



SADC Plant Genetic Resources Centre (SPGRC)

Regional Stakeholders' Meeting on Information Exchange of National Strategies on PGRFA, 2012, Lusaka, Zambia



**September 2012
Lusaka, Zambia**

Acronyms

AAH	All Africa Horticulture Congress
ACP-EU	Africa, Caribbean and Pacific-European Union Cooperation
AIMS	Agricultural Information Management System
AREU	Agricultural Research and Extension Unit, Mauritius
ASTI	Agricultural Science and Technology Indicators, World Bank
AVRDC	Asian Vegetable Research and Development Centre (now World Vegetable Centre)
BADEA	Arab Bank for Economic Development in Africa
BBTV	Banana Bunchy-Top Virus
BES	Barkly Experiment Station
CGIAR	Consultative Group on International Agricultural Research
CIMMYT	International Maize and Wheat Improvement Centre
COSPE	<i>Cooperazione per lo Sviluppo dei Paesi Emergenti</i> (Cooperation for the Development of Emerging Countries), Italy
CTDT	Community Technology Development Trust, Zimbabwe
DAFF	Department of Agriculture, Forestry and Fisheries, South Africa
DAR	Department of Agricultural Research
DARSS	Department of Agricultural Research & Specialist Services
DRC	Democratic Republic of Congo
EMBRAPA	Brazilian Agricultural Research Corporation
EPA	Extension Planning Area, Malawi
FAO	Food and Agriculture Organisation
GCDT	Global Crop Diversity Trust
GIS	Geographic Information System
GPS	Global Positioning System
GRBI	Genetic Resources and Biotechnology Institute, Zimbabwe
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
ICBA	International Centre for Biosaline Agriculture
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IIA	Agricultural Research Institute, Angola
IIAM	<i>Instituto de Investigação Agrária de Moçambique</i> (Agricultural Research Institute of Mozambique)
IITA	International Institute of Tropical Agriculture
INERA	<i>Institut National pour l'Etude et la Recherche Agronomique</i> (National Agricultural Research Institute), DRC
IPGRI	International Plant Genetic Resources Institute (now Bioversity)
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
MACO	Ministry of Agriculture and Cooperatives, Zambia
MLS	Multilaterals system
MTA	Material Transfer Agreement
NACU	National Agricultural Crop Conservation Unit, Seychelles
NGO	Non Governmental Organisation
NordGen	Nordic Gene Bank
NPGRC	National Plant Genetic Resources Centre
NPGRCom	National Plant Genetic Resources Committee
NPGRU	National Plant Genetic Resources Unit, Mauritius
NRM	Natural Resource Management
NTSYSpc	Numerical Taxonomy SYStem for personal computer
PGR	Plant Genetic Resources

PGRFA	Plant Genetic Resources for Food and Agriculture
RBSPC	Roches Brunes Seed Production Centre, Mauritius
RHS	Royal Horticultural Society
SAA	Seychelles Development Agency
SADC	Southern African Development Community
SANBio	Southern African Network for BioSciences
SDIS	SPGRC Documentation and Information System
SPGRC	SADC Plant Genetic Resources Centre
SPO	Senior Programme Officer, SPGRC
TCP	Technical Cooperation Programme
TEEAL	The Essential Electronic Agricultural Library
TO	Technical Officer, SPGRC
UEM	Eduardo Mondlane University, Mozambique
UNAM	University of Namibia
UNDP	United Nations Development Programme
UPS	Uninterruptible Power Supply
ZARI	Zambia Agricultural Research Institute

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Regional Stakeholders' Meeting on Information Exchange of National Strategies on PGRFA, 10th – 13th September 2012, Lusaka, Zambia

1. Objectives

The regional stakeholders' meeting on information exchange of national strategies on PGRFA brought together representatives from all SADC Member States (NPGRCs) with the objective to:

- initiate planning and implementation of the FAO-funded project that would see national strategies for PGRFA developed for selected SADC countries;
- review the implementation of the technical activities for 2011/2012 cropping season;
- evaluate the technical and budgetary plans for the 2012/2013 cropping season; and
- facilitate information sharing on any other technical and networking issues.

2. Attendance

In attendance were twenty eight (28) participants from NPGRCs, SPGRC, FAO, and ABCIC. All SADC countries were represented.

3. Programme

The meeting was held at the Protea Hotel – Cairo Road, Lusaka from 10th to 14th September 2012. On the first day (10th September 2012) the Project task Force comprising of the SPGRC Head, Regional Project Coordinator, a Consultant and FAO representatives met. The remaining days were dedicated to purely core network activities, including planning for implementation of the FAO-TCP project.

A detailed meeting programme is found in Appendix I.

4. Opening Ceremony

The meeting was called to order by the Session Chair at around 09:25 by welcoming all participants to this year's annual meeting, hoping that they will all enjoy stay and have fruitful discussions and deliberations.

The Session Chair announced the logistics by directing where the meeting secretariat office was located in the hotel and asked participants to hand in registration and claim forms so that they are processed in time.

4.1 Welcome Address by Head of SPGRC

The Head welcomed the participants to the meeting hoping that they had had rested following long travel from their respective countries. He was happy that SPGRC has been able to hold such a meeting after the ending of funding by Nordic, thanks to SPGRC's own efforts and the generous funding by FAO.

He acknowledged and thanked the presence of strong FAO delegation and that of ABCIC as consultants. He welcomed back Mr Godfrey Mwila, a senior officer from Zambian NPGRC who was away for a few years working with the Global Crop Diversity Trust.

Despite many challenges, the Head outlined some of the major achievements scored during the reporting time. These include successful conclusion of the GCDT funded regeneration project and safety duplication of materials to CGIAR centre in 2011; completion of the non-binding regional PGR policy guidelines with funding by SANBio; preparation of the 5th Phase completion report; updating of the SPGRC long-term sustainability plan; development and submission of two competitive project proposals for possible funding by donors; and programme development for the FAO-TCP project aimed at developing national PGRFA conservation strategies for selected SADC Member States.

4.2 Welcome Remarks by Zambia FAO Representative

The FAO representative, Mr Ad Spijkers expressed his gratitude for being invited to the meeting and also for FAO having opportunity to work with SPGRC network through a TCP that he confirmed was recently signed.

Mr Spijkers urged the network to strive to be in the forefront for raising agricultural productivity in the region. His experience in Asia tells the potential for Africa as having room for improved productivity.

He reminded the meeting that FAO was not a funding agency but a technical facilitator to support countries improve agriculture in areas that include soil fertility, land, water, labour, seed, marketing, *etc.*

He revealed that Africa is the next basket of food and therefore with the application of existing and appropriate knowledge and technology, average production could increase 2-3 folds.

5. Matters Arising from the Last (2011) Meeting

5.1 FAO Work with SADC Region

Following presentations by FAO – Harare Office (Ms Joyce Mulila-Mitti), FAO- Rome Representative (Dr Chikelu Mba), and ABCIC Director (Dr Dionysius Kiambi) on the importance and opportunities of collaborative work in PGR, SPGRC and ABCIC signed an MoU, and SPGRC managed to secure FAO-TCP funding for developing PGR national strategies.

Dr Mba gave an elaborate presentation on managing PGRFA as a *continuum*: strategy for enhanced crop productivity. It was recommended that such presentation be made to the SADC Ministers responsible for Food, Agriculture and Natural Resources. However, the Ministers have not met since.

5.2 Documentation - Subscriptions

The SPO – Documentation & Information mentioned that SPGRC on behalf of the network had applied for subscription to The Essential Electronic Agricultural Library (TEEAL) of the US Cornell University, through *The Technical Centre for Agricultural and Rural Co-operation ACP-EU*. It is now reported that SPGRC was granted support in July 2012 and scientists are encouraged to utilize the facility through SPGRC.

5.3 Status of SDIS

SPGRC initiated the request for relocating the central server relocation to the region

way back in 2007 until when the SADC Secretariat had to intervene by writing to NordGen for the same in 2010. The server was only delivered to the SADC Secretariat in December 2011 without documentation and access codes.

Upon authentication by a SADC Technical Team, the server was found to be old and was designated 'depreciated'. Even though the root login was disabled, upon entry the machine was found to have no applications installed, no Apache found, and no history of the author's activities was found, implying the machine had been idle. There were no web servers and no web applications found on the machine. In addition, the Team found that there were no routing table entries on the server that are meant to facilitate communication with the Member State servers.

The SPGRC is working with SADC – AIMS programmer to configure the web-based system. NPGRCs urged to continue inputting their data on the current system.

5.4 Namibian data on on-farm practices survey

Upon request from Namibia, SPGRC will create a database to capture the survey data. It will be a standard database that can further be developed to capture all regional indigenous knowledge data. This was being handled by former TO – Documentation & Information but will further be taken up by sitting incumbent.

5.5 Capacity in maintenance of equipment/facilities

The issue of aluminium foil packets and pollination bags was a concern to most of the countries. SPGRC responded that it was in the process of identifying reliable suppliers of aluminium foil bags in the region and this was to be communicated to the Member States. Pollination bag supplier has been identified in Zimbabwe and South Africa and their contacts will be given by SPO – *Ex-Situ* Conservation.

6. NPGRC PROGRESS REPORTS

Angola

General

(i) Introduction

Genetic resources are considered to be very important in the context of food security, economic and social development of the country and their conservation is essential for future generations, thus need for continuously carrying out conservation activities including collection, preservation and utilisation of all genetic diversity in Angola.

(ii) Staffing

It was reported that Mrs. Domingas Tomás returned to Angola in April 2012 following successful completion of 2 years MSc course in Brazil.

(iii) National Plant Genetic Resources Committee (NPGRCCom)

Angolan NPGRCCom met twice to consider a new proposal for legislation to protect Angola's genetic resources. Following several consultations the draft bill is being finalized before presentation to higher authorities.

(iv) Training, Workshops and Meetings

- In collaboration with EMBRAPA (Brazil), NPGRC is preparing for a training course in pre-characterization targeting agronomists and middle-level technicians due in October 2012;
- Between 2011 and 2012, preparations have been going on for an MSc course in PGR Conservation and Utilization to be held at Agostinho Neto University in 2013;
- Dr Pedro Moçambique, Elizabeth Matos, Evaldina Pedro, Domingas Tomás, José Pedro and Isabel Daniel participated in the 2nd National Conference on Science and Technology on 19th and 20th October 2011 in Luanda.
- Dr Pedro Moçambique and Isabel Daniel participated in an national agriculture research meeting organized by the Agriculture Research Institute on 25th and 26th July 2012 in Huambo province.

(v) Equipment, Supplies and Facilities

The Centre acquired 4 new vertical freezers, making a total of 46 freezers that are all functioning properly. It has five desktops computers, three notebooks, five printers, and a photocopier that are functioning properly. With the exception of the "Termaks" dryer received from SPGRC not working, the NPGRC has its motor vehicles and equipment in good order.

(vi) Requirements

The Centre is in requirement of 500 large, 1,000 medium and 2,000 small size laminated foil bags, as well as 1000 large pollination bags.

(vi) Constraints

A serious constraint on the work of the Angolan NPGRC continues to be the delay in the establishment of the Centre's experimental field at the new University Campus. These delays, mainly caused by financial constraints, have been the main reason for NPGRC being unable to carry out some of its expected field plans for 2012. While waiting for the new experimental field, NPGRC continues its work at the Ministry of Agriculture's Seed Services field at Kikuxi.

Technical Progress Reports

(i) Ex-Situ Conservation

Conservation

The current holding of accessions in the active collection is 4,281 that include the last collections made in June 2012. Up to September 2011, the NPGRC had 4,017 and this year NPGRC staff collected more than 264 accessions. Collections are planned for 2012-2013 in the remaining areas of Lunda Norte, Lunda Sul and Moxico provinces in order to have more representative location sites for local varieties of food crops.

Regeneration and Multiplication

During the period under review, the Center carried out and completed activities of characterization, multiplication and regeneration of accessions of maize, cowpea, sorghum and pumpkin.

NPGRC is currently characterizing 35 accessions of cowpea, in collaboration with the Agriculture Research Institute (IIA) in effort to open up new ways of working together with other sectors.

With regard to multiplication and regeneration of accessions of sorghum, NPGRC had serious difficulties because the plots suffered intense attacks by birds, although protective bags were used. Unfortunately nothing could be harvested from these multiplication plots.

(ii) Field Genebank Maintenance

The Centre maintains field banks in the Agricultural Research Stations of Malange and Mazozo (root and tuber crops), Benguela (fruits – mango, banana), and Huambo, Kwanza Sul and Uige (coffee).

(iii) Utilisation of Plant Genetic Resources

The NPGRC distributed 36 accessions of maize, 25 accessions of cowpea and 24 accessions of common bean for molecular characterisation purpose of a final thesis of three students. The principal requests for this material was from the Faculty of Science. One student from the Faculty of Science is working on viability data produced from some accessions of maize, cowpea, groundnut and pearl millet stored for more than 10 years at Angolan genebank. Another student from the same Faculty is working in the viability data produced from some accessions of tomato, capsicum, pumpkin and amaranths stored at Angolan gene bank.

While about 180 accessions of maize were transferred to the Agriculture Research Institute (IIA) for use in a project with a South Korean research breeding institution; 50 accessions of pumpkin, tomato, *Capsicum*, eggplant were transferred to the Polytechnic University of Valencia legume project.

(iv) Germplasm Collection

In the period under review, multi-crop collecting missions were conducted in 2 provinces from the Northern part of Angola (Bengo and Kwanza-Norte) yielding a total of 188 accessions of different species of local varieties of food crops were collected.

In June 2012, in collaboration with the Polytechnic University of Valencia, Spain, a third collecting mission was carried out in 4 provinces (Kwanza Sul, Benguela, Huíla and Namibe), within the framework of a project for the conservation of local varieties of some species of horticultural legumes. 74 accessions including tomato, eggplant, capsicum, water melon and pumpkin and 2 accessions of cowpea were collected. In total, 264 accessions were collected during this period.

(v) Documentation and Information

The WinSDIS is working very well and is backed up very often as soon as we new data is added to the system. The Diva-GIS version 7.1 is still in use to produce maps for location sites of the material collected.

The database server for Angola NPGRC is not functioning because of the continuing erratic energy supply in Luanda and frequent changes between town supply and generator. The NPGRC wishes to be helped addition of names from places which are not yet in the system.

Botswana

General

(i) Staffing

The staffing for the NPGRC remained unchanged during the year.

(ii) National Plant Genetic Resources Committee (NPGRCCom)

There was no Committee meeting held in the year. Two committee members left for further training while one was transferred locally. The affected institutions have been requested to nominate replacements.

(iii) Training, Workshops, Courses and Meetings

During the reporting period, none of the NPGRC staff attended a training or meeting.

(iv) Visits

The NPGRC was visited by Dr D. Kiambi from ABCIC in Nairobi as a consultant for FAO-TCP project and Mr B. Kapange from SPGRC to re-install SDIS in a newly acquired machine.

A delegation from Japan Universities (Riken, Tottori and Ryukus) visited NPGRC to kick start the Botswana/Japan Jatropha Biofuel project. It also received students from Botswana College of Agriculture on a familiarisation tour of genebanking.

(v) Equipment, Supplies and Facilities

The NPGRC has maintained two types of storage facilities: 10 upright freezers and a cold room all of which are functioning well. The germinator, seed counter and seed grinder are still in good working condition. The walk-in dryer that was reported faulty last year was fixed by a local company and is now working.

(vi) Requirements

The NPGRC expressed need for a standby generator, germination trays, aluminium foil bags, irrigation facilities, and a label printer.

(vii) Constraints

The NPGRC has continued succumbing to the shortage of qualified staff as well as lack of funds for short and long courses training for gene bank staff. It is also constrained by frequent power cuts.

Technical Activities

(i) Conservation

The NPGRC reported of having 4,480 accessions in conservation and that it duplicated 300 accessions to SPGRC in February 2012. These included 201 cowpea, 60 bambara nuts, 20 groundnut, 9 mung bean, and 10 tepary bean species.

About 37 accessions were collected during the year and seed processing is on-going. During collection, it was learnt that in spite of intensive promotion of improved varieties, farmers have faith in their landraces that normally survive harsh conditions that characterize Botswana agriculture. It was also proven difficult to get enough seeds for conservation and therefore, after each collection, seeds have to be multiplied in the subsequent season to get enough for storage and distribution.

(ii) Regeneration of Cowpeas

A total of 51 cowpea accessions were planted in December 2011 for rejuvenation of the ageing seed materials. The regeneration performed very well and yields obtained per accession were fairly good.

(iii) Characterization of Bambara

Field multiplication and characterization took place at the Department of Agriculture Research Station in Sebele under rain-fed conditions. A total of 95n bambara mut accessions were sown in December 2011, data was recorded up to the flowering stage after which all plants died due to drought. Therefore the remnant seed of the accessions will be planted next season.

(iv) Sorghum Multiplication

Eighteen sorghum accessions were planted but experienced very poor germination a result of poor germination (20%) noted in growth chambers. The failed crop was replanted but yielded poor crop stand with drought contributing to very low yields. The trial will be repeated next season.

(v) Mung bean Trial

Thirteen mung bean accessions planted in December 2011 failed to germinate due to reasons that could not be established. The remnant seeds of the failed accessions will be planted in growth chambers as an investigation strategy.

(vi) Utilization of Plant Genetic Resources

There was a high demand for germplasm during the year. A total of 104 accessions were distributed to different germplasm users that include the DAR which took 10 tepary bean, 15 sorghum, and 21 water melon accessions for evaluation purposes. The Botswana College of Agriculture took 14 cowpea, 12 bambara nut, 3 water melon, and 1 gourd accessions to assess among others, resistance against cowpea seed beetle. The university took 7 wild water melon and 21 water melon species for academic purposes.

(vii) *In-situ*/On-farm Conservation

With the objective of establishing platform for exhibition of seeds indigenous landraces and as forum for NPGRC to assess species diversity as well as creating platform for exchange of seeds and knowledge, the NPGRC in collaboration with Permaculture Trust conducted a seed fair in September 2011 in Serowe Village.

From the Seed Fair, it was concluded that from the large number of exhibits, farmers are still keeping their landraces though some seem to be disappearing.

(viii) Documentation and Information

A total of 124 accessions were electronically documented in the SDIS thus brining the total accessions on the system for Botswana to 3,480. There was a delay in setting up the new documentation computer as the old computer was affected by virus. This was rectified by Mr B. Kapange from SPGRC who re-installed the system in the new machine.

Democratic Republic of Congo (DRC)

(i) Introduction

The National Plant Genetic Resources is cross-cutting programme that deals with all species and thematic programmes in DR Congo. Genetic resources are *in-situ* and *ex-situ* species collected or developed by thematic programmes. The bottleneck remains on conservation of these genetic resources and availability of adequate facilities and equipment.

(ii) National Plant Genetic Resources Committee (NPGRCom)

The NPGRCCom was institutionalized in 2008 with committee members approved from ministries, universities and other institutions involved in genetic resources activities. However, the committee did not hold any meeting during the reporting period.

(iii) Staffing

The NPGRC in DRC staffing for the newly established NPGRC as Professor Mbikayi Nkonko – Director Scientific Research at INERA, Mr Ramazani Lumbe – Head of Division Management of Genetic Resources, and Program Chiefs at respective Research Centers across the country.

(iv) Facilities and Equipment

The established NPGRC for DRC reported of having an office and a faulty desktop computer at INERA in Kinshasa. As a result of joining the network late, DRC has not received any kind of equipment support and was therefore asking for SPGRC to enable it start up activities.

(v) Constraints

The DRC reported to have identified a building to house the genebank (a small store room which needs renovations with assistance from SPGRC). DRC It is in dire need for a laptop, desktop computer and database to document conserved germplasm.

(vi) Germplasm Conservation and Collection

DRC reported it has in conservation over 9,641 species of germplasm at Yangambi Research Centre. These include cocoa, coffee, forest trees, oil palm, cassava, maize groundnuts, cowpea, soya, agrostological species, wild fruits, banana and hevea/para rubber species. It also reported another 723 species in conservation at M'Vuazi Research Centre most of which include cassava, groundnut, cowpea, soya, common beans, banana, forest species, rice, maize, mango, citrus, pawpaw, avocado, agrostological species, lansium, pigeon pea and taro species.

Lesotho

General

(i) Introduction

This was another very difficult year for the Lesotho National Plant Genetic Resources Centre (LNPGRC) due to inadequate government budget, which was exacerbated by lack of external funding. On the other hand field activities were unsuccessful due to unfavourable weather conditions including the wet weather and the early frost.

(ii) NPGRC Staff

The staffing situation changed following resignation of the *In-Situ* Officer for which no replacement has so far been made.

(iii) National Plant Genetic Resources Committee (NPGRCCom)

The Lesotho NPGRC committee composition slightly changed following passing of one member who represented NGOs. Meanwhile, the Committee held one meeting during the year to deliberate on issues affecting PGR conservation and utilization in the country.

(iv) Training, Workshops, Meetings

The NPGRC staff attended among others:

- **March 2012:** The African regional workshop on plant conservation held in Cape Town, South Africa
- **June 2012:** Climate change and food insecurity in Southern Africa held in Harare, Zimbabwe by the Documentation and Information officer
- **June 2012:** The Agricultural Science and Technology Indicators (ASTI) in Uganda
- **2012:** Local workshops on climate change related issues attended by all NPGRC technical staff

(v) Equipment and Facilities

With the exception of the faulty photocopier, label printer, and a seed drying cabinet, most of the equipment is in good condition.

In order to circumvent the effects of power cuts that expose the material in active storage at the risk of losing viability, the NPGRC is undertaking a feasibility of using solar power as standby power source. This is aimed at avoiding purchase of generator whose initial cost and running costs are high.

Technical Activities

(i) Ex-situ Conservation

Currently, the NPGRC holds 1,519 accessions comprising cereal crops, leguminous crops, forage crops, cucurbits, vegetables, oilseed crops and wild species

(ii) Field Gene Bank Maintenance

The field genebank maintains 64 different species of the indigenous medicinal plants and species of socio-economic importance. No new species were collected during the year.

(iii) Germplasm Collection

The NPGRC undertook a seed collection of indigenous vegetables including *wahlenbergia* and *Rorripa nudiuscula* which were planted on main station around the NPGRC surroundings.

(iv) Documentation and Information

The SDIS database still runs smoothly and during the year, the NPGRC managed to enter 524 records in SDIS modules including Germplasm collection Information System and Active Collection Module. It also strived to improve quality of the existing data by filling of the empty spaces in the database and maintaining consistency in species and location names. The linux database server was reported to be connected but inactive.

(v) Utilization of plant genetic resources

The NPGRC reported to have distributed sorghum germplasm by SLU PhD student, Ms Tiny Motlhaodi for academic purposes. It also distributed five wheat varieties of 100g each for research at the main station, as well as 14 accessions of peas at 100g each were distributed to Soils Section.

(vi) Achievements and Constraints

- Gap between the Active and Base collection
- Gap between the collected and active collection
- Underutilization of material in the gene bank
- Irregular power supply to the NPGRC/Genebank

(vii) Requirements

The NPGRC requests for a germinator, a laptop, colour chart, seed counter, moisture analyzer, aluminium foil bags (large, medium, small), and carton boxes. It also needs a laptop, and a video camera.

Malawi

General

(i) Staffing

During the reporting period, the Malawian NPGRC Curator, Mr Lawrent Pungulani and the In-situ/Collection Officer, Ms Nolipher Khaki continued with PhD and MSc study programmes respectively. Meanwhile, Mr Kingsley Kapila continued to be engaged on NPGRC work on short-term contracts.

(ii) Training and Workshops

Mr K. Kapila attended a SPGRC/SANBio stakeholders' workshop on developing and implementing PGR Policy: 1 – 2 December 2011, Pretoria, South Africa.

(iii) Equipment and Facilities

The Centre requested for pollination bags, carton boxes, and aluminium foil bags (medium and large sizes).

Technical Activities

(i) Multiplication and Regeneration

During the reporting period, seed multiplication and rejuvenation activities were conducted at Chitedze Research Station. While activities proposed for Chitala and Makoka Research Stations were put on hold due to logistical hiccups, only maize (*Zea mays*) samples were characterized, and analysis of characterization data collected is going on. A total of 266 samples were multiplied/rejuvenated most of which were of bambara nuts (25), velvet beans (27), lima beans (9), groundnuts (35), gourds (18), amaranths (15), sorghum (10), Dioscorea (47), maize (68), and many other species.

(ii) Seed Packaging, Processing and Storage

During the year, 362 seed samples from 12 crop species were processed, dried and packaged for storage; whereas, duplicate samples were due to be sent to SPGRC for safety storage.

Results from the laboratory seed germination tests revealed that *Cajanus cajan* (pigeon peas) and *Oryza* spp. (cultivated and wild) need regeneration and plans are underway to do so.

(iii) Distribution and Sustainable Utilisation of PGRFA

About 437 tuber and seed samples comprising 27 crop species were distributed to various users during the reporting period.

Majority of the distributed materials included maize (131), bambara nuts (68), sorghum (67), pigeon pea (47) species. Others were cow pea (11), finger millet (10), green grams (16), yams (16), and many other species.

It can be said that success of the gene bank has improved as indicated by the number of users and samples distributed during the period.

(iv) Public Awareness

Most planned activities under awareness did not take place due to logistical problems. However, Malawi gene bank participated in the 8th National Agricultural Fair, a number of organized field days and seed fair. It also accommodated student visits from various schools and higher learning institutions.

(v) Documentation and Information

To date, 4,613 accessions from 974 plant species (4,097 seed and 465 vegetative samples) were reported registered in SDIS. However, documentation and information management been affected due to breakdown of the computer containing most documentation data and SDIS software and NPGRC is in the process of acquiring a new machine.

(vi) On-Farm Conservation of Landraces

During the year, with view to increase income, food and nutritional security through production and utilization of bambara nuts, Malawi genebank conducted on-farm conservation of crop landraces. Its long term objective is to introduce bambara nuts to confectionary industries in order to expand the horizon for bambara nuts. To achieve this, the genebank multiplied seed at Chitedze, distributed seeds from 8 varieties in Nchitsi and Mzimba, conducted farmers field days in Mzimba and Nchitsi, and conducted field demonstrations with the 8 distributed varieties.

(vii) Management of Field Genebanks

Because of the banana bunchy top virus (BBTV) that has affected most of the accessions in the field gene bank, a proposal has been made to clean the banana germplasm through tissue culture. The materials will then be kept at the tissue culture lab at Bvumbwe research station.

The sugarcane materials have been moved to a new site as they had overstayed at one site (over 10 years) and ratooning was becoming weak. Also, due to lack of supplementary irrigation at Chitedze, plans are underway to have the root and tuber accessions being conserved at Chitedze transferred to Lifuwu and Kasinthula research stations respectively.

Mauritius

General

The National Plant Genetic Resources Unit (NPGRU) forms part of the Horticulture Division of the Ministry of Agro Industry and Food Security. It consists of a Seed Gene Bank located at Curepipe, and a Field Gene Bank located at Nouvelle Decouverte. Other Agricultural Stations of the Ministry provide facilities for the implementation of the PGR Programme.

(i) Staffing

The NPGRU is under the responsibility of the Divisional Scientific Officer (DSO) Mr. N. Gopaul of the Horticulture Division. Other staffs include a scientific officer responsible for scientific development activities in PGR, agricultural superintendent, two senior technical officers in charge of seed bank and the other for field genebank. Also are two technical assistants to assist the technical officers.

Other support staff involved in overall PGR activities include Senior Field Assistant, Clerical staff, Laboratory Attendant, Tradesmen, Drivers and Watchmen who provide support to PGR activities on the Government Agricultural Stations.

The Technical Officer, Miss Houshna Naujeer, left the Division since 1st of April 2011 following her promotion as Research and Development Officer at the National Parks and Conservation Service.

(ii) NPGR Committee

No meeting was held during this reporting period.

(iii) Training, Workshops and Meetings

Scientific Officer Y. Mungroo, as National Focal Point of ITPGRFA, attended the 4th session of the Governing body held in March 2011, in Bali.

(iv) Equipment, Supplies and Facilities

The Motor Vehicle donated by SPGRC is reported to be still in good running condition. The Seed Gene Bank is currently equipped with 16 vertical freezers and all are in working order and the storage space seems to be adequate.

The IBM Server donated by SPGRC in September 2009 is not yet operational because existing electrical wiring network has to be reviewed as per recommendation of Computer Support Unit.

The Termax Seed Dryer donated by SPGRC is still non functional. Assistance for repair of same through purchase of defective spare parts (Printed Circuit Board and Motor Fan) was made to SPGRC. During Mr. L. Qhobela's visit in Mauritius, it was recommended that procurement of the defective parts should be initiated by the NPGRC.

The Germinator is fully operational and is used in the seed viability determination. The seed grinder at Seed Gene Bank is not functioning properly and needs to be replaced. Two dehumidifiers and two sealers at Seed Gene Bank are functional.

As of now, the NPGRC is in need of a seed counter machine, Rotronic hygrometer for moisture content test, moisture analyser and a one seed drier. It also needs a seed grinding machine, a Royal Horticultural Society's (RHS) colour chart, and assorted pollination bags.

(v) Constraints

The NPGRC is aware of its gap filling commitment for safety base duplicate collection to be deposited at SPGRC. Poor seed viability has been observed in old seeds as reported during previous year, and the remaining seeds being limited in number, the Seed Gene Bank is looking forward to remedy the situation. Following Mr Qhobela's recommendation, the revised quantity of seed for shipment to SPGRC is now 2000 seeds per accession. This will facilitate the Gene Bank activities in terms of regeneration /multiplication and for future shipment of accession to SPGRC in view of filling up the existing gap.

The Divisional Scientific Officer has initiated action for transfer of activities from Curepipe Gene Bank to the main station of the Division where drying facilities, laboratory facilities (including tissue culture) are available.

In terms of land resources, the multiplication and regeneration of the accessions are carried out mainly on Government stations. Land area has been decreasing due to distribution to the farming community and consequently has limited the area under cultivation for PGR activities.

(vi) Awareness Seminar

A World Food Day was organised by the Ministry of Agro Industry and Food Security in October 2010. The NPGRC participated through display of traditional seed accessions, root crops and underutilised pulses. Posters on the mandate of the NPGRC as well as on underutilised pulses were displayed. A few planters have shown interest in underutilised crops and requested seeds/planting material.

Technical Activities

(i) Ex-Situ Conservation

A total of 512 accessions have been registered at NPGRU. Out of these, 472 are number of seed accessions collected, and 40 are vegetatively propagated accessions.

A total of seventeen accessions of different commodities including *anethum*, chilly, cucumber, groundnut, eggplant, mungbean, okra, pigeon pea, ridge gourd, tomato, wax gourd seeds were to be deposited at SPGRC during planning meeting of September 2011.

(ii) Regeneration and Multiplication

The regeneration and multiplication exercises were ongoing for accessions with poor germination and inadequate quantity in the seed gene bank. During this reporting period, fifty (50) accessions were targeted for regeneration/multiplication for the period

September 2010 to August 2011.

Based on the crop agroclimatic requirements, regeneration and multiplication of accessions were carried out on appropriate outstations. Cultural practices based on seed production and crop production manuals as prepared by the Ministry were also followed. Necessary precautions were taken to prevent cross pollination.

From the regeneration/multiplication crop programme (September 2010–August 2011) the following have been achieved:

- 11 seed accessions already harvested.
- 3 seeds accessions were still in the field at various stages of growth
- 4 vegetative accessions still in field and were to be harvested in September 2011.
- Seeds of 2 accessions failed to germinate.

(iii) Characterisation

Characterisation of Okra (Abelmoschus esculentus)

Five accessions of okra from the seed gene bank collection were grown in the dry region on two stations, Roches Brunes Seed Production Centre (RBSPC) and Barkly Experiment Station (BES). Only four out of the five accessions were characterised as one accession MRU 25/1 failed to germinate.

Analysis on an average index of the accessions revealed that there was no/negligible variation within accessions. Hence almost all plants within a particular accession have shown homogenous characters. However, among the four accessions under test, three well differentiated categories have been identified on the fruit traits.

Characterisation of Eggplants (Solanum melongena)

The characterisation exercise was carried out at RBSPC and BES. The five eggplant accessions were raised in the station's nursery of the two stations before transplantation in the field.

Morphological characterization was done in the field for the 5 eggplant accessions using the AVDRC-GRSU descriptor for Eggplant (*Solanum melongena*). The general plant characters and fruits traits were assessed in the field and after harvest respectively. Visually a wide variation was observed in fruit traits in two of the accessions under investigation. Data collected are being processed for analysis.

Ongoing Characterization Exercises

Characterization of okra and eggplants were to be continued as planned but due to priorities targeted by the Division, the following commodities were taken on board for characterization at RBCPC: 5 accessions of chilly collected from Rodrigues, 28 accessions of garlic, 6 varieties of Beans.

During the characterization of the above mentioned commodities, the yield assessment would also be considered. All the above mentioned accessions were at vegetative and pre-flowering stages. Only the chilly accessions had initiated flowers.

Selection Exercise for pumpkin seed production

The selection exercise of pumpkin was carried out at Belle Vue station. Seeds obtained from the last selection exercise and conserved at the seed gene bank were used for this ongoing exercise.

A total of 50 seedlings were planted, flowers isolated using paper bags in view of preventing hybridisation from other plants.

The harvested fruits were smaller in size as compared to the ones obtained from previous lines. Nevertheless, the fruits obtained were assorted in four different shapes. This exercise would be continued in the next programme of work until purity in term of shape as characterised by type 1 (round and flattened fruit) is obtained for seed production. Apart from type 1, PGR Unit would still conserve the diversity within the local accession of pumpkin.

(iv) Field Gene Bank Maintenance

Several vegetatively propagated accessions were conserved as live plant specimens in the field at Nouvelle Découverte Plant Genetic Resources Unit (N.D) and peach palm at Curepipe Experiment Station (Cpe ES) and Richelieu Experiment Station (Richelieu ES) as duplicates. Nouvelle Decouverte and Curepipe are situated in the super-humid zone whilst Richelieu is in the sub-humid zone.

Accessions of a given species were conserved and maintained in separate fields. Some of the crop species, vulnerable to both biotic and abiotic (cyclones, *etc.*) threats, e.g. cassava, sweet potato and strawberry were duplicated in pots as a safety measure. Crop rotation was also observed.

The field gene bank holds the largest collection of sweet potato accessions in the country. Other accessions consisting of vegetatively propagated crop species are maintained at RBSPC and BES. These include accessions of garlic, *Dioscorea spp.* ginger, mango ginger and turmeric.

(v) Collection Missions

After a request made by the Ministry in line with food security and for the setting up of a jackfruit village, jackfruits (*Artocarpus integrifolia*) were collected from one locality Quatre Bornes. All the seeds obtained from three different individuals within the locality were sent to the nursery section of Barkly ES for propagation. Plants obtained from propagation unit were kept for conservation as jack fruit accessions at Barkly Experiment Station.

A total of 34 mango, 3 coconut and one star fruit varieties present at the Roches Brunes Seed Production Centre were earmarked for provision of planting material for sale to the public.

(vi) Rescue Mission

A collection of mango varieties were planted at the Plaisance Experimental Station many years back. This station has already been taken by the Airport Authority for the extension of the runway and will be cleared very soon. Hence it was decided that scions be collected for grafting on conventional rootstock at the main station of the Division (Barkly Experimental Station). Out of the 23 mango varieties involved in the exercise, 16 mango varieties have been rescued through grafting. All the rescued varieties were

at very young stage and would be transplanted in field at RBSPC and other stations for conservation. Scions would be collected in the seven remaining varieties by the end of the year.

(vii) Rescue of unique endangered palm tree (*Hyophorbe amaricaulis*) at the Curepipe Botanical Garden

In an attempt to rescue the unique palm species, *Hyophorbe amaricaulis*, the PGR Unit was still involved. Collection of mature male flowers was made possible only once as early flower drops attributed to observed windy and rainy conditions. Collected pollen was conserved and the receptive female flowers were hand pollinated 17 days after pollen collection. Four days after pollination, the pollinated flowers were still found on the inflorescence, indicating a successful fertilisation.

An initiation of die back was also observed. Samples of the diseased parts of the inflorescence were sent to National Plant Protection Office for identification and recommendation. An early report indicated presence of *Fusarium spp* and further investigations were warranted.

Overall, initially flowers persisted a few days after pollination. However, the die back seemed to have ultimately contributed to the flower drops and therefore no fruit formation occurred.

(viii) Documentation and information

About 490 accessions were reported to have been successfully registered in the SDIS database. The remaining accessions have not been registered as the trained officer (Ms Naujeer) has been promoted and transferred to another Division. Arrangements are being made for training of other officers in this field.

The computer acquired in June 2009 from Agricultural Information Division was facilitating regional and national communication and scientific literature search through Internet access.

Mozambique

General

(i) Staffing

During the reporting period, there was no change on the staff complement.

(ii) NPGRCom

No meeting was held since last year, and there was no change on the Committee composition.

(iii) Training, Workshops and Meetings

- Mr. Abilio Virissimo Afonso still pursuing his studies at MSc. course in Sweden. He started the course in January 2011 and is expected to complete the studies by the end of 2013.
- Mr Francisco Reis is pursuing his studies at Bsc. Hons level (Agronomy) at the Polytechnic Institute in Maputo

(iv) Visitors

- Ms Thandie Lupupa, from SPGRC visited the Mozambique NPGRC in June 2012 and Dr. D. Kiambi visited in September 2012;
- Students from Eduardo Mondlane University (UEM), Polytechnic Institute (ISPO), Agrarian Institute of Boane (IAB)

(v) Equipment and Facilities

The Mozambican NPGRC is currently in possession of working 12 deep freezers, one functional precision weighing balance and 2 aluminium sealing machines. It also possesses a moisture analyzer, seed grinder, 2 desktop computers, 2 printers, 2 UPS. In addition, it has 3 air conditioners and 3 sets of camping equipment.

(vi) Requirements

The NPGRC is in need of the following items: 1 GPS, 1 altimeter, 1 laptop computer, 1 germination cabinet, 1 seed drier.

(vi) Constraints

The transportation to the field plots or collection target sites is still a challenge to the NPGRC due to lack of reliable transport.

Technical Activities

(i) Germplasm Conservation

Currently, the NPGRC holds a total number of 2,823 accessions.

(ii) Regeneration and Multiplication/Characterization

Nothing to report.

(iii) Field Gene bank maintenance

Currently, the NPGRC does not have a field gene-bank.

(iv) *In-situ*/On-Farm

Nothing to report.

Germplasm collection

Nothing to report.

Namibia

General

(i) Staffing

The staffing status at NPGRC remained unchanged from last year's reporting. It still has four permanent technical staff.

(ii) National Plant Genetic Resources Committee (NPGRCCom)

No NPGRC Committee meetings were held during the reporting period and the Committee composition remained unchanged.

(iii) Training, Workshops and Meetings

- Ms R. Moses is expected to complete her Honours degree in Plant Sciences (University of Pretoria)
- S. Loots is a PhD student at Swedish University of Agricultural Sciences
- S. Loots attended a workshop on introductory phylogenetics at UNAM
- NPGRC provided on-job training to B. Alweendo on germination test of pearl millet.

(iv) Equipment, Supplies and Facilities

The NPGRC possesses two 4x4 vehicles running vehicles. There are a total of 48 upright freezers in the NPGRC of which 21 are filled. The NPGRC has four computers one of which is faulty and one printer in working order. It has two working dehumidifiers.

The NPGRC has two sealers, two grinders, two growth chambers (germination cabinets), 4 electronic scales, two moisture content analysers, an autoclave and a laminar flow cabinet, all in working condition.

Technical Progress Report

(i) Ex situ Conservation

Conservation

The NPGRC has registered a total of 3917 accessions (51 % crops & 49 % wild) in its collection. Out of 2,008 crop species, 88 % have been multiplied, while 42% of it has been characterized. In the class of crop species are pearl millet (1,460), legumes (179), sorghum (157), cucurbits (163), maize (25), sunflower (2), and *Chenopodium quinoa* (24) accessions.

(ii) Germplasm Regeneration and Multiplication

In 2010, 54 accessions of *Citrullus lanatus* were sent to Malawi for multiplication and Namibian NPGRC happily reported that 47 accessions of *C. lanatus* came back in 2012 out of the 54 accessions, 6 did not germinate.

Multiplication and characterization of 5 accessions of *Citrullus lanatus* was planned for 2011 but it was not done.

Namibia did a number of seed germination tests. On pearl millet, 2 out of 20 accessions were below 85%. A request from Plant Product Development section was made for NPGRC to do germination test on Kalahari Melon Seed to check viability. The results were very poor, with visible signs of fungi and percentage of hard seeds being the highest. Tests will be done again, carefully following all test procedures.

(iii) Utilisation of Plant Genetic Resources

Dispatch of germplasm samples from the Namibian NPGRC is dependent on the signing of a comprehensive Material Transfer Agreement. Namibia has draft legislation on access and benefit sharing. Out 12 requests for germplasm received, 2 were processed , 16 accessions were given out during the year.

(iv) On-farm/ In-situ

In Namibia, crop seeds were distributed to farmers in Omusati Region with a total of 13 households receiving seeds. From the total 13 requests, 3 were for improved varieties. As for *in-situ* conservation, seeds were collected from 39 *Lithops* populations and seeds grown in Sweden for the PhD student pursuing her studies as a Swedish University. DNA will be extracted from these seedlings to use in populations genetics study and analysis for taxonomic studies.

(v) Germplasm Collection

The NPGRC had an unplanned crop diversity-collecting mission, but did not carry out any wild collecting missions. The current phase of the Millennium Seed Bank Project has ended in December 2009 and new funding proposals were developed for the next phase. Seed collecting as a component of the new phase will continue.

(vi) Documentation and Information

The registration module of SDIS stands at 3,917 accessions and the germplasm collecting information system stands at 3,781. Two books of pearl millet characterization data were added to SDIS (120 accessions).

There is plan to re-install SDIS in a newly acquired computer to replace the old faulty one. Following installation, all SDIS modules will be updated targeting new samples as they come in and entering characterization data for *P. glaucum* and *C. lanatus*.

Seychelles

General

(i) Introduction

The year 2012 is what can be considered by Seychelles as the inception year for its NPGRC. In this year budget, the Rs. 4.1 million were secured for the construction of the

new Soil Laboratory which will create space for the setting up of the NPGRC in the existing infrastructure being use currently by the Soil fertility Unit.

The setting of the NPGRC in Seychelles is being greatly supported by the Minister for Natural Resources and Industry Mr. Peter Sinon.

In March 2012 the Seychelles Agricultural Agency and the Natural Resource Department went through a series of high level restructuring that includes the appointment of a new CEO Mr. Marc Naiken. The recent change in leadership has resulted in a slowdown in the process of implementation of the Seychelles PGR Plan of Action for 2011-2012.

(ii) Staffing

There were no new recruit for the PGR unit during 2011-2012 period. However there was a new recruitment at the soil laboratory which allowed the Acting Curator more time to focus on the PGR programme, but that lasted only for 9 month as a result of the resignation from the post. New recruitment is schedule for next year with the establishment of the NPGRC. The current staffing of the PGR Unit includes the Acting Curator and Acting Documentation Officer.

(iii) National Plant Genetic Resources Committee (NPGRCCom)

The composition of the NPGRCCom has been finalized and is now awaiting the approval of the CEO and formally notifies the member of the committee.

The Terms of Reference for the committee member has been drafted and has already been sent to the CEO for endorsement. It is expected that soon the NPGRCCom will commence its work.

The Committee is composed of:

- Chairperson (SPGRC Board member, CEO-SAA)
- Vice Chairperson (Manager Crop and Animal Health)
- Curator NPGRC,
- Secretary (SAA)
- PCA (Plant conservation action group)
- SFS (Sustainability for Seychelles)
- Nature Seychelles
- Mr. Jose Lausteau Lalanne
- Principal officer (Research and Development)
- Representative of the Attorney General's Office

(iv) Training Workshops, Meetings

- The Acting Curator attended the Bio-saline Agriculture technology training in Dubai from the 9th to the 20th of October 2011, organized by ICBA (International Centre for Biosaline Agriculture) and funded by BADEA.
- The Acting Curator attended the Ex-Act Training, focusing on the use of the Ex-Act Software to calculate carbon footprint as a result of land uses changes. The training was funded by FAO and carried out in Mauritius.

(v) Meetings, Official Visits

Mrs. Thandie Lupupa from the SPGRC visited Seychelles from the 17th to 21st July 2012 Together with the Acting Curator, visited and met officials at SAA Office at Grand Anse, Anse Boileau Research station, including the root crop unit and the Tropical fruit nursery. Also visited areas proposed for the new NPGRC office (Grand Anse Mahe) and for the PGR Nursery and Multiplication site. The Team also visited Biodiversity Centre at Barbaron, Botanical Garden and Nature Seychelles and the Heritage Garden as a model for Every Home a garden.

The Team also met the Minister for Natural Resources and Industry, and also Member of the newly propose NPGRCom where Mrs. Lupupa made a presentation about the role of SPGRC.

Technical Activities

Progress Made in 2011/2012 Action Plan

(i) Setting up of NPGRCom

The Curator submitted the list of potential member for the committee and the list was received by the CEO and is awaiting his approval.

(ii) Creation of a Unit responsible for the Conservation of Plant Genetic Resources in Seychelles

Proposed Name of the Unit (NACCU-National Agricultural Crop Conservation Unit) and discussion on the creation of a specialized unit for PGR within the research and development section was affected with the CEO and Minister, but is yet to be finalised.

(iii) Retrieve information on inventory carried out by ex-officers responsible on PGR in Seychelles

Complete new inventory required

(iv) Setup of a tissue Laboratory for micro-propagation of root crops and their multiplication.

Due to limited space for other vegetative methods of propagation and lack of funding for both Training and Infrastructural development no progress made. However, the government is investing in a new soil and Plant diagnostic Laboratory which will cater for Seed testing.

South Africa

General

During the reporting period, the NPGRC was engaged in reviewing Draft Strategy on pearl millet and finger millet conservation for Bioversity International. It also, in liaison with Bioversity International, became a Trustee for the CGIAR Fund to establish seed banks amounting to US\$39 200 at 31 May 2012.

(i) Staffing

All officers are based at the NPGRC located at Roodeplaat, except the Director – Genetic Resources and Deputy Director - PGR who are operating from the Departmental Head Office in Pretoria.

Besides the Curator, the staffing include scientists responsible for management and oversee implementation the of germplasm conservation and use management of germplasm conservation through cryopreservation process, management of conventional seed and vegetative tissue culture germplasm storage, and management of *in situ* related germplasm use and conservation programmes. These are supported by technicians in their respective areas of expertise together with trainees.

(ii) National Plant Genetic Resources Committee (NPGRCCom)

Nothing to report

(iii) Training, Workshops and Meetings

- Ms Jermina Moeaha and Mr Percy Moila still pursuing their Masters Degree programmes in Sustainable Agriculture with University of the Free State
- Ms N. L. Maluleke pursuing Honours Degree in Plant Ecology with University of Pretoria
- Ms Natalie Feltman attended All Africa Horticulture Congress (AAHC) in Skukuza, as well as workshop on the Global Plant Conservation Strategy at Walter Sisulu Botanical gardens in Gauteng

(iv) Equipment, Supplies and Facilities

In terms of equipment, the NPGRC acquired a new pH meter, a sealer and an electronic weight balance.

It expressed need for aluminium bags, magnetic stirrer and water distiller.

(v) Constraints

The major challenges experienced for the period under review were:

- Documentation of germplasm data
- Acquisition of aluminium foil bags
- Services of machinery and equipment

Technical Report

(i) *Ex-situ* Conservation

Conservation

The NPGRC reported that it was conserving tissue culture of strawberry, sweet potato and other vegetatively propagated crops including sugar cane, cassava as well as some medicinal plants. It was also conserving 3 sweet potato accessions by cryopreservation technology.

Regeneration and Multiplication

The NPGRC reported that it had multiplied 100 accessions of dry bean but with only 1 yielding enough seed for duplication at SPGRC. 94 maize accessions were multiplied with 74 accessions having been described for ear and kernel characters.

There were 72 bambara groundnuts under multiplication on station; whereas, several maize, pumpkin, sorghum, calabash, melon germplasm were multiplied through on farm conservation programme.

Field Genebanks

The NPGRC still maintains collections of sweet potato; cassava; sugar cane taro growing in glass and shade houses.

(i) Utilisation of PGR

76 sorghum bicolour accessions were provided to a plant breeding research student at the University of Kwazulu/Natal. One of the stated objectives of the research study is to characterize sorghum collected in provinces of South Africa morphologically and also using molecular markers

(ii) *In-situ* Conservation

No activity undertaken or planned with regard to wild relatives.

On-Farm

Nineteen (19) active small-holder farmers who had donated seed samples through collections for storage at the NPGRC from 13 rural villages in Kwa-Zulu/Natal were identified and selected to participate in the project on farm multiplication project. A R500.00 per crop incentive was paid bringing the cost to R24 000.00 being paid to farmers. Officials from the Department of Agriculture in the province were instrumental in liaising with these participating farmers.

(iii) Germplasm Collection

About 246 varieties were availed from the Sub-Directorate – Variety Control for storage at the gene bank.

(iv) Documentation and Information

The SDIS and NTSYS compact discs received from SPGRC were installed on a stand-alone computer. There has been no significant data input into the SDIS. The Germplasm Information Management System developed by the Department is currently not running, due to issues related to unfulfilled commitments by the contractor. Internet access though available is hard to access during most of working hours. The Directorate of ICT is working on finding solution to this situation

Swaziland

General

(i) Staffing

Staffing challenges within the NPGRC increased even during the 2011/2012 season as the management of the Department of Agricultural Research and Specialist Services (DARSS) effected a rotational change for technicians. This resulted in the NPGRC technician, who was with the NPGRC for 2 years being transferred from the NPGRC and was replaced by Mr. Mpande Zulu from the Soil Fertility and Plant Nutrition Section of the Department.

Similarly, labourers' team that was for a long time attached to the NPGRC and other DARSS Sections were reorganized and pooled together and they now belong to the Farm Management Section of the DARSS. Hence the NPGRC now has Curator and the new technician as permanent and or semi-permanent staff members.

(ii) National Plant Genetic Resources Committee (NPGRCCom)

There were no reported changes in the NPGRCCom membership. There were no meetings held during the year.

(iii) Training, Workshops and Meetings

During the 2011/2012 season, the Curator attended the following training workshops:

- SADC REEP Environmental Mainstreaming and sustainability in Agriculture, NRM, Water and education sectors workshop at Esibayeni Lodge, Swaziland
- Regional Biosafety Course on Holistic Foundations for Assessment and Regulation of Genetic Engineering and Genetically Modified Organisms University of Dar Es Salaam, Tanzania
- CIMMYT training course on experimental design, maize breeding and seed production, Mantenga, Ezulwini, Swaziland
- Swaziland stakeholders workshop on drafting of National Agricultural Research Policy, Ezulwini, Swaziland
- Conservation Agriculture Training workshop, Mphophoma, Malkerns Swaziland

(iv) Equipment, Supplies and Facilities

The NPGRC's only motor vehicle that was out of service for more than 2 years was reported to be up and running thus easing transportation requirements for the genebank. The long awaited installation of the standby generator was completed and the generator is now running.

The Curator reported that most of the genebank's equipment was working except for continuous ice accumulation on outside pipes on the freeze drier.

(v) Requirements

The NPGRC is in requirement of a sealer, label stickers, seed counter, non-destructive moisture meter, seed blower, a colour chart and refractometer.

(vi) Rehabilitation of NPGRC Building and Installation of Standby Generator

Rehabilitation of the NPGRC was been accomplished. This includes flooring, wiring,

ceiling replacement and painting.

(vii) Public Awareness on PGR

Following the request by Ministries through the Ministry of Foreign Affairs to workshop legislators on their respective treaties (conventions) which Swaziland has still not acceded to, the Ministry of Foreign Affairs organized a 2 day workshop. However, the curator and Chief Research Officer were not duly informed about the workshop and therefore could not make the presentation on the Treaty. However, a presentation on the treaty was later delivered by the Minister of Agriculture during a People's Parliament that was sanctioned by His Majesty King Mswati III at Ludzidzini Royal Kraal along with 25 other conventions presented from other Ministries.

What remains is for each of the treaties (conventions) to be deliberated upon in Parliament so that a decision on whether or not to approve the accession can be made. Unfortunately, there are 24 international treaties or conventions and the ITPGRFA is currently ranking 18th on the priority list of international conventions awaiting Parliament approval.

The presentations emphasised the 'importance of conservation and preservation of Swaziland's plant genetic resources heritage highlighting the role and contribution made by indigenous crop diversity to crop improvement, and food and nutrition security poverty alleviation,, soil fertility improvement.

Technical Activities

(i) Ex-Situ Conservation

Conservation

Even though no collection mission was planned, 7 samples were collected from the Manzini regional agricultural show including one (1) suspected wild cotton collected from the wild in the Lubombo region. This has brought the total number of accessions conserved by the NPGRC to 972 accessions. The Curator was also involved in the collection for nursery establishment of edible aloe planting material specifically for distribution to partner NGOs that work closely with the HIV/AIDS infected and affect families in Manzini, Hhohho and Lubombo.

Multiplication

As a result of the challenges mentioned earlier, none of the proposed accessions were multiplied. Only 2 unduplicated groundnuts and 3 jugobeans were multiplied. Groundnuts were multiplied through a University of Swaziland student research project that was aimed at analysing genetic variability in 20 groundnuts accessions. Jugobeans were multiplied under the Grain Legumes Section's bulk jugobean multiplication.

(ii) Field Genebank Maintenance at Malkerns

The NPGRC continued with maintenance of vegetatively propagated germplasm that is at the field genebank at Malkerns but could not monitor germplasm at the Lowveld Experiment Station. However, efforts will be made to continue maintaining the vegetatively propagated germplasm at both sides particularly now that a vehicle is available despite fuel challenges.

(iii) Utilisation of Plant Genetic Resources

Seven farmers requested a total of 8 mixed crop accessions from the NPGRC. A total of 20 sorghum accessions were distributed to a PhD student at the Swedish University of Agricultural Science while another 20 accessions of groundnuts were also distributed a BSc. Student at the University of Swaziland.

(iv) *In-situ*/On-Farm

Even though the NPGRC is proposed to distribute seed of different crops to NGOs for multiplication, *in-situ*/ on-farm conservation activities which were proposed were a non-starter during the 2011/2012 season. This was mainly due to transport challenges even this season. Plans to work with partners such as COSPE were hampered as the project came to an end partly due to financial challenges.

(v) Documentation and Information

There were no updates undertaken on the SADC Documentation and Information System (SDIS).

The NPGRC internet is functional except on some instances especially in the afternoon when connection would suddenly become unavailable.

Tanzania

General

(i) Staffing

During the report period, there has been a slight change in the staff status at the NPGRC. The centre received a new staff Ms Getrude Kanyairita as a Field Officer.

Mr. E. Mausa and Mr S. Mungure continued pursuing MSc. training in Biotechnology and Laboratory Sciences at Sokoine University of Agriculture in Morogoro, Tanzania.

(ii) Meetings, Seminars, Workshops

- Dr. M. Mollel, Mr. W. Hamisy, Mr. M. S. Kabululu and Mr. E. Mausa attended a workshop on the preparation for a project “collection of landraces and wild species of *Oryza* in Kenya, Tanzania and Uganda” in Nairobi, Kenya
- Mr. L. N. D. Mapunda attended on African Regional Workshop on Plant Conservation in Cape Town, South Africa.

(iii) NPGRC Com Meetings

No meetings were held during the period under review.

Technical Activities

(i) Germplasm Collection

During 2011/12 period, NPGRC have implemented one collecting mission of wild *Vigna*, *Pennisetum* and *Eleusine* under Global Crop Diversity Trust (GCDT) funding, covering North and Western part of Tanzania (Lake zone). A total of 25 accessions have been collected during the mission. Seed duplication to IITA and ICRISAT is done with exception of SPGRC pending multiplication when funds are availed.

It was observed that Lake zone could be a good target for collecting *Vigna spp.* with noted problem that some of the seed are very few to duplicate which lender difficulties to duplication SPGRC.

(ii) Regeneration and Characterization

The *ex-situ* conservation activities during this period included characterization, germination tests and distribution of germplasm. The National Plant Genetic Resources Centre regenerated and characterized a total of 95 accessions of 7 different crop species. These activities were carried out at Madiira Farm and TPRI screen houses (Arusha region). At both sites, supplemental irrigation was necessary, to obtain good crop establishment.

The NPGRC also multiplied two (2) accessions of finger millet through HOPE project at Miwaleni outpost station (Kilimanjaro region).

Only peas and soybean were harvested and seed characterization will be carried out soon. Other crops were still in the field and characterization exercise was still ongoing. The collected data are regularly being compiled for documentation and further analysis.

In this season NPGRC managed to distribute a total of 130 accessions to different researchers. 69 accessions of sorghum and 20 accessions of rice were distributed to MSc students of Sokoine University of Agriculture respectively. Also 41 accessions of finger millet been distributed to PhD student of Sokoine University of Agriculture.

(iii) Genetic Enhancement

- Studies on assessing the genetic diversity of rice landraces and its wild relatives conserved at NPGRC-Tanzania, using SSR markers.
- Studies on assessing the genetic diversity of Sorghum conserved at NPGRC-Tanzania, using SSR markers.
- Evaluation of 16 selected maize landraces conserved at NPGRC-Tanzania in comparison with 9 improved varieties for good agronomic traits.

(iv) Documentation and Information

The main activities under Documentation and Information include updating of database, registration and data entry in the computer. To date, a total of 5,274 accessions have been registered.

(v) *In-situ*/On-Farm Conservation

It was reported that the on farm conservation project has come to an end and all gathered data and information has been reported and submitted.

A subsequent project has been secured with a title “Strengthening On – farm conservation of selected neglected and underutilized species NUCS (cucurbits, finger millets, yam, aloe and orchids) in Tanzania”

The new project is in preparatory stage to the start and may be started to be implemented end of this year

(vi) Constraints and material Requirements

- The NPGRC is facing a problem of storage facilities (freezers) to cope with increased number of seeds, as a result a number of samples are yet to be conserved.
- Lack of enough space that can accommodate additional freezers and office for staffs. Additional building is required to solve the problem.
- The vehicles which the centre has are too old, hence the need for a new motor vehicle is recommended.
- The screen and green houses have passed their life time, hence a need for renovation.
- The SDIS database system presents some technical difficulties

(vii) Major Achievements

The NPGRC managed to collect and conserve 25 seed samples of Vigna, Pennisetum and Eleusine at NPGRC, IITA & ICRISAT.

The centre has carried out regeneration and characterization of 95 seed accessions from 7 crop species.

The centre managed to acquire a standby generator with 50 KVA capacity which now help as a backup in case of power cuts.

Zambia

General

(i) Staffing

During the period under review the staffs position at the NPGRC remained unchanged both at professional and technical levels. As the case for the previous season there are four (4) professional officers, two (2) Technical Research Assistants and two support staff. One of the support staff attained his retirement age. One Principal Research Officer, Mr Godfrey Mwila rejoined the NPGRC after service with the Global Crop Diversity Trust in Rome, Italy.

(ii) National Plant Genetic Resources Committee (NPGRCCom)

The NPGRCCom forms the backbone of the national plant genetic resources programme in the provision of policy guidance. During the period under review the committee held

a meeting in October 2010.

The Committee recommended that Ministry of Agriculture & Cooperatives (MACO) and, specifically ZARI, should develop the ITPGRFA-compliant legislation and, where necessary, review existing legislation for possible amendments; In the process, coordination with the existing ongoing initiatives e.g. for the National Biodiversity Bill should be achieved. It also recommended particular attention should be paid to differentiating the implementing authorities for PGRFA and the other PGR for other uses.

(iii) Training, Workshops

The NPGRC staff participated in various training courses, meetings provided within and outside the country.

(iv) Equipment and Facilities

The NPGRC has one running vehicle, which is now old and has high maintenance costs. The other two vehicles that were reported non-runner in the last report have been auctioned due to increased maintenance.

Since procurement and installation, the seed drier has not presented any serious problems. However, it does not seem to be functioning properly, probably due to lack of servicing.

The 30 KVA genset that was procured in 2007 with support through the SPGRC Project is still functioning well and is very useful because the institution experiences rampant power outages.

The genebank has a stock of 29 deep freezers and are plans to acquire additional two (2) freezers in order to cope with the increase in the number of accessions and batches arising from collecting and regeneration activities respectively that were undertaken during the period under review.

Currently, the NPGRC does not have a seed moisture analyzer of its own ever since the only analyzer became malfunctional. The centre is in the process of procuring its own analyzer soon.

The NPGRC has two (2) functional desktop computers and three printers (a HP LaserJet 4200 PS, a HP LaserJet P1005 and Sharp model AL-1556, AL-1566).The sharp printer has its scanner unit non-functioning and this component could not be sourced locally.

Technical Activities

(i) Conservation and Distribution

The documentation of the active collection at the NPGRC is still undergoing realignment in order to match with the record on the SADC Documentation and Information System (SDIS). Currently, the number of accessions held in the gene bank stands at 6,500 without taking into account the recently collected genetic resources. The centre is also maintaining a living collection of 114 accessions of sweet potato and 154 accessions of cassava in the field gene bank.

As part of its mandate, the NPGRC is charged with the responsibility of facilitating

access to conserved plant genetic resources for purposes of research and development. During the period under review, a total of 50 accessions of beans and 40 accessions of maize were distributed to University of Zambia, School of Agricultural Sciences and the Maize Improvement Programme within ZARI respectively for research purposes.

The NPGRC implemented four major technical activities during the course of the 2011/12 growing season. These activities involved regeneration of germplasm accessions that had low viability; germplasm collecting targeting traditional leafy vegetables; on-farm conservation of crop genetic diversity and maintenance of the field genebank of sweet potato and cassava. The NPGRC plans to continue with some of these activities during the 2012/13 growing season as on-going protocols.

(ii) Germplasm Regeneration Project under Global Crop Diversity Trust

The NPGRC has over the period of the project regenerated all 865 germplasm accessions that were identified as threatened due to low viability and having few seeds. Two regeneration sites were used for this purpose i.e. Mount Makulu Research Station for regeneration of beans, maize and cowpea accessions and Mansa Technology Assessment Site for regeneration of sorghum accessions.

The centre has managed to duplicate a total 170 accessions of maize to CIMMYT, Mexico. Passport data of the regenerated accessions was also sent. The NPGRC has also managed to duplicate a total of 130 accessions of cowpea to IITA in Nigeria. The duplication of the remaining accessions of beans to CIAT and sorghum to ICRISAT is still pending.

(iii) Regeneration, Multiplication and characterisation of genetic resources

A total of 415 germplasm accessions including cowpea, bambara groundnuts, groundnuts, beans, solanum, Brassica, amaranths and cucurbits were planned for regeneration during the 2011/12 season. Of these, a total of 281 accessions of all except Solanum, Brassica and amaranths were actually planted. Two hundred and thirty (230) accessions were finally harvested. Accessions of Solanum, Brassica and amaranths were not planted during the period under review because of limited financial resources.

(iv) Collection

Zambia Agriculture Research Institute (ZARI), through NPGRC signed a memorandum of understanding with Enza Zaden Research and Development B.V. of the Netherlands for the exchange of germplasm accessions of cucurbits, Brassica, Solanum and amaranths. Implementation of the project activities started in June 2011. The starting point of the project was the harmonization, review and compilation of descriptors for use in the characterization of germplasm accessions. The NPGRC also undertook an inventory of reports arising from activities undertaken prior to the proposed collecting activities under the project. During the same year, the NPGRC undertook the germplasm collecting targeting species specified under the project i.e. cucurbits, Brassica, Solanum and amaranths. In the first year, the NPGRC was also expected to undertake viability testing of seed samples of the conserved germplasm accessions of the target species.

During the 2012 season, the NPGRC was expected to undertake the second germplasm collecting mission during which would target amaranths, cucurbits, Brassica and solanum species. Within the Cucurbitaceae species, deliberate effort would be directed to collecting *Momordica balsamina*, snake gourds, sponge gourd (edible Luffa), *Sicyos*

angulatus (Bur cucumber). This particular collecting mission was undertaken in May 2012 in collaboration with CTDT-Zambia and Department of Agriculture.

During the whole collection mission a total of 277 samples of germplasm were collected in Mumbwa, Kabwe and Kapirimposhi. The species collected were amaranths, Brassica, Cucumber, Edible gourds, African egg plants, Hibiscus, Momordica, Snake gourd, sponge gourds, tomato and pumpkins. Others were Cucumis, Capsicum, Lagenaria and cattle melon.

The germplasm accessions collected in selected areas of Mumbwa and combined Kabwe and Kapiri mposhi districts have their passport data associated with the collected germplasm which mainly had to do with cultivation, use and maintenance and was entered on collection forms for subsequent encoding on the SDIS database.

(v) Regeneration and Safety Duplication of Regionally-Prioritized Crop Collections in Zambia

Funded by the Trust through coordination of SPGRC, the NPGRC undertook the regeneration of threatened prioritized crop collections in the genebank. A total of 834 accessions of beans, cowpeas, maize, and sorghum were planted the project. Currently, the NPGRC is preparing the passport data, characterization data and materials in readiness for duplication to SPGRC, Svalbard Seed Vault and other international genebanks. Characterization data will be made available both in electronic and hard formats.

(vi) Re-establishment and Maintenance of Living Collection in the Field Genebank

Currently, the field gene bank is holding 153 cassava and 113 sweet potato germplasm accessions as living collections at Mount Makulu Research Station. These materials were collected from Luapula, Northern and Northwestern provinces of Zambia.

The NPGRC is faced with one challenge of maintenance of clones of sweet potato during the dry season given a limitation of backup irrigation facilities at Mount Makulu Research Station.

Activities implemented during the reporting period include shifting sweet potato accessions, weeding and slashing in cassava and sweet potato field gene bank, and irrigation of sweet potato and cassava germplasm during dry season

(vii) *In-situ*/On-farm conservation

The NPGRC in collaboration with CTDT, Department of Agriculture (DoA) and SPGRC has continued with the on farm conservation activities in Rufunsa, Situmbeko, Simutwe, Mamvule and Nadezwe. During the last season much of the work was devoted to organizing farmers into groups. This was followed by training of farmers on entrepreneurship skills in each of the stated sites. A total of 150 farmers benefited from this training.

In the month of August 2012, the NPGRC in collaboration with CTDT and DoA has planned for three seed diversity fairs in Chikankata, Rufunsa and Mamvule. The proposed dates for the fairs are as follows: Chikankata on 16 August 2012, Rufunsa on 23 August 2012 and Mamvule in Mumbwa district on 30 August 2012.

(viii) Documentation and Data Analysis

The SDIS is working well except that the active gene bank has been reorganised and is only waiting to be reconciled with SDIS.

It has been noted that on the characterisation module, there are only 8 crops listed namely: beans, cucurbits, finger millet, groundnuts, maize, pearl millet, sorghum and *Vigna* spp. Also, some traits on these crops are not included especially on vegetative characters for data entry. In some cases there are only 2 traits while the IPGRI descriptor has more than those presented.

The Curator also reported non-activation of the germplasm distribution and the Tools and utilities modules

Zimbabwe

General

(i) Staffing

There has been no big change to staffing at NPGRC. While Ms Alter Murangi, and Mr. Onismus Chipfunde are still pursuing their Masters level studies in Plant Science and Environmental Policy and Planning respectively, Ms Fungai Chinosengwa is pursuing her Bachelor's degree in Crop Science and Mr. Peter Mavindidze (Research Technician) just finished his studies and rejoined the NPGRC.

The management and staff of the GRBI regretted to announce the death of Ms Tendai Tembo who passed away on the 31st December 2011 early morning at home. Miss Tembo joined GRBI as general hand in March 2009 and served in the same position up to her time of death. She will be greatly missed may her soul rest in peace.

(ii) National Plant Genetic Resources Committee (NPGRCCom)

While its composition remained unchanged, the NPGRC committee did not meet during the reporting period.

(iii) Training, Workshops, Meetings and Visitors

- Ms Rudo Musango attended the Sida's International Training Programme "*Genetic Resources and Intellectual Property Rights*" in Sweden
- Mr Kudzai Maramwidze attended a horticulture course organized in Zimbabwe
- Mr Kudzai Kusena attended a workshop on Biosafety and Plant germplasm exchange in Africa held in Cameroon

(iv) Equipment, Supplies and Facilities

The genebank has 27 freezers that are all full. It also has faulty drier, moisture analyser and grinder. There is a working dehumidifier, a fax-scanner-printer-photocopier

machine, 4 printers and standby generator.

The Centre has 4 heat sealing machines, 2 of which are faulty. It also has 2 laptops and 3 desktops. The Centre vehicle's engine that was faulty has now been fixed and the vehicle is running.

Technical Activities

(i) Ex-situ Conservation

Under the laboratory-based seed cleaning, a total of 34 accessions were cleaned, 68 accessions packed and stored.

A total of 110 accessions were tested their viability; whereas, 87 accessions were tested for moisture.

One major activity implemented during the reporting period involved resorting and repacking of samples in freezers and currently all freezers can safely be claimed, rearranged.

(ii) Germplasm Collection

There were no collections done during the period under review. In the coming season, GRBI is planning to carry out a mixed crop rescue collection mission along the great dyke. Plant genetic resources found in this environment are usually endemic and these pose unique characters like high tolerance to higher concentration of metal ions. The typical great dyke environment is slowly disappearing due to mushrooming of mines and illegal miners.

(iii) Characterization

Ten (10) Common bean accessions were characterized in a work that was done in collaboration with University of Zimbabwe student.

(iv) Multiplication

Eighty nine (89) accessions of cowpea (60) and cucumber (29) were multiplied but given bad weather; only 46 and 11 accessions of same respective crops were harvested.

(v) Field Genebank Maintenance

There were no field genebank maintenance activities since there was no budget allocated to the exercise. However some field gene bank work is proposed for 2011/2012 season.

(vi) In-situ/On farm Conservation

There were no *in-situ* conservation activities done

(vii) Germplasm Distribution

During the year, a total of 139 samples were distributed to requesting partners. These included *Voandezia subterranea* (20), *Lagenaria spp.* (18), *Curcubita maxima* (21),

Hibiscus esculentus (18), *Vigna unguiculata* (21), *Cucumis spp* (21), *Sorghum spp* (15), and *Zea mays* (5).

(viii) Documentation and Information

Zimbabwe is already working towards electronic documentation. Over 90% of the germplasm passport data has already been currently documented on Microsoft Excel which will then be shared with SPGRC for incorporation in SDIS.

Appendix 1: Proposed Multiplications and Characterisation

Country	Budget 2010/11	Budget 2011/12	Proposed Budget 2012/13
Angola	4,280		26,400
Botswana	2,627	2,627	-
DR Congo		5,000	0
Lesotho	12,646		3,200
Malawi	6,500	9,000	4,934
Mozambique			3,606
Namibia		2,150	0
Swaziland	3,600	5,792	0
Tanzania	9,437	4,748	4,312
Zambia	12,500	12,500	29,374
Zimbabwe	11,000	11,000	0
Shipment of seed samples from Malawi	2,000		0
Total	64,590	52,817	71,826

Appendix 2: Proposed Collections (2012/13)

Country	Budget 2010/11	Budget 2011/12	Proposed Budget 2012/13
Botswana			-
Lesotho		2,886	0
Malawi	10,200	10,200	0
Mozambique	10,500	11,692	0
Seychelles	3,900		0
Tanzania	13,600	13,600	12,000
Zambia	19,526		0
Zimbabwe	3,000		0
Total	60,726	38,378	12,000

Appendix 3: Proposed *In-Situ*/On-Farm Activities

Country	Budget 2010/11	Budget 2011/12	Proposed Budget 2012/13
Botswana	5,550		0
Lesotho	7,500		0
Malawi	28,500	14,500	0
Namibia		944	0
Seychelles	3,400		0
Swaziland		5,600	0
Tanzania			0
Zambia	14,100	12,300	10,824
Zimbabwe	6,800	4,550	0
Total	65,850	37,894	10,824

Appendix 4: Other/Miscellaneous Budgetary Items

Country	Budget 2010/11	Budget 2011/12	Proposed Budget 2012/13	Remarks
DRC	25,000	20,500	25,000	Seed multipl. <i>in-vivo</i> , Monitoring, Training, inventory, germination tests
Lesotho	8,000		13,300	Seed germination tests
Malawi	19,500	30,000	4,015	Seed packaging, storage, monitoring
			1,973	Updating PGR inventory
Seychelles	26,042		106,463	Bldg renovation, field genebank establishment, motor vehicle, computer and accessories, photocopier, camera, GIS/GPS, freezers
Swaziland			0	
Tanzania	6,527		4,000	Documentation – Harnessing SDIS database
Zambia	3,500		1,837	Field genebank maintenance
Zimbabwe	1,000	5,500	0	
Total	74,069	56,000	156,588	

Table 5: Summary of Costs

Activity	Amount Requested for 2011/2012	Amount Budgeted for 2012/2013
Multiplication and Characterisation	52,817	71,826
Germplasm Collection	38,378	12,000
<i>In-Situ</i> /On-farm Conservation	37,894	10,824
Miscellaneous	56,000	156,588
Grand Total	185,089	251,238

7. NPGRC PLANNED ACTIVITIES FOR THE YEAR 2012/2013

Angola

(i) Multiplication and characterisation of some accessions in the genebank

The NPGRC proposes to multiply and characterize 60 common bean accessions in 2012-2013. It also proposes to multiply Maize (3), cowpea (10), Pea (5), soya (5), groundnut (15), pumpkin (10), tomato (10), Capsicum (10), Amaranths (10), and Lossaka (10) accessions. Additionally, the genebank will regenerate common beans (10), maize (7), cowpea (10), pea (5), soya (5), and groundnut (15) accessions.

It implies, the genebank will multiply a total of 152 accessions and regenerate 52 accessions.

Botswana

(i) Multiplication and regeneration of various crops

The NPGRC is proposing to multiply 25 accessions that will be planted at Sebele Research Station. All crop management practices will be done during the growth period. Data for characterization will be collected throughout the growth period of the plants following the appropriate (IPGRI) descriptors and data analysis for the trial will be subjected to cluster analysis using the NTSYSpc.

Eventually, the data will be entered in the characterisation file in SDIS and also availed in hard copy in the form of a catalogue.

The project is estimated to cost approximately **US\$ 2,627**.

(ii) Germplasm Collection

A multi-crop germplasm collection in Kgalagadi, Gantsi, Ngamiland, Central, Kgatleng and Chobe District is being proposed with the aim of collecting germplasm of local crops and other useful plant species from areas that was not covered by previous collection missions as well as documenting local indigenous knowledge pertaining to the management and use.

The exercise will assist in conserving the existing genetic diversity of the crop species occurring in the target areas. Most areas of Kgalagadi, Gantsi and Ngamiland were not adequately covered in previous collection missions due poor accessibility but are now relatively accessible and should therefore be targeted for collection. Target crops include sorghum, cowpea, watermelon and pearl millet.

Democratic Republic of Congo

Updating the status of the gene bank accessions in the main research centres of the Democratic Republic of Congo

- Conduct an inventory of accessions per species

- Test viability of the seed accessions and their moisture contents
- Conduct seed multiplication of accessions *in vivo*
- Conduct monitoring and evaluation of accessions
- Train technicians in the data entry
- Share the data base with other site programmes

Lesotho

(i) PGR Publication Material

The main objective of the project is to collect literature and publish a document that details PGR conservation and utilisation activities in the country. The proposal attracts a budget of US\$ 2,000.

(ii) Multiplication and Characterization – Machache Research Station

The NPGRC proposes to multiply 110 accessions of sorghum at Machache Research Station that represents the foothills of Lesotho

The main objectives of the activity include availing characterization data for 99 accessions of sorghum landraces as well as acquiring sufficient seed for active and base collections. The activity is estimated to cost US\$ 3,200

(iii) Seed germination tests of accessions in active collection

Justified by the fact that frequent power cuts may have affected the lifespan of material and therefore, the NPGRC wishes to conduct germination tests will determine the level of impact.

If the germination % is below 85% then there will be need to regenerate the accessions. The activity is estimated to cost US\$ 600.

Malawi

(i) Seed multiplication, rejuvenation and characterization of various crops

Seed multiplication and rejuvenation will be carried out on different crops in order to meet seed quantity requirements for storage and distribution, as well as having seeds with recommended viability (not less than 85%). Therefore samples from various crops will be planted to meet the above named criteria.

Samples will be planted at three different sites; Chitedze, Chitala, Makoka and Lifumu/Namasalima Research Stations at an estimated total cost of US\$ 4,934.

(ii) Development and promotion of Bambara Groundnuts for Improved Human Nutrition

The main objective is to Increase income, food and nutritional security through production and utilization of bambara nuts through introduction of new recipes using

bambara nuts to farmers in addition to traditional consumption uses.

It will be implemented concurrently through seed multiplication and distribution; farmer field days, mounting demonstration plots; bambara recipe development; and plan development for bambara market.

The project will be undertaken in Mzimba district (Mbawa EPA) and in Ntchisi district (Kalira EPA) with funding from the McKnight Foundation.

(iii) Seed processing, packaging and storage

Before seed can be stored at -18°C; it requires processing which includes threshing, cleaning, adequate drying and packaging in special containers. Documentation of information on all samples in the gene bank is important for ease of utilization of the stored germplasm. The harvested seed samples undergo several processes before storage to ensure high seed viability.

To accomplish the above, the NPGRC is proposing to undertake the following:

- Processing of all samples from multiplication/rejuvenation and new accessions
- Drying, packaging and storage of desired seed
- Seed viability monitoring of samples in deep freezers, samples below 85% viability will go for regeneration
- Sample distribution for utilization by individuals and institutions to continue, but based on proposed regulations.
- Servicing of working deep freezers and repairing of the broken ones will be required as they have functioned for over 20 years now.

Estimated cost: US\$ 4,015.

(iv) Updating of the PGR Inventory

The project aims at having well-documented and up to date information on conserved germplasm.

To enhance utilization of Plant Genetic Resources (PGR) held by the gene bank, it is important to have a properly organized and updated information base. The PGR inventory being used at the moment has not been updated for a long time; hence it is in this view that this activity is deemed important at an estimated cost of US\$ 1,973.

Mauritius

(i) Collection of Germplasm

Collection of traditional and underutilised crops such as root crops and other gap filling collections will be targeted for collection.

Establishment of on-farm conservation at Clemencia and Nouvelle Decouverte would also be considered for crops such as Arrow root and cornflour with the collaboration of the Agricultural Research and Extension Unit (AREU).

(ii) Regeneration/Multiplication

Fifty accessions with poor seed viability and inadequate quantity will be

regenerated/multiplied including okra, papri, cowpea, amaranths, chilly, tomato, onion, eggplant among others.

(iii) Characterization

Apart from the ongoing characterisation exercises of the 39 accessions mentioned above, two cucurbits (cucumber and bottle gourd) were earmarked for characterisation. Other accessions would be considered for characterisation subject to the Division's priority and availability of resources.

(iv) Maintenance of field gene bank

Maintenance of existing and newly acquired field gene bank accessions will be continued as per previous reporting year.

(v) Rescue of endangered species

Attempt to the rescue of the unique Palm species *Hyophorbe amaricaulis* will be an ongoing exercise. Other species would be taken on board upon request from the Forestry Division and the National Plant and Conservation Services.

(vi) Documentation

Our trained officer on Documentation being promoted and transferred to another Division, data entry into SDIS database was not completed. Training of other officers at the Seed Gene Bank would help for the completion of data entry and other inputs on the Information System.

Mozambique

(i) Multi-crop germplasm collection mission in Zambezia Province

The proposal is justified by the fact that the exploratory expeditions will be conducted in regions particularly targeting on districts which have not been covered in the previous expeditions.

The main objectives of this mission will be to collect as much possible the existent germplasm occurring in Zambezia Province for conservation and future use.

The collection mission will be undertaken during the harvesting period (May-July 2013) at an estimated budget of US\$ 3,306.

Namibia

(i) Multiplication of *Citrullus lanatus*

The objective of this trial is to multiply 5 accessions of *C. lanatus* during the main season 2012, to obtain sufficient seed for storage in base and active collections and for utilisation. The second objective is to do preliminary characterisation of accessions to make them more valuable for germplasm users.

The NPGRC is planning to multiply and characterise 5 accessions of *Citrullus lanatus*, in the main season of 2012/2013 as recommended for replanting of the same accessions in the last season.

(ii) In-situ Activities

Ms. Loots is on Study leave to fulfil the requirements of her PhD study programme. The research that she is undertaking forms part of the in situ conservation of the genus *Lithops* in Namibia and she hopes to revise the conservation status of the Namibian species at the completion of the research. The research will be on critical evaluation of the conservation status of *Lithops* N.E.Br. (Aizoaceae) in Namibia.

(iii) On-farm Activities

With the existence of new varieties and climate change, some farmers have lost their local varieties. During seed collection in Omusati region, some farmers have identified crop species they no longer have. The activities under on-farm conservation for the coming season will focus on identifying what crop species the farmers wanted and take such species if in the genebank to them for multiplication.

The main activity of the project next season is to return to the farmers for feedback and seed collection (Omusati Region).

It is expected that a group of farmers will be identified to implement on-farm project activities in future, together with the National Plant Genetic Resources Centre.

The information and experience gained during this project will be used to improve and expand on-farm conservation work to other regions of Namibia.

(iv) Documentation and Information

The following activities are planned for Documentation and Information:

- Replacement of SDIS computer
- Update all the SDIS modules
- 136 entries on Germplasm information system module
- Register new samples as they come in
- Enter characterization data for *P. glaucum* and *C. lanatus*

Seychelles

Seychelles NPGRC is proposing the following activities for next financial year:

- Finalize the setting up the NPGRCCom and have the first meeting
- Initiate plan to development National PGRFA policy
- Renovation of existing Soil Lab Building to cater for the new building to house the NPGRC Seychelles and the genebank
- Inventory of PGRFA on farm and home garden
- Seek the help of SPGRC for training in germplasm collection, preservation, regeneration and documentation for new staff joining the Unit from next year
- Setting up of seed bank including installation of equipments
- Develop new project proposal for PGRFA and submit to potential donor organization

South Africa

(i) Multiplication

The NPGRC is proposing to multiply Melon (4), mungbean(1), sorghum(9), lagenaria(5), pearl millet (2) samples that could not be multiplied in the 2011/2012 season. This would be multiplied in addition to the maize, beans and groundnuts multiplied by the ARC-GCI.

(ii) On-Farm/ *In-situ* Conservation

In Mpumalanga Province, the NPGRC is planning to initiate a community-based on-farm conservation project with the aim of promoting the effective management and maintenance of plant genetic resources, with a special emphasis on landraces/traditional varieties at farm level and to incorporate farmers into NPGRC system and empower them to have control and easy access to crop genetic resources.

The NPGRC also seeks to improve food security, nutritional food diversity and livelihoods in the Southern Africa region by targeting two objectives of: selecting adaptive and preferred crops with useful traits and make them available to small scale farmers as Quality Declared Seed; and by strengthening Community Seed Banks for improved access and availability of adaptable appropriate local seed varieties and planting material of root and tuber crops.

(iii) Germplasm Collection

In collaboration with the North West Province Department of Agriculture and Rural Development, the NPGRC plans to collect germplasm in the Bojanala District that would extend to over 3 to 5 years. In so doing, the NPGRC would be in position to assess the extent of availability and growing of traditional food crops in the Western Cape and Gauteng Provinces as well as assess the extent of distribution and use of genetically modified maize seed provided by other/provincial government agencies through projects.

(iv) Documentation & Information

It is the intention of the NPGRC to update all accessions from MSB collections on SDIS and delisted varieties Access database, verify the SDIS information with accessions maintained in storage and implement the DAFF's GIMS.

Swaziland

(i) Multiplication

The NPGRC once again propose to multiply some of the accessions that are not yet safely duplicated at SPGRC which also could not be multiplied in 2011/2012 cropping season.

The NPGRC will multiply 75 crop accessions which include maize (14), cucurbits (38),

pigeon pea (1), pearl millet (5), okra (1) beans (5), and cowpea (10).

(ii) Facilitate Accession to the ITPGRFA

In an effort to facilitate accession to the treaty, the curator, through the office of the Chief Research Officer, will from time to time work with the Minister of Agriculture and the Legal Advisor in the Ministry of Foreign Affairs in monitoring progress of the Treaty in Parliament.

Tanzania

(i) Regeneration, multiplication, characterization, germination test of selected crop accessions

The project main objective is to obtain sufficient quantities of seed for storage in the base collections, and to characterize accessions of different crops, so as to determine genetic diversity existing among them for germplasm users, to check viability of the stored materials at the genebank and to promote its utilization by distributing it to various stakeholders for research purposes which leads to food and agriculture improvement.

Selected accessions will be sown in the two fields (Miwaleni and Madiira) during the 2012/2013 season. The number of the accessions NPGRC intends to multiply will depend on the availability of funds. However, budget has been made for 300 accessions.

(ii) Genetic enhancement

In order to effectively enhance genetic diversity, the NPGRC will conduct:

- Studies on assessing the genetic diversity of rice landraces and its wild relatives conserved at NPGRC-Tanzania, using SSR markers.
- Studies on assessing the genetic diversity of sorghum conserved at NPGRC-Tanzania, using SSR markers.
- Evaluation of 16 selected maize landraces conserved at NPGRC-Tanzania in comparison with 9 improved varieties for good agronomic traits.

(iii) Harnessing of SDIS Databases

After the database rectifications, NPGRC remains with the incorporation of passport data in to the database. Apart from passport data, most of the information is not incorporated, such as characterisation data, *etc.* The Centre therefore intends to put more thrust in this area, which include engage staff for data input.

The Centre will therefore incorporation of characterization data into database; clear some of the backlog passport data in to the data base and do overall data updating and purification. It will also strive to improve on reliability of Internet connection.

(iv) On farm conservation project

This project has come to an end and all gathered data and information has been reported and submitted to donor and other stakeholders.

Another sister project has been secured with a title “Strengthening On – farm conservation of selected neglected and underutilized species NUCS (cucurbits, finger millets, yam, aloe and orchids) in Tanzania”

The new project is in preparatory stage and may start being implemented towards the end of 2012.

Zambia

(i) Regeneration, multiplication, characterization

It is being proposed that the activity should be continued during the 2012/2013 growing season from last year as there are more germplasm materials that require regenerating and multiplying. The proposal involves regeneration of 10 accessions amaranths and solanum each and 20 accessions of brassica. In addition, there will be multiplication of 60 and 30 accessions of rice and cucurbits respectively.

(ii) On-farm conservation and management of local crop diversity

The overall objective is to contribute to the improved food security and livelihoods of people through the diversified and sustainable crop production among small scale farmers in Zambia.

As a continuation of the the programme that was running in 5 sites of Rufunsa, Situmbeko, Mamvule, Simutwe and Nadezwe last year, a number of activities listed below have been planned for the coming season targeting farmers in the same project sites :

- 5 trainings to be conducted
- 3 exhibitions at 3 district shows of Mumbwa, Chikankata and Chongwe.
- 1 seed fair to be held
- 1 field day to be held
- 3 visits to all the areas for monitoring and evaluation

(iii) Evaluation and pre breeding of 60 maize germplasm accessions

The ultimate purpose of the genetic banks is their use for further genetic improvement of the species. Considering the great genetic diversity existing within the maize species, and the amount of available accessions, it seems pertinent to consider the most desirable approach to achieve the germplasm bank's goals. One of the main purposes of pre breeding is to enhance the agronomic performance of the gene pools.

The proposal aims at representing the genetic diversity of maize accessions with a minimum of repetitiveness through creation of core collections; and evaluating the existing gene pool for specific combining ability

Sixty (60) maize accessions from the Zambia national genebank will be included in the evaluation trial at Mt. Makulu Research Station.

(iv) Characterization and evaluation of cassava germplasm collections in the field genebank

The main purpose of the proposed protocol is for the characterization and preliminary evaluate the cassava clonal collections thereby enhancing the utilization of the conserved genetic resources.

The clonal material will be planted in an environment that is highly suited to cassava growth and development, and where biological and environmental problems are minimized, so that there are no confounding effects on the expression of traits used for characterization.

Zimbabwe

- (i) Molecular Characterization of 10 water melon accessions and 20 cowpea accessions in collaboration with National University of Science and Technology**
- (ii) Ongoing Regeneration and Multiplication of conserved germplasm**

7. Other Discussions

7.1 Issue of NPGRCs not meeting; ToRs for NPGRCs

From most country progress reports, it was noted that many NPGRCs were either non-functional or its members were not meeting.

It was confirmed by SPGRC that there were Terms of Reference for NPGRCs and thus even if a country made its own, they had to be aligned to the SPGRC overall ToRs. It was however remarked that these terms needed to be updated to match with the current situation.

While some countries like did not have functional committees, other countries had committees in place but which were not active. While it is the Secretariat of the Committees, which actually is the Curator who can revive the spirits of the Members, Curators were urged to be more proactive to ensure Committees meet and deliberate on issues, especially before the annual technical review and planning meetings, for them to have inputs to the progress of their respective NPGRCs. The agenda and meeting dates should be communicated to members well in advance like a month before.

One strategic approach would be to ensure the Committee membership is inclusive of broad representation of stakeholders, from forestry to universities, farmers to researchers, government departments to environment/natural resources, *etc.*

It was proposed that a constitution or guide for NPGRC need to be developed and communicated to Members for them to abide and follow. Zimbabwe promised to share its own with the rest of NPGRCs.

The meetings proposed that the issues of the NPGRCs not meeting be presented to the Board as a concern, retarding NPGRC performance.

7.2 Issue of Malawi NPGRC multiplying bambara nuts, groundnuts, water melons on behalf of other Member States

It was recalled that during the 2010 planning meeting, in acknowledging the Malawi's experience and expertise in multiplying bambara nuts and water melons, countries were urged to tap on its capability and send their materials for assistance. Botswana, Namibia and Zambia showed interest.

However, Malawi reported to have only received materials from Namibia in 2010 and that it had successfully multiplied the water melons in 2011 and repatriated the materials in 2012.

Apparently, Botswana NPGRC was advised not to send the materials due to variability in conditions that could in a way, affect genetic composition of the germplasm.

The meeting could not reach consensus as to whether money from SPGRC/Donor was sent in 2010 to Malawi to help multiplication for other countries or not. SPGRC was asked to cross-check and if funds are available, advise countries (Botswana, Zambia, others) to send the materials for assistance in multiplication.

7.3 Reasons for little uptake of on-farm/*in-situ*: What has gone wrong?

Despite substantial efforts to step-up establishment and development of on-farm/*in-situ* activities, there has been little uptake as reported by the countries. The meeting was asked to ponder reasons as to why this is so.

After long discussions, the network was advised to do research for regional uptake of on-farm/*in-situ* by reviewing successes and failures achieved over the years, and assess the potential for the same. This should be done through a commissioned study.

While the meeting was advised to find possibilities for advancing on-farm market *niches*, they should also strive to conserve *ex-situ* materials for future use. Extensive urbanization is engulfing Africa and soon there will be a very small proportion of farming communities that will feed the rest in towns using inorganic materials (seeds, fertilizers, extensive land cultivation methods). Consumers will turn to organic foods whose answer lies in PGR.

The meeting also advocated for repatriation of crop landraces back to farmers, raising awareness on the benefits/advantages of on-farm/*in-situ* conservation and continue with efforts to sell a prepared proposal by SPGRC on the same to potential donors.

7.4 Sending of germplasm materials to SPGRC for base conservation: Why inconsistency?

It was emphasized that sending the country materials for back up at SPGRC base collection is a no-choice and should be taken seriously to save the seeds from any possible mishap at the national genebanks. It is important to utilize the facility that is funded by the SADC Member States.

Clarifying, the SPO – *Ex-situ* Conservation asked the Curators to submit to SPGRC for base collection 1500 seeds, of which, 500 go to base, 500 for testing, and remaining is duplicated for safety to Svalbard Global Seed Vault. Should a country send unprocessed seed, then it should add another 500 seeds (making it 2000 seeds) that will be used for testing.

7.5 Use of solar power for back ups

There was a proposal that given the erratic power supply in a number of countries in the region, NPGRCs could start thinking use of abundant solar power even though its initial capital is high, it becomes cheap in the long run if compared with costs involved in running standby generators.

The meeting agreed that a feasibility study be done to explore use of solar to power genebanks. Since Lesotho had started exploring, it was requested to share findings through SPO – *Ex-Situ* Conservation.

Seychelles promised to share its experience whereby individuals generate solar power excess which they sell to the national grid and get compensated.

7.6 Role of SPGRC in multilateral system (MLS) – Distribution of germplasm materials

In order to enhance utilization and raise its relevance, SPGRC felt the need for it to be a centre for distributing materials on behalf of NPGRCs. After intensive discussions, the meeting felt that, if agreed, there will have to be an agreement (MTA) between SPGRC and NPGRCs which when signed, will allow SPGRC to distribute the deposited materials. This however, would mean more materials should be deposited at SPGRC.

It was agreed that this is a policy issue and should be presented to the Board.

7.8 Domestication of the Treaty

It was reported that funds that were available for awareness raising were exhausted and that SPGRC was trying to source other means of funding.

The SPGRC was advised for it to resuscitate its relations with the Treaty Secretariat and see if there is possibility for them to provide funds for domestication in the region. SPGRC was advised to write a letter/email to this effect.

7.9 Characterization and utilization of germplasm

While characterization was considered important in unveiling crop traits that users (breeders, farmers) look for in any crop development programme, NPGRCs were encouraged to step up characterization and share outcomes so that collected and conserved materials find relevance and importance for the policy makers to support our course of work.

Countries doing morphological characterization might have data which breeders see it insufficient for their work, so molecular characterization seem to be the way and countries should strive to join the bandwagon.

In order to holistically address the producer-user gap, it will be advisable to involve breeders in characterization as well as evaluation after characterization.

8. Summary of Technical Presentations

8.1 Documentation and Information

The SPO – Documentation & Information mentioned that last year was challenging with the departure of the former Technical Officer who resigned and also that there were financial difficulties that affected smooth implementation of planned activities.

The SPO commended Angola for continued use of DIVA-GIS which he advised, should be emulated by other countries, tapping on the former's expertise and experience. He also praised Lesotho for entering more than 524 records in SDIS despite its machine being old. Lesotho also managed to fill in blank/empty spaces so as to maintain consistency in species and location names. Namibia's data entry of more than 120 accessions was also acknowledged.

With regard to operability of SDIS, a number of countries including Botswana, Malawi, Namibia and Tanzania showed that SDIS had either some hitches in capturing data or needed re-installation. Angola complained about its GIS data display showing fewer digits than those entered. SPGRC promised to assist where it can, considering financial constraints.

On the addition of locations, names and places on the database, the SPO acknowledged change in names and locations due to creation/division/merging of provinces and districts in some countries. SPGRC will take care of such changes when updating the database.

The SPGRC Documentation staff reported that work was going on to redesign and re-install SDIS and asked countries to continue inputting data on their current SDIS version because it is the same that will be migrated to the web-based system. The new web-based will also have the inactive modules like distribution, tools and utilities activated. The characterization modules will have more descriptors, and also the problem of accession selection module having the new search results appended to the previous resolved.

Upon Swaziland reporting the crashing of its SDIS hosting computer, all NPGRCs were reminded that continuous and periodic backing up their data was vital and should be upheld.

8.2 *In-situ*/on-farm Conservation

Promotion of the conservation and use of crop diversity is done and monitored through farmers' field days and Seed Fairs. Seed Fairs were attended in Malawi and Zambia where farmers continue to share seed within their communities and to maintain crop diversity. The Zambia NPGRC restored seed sample for sorghum, groundnuts, beans, bambara, and African Leafy vegetables. In Botswana, The diversity was good.

All on-farm conservation sites mentioned challenges on marketing their produce. In Malawi, the promotion of finger millet and its utilization is continued together with other underutilized crops like bambara nuts. Restoration of finger millet has lead to excess production and farmers have problems in selling their produce. Countries continued to roll out the on-farm activities and Community Seed banks. Namibia, seed samples were distributed to farmers as restoration measures. In South Africa, farmers

gain access to lost crops through the seed multiplication process done by the NPGRC in collaboration with farmers. In Malawi, on-farm activities ongoing, promotion of finger millet was a success though farmers are faced with marketing challenges. There are problems in Lesotho and Swaziland, the concept seem not to be picking up as expected. The “Every Home a Garden” concept that is practiced in Seychelles was initiated 15 years ago to combat the loss of food crops. This was merely targeting communities staying in double storey flats. At the earlier stages, farmers were encouraged to grow crops in old containers and seedlings were sourced for free. Since the island is away from neighboring agricultural markets, it was the responsibility of the households to grow some of the crops in order not to rely on buying all that they eat. A meeting was held and farmers expressed the need for a sustainable supply and sharing of seedlings and seed. Visited farmers appreciated the concept and it can be rolled out to other countries, particularly urban areas.

In the case of gerplasm collection, 902 samples of mixed crops were collected in nine countries (Angola, Botswana, Lesotho, Namibia, South Africa, Swaziland, Tanzania and Zambia). SPGRC participated in the collection of wild cowpea in the Lake Zone, Tanzania.

9. General Discussions

9.1 Issue of NPGRCs not meeting and ToRs for NPGRCs

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Appendix 1: Programme

Sunday, 9th September 2012: Arrival of FAO/ABCIC Delegates	
Monday, 10th September 2012: Arrival of Participants	
Monday, 10th September 2012: Project Task Force Meeting (Dr C. Mba, Ms J. Mulila-Mitti, Dr P. Munyenembe, Dr D. Kiambi, Ms T. Lupupa)	
Tuesday, 11th September 2012	
Session 1:	Opening Ceremony Chair: L. Qhobela
09:00 – 09:30	Welcome address – Head of SPGRC FAO Representative Programme and logistics announcements – L. Qhobela Issues arising from the last (2011) meeting – L. Qhobela
09:30 – 10:00	Presentation on strategies – FAO/ABCIC
10:00 – 10:30	MORNING TEA BREAK
Session 2:	Project Inception Mission Meeting Chair: FAO Representative/ABCIC Rapporteur: Thabo Tjikana
10:30 – 13:00	Presentations
13:00 – 14:00	LUNCH BREAK
Session 3:	Project Inception Mission Meeting Chair: FAO Representative/ABCIC Rapporteur: Mujuni Kabululu
14:00 – 15:30	Working Groups
15:30 – 16:00	AFTERNOON TEA BREAK
16:00 – 16:30	Working Groups
16:30 – 17:00	Summary of Working Groups
Wednesday, 12th September 2012 General Rapporteurs: Barry Nourice, Modester Kachapila	
Session 4:	Presentations: Country Progress and Plans Reports Chair: Mary Molefe Rapporteur: Thembinkosi Gumedze
09:00 – 10:30	Country Presentations
10:30 – 11:00	MORNING TEA BREAK
11:00 – 13:00	Country Presentations
13:00 – 14:00	LUNCH BREAK
Session 5:	Presentations: Country Progress and Plans Reports Chair: Godfrey Mwila

	Rapporteur: Maleoa Mohloboli
14:00 – 15:30	Country Presentations
15:30 – 16:00	AFTERNOON TEA BREAK
16:00 – 17:00	Country presentations
Thursday, 13th September 2012	
Session 6:	Presentations: Country Progress and Plans Reports Chair: Evaldina Pedro
	Rapporteurs: Kahimbi Sikute
09:00 – 10:30	Country presentations
10:30 – 11:00	TEA BREAK
Session 7:	General Issues Chair: P. Munyenembe
11:30 – 12:30	Summary of Presentations - <i>Ex-Situ</i> : L L Qhobela - <i>In-Situ/On-farm</i> : T J Lupupa - Documentation & Information: B W Kapange
12:30 – 13:00	Presentation from FAO
13:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Visit to SPGRC
	Reception
Friday, 14th September 2012: Meeting of the Project Task Force with FAO Country Officials	
Friday, 14th September 2012: Departure of Participants	
Saturday, 15th September 2012: Departure of FAO/ABCIC Delegates	

List of Participants

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