

## 26<sup>th</sup> Board Meeting Held in Lusaka

The 26<sup>th</sup> SPGRC Board meeting was held at SPGRC in Lusaka, Zambia on from 5<sup>th</sup> to 6<sup>th</sup> November 2009.



*SPGRC Board meeting participants*

In attendance were Board Members or representatives from 13 out of the 15 SADC Member States including Seychelles, represented by Mr A. Moustache, attending the Board for the first time after rejoining SADC. Mrs E Kanyeka attended to represent Tanzania following retirement from civil service of the Board Member Dr M. Msabaha. Mr A Chalabesa represented the Zambian Board Member, Dr S Muliokela who had other commitments. Ms M Mohloboli and Ms C do Vale respectively represented Lesotho and Mozambique whose substantive Board Member could not attend. Board Members from

DRC, Mauritius, South Africa could not attend.

The meeting was also attended by representatives from NordGen, Bioversity International, Millenium Seed Bank (East Africa) as well as a Consultant (Mr Max Thondolo) who presented findings of the consultancy of SPGRC sustainability study.

The Board meeting was officially opened by the Permanent Secretary in the Zambian Ministry of Agriculture and Cooperatives, Mr Banda.

The Board discussed among others, sustainability report, status of the

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### SPGRC/NPGRCs Technical Review and Planning Meeting

The annual SPGRC/NPGRCs technical review and planning meeting was held at Protea Hotel, Cairo Road in Lusaka, Zambia on 7<sup>th</sup> – 9<sup>th</sup> September 2009.

As traditionally organised, the objectives of the meeting were:

- To review the implementation of the technical activities for 2009/2010 cropping season;
- To evaluate the technical and budgetary plans for the 2010/2011 cropping season; and
- To facilitate information sharing on any other technical and networking issues.

It was attended by forty (40) participants from NPGRCs, SPGRC, NordGen, Sida, Global Crop Diversity Trust (The Trust).

The meeting was updated on the status of the preparations for the construction of Biotechnology Laboratory at SPGRC; SPGRC-SANBio Project: Review of National PGR Policies and Development of Regional PGR policy Guidelines; and on the regeneration project with funding from the Trust.

It also spent substantial amount of time discussing strategic issues regarding continuation and development of SPGRC and of regional network collaboration after cease of funding from Nordic development agencies after 2010. This culminated into suggesting sharing of responsibilities between SPGRC and NPGRCs, clearly defining roles of SPGRC in multilateral systems, and potential benefits to the network from global frameworks.

The meeting was updated on the connectivity status of NPGRCs and the stage the development of the web-based SDIS had reached, followed by a demonstration on the latter. Participants were also informed of the intention of SPGRC hosting database web server for SDIS within the region as opposed to hosting it in Sweden.



# Malawi Serves on the International Advisory Council of Global Seed Vault

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Global food security relies on availability of plant genetic resources which are currently threatened by a number of factors and if no immediate counteractions are taken, they will be lost forever. Several initiatives have been taken to ensure future availability of these resources to both farming and research communities. One such initiative is the establishment of the Global Seed Vault by the Norwegian Government and co-managed by the Global Diversity Trust. This facility is located in the Arctic region to take advantage of natural cold conditions.

The running of the Seed Vault is guided by global experts in the area of plant genetic resources. These experts form an International Advisory Council for the Seed Vault. This is a panel of experts from different organizations in the World. The SADC Plant Genetic Resources Network is privileged to have one of its network member serve on the council. Curator for Malawi Plant Genetic Resources Centre, nominated by the Norwegian Ministry of Agriculture and Food, serves on the council based on technical capacity as far as plant genetic resources is concerned.

The composition of the International Advisory Council is as follows:

- Executive Director of Global Crop Diversity Trust;
- Chairman of the Bureau of ITPGRFA;
- Director, Plant Production and Protection Division, FAO;
- Director General, Bioversity International;
- Head of Environmental Department, Governor of Svalbard;



*Some members of the Advisory Council at the entrance of the vault*

- Forage Diversity Project Leader, International Livestock Research Institute (ILRI);
- Executive Director, SEARICE (Southeast Asia Regional Initiatives for Community Empowerment);
- University of Life Sciences, Norway;
- Managing Director, Norgen; and
- Malawi Plant Genetic Resources Centre.



*One of the chambers of the Seed Vault*

Mr. Pungulani was appointed to the Advisory Council in February 2009 and has attended one meeting which was held in Svalbard, Norway on 25<sup>th</sup> February 2009. In addition to the meeting Mr. Pungulani participated in the one-year anniversary celebration held on 26-27 February 2009 in Svalbard. Inclusion of Malawi Plant Genetic Resources Centre is a clear manifestation of the long relationship that has been there between SADC region and Nordic Countries.

Mr Pungulani joined plant genetic resources profession in 2003 as a documentation officer. In



*A tube leading to the chambers*

the same year he participated in the short course in Sweden and proceeded to pursue his MSc in Plant Genetic Resources Conservation and Utilisation at the University of Birmingham where he passed with a distinction. In 2006 he was appointed as head of Malawi NPGRC. He has also served as a Task Force member for the Agrobiodiversity Policy in Malawi and member of the Crop Wild Relative Specialist Group of the IUCN. He is a member of the Taskforce for the development of a project on “Enhancing Capabilities of conservation and utilization of Plant Genetic resources in the SADC Region” through the NEPAD Office of Science and Technology. Mr Pungulani has led the drafting team of the country (Malawi) on the State of plant genetic resources 2008. He is the national focal point for establishment of National Information Sharing Mechanism for the plant genetic resources in Malawi; and chaired the 2009 National Agricultural Field Day for Chitedze Research Station.

### **Lawrent’s Message**

The task we have in the SADC region of conserving plant genetic resources will lead to more and important responsibilities in the world. Let’s take our roles seriously and make a name. Professionalism in our activities in the member states will put our region on the map.

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construction of biotechnology laboratory at SPGRC, and brief progress reports from NordGen, Bioversity, Millenium Seedbank Project. It was also presented with issues from the annual technical review and planning meeting, bridging the gaps between SPGRC and NPGRC collections. It financially discussed the audited financial statements as well as discussing and approving SPGRC workplans and budgets for financial year 2010/11. It was agreed that the next meeting should be held in Lusaka in the first week of September 2010.



*Board members taking break*

# THREATENED WILD EDIBLE ORCHIDS:

## A review of threats, economic contribution and initiatives for its conservation in Tanzania and Zambia

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### Introduction

The purpose of this review is to bring together the empirical evidence of genetic erosion of edible orchids in Tanzania and Zambia and the conservation initiatives now underway. The report describes edible orchids, and then gives an account



One of the orchid species

of evidence of the genetic erosion in each country. It also highlights the plant's contribution on food security for the poor. Then it goes over initiatives that have been, or, are applied for the conservation of the wild edible orchids.

### Wild edible orchids

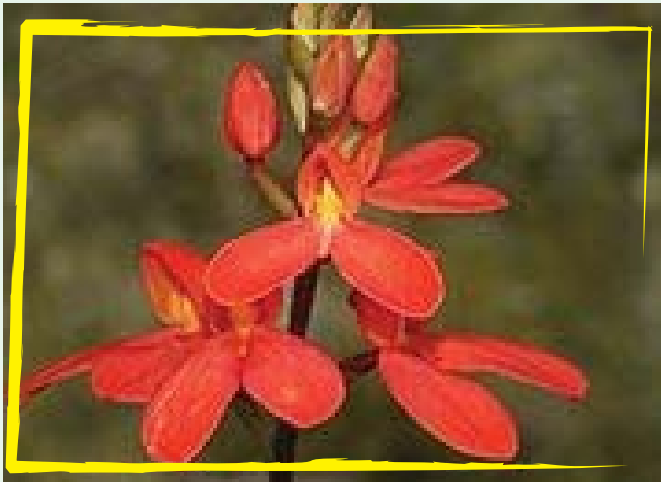
In Tanzania, the “edible orchids” are terrestrial species of the family Orchidaceae growing widely, particularly

in mountainous parts of the Southern Highlands of Tanzania where *Satyrium buchananii*, *S. atherstonei*, *Disa ochrostachya*, *D. Erubescens*, *D. Robusta*, and *Habenaria xanthoclora* have been recorded (Mapunda, 2007). However in Zambia, they are found in two environments, wet *dambos* along streams and dry upland in miombo woodlands (Mwila and Nxumalo, 2008). They have been eaten in the southern Africa region (Tanzania, Zambia and Malawi) for a long time where as a source of food is usually used in the preparation of a meatless sauce. They are widely known in Zambia as *chikanda* and *kikande* in Tanzania. The tubers are traded locally within the three countries. The business is being carried out in an unsustainable manner as a result threatening the future of the species and their associated biological diversity in the natural habitats (Davenport, 2002). Many reports conclude that orchids in Tanzania and Zambia are threatened to extinction if proper management strategies are not implemented.

### Major threat

Whilst all orchid species are in CITES (Convention on International Trade in Endangered Species) Appendix II, collectors [in Tanzania] are currently harvesting between 2.2 and 4.1 million tubers per year for export to, and consumption in, neighbouring Zambia. As many as 85 species may be at risk from this trade, and there is evidence that large areas in Ufipa, Mbeya and Kipengere in Tanzania have already been stripped of their orchids. A decline in traditional Tanzanian consumption of *kinaka* seems to be having little or no impact on harvesting volumes. Orchid collection across the Southern Highlands is now escalating at a rate that may be far from sustainable (Davenport, 2002).

Davenport point is that scant knowledge of the trade's existence between Tanzania and Zambia and subsequent lack of enforcement of CITES rules, has



*Disa orchid*

led to truckloads of uncertified plants entering Zambia each day. The WCS report documented how the region's orchids were being exploited by local people, who exported the plants into neighbouring Zambia, where they are eaten as a delicacy. The trade in the southern highlands of Tanzania has increased so fast for markets in the neighbouring countries (Zambia and Malawi). The lack of data on distribution, status and propagation methods has contributed to unavailability of effective conservation measures for the orchids (Hamisy, 2007). This led to unrecorded genetic erosion. The main factors that contribute to genetic erosion of the plant in the region are given below.

### Factors that cause genetic erosion

Various major factors that contribute to genetic erosion of edible orchids in Tanzania and Zambia are:

- **Land conversion for agriculture and forest plantations:** Among others, Hamisy (2007) reported that conversion of forest land and grassland areas into agricultural and forest plantations is the most common phenomenon in Tanzania displacing the orchids. Wild edible orchids grow better under natural forest environment but not plantation forestry.

- **Chitemene – practice:** Among others, Qhobela, (2008) reported that *chitemene* – a practice of clearing a small piece of forest land to create agricultural plot by burning trees to increase soil fertility had been practiced in several areas where they collected wild edible orchids in Serenje district in Zambia. The practice leads to conversion of habitats for orchid's survival.
- **Poor methods of harvesting the tubers:** Among others, Qhobela (2008) with his colleagues during a collecting expedition of edible orchids in Serenje district in Zambia in 2008 found that harvesters removed all tubers without leaving vegetative parts for regeneration, yet plant did not have seed to regenerate subjecting it to extinction.
- **Uncontrolled trade of orchids across the borders:** Among others, Davenport (2002) reported that harvesting in the highlands of Tanzania was between 2.2 and 4.1 million tubers per year for export to, and consumption in Zambia. An estimate of over 90% of harvested tubers in Tanzania transported across the border for market in Zambia. Davenport (2002) affirmed as many as 85 species may be at risk from this trade, and there is evidence that large areas in Tanzania have already been stripped of their orchids.

### Economic importance

There is no documented information on the volumes, of marketed orchids' tubers in Zambia. However, it is known that substantial quantities are exported from some areas in Central, Northern, and Luapula provinces to major urban centres on the Copperbelt and Lusaka provinces (Mwila and Nxumalo, 2008). 'The Rufford Small Grants Foundation' in 2007, on the development of conservation strategies for the wild edible orchid in Tanzania, reported that in Makete and Mbinga Districts in Tanzania:

- a sack of edible orchids sold for 250,000 – 300,000 Tanzanian shillings (equiv. US\$ 210-250);

- a sack of Irish potatoes sold for 40,000 – 50,000 Tanzanian shillings for the same volume (equiv. US\$ 33-40);

This report further stated that Irish potatoes were the major cash crop in the area.

A piece of *chikanda* about one to two standard match box size, prepared for snack bite sells for between K500 to K1000 (equiv. US\$ 0.1 – 0.2) by street vendors in Chelstone in Lusaka Zambia. The calculation showed that *chikanda* about the size of 3 normal slices of bread was sold for one US Dollar in Chelstone. Translating the calculation further revealed that the street vendor gets between \$4.5 and \$5 for *chikanda* of the same volume of a loaf of bread that cost about \$0.7 at Chelstone market. Without suggesting that one can replace the other, but for simple understanding by way of comparing volumes, the price of *chikanda* is 6 to 7 times higher than the price of bread of the same volume in Chelstone, Lusaka Zambia. It is hoped that this explains why about 90% of orchids harvested in Tanzania cross the border for the Zambian market. Indeed this is a serious challenge for conservationist.



*Disa equestris*

According to Mwila and Nxumalo (2008), *chikanda* prepared in traditional way has the following nutrient: Protein 8.8%, water 82.2% and 2.6 fat and ash. The harvesting activity of the plant has generated

important employment to some household members in the regions where harvesting is common. The WCS warned that the business is being carried out in an unsustainable manner as a result threatening the future of the species and their associated biological diversity in the natural habitats. In view of the above, different initiatives and strategies have been set up and in some cases implemented in each side of the border.

### Major initiatives and ongoing conservation strategies

A great stride in Zambia was the survey of edible orchids (*chikanda*) in Serenje, Mpika, Kasama and Mbala districts of Zambia in 2002, funded by the Pilot Environment Fund (PEF) of the Environment Support Programme (ESP), Ministry of Tourism, Environment and Natural Resources. Ng'uni and Chuba (2002) made three important recommendations: that, further surveys were needed, and collections of the plant to be carried out during flowering season; to conduct public awareness campaigns and encourage harvesters to replant the remainder of the vegetative material; and the need to put in place management strategies for the designated protected areas. Ng'uni and Chuba recommended that the strategies may be by government departments or Non-governmental Organisations.

In 2008, the Zambian National Plant Genetic Resources Centre in partnership with the Regional Plant Genetic Resources Centre (SPGRC) conducted a collection expedition of edible orchids in Serenje district in Zambia. The mission resulted in a collection of over 100 tubers and conserved them ex-situ in field genebank.

According to Davenport (2002), the New York based Wildlife Conservation Society persuaded the government of Tanzania to safeguard a unique area known for its diversity of orchids. The Tanzanian government in collaboration with its National Parks Board led the creation of the a 52 square mile park on the Kitulo Plateau, part

of Tanzania's Southern Highlands that was to be added to country's 12 existing national parks. The work of the WCS in Tanzania has been to inspire people to get involved in safeguarding wildlife as population and development close in on wild lands where orchids grow. Based on reports of the New York based WCS, Tanzania is a leader in protecting wildlife and wild lands. Nonetheless, the problem of genetic erosion through mainly consumption and trading in main urban towns of Zambia is real whereas, information available about local germplasm is limited (Ng'uni and Chuba, 2002).

A report on "Edible Orchids in Makete district, in the Southern Highlands of Tanzania: distribution, population and status", by Mapunda (2007) has recommendations for practical conservation of edible orchids.

## Conclusions:

The review concludes that the major factors causing genetic erosion of wild edible orchids in Tanzania and Zambia are: land conversion for agriculture and forest plantations; *Chitemene* practice (forest clearing for household cultivation); poor methods of harvesting the tubers; and, uncontrolled trade across the borders for lucrative markets in Zambia. Although much work still has to be done to ensure the sustainable harvesting is applied in Tanzania, there is a bigger challenge for Zambia where the high demand has to be supplied without causing loss to the remaining diversity and densities of the wild edible orchids.

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