SPGRC Network News

A Publication of the SADC Plant Genetic Resources Network

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Zambian Minister Visits SPGRC

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

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

Upon arrival at SPGRC, the Honourable Minister was welcomed by the Zambian SPGRC Board Member, Dr S. Muliokela

After a short briefing by the SPGRC Acting Director, Ms Thandie Lupupa, the Minister was shown around the administrative, finance and technical sections.

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Extra-Ordinary Board Meeting, Pretoria

The Extra-Ordinary Board meeting was held in Pretoria on 19-20 February 2007 to deliberate on among other things, the SPGRC Long-Term Sustainability Strategic Plan, discuss and approve Memoranda of Understanding: between SPGRC and Bioversity; and for Establishment of SPGRC. The Board also discussed the SPGRC Network Fifth Phase document.

After discussing the Long-Term Sustainability Strategic Plan document, the Board instructed SPGRC management to complete it by incorporating comments and recommendations by the end of February 2007 and electronically circulate it for clearance by the Board before it is presented to the Integrated Council of Ministers (ICM) in June 2007. It will then be forwarded to the SADC Council of Ministers in August this year.

Photo group of Board Members who met in Pretoria

Corrections and recommendations were made to the MoU for Establishing SPGRC and the Board asked SPGRC Management to make final editorial work on the document.

SPGRC Calendar of Events, 2007

23 June – 10 August 2007: *NGB Short Course on Plant Genetic Resources Management, Sweden.*

14 – 18 August 2007: *Series of SADC Meetings, climaxed by SADC Heads of States Summit on 18 August 2007, Lusaka, Zambia.*

3 -6 September 2007: *SPGRC/NPGRCs Annual Technical Review and Planning Meeting, Lusaka, Zambia*

05 - 07 November 2007: *SPGRC Board Meeting*

Extra-Ordinary Board Meeting,

The Extra-Ordinary Board meeting held in Rome on 15th June 2007 was attended by members from Angola (Chair), Lesotho, Malawi, Mauritius, Mozambique, Namibia, Swaziland, Tanzania, and Zimbabwe while observers (non-Board Members) from Zambia, Angola and Nordic GeneBank were also present.

This meeting was held during the Eleventh Session of the Commission on Genetic Resources for Food and Agriculture also held in Rome, Italy.

The SPGRC Project Consultant provided to the Board Members, the amended versions of the 5th Phase Project document, SPGRC and NPGRCs budgets reflecting amendments made by member countries.

At this meeting, the Consultant informed the Board that SPGRC Management had prepared and submitted a budget for the next six months that includes capital investment . It was also reminded that capital investment requests by NPGRCs for the 5th Phase will not be covered by donors unless if they are relevant to the achievements or attainment of the overall objective of reducing the backlog in duplicate accessions.

Considering that the document to be submitted to the donors must be as comprehensive as possible and of a good quality, the Board instructed completion of the documents first by sending compiled budgets, logframes to NPGRCs who should in turn, complete the logframes and amend any figures if necessary before resending to SPGRC for incorporation in final document that will then be approved by the Board.

Historical Signing of MoU between SPGRC-and Bioversity International

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

Dr Mlambo and Dr Baidu-Forson exchanged MoU documents after signing on behalf of SPGRC and Bioversity

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

Minister's Visit at SPGRC

He then proceeded to visit the farm where he saw by himself multiplication of accessions, arboretum with wild fruits and medicinal plants.

The Minister visited the field and in the photograph is seen admiring one of the conserved plants whose economic value is being assessed

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

The Honourable Minister, Mr Ben Kapita was impressed to learn that various seeds from the region are conserved to provide a base crop gene pool for current and future use in agricultural production

Following Ms Lupupa's note that not all SADC member states had ratified the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGRFA), the Minister promised to lobby for the remaining countries to sign it so that SADC as a region benefited from the Treaty. He commended efforts being done to ensure that all National Plant Genetic Resource Centres (NPGRCs) are being connected through the Internet so as to improve communications in the SPGRC network activities and functions. He finally appealed for maintenance of high standards at SPGRC to attract and convince donor and member states support to its work.

Workshops, Meetings, Seminars, Training

Formulation of the Phase II of the SSSN Project Workshop, 28-29 May 2007, Pretoria,

A workshop was held between 28th and 29th May 2007 in Pretoria, South Africa with the main objective was to finalise a project document for the Phase Two of the project. In line with that, a zero-draft document was presented to participants for improvement and which will be used for securing funding for the next three years of the project.

After presentation of the zero-draft document, a lengthy discussion followed noting the major concerns surrounding combination of certain outputs, addition of programme objectives and components.

During the group discussions, what was of interest to SPGRCwas, among other issues, the location of the proposed Seed Centre whereby Zambia, Malawi and South Africa were selected. It was agreed that the present Project Implementation Unit should initiate establishment of a Seed Centre starting 1st April 2008 and the staff recruitment be done in the first year of the second phase. The current staff should work with the new team for three months. All groups agreed to the establishment of the SADC Seed Centre and that it should initially be attached to an existing institution, preferably SPGRC since it is a regional institution.

Eleventh Regular Session of the CGRFA, Rome Italy, 11-15 June 2007

The session that was attended by the SPGRC Acting Director and several Board members was preceded by a day of regional consultations and one-day special event on the Commission's future Multi-Year Programme of work.

It reviewed ongoing programmes of work of the Commission that include Animal genetic resources for food and agriculture; Plant genetic resources for food and agriculture; and Draft code for conduct on biotechnology.

Other biodiversity-related matters under the mandate of the commission included Synergies and cooperation at the international level, Cooperation with international organisations and agreements, Consideration of FAO's policies, programmes and activities.

SPGRC Represented at SADC-AIMS Workshop, Pretoria

The Senior Programme Manager – Documentation & Information attended an Agricultural Information management System (AIMS) for SADC that was held between 27 and 28 March 2007 in Johannesburg, South Africa

The workshop whose main objective was to integrate and rationalise the various information systems within the FANR into an effective, efficient and coherent system in support of revitalising agricultural growth, enhancing food security and promoting rural development in the region; came up with deliberations that will foster establishment and development of AIMS.

Training Course on Data Analysis

Use of plant genetic resources in genebanks is laden with a number of factors, one of which is the availability of useful information associated with the conserved germplasm. SPGRC has been organizing workshops for NPGRC officers to get acquainted with analytical tools that will add value to germplasm. To pursue this, SPGRC, with support from NGB organized a special training workshop on Numerical Taxonomy System (NTSYSpc) statistical package that was held in Pretoria, South Africa from 12 to 16th February 2007. Two participants were drawn from each of the SADC member states except for DR Congo who did not attend.

After theoretical part of the data anlysis using NTSYSpc package, course participants had ample time to work hands-on in a specially set-up computer laboratory at Arcadia Hotel, Pretoria.

When opening the workshop, the South African Board member Dr Julian Jaftha, commended the project's aim of building capacity to NPGRCs in information management and analysis, which is expected to add value to the germplasm collections, and eventually lead to an increase in the use of conserved material.

SPGRC is grateful for the good work done by the local course resource person from the Zimbabwean Seed Services and former Curator of Zimbabwean NPGRC, Mr Claud Mujaju.

Induction Programme for New Staff Members

The three Senior Programme Managers for In-situ Conservation, Ex-situ Conservation, and Documentation & Information attended and Induction Programme in Gaborone, Botswana between 5 and 6 March 2007, that was prepared for all newly recruited Senior Programme Managers.

Management Development Training Programme

Mr Eddy K. Songa, the Receptionist/Typist at SPGRC attended a management development programme for executive assistants 1 (Basic) course run by the Eastern and Southern African Management Institute (ESAMI) held in Mbabane, Swaziland between 02 and 27 April 2007.

Review of Germplasm Multiplication Carried Out at SPGRC - Chalimbana Research Station in 2005/06 Rainy Season

By: Qhobela L.L, SPGRC

Abstract

The results of multiplication at Chalimbana research station to meet seed requirements for base collection have been positive. The success level has been determined by 570 (86%) accessions that were harvested at the end of the process, registered, sent for storage in the base, and, finally sending a total of 3437 foil packets of seed, for distribution in respective NPGRCs .

Introduction

The flow of germplasm material to SPGRC base collection has decreased over time resulting in increasing gap between numbers of seed accessions held in active and the base collections. SPGRC multiplied 726 seed accessions of five crops from three NPGRCS that conserved them in active collections but not duplicated in base collection. An evaluation was carried out to assess the extent of success of multiplication at Chalimbana research station, whose purpose was to reduce the gap between numbers of accessions conserved in active collections in NPGRCs and the base collection at SPGRC and identify areas for improvement in the future.

Materials and Methods

Accessions were acquired from Namibia, Tanzania and Zambia comprising of pearl millet, sorghum, groundnuts, beans and sesame crops. They were scrutinised upon receiving. Regeneration in any genebank is one of the most important steps to be carried out in the process of germplasm conservation (Castillo 1995) hence sesame and beans whose viabilities were initially low were regenerated alongside multiplication on plots with dimensions of 4 rows raised about 15cm, 3m long separated by 75cm between rows and 2m between plots. Planting took 3 weeks in December of 2005, dressing done after 6 weeks and supplementary irrigation applied during dry spell. Four workers were engaged to carry out activities as needed throughout the season. Post harvest handling and storage were completed by August.

Results and Discussion

Table 1. Data analysis of accessions before, during and after multiplication at Chalimbana research station in 2005/06

Crop	Issued packets	Accessions				Incorrect or missing data	Already registered	Mixed-up accessions
		Planted	Harvested	Not germinated	Registered			
Pearl Millet	2536	500	488 (98)	12 (2.4)	430 (88.1)	0	33 (6.6)	26 (3.6)
Groundnuts	162	35	30 (86)	5 (14)	26 (86.7)	4 (11)	0	0
Sorghum	566	106	96 (90.6)	10 (9.4)	71 (73)	21 (19.8)	5 (4.7)	0
Beans	89	39	30 (76)	9 (23)	29 (96.7)	1 (2.5)	0	0
Sesame	84	46	20 (44)	26 (56)	14 (70)	5 (11)	0	0
Total	3437	726	664	62	570	31	38	26
Percentage		100	91	9	86	4.3	5.6	3.6

SPGRC is bilding up its capacity to cope with the increasing load of support to NPGRCs' multiplication requests

In summary, from 726 accessions, 664 (91%) produced adequate seed for sharing between the active and the base collections. Beans and sesame were being regenerated alongside multiplication and largely contributed a large portion of 62 (9%) accessions that did not germinate at all. Some accessions were received from national genebanks with incorrect or missing some data, this was observed in all crops except pearl millet. When data was further studied, some accessions were duplicates of accessions that already existed in the base collection, this was particularly true for pearl millet and sorghum. Post harvest handling also posed a little problem that led to rejection of a few accessions. In summary, multiplication work resulted in 570 (86%) accessions registered and stored in the base collection, and finally distributing duplicate seeds in 3437 small foil packets back to respective NPGRCs for utilisation.

Recommendation/Conclusion

The multiplication process yielded positive results though it was not without problems. To avoid similar problems in future, new collections should be duplicated for base collection within the first two years of collecting and a thorough evaluation of register done to avoid repeating transfer of germplasm that is already stored in the base. Secondly, NPGRCs will have to ensure that before seed transfer, all data that should accompany an accession from active to base collection is included before the transfer is effected. Finally, post harvesting losses will be reduced by training workers. Over 86% (570) of accessions multiplied for base collection were conserved by August 2006.

Acknowledgements

The author extends special thanks to Mrs P. Ng'ono and Mr M. Mushinge for their invaluable technical support on this work.

References

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SPGRC 2006. Regeneration and Characterization Report, Lusaka, Zambia.

Prosperity of Plant Genetic Resources Cuddled by Stable Climate

By: Barnabas W. Kapange, SPGRC

Introduction

The Earth's climate change, previously due to natural causes is currently human-induced, posing serious threat to both society and the Earth's ecosystems. It is mainly influenced by excessive emissions of greenhouses.

What is Climate Change?

Gases including carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), chlorofluorocarbons (CFCs) used in air-conditioners and water vapour trap heat from the sun within the atmosphere ensuring that temperatures close to the Earth's surface are much warmer than they would otherwise be. However, by burning fossil fuels at increasing rates due to industrial use, releases huge amounts of greenhouse gases into the atmosphere, increasing concentrations of greenhouse gases that intensify the greenhouse effect by trapping more infrared energy in the atmosphere than it occurs naturally. The additional

Average global temperatures are projected to increase by 1.4 to 5.8 degrees Celsius over the next 100 years because of the enhanced greenhouse effect which cause glaciers and the polar ice caps to melt, causing sea levels to rise by between nine and 88 centimetres in the coming century and significant changes to patterns of rainfall.

Climate Change and Development

By their nature, the problems created by climate change affect all core economic activities in fields such as transport, energy, public health, agriculture and forestry. In addition, policies linked to both reducing greenhouse gases and adapting to the impacts of climate change are closely linked to broader development issues.

Global warming affects many different facets of life on Earth. Globally, the losses are expected to far outweigh the benefits and regions most severely affected are often the regions that emit the least greenhouse gases, one of the challenges that policy-makers face in finding fair international responses to the problem.

If most of the summit of the Africa's highest mountain (Mt Kilimanjaro) was covered by ice in 1912s (left), by 2000 (right photo) it had receded alarmingly

Climate Change on Agriculture and Food Security

Agriculture is absolutely dependent on weather and climate and therefore, for agricultural production to be sufficient to meet the demands of the ever-growing human population (expected to reach 10 thousand million in the 21st century), the impact of the climate must be understood and integrated in any future planning.

The composition of the gas mix in the atmosphere strongly affects the planet's temperature and the increase of greenhouses may have serious consequences for agriculture and, in particular, for food security particularly in developing countries, compounded with the already strained by increased demand and intensification of resource use, by the fast-growing human population and by an increase in per capita consumption of agricultural products.

Five main climate change related drivers: temperature, precipitation, sea level rise, atmospheric carbon dioxide content and incidence of extreme events, may affect the agriculture sector through reduction in crop yields and agriculture productivity, increased incidences of pest attacks, and limit availability of water. Other factors may include exacerbation of drought periods, reduced soil fertility, low livestock productivity and high production costs as well as the availability of human resources. This will affect the worldwide economy as emerging trade-partners are lost, hunger increases, and refugees leave regions harmed by global warming in search of food and resources.

Global Warming Effects on Plant Genetic Resources

Plant genetic resources (PGRs) highly contribute to taming hunger and in ensuring food security since it provides basic raw materials for making crops adaptable to: biotic/abiotic stresses, consumer preferences; and possible changes in the environment. They should therefore be ably managed particularly in the areas of ex-situ and in-situ conservation; on-farm community conservation and utilisation; monitoring and early warning of genetic erosion. Greater efforts must be exerted on development of techniques for sustainable advances in agricultural productivity as w on.

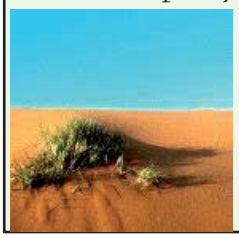
Searching for edible seeds among the desert-ridden dust

It has been noted that significant PGRs are still being lost despite massive awareness to resource users. According to the Consultative Group on International Agricultural Research study, wild relatives of plants such as the potato and the peanut are at risk of extinction due to climate change, threatening a valuable source of genes that boost the cultivated crops' resistance to pests and drought. The study cautions that most of those that remain would be confined to much smaller areas, further eroding their capacity to survive.

Modern molecular techniques enable genes transfer from one living organism to the other or to change the genetic material within to produce more desirable traits, what avails the enormous potential to help solve problems that have proved obdurate using conventional breeding approaches.

The Regional Impacts of Climate Change

Southern Africa is one of the regions pegged to be at risk from climate change that has enhanced desertification and a gradual decrease in forest cover. Impact levels are further amplified by such factors as widespread poverty, recurrent droughts, inequitable land distribution, and overdependence on rain-fed agriculture. Although adaptation options, including traditional coping strategies are available, they are limited by resources, and economic capacity to effect timely response actions.



As a result of rising temeperatures caused by global warming, in Botswana, Kalahari Desert is getting drier, leading to long-term decline in soil moisture, frequent droughts and strong winds for moving up destabilized dunes and vegetation thus affecting grazing. Dense and spatial distribution of the population increases pressure on resources including water influencing desert's dunes to spread.

SADC Regional Climate Change: 1991-1992

Large sections of the SADC region received scanty rainfall-20-75% of normal, experiencing worst drought of the century: central Zambia through central Malawi and Mozambique southward (seasonal deficits of as much as 80% of normal rainfall);

Abnormally high temperatures (47°C along the South Africa-Zimbabwe border) exacerbated the extreme dryness. Number of food-insecure households among farmers in Zimbabwe more than doubled;

Regional grain production fell 60% short of expected levels

Nutritional status affected by crop failure;

Level of the Kariba Dam, which supplies power to Zambia and Zimbabwe, fell below the level required to generate

The critical challenge in terms of climate change in Africa is the way that multiple stressors--such as the spread of HIV/AIDS, the effects of economic globalization, the privatization of resources, and conflict--converge with climate change. Several stressors reinforce each other that societies become vulnerable, and impacts of climate change can be particularly severe

Mitigation and Adaptation

Reducing Carbon Emissions

To prevent the effects of global warming all humankind activities must be streamlined towards reducing the amount of carbon dioxide and other greenhouse gases released into the atmosphere. The Kyoto Protocol, ratified by over 100 countries, seeks to limit the current amount of CO_2 emitted into the atmosphere to those of 1990 and efforts to enforce it are underway.

Improving Agricultural Systems

Substantial change to agricultural systems including investment in infrastructures as well as policy changes may contribute to the maintenance of climate. Major changes in cropping calendars, irrigation, and swapping of less adapted crop varieties with more adapted ones to the changed climate can contribute to mitigating and adapting to newly formed climate.

Adaptation to Global Warming

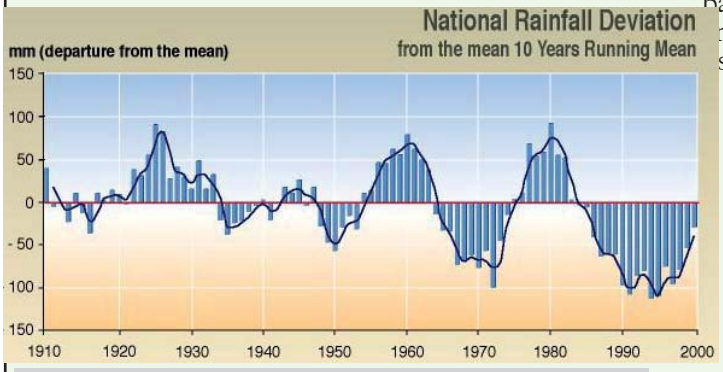
If today, CO_2 emissions into the atmosphere were totally halted, the amount already emitted atmospheric CO_2 will still augment greenhouse effect for the next 50 years. Besides stopping emissions, it therefore calls for adaptation to the effects of climate change which we have to live with even without emitting more gases. Adaptation strategies may include development of drought-tolerant crop varieties, introduction of irrigation systems to counter the drying land cover, etc. Protecting particularly vulnerable natural ecosystems that are a source of livelihoods and building of dams to protect communities from flooding are also adaptation strategies.

Policy Adjustments

Hundreds of scientists and government officials met in Bangkok in early 2007 to discuss strategies and liabilities for combating global climate changes. Del-

"...the time to act is now" because it takes so long to undo damage to the environment and the existing damage will continue to be discernible for long time to come.

Although critics profess that implementing changes to reduce greenhouse gases is too expensive, environmentalists say that the costs of doing nothing will be far higher and cumulate into more devastating economic repercussions resulted from droughts, floods, storms, heat waves and the rising sea levels. The delegates agreed the world can avoid the catastrophic consequences of global warming by drastically reducing its reliance on the burning of coal, oil and other fossil fuels that produce greenhouse gases.



Diurnal temperature range is decreasing, while deviations in

Sourcing Alternative Energy

An important characteristic of the southern African region with regard to energy resources is the existence of coal in the southern part (predominantly South Africa and Zimbabwe) and vast hydropower potential in the north (Zambia and DRC). Cooperation within SADC that will directly link to mitigating climate change would be pooling of electricity capacity with a view to minimizing CO_2 emissions.

Power trading is already taking place within the Southern African Power Pool and power is being exchanged between the utilities of the region even though its motivation is not to minimize CO_2 emissions. This power pool is fully justifiable in terms of security of supply and economic considerations. The addition of CO_2 emission minimization would provide a further argument for such cooperation, and its possible extension.

Challenges Ahead

Recent droughts in the early 1990s focused attention in the region on the management of natural resources under conditions of extreme climate variability. The prospect of accelerated global warming, and associated regional changes in climate, reinforces the need for SADC also to consider the longer-term constraints that future climate may place on development of the region.

Estimates of global human population are projected to reach 10 billion by the year 2050. Undoubtedly, this will present a daunting challenge to scientists engaged in improving food production technology as well as to those reviewing policies for food production and distribution. However, the global food supplies are becoming increasingly dependent on a small number of species as many plant and animal species have become extinct.

It is encouraging to note that small-scale farmers and herders continue to protect and increase the world's stock of genetic resources as they have been making important contribution to food security with women also playing a fundamental role in farming, particularly in the developing world, where they are responsible for the conservation and use of plant genetic resources. Global organisations such as FAO are helping to strengthen the capacity of developing countries to preserve agricultural biodiversity and maintain comprehensive gene banks (though Global Crop Diversity Trust) that will nsure availability of gene pools for current and future se.

Concluding Remarks

SADC has a number of priority areas of envi ronmental policy which include: sustainable water supply and quality; reversing desertifica tion; combating coastal erosion and pollution; ensuring sustainable industrial development. It also addresses efficient use of ener gy resources; maintenance of forests and wildlife resources; as well as managing demo graphic change and en suring adequate food security.

People of the region should make the best use of climate as a resource for agriculture by enhancing the capabilities of agriculturalists, agribusiness and organisations to respond to climatic variations and climate change. Specific objectives would be to promote sustainable agricultural development in Africa; to reduce vulnerability to, and increase the capacity to respond to, climatic hazards; and to adapt to new climatic resources as they materialise.

Further Readings

Africa: Agriculture Climate Welcome to Climate Change and Agriculture in Africa http://www.ceepa.co.za/Climate_Change/index.html ‹‹Accessed 4th July 2007››.

Fajer, E.D. and Bazzaz, F.A. 1992. Is carbon dioxide a 'good' greenhouse gas? Effects of increasing carbon dioxide on ecological systems. Global Environmental Change: Human and Policy Dimensions 2: 301-310.

Global warming to produce famine and poverty in Africa http://www.afrol.com/Categories/Environment/env056_warming_poverty.htm. ‹‹Accessed 3rd July 2007››

Maintaining a diversity of crops and varieties is a key to survival for millions of farmers living on impoverished land http://www.unesco.org/courier/2000_05/uk/doss23.htm

The Regional Impacts of Climate Change: Regional Vulnerability to Global Climate Change Africa.http://www.grida.no/climate/ipcc/regional/507.htm

Rosenzweig, C. and Parry, M.L. 1994. Potential impact of climate change on food supply. Nature 367: 133-138.

Ruttan, W. (ed.). 1994. Agriculture, Environment, Climate

Useful PGR-Related Online Resources

1. Online Guide for Identifying Fruits and Seeds http://nt.ars-grin.gov/sbmlweb/OnlineResources/frsdfam/index.cfm

2. Economic Literature on Crop/Livestock Genetic Resources. The Genetic Resources accessible from http://www.ifpri.org/pubs/sgrp/index.asp.

3. Weblog for Agricultural Biodiversity (http://agro.biodiver.se/about/). A one-place collection of information that is related to agricultural biodiversity.

4. Access to Global Online Research in Agriculture (AGORA). The AGORA (http://www.aginternetwork.org) provides digital library collection in the fields of food, agriculture, environmental science and related social sciences.

Proposed Multiplications 2007/08-2008/09

LL Qhobela

The rising gap between the numbers of accessions held in the active and the base collections led SPGRC and the network to convene a one day Curators' meeting in Pretoria - South Africa in February 2007 to determine the scale of the problem in the region, find ways of dealing with the existing multiplication backlog, and, develop a sustainable strategy that the network would adopt in order to ensure that multiplication backlogs are avoided in the future

Results of the Meeting

All member states except the DRC were represented at the meeting and participants recognised the following factors to be influencing discrepancy: national priority species that are not in mandate list of SPGRC; vegetatively-propagated accessions that are not conserved at SPGRC; breeders' material which is not to be stored in the base collection; and seed accessions that were in mandate list of SPGRC, present in active collections but not yet distributed to the base collection. The analysis found that about 25% of seed accessions were not represented in the base collection.

Multiplication plan for 2007/8 to 2008/9

SPGRC will assist in multiplying samples for four countries. One country will receive freezers. Another country will outsource services from a private organisation. Gaps were not significant in the other countries.

National Plant Genetic Resource Centres' Contacts

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