterranea (L.) Verdc.	Bambara Nuts	410
Cucurbits (C. Pepo & maxima)	Pumpkin	369
Citrullus lanatus (Thumb.) Matsumura & Nakai	Water Melon	217
Triticum aestivum L.	Wheat	142
Cajanus cajan (L.) Millsp.	Pigeon pea	172
Cicer arientinum L.	Chickpea	145
Pisum sativum L.	Pea	106
Sesamum indicum L.	Sesame	101
L. siceraria	Gourd	1121
Others		414
Total		**17,329**

4.3.5 Herbarium

The activity to improve herbarium and get sampleswas postponed due to technical consideration and will be carried out later in the year, before end of financial year.

4.4 TECHNICAL BACKSTOPPING TO NPGRCs

Compliance to international legal obligations under the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and Global partnerships including service provision to the SPGRC network guides its coordination and management commitments. The SPOs travelled to the national genebanks during this year and provided technical backstopping on matters relating to commitment to implementation of best genebank standards to ensure longer term conservation and promotion of the use of germplasm, establishment and continuous management on on-farm/*in-situ* activities, and on standardized information sharing/exchange and propagation of use of ICTs in managing germplasm collections using databases.

5. Farm

During the 2013/2014 season, Soya beans were cultivated in 12ha of land. Planting commenced from 04-17 December, herbicides were used to control weeds. The general crop stand was satisfactory resulting to 221 bags. This seasons' plan included planting of sunhemp at all the fields that were not used for crop production, to improve the soil structure and fertility. This activity and winter ploughing could not be done due to the breakdown of the tractor.

6. Status of FAO-TCP Project

National strategies for PGRFA were developed in all six participating Member States and were officially handed over to the countries during the 2014 Planning Meeting, which also served as the "End of Project Workshop". The strategies were well received and countries are expected to prepare short briefs for their respective Ministers of Agriculture to facilitate their implementation at country level.

Table 6.1: Status of FAO-TCP Project as of February 2015

Activity	Participating Countries						Notes
	Botswana	Lesotho	Malawi	Mozambique	Tanzania	Zambia	
Surveys on status of PGR	D	D	D	x	D	D	Mozambique - no report received
Status of *in situ*/on-farm	D	D	D	x	D	D	Lesotho- report not submitted. Mozambique – no report received
Development of national strategies	D	D	D	D	D	D	Strategies were shared with all countries
Identify promising materials	x	x	x	x	x	x	Capacity for FIGS & GIS lacking
Evaluation and pre-breeding	x	x	x	x	x	x	No Funds
Dev a plan for integration of climate change resilient traits in national breeding programmes	D	?	?	?	?	?	No reports received
Dev & distribute germplasm catalogues	D	x	x	x	D	x	Other countries encountered funding problems
Regional workshop for Curators, breeders	D	D	D	D	D	D	Activity was successful
Conduct a short course on characterization	D	D	D	D	D	D	Short course well received by participants
Conservation infrastructure at national and regional levels	D	D	D	D	D	D	Some equipment not procured due to funding limitations
Configuration and installation of servers	PD	PD	PD	PD	PD	PD	

Key:

- D *Done*
- PD *Partially Done*
- X *Not Done*

Mozambique faced logistical problems in the implementation of the project. A work plan and budget was submitted to the FAO Maputo office but there were no funds released for carrying out the activities.

Overall, the project was a success. SPGRC tremendously benefited by the replacement of the standby electricity generator that came at the right time when the old one was becoming problematic to repair due to scarce spare parts. The generator will improve the conservation efficiency for the base collections.

Participants at workshops of developing national strategies in Mozambique (top) and Malawi (bottom)

7. Financial Report 2012/2013

Table 7.1: Income & Expenditure Statement for the Year Ended 31st March 2014

	2013/14, US$	2012/13, US$
INCOME		
Member States Contributions	1,178,000	1,133,433
ICP Contributions	-	11,889
Other Income	63,680	62,855
Total Income	**1,241,680**	**1,208,177**
EXPENDITURE		
Operating Expenses		
Employee Benefits Expense	365,239	375,517
Transport, Subsistence and Conferences	21,411	56,201
Rent	-	-
General Expenses and Supplies	89,821	85,768
Communications	8,872	17,504
Audit and Professional Fees	6,000	8,732
Depreciation	80,906	81,425
Sub-Total	***572,249***	***625,147***
Programme Expenses		
Member States Funded	665,874	582,966
Development Partners	-	11,889
Sub-Total	***665,874***	***594,855***
Total Operating Expenditure	1,238,123	1,220,002
Operating Surplus	**3,557**	**(11,824)**
Finance (Costs)/Income	(4,720)	(4,860)
Operating Surplus	**(1,163)**	**(16,684)**
Other Comprehensive Income:		
Exchange Rate Gain/(Loss)	(7,459)	(21,937)
Surplus (Deficit) for the Year	**(8,622)**	**(38,621)**

Source: *SADC Financial Statements for the Year Ended 31st March 2014*

Table 7.2: Statement of Financial Position as at 31st March 2014

	2013/14, US$	2012/13, US$
ASSETS		
Non-Current Assets		
Property, plant and equipment	1,698,875	1,711,478
Current Assets		
Debtors and prepayments	44,632	96,680
Cash and cash equivalents	442,422	345,796
Current Assets	487,053	442,476
Total Assets	**2,185,928**	**2,153,954**
MEMBER STATES FUNDS AND LIABILITIES		
Member States Funds		
Reserve Fund	20,140	20,140
Accumulated fund	128,235	154,894
Staff loan fund	54,131	52,369
Member States Funds	202,506	227,403
Non-Current Liabilities		
Deferred capital grant income	1,648,640	1,644,718
Post-employment benefit	288,282	238,404
Non-Current Liabilities	***1,936,922***	***1,883,122***
Current Liabilities		
Payables	46,501	43,430
Current Liabilities	***46,501***	***43,430***
Total Member States Funds and Liabilities	**2,185,928**	**2,153,955**

Table 7.3: Cash Flow Statement for the Year Ended 31st March 2014

	2013/14, US$	2012/13, US$
Cash Retained from Operations		
Surplus for the year	(8,622)	(38,621)
Adjustments		
Depreciation	80,906	81,425
Profit on Disposal of Fixed Assets	-	204
Finance Income	4,720	4,860
Exchange Gain/(Loss)	7,459	21,937
Transfer from Capital Grants	(57,367)	(53,934)
Transfer from Accumulated Fund	-	-
	27,096	15,871
Receivables	52,049	(25,908)
Payables	3,071	(39,751)
Net Cash from Operations	**82,216**	**(49,788)**
Cash Flows from Investing Activities		
Acquisition of Fixed Assets	(68,301)	(45,166)
Proceeds on Disposal of Fixed Assets	-	(204)
Interest Received	-	-
Interest Paid	(4,720)	(4,860)
Exchange Gain/(Loss)	(7,459)	(21,937)
Net Cash Flows from Investing Operations		**(72,167)**
Cash Flows from Financing Activities		
Member States Special Funds	(18,038)	25,022
Grants Received	61,289	-
Staff Loan Fund	1,762	637
Lease Repayments	-	-
Gratuity Fund	49,879	68,456
Development Partners Funds	-	-
Net Cash Flows from Financing Activities	**94,892**	**94,115**
Net Increase in Cash and Cash Equivalents	96,628	(27,840)
Opening Cash and Bank Equivalents	345,794	373,634
Closing Cash and Bank Equivalents	**442,422**	**345,794**

8. Appendices

Appendix I: Members of the Board of SPGRC, 2014/2015

Mr Godfrey Mwila	–	Zambia (Chairperson)
Dr Pedro Moçambique	–	Angola
Ms Mary K. Molefe	–	Botswana
Prof Jean-Albert M. Nkonko	–	DRC
Ms Maleoa Mohloboli	–	Lesotho
Ms Michelle Andriamahazo	–	Madagascar
Dr Mackson Banda	–	Malawi
Ms Carla do Vale	–	Mozambique
Mr Nitish Goupal	–	Mauritius
Mr Steve Carr	–	Namibia
Mr Marc Naiken	–	Seychelles
Dr Julian Jaftha	–	South Africa (outgoing)
Mrs Noluthando Netnou-Nkoana	–	South Africa (incoming)
Dr Innocentia S. Kunene	–	Swaziland (Vice-Chairperson)
Dr Hussein Mansoor	–	Tanzania
Dr Cames Mguni	–	Zimbabwe
Ex-Officio Members		
Mrs Margaret Nyirenda	–	SADC Secretariat
Dr Jojo Baidu-Forson	–	Bioversity International
	–	Donor
Dr Paul M Munyenyembe	–	SPGRC (Secretary)

Appendix II: SPGRC Staff Members, 2014/2015

Dr Paul M Munyenyembe	Head, SPGRC (*18 July 2008*)
Ms Thandie J Lupupa	Senior Programme Officer – *In-Situ* Conservation (*16 May 2006*)
Mr Barnabas W Kapange	Senior Programme Officer - Documentation & Information (*09 May 2006*)
Mr Lerotholi L Qhobela	Senior Programme Officer – *Ex-Situ* Conservation (*15 May 2006*)
Mrs Mary B Phiri	Assistant Administrative Officer (*01 March 2000*)
Ms Florence C Chitulangoma	Assistant Finance Officer (*08 March 1993*)
Mrs Peggy S Ng'ono	Technical Officer-Conservation (*01 June 2005*)
Mr Mike Daka	Technical Officer - Documentation & Information (21 May 2012)
Mr Ferdinand Mushinge	Technical Officer – *In situ* (*01 March 2004*)
Mrs Phyllis M Litula	Personal Secretary (*12 November 2001*)
Mr Wilbroad M Chashi	Senior Finance Clerk (*01 July 2002*)
Mr Alexius M Nyambe	Driver (*01 February 1991*)
Mr Kapelwa E Songa	Typist/Receptionist (*01 September 1989*)
Mr Gibson Zulu	General Worker (*01 August 1989*)
Mr John Mfwembe	General Worker (*04 September 1989*)
Mr Wale Banda	General Worker (*01 April 1990*)
Mr Olipen Phiri	General Worker (*05 January 2009*)

Appendix III: List of Some Prominent Visitors to SPGRC (2014/2015)

R. Wesser	Swiss Development Cooperation
Gertrude Takawira	Ambassador of Zimbabwe, Lusaka
C. N. Makupula	South African High Commission, Lusaka
Cahudry Johnry	Ministry of Agroindustry, Mauritius
David Bandawe	Malawi High Commission, Lusaka
Bruce Cowley	Agriseeds (Pvt) Ltd., 5 Wimbledon Dr., Harare, Zimbabwe
Boniface Chirwa	Waterfalls Hotel, Lusaka, Zambia
Yasmina Fakim	Dean, Faculty of Agriculture, University of Mauritius
Yacoob Mungroo	Sen. Scientifc Officer, Min. Of Agroindustry, Mauritius
Simfukwe Paul	Mulungushi University, Kabwe, Zambia
Ridley V van Wyk	SAI-Namibia, Windhoek, Namibia
Elias T. Tuaire	SAI-Namibia, Windhoek, Namibia
Alves A. C. Mendoso	SAI-Miozambique, Maputo, Mozambique
Moises Ricardo Covele	SAI-Miozambique, Maputo, Mozambique
Matilda M. Tembo	SADC, P/Bag 0095, Gaborone, Botswana
Timothy Gotora	SADC, P/Bag 0095, Gaborone, Botswana
Calvin Nhira	SADC, P/Bag 0095, Gaborone, Botswana
B. N. Verma	ZAMSEED, Lusaka, Zambia
Virendera K. Verma	India
Mick S. Mwala	School of Agric. Sciences, UNZA, Lusaka, Zambia
Shirley H. Ng'andu	School of Agric. Sciences, UNZA, Lusaka, Zambia
Langa Tembo	School of Agric. Sciences, UNZA, Lusaka, Zambia
Russel S. Mufaya	SADC Secretariat, P/Bag 0095, Gaborone, Botswana
Margater Nyirenda	SADC Secretariat, P/Bag 0095, Gaborone, Botswana
Hendrix Tonde	SADC Secretariat, P/Bag 0095, Gaborone, Botswana
Ereck Chakauya	NEPAD/SANBio, CSIR, Pretoria, South Africa
Keolesogile Tiro	NEPAD/SANBio, CSIR, Pretoria, South Africa
Gwadamirai Majange	NEPAD/SANBio, CSIR, Pretoria, South Africa
Catherine Sampson	Chemonics, Washington D.C., USA
Justin Kobris	Chemonics, Washington D.C., USA
Ehsan Dulloo	Bioversity Int'l, via dei Tre Denari 472/a, 00157 Rome
Imke Thormann	Bioversity Int'l, via dei Tre Denari 472/a, 00157 Rome
Charles Wetherill	NIRAS, Finland
Matija Obreza	The Global Crop Diversity Trust, Germany
Theo Knight-Jones	International Livestock Research Institute, Lusaka
SikhalazoDube	International Livestock Research Institute, Harare
Mwansa Songe	International Livestock Research Institute, Lusaka