SADC PLANT GENETIC RESOURCES CENTRE - ITS ROLE AND ACHIEVEMENTS IN PLANT GENETIC RESOURCES MANAGEMENT*

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A SUMMARY

The SADC Plant Genetic Resources Centre (SPGRC) is a non-profit making Southern Africa Development Community (SADC) institution whose objectives are to conserve and guarantee safe conservation of crop and wild plant genetic resources; document the plant genetic resources of the region to ensure their efficient and sustainable use and provide a forum for exchange of scientific as well as cultural, traditional and indigenous knowledge and experiences; to train personnel in plant genetic resources management and co-ordinate plant genetic resources activities in the SADC region. The SADC region comprises 14 countries (Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe).

SPGRC was established in 1989 at Chalimbana Research Station near Lusaka in Zambia. The centre was set up as a network activity to promote and co-ordinate a regional network of plant genetic resources management through the National Plant Genetic Resources Centres (NPGRCs). The activities of the network are the collection, conservation, documentation, evaluation and utilisation of regional plant germplasm and thereby contribute to raising the standard of living and welfare of people in the region. The base collections for long-term storage for Member States are maintained at SPGRC whereas NPGRCs maintain the active collections for short-term storage for immediate use in crop improvement programmes.

B STAKEHOLDERS

The beneficiaries of SPGRC are the NPGRCs, NARs and other research institutions, universities, farming communities, NGOs and IARCs. Partners in research are SACCAR, Nordic Gene Bank and institutions of the CGIAR such as IPGRI, CIMMYT, IRRI, ICRAF ICRISAT, and IITA and United Nations agencies such as FAO and UNEP.

The project is to be funded over a 20-year period by the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) and the SADC Member States. During the first 5 years SPGRC was fully funded by the Nordic Countries. From year 6 the SADC member states took over the element of funding so that will have assumed full financial responsibility by the end of the project in 2008.

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Figure 1. Simplified Organisational set-up between Nordic and Southern African Development Community (SADC) Countries.
C PROJECT RESULTS AND IMPACT

1. Main Results.

a) Technological Packages

i) Recommendations adopted during SPGRC/NPGRCs annual technical planning meetings regarding better handling of germplasm by NPGRCs of 12 member countries and by SPGRC.

Examples: regeneration in pearl millet which is highly cross-pollinated; managing of pests and disease during handling, field production and transfer of germplasm; hand pollination of cucurbits during regeneration and seed multiplication.

ii) Well-maintained germplasm for use in plant breeding and research throughout the SADC region.

iii) Well-documented standardised information system adopted by all NPGRCs in the member states. The SPGRC Documentation and Information System (SDIS) has been developed at SPGRC with an input from the NPGRCs. It has now been installed at all NPGRCs in the member countries.

iv) Standard equipment necessary for germplasm management has been purchased for all the NPGRCs. These include four wheel drive vehicles for inventory, survey and collecting, freezers, seed dryers and moisture analysers.

b) Socio-economic results

i) SPGRC co-ordinates and supports the SADC member countries in policy development on issues such as Farmers’ Rights, Breeder’s Rights, Community/Collective Rights, Intellectual Property Rights, effective *sui generis* protection systems, African Model Legislation and on-farm conservation, which have a bearing on the socio-economic well being of rural populations.

ii) SPGRC has promoted debate on issues of access to genetic resources, bio-safety and equitable benefit sharing in financial and other benefits from commercial exploitation programmes by the rural custodians of these resources.

iii) Guaranteed availability of germplasm for now and the future contributes to availability of plant varieties to suit different generations of humans and environments.

iv) SPGRC is promoting collection and documentation of indigenous and traditional knowledge, innovations and practices of local and indigenous communities that are relevant to the conservation and sustainable use of plant genetic resources. This knowledge is of tremendous value but is being lost rapidly.
v) SPGRC has facilitated discussion of the International Undertaking (IU) and Trade-Related Aspects of Intellectual Property Rights (TRIPS) so that SADC Member States appreciate the obligations and implications of these instruments.

c) Environmental improvements

i) SPGRC promotes conservation of some plant species germplasm in situ. This in many cases implies allowing plant populations to thrive in protected areas and thereby contribute to the maintenance of the environment.

ii) Awareness on the importance of some wild species as crop relatives growing in the wild may help to conserve the environment as a whole.

2. Dissemination of the Results

SPGRC organises workshops and meetings for all stakeholders. Information about the importance of SPGRC and the steps being taken to prevent the loss of plant genetic resources is disseminated this way. SPGRC also produces annual reports, brochures, newsletter and other publications.

3. Impact of the Project.

The major impact of the project has been the awareness created throughout SADC on the importance and the need to conserve plant genetic resources not just for immediate use but for future generations.

Training of personnel to manage the plant genetic resources of the SADC countries is a major impact. All the NPGRCs are manned by staff who have been trained in plant genetic resources at MSc degree level and have undergone several practical short courses.

The SADC region is now actively participating at international fora on discussions of the FAOs' undertaking on plant genetic resources and various issues arising out of the Convention on Biological Diversity all as a consequent of the SPGRC initiative.

D PARTNERSHIPS IN PLANT GENETIC RESOURCES

1 Role of the Stakeholders

The Board made up of 12 members representing each SADC Member State governs the SPGRC. The functions of the Board of SPGRC are spelt out in the memorandum of understanding establishing SPGRC. The Board essentially formulates and reviews the overall policy and strategy of SPGRC. It considers management, administrative and financial matters and recommends for approval to the SADC Council of Ministers. Besides these, the Board now represents the SADC Member States at the FAO Commission on Plant Genetic Resources for Food and Agriculture and the Conference of the Parties to the Convention on Biological Diversity on issues relating to agrobiodiversity. The participation of the SPGRC Board members at the various FAO and CBD fora attests for the commitment of the SADC Member States to SPGRC and the conservation of plant genetic resources.
SACCAR is the implementing agency on behalf of SADC. The role of SACCAR was very important especially during the first four years of the project. It facilitated negotiations of agreements between Sida and SADC and SADC and Zambia. It carried out recruitment of regional staff for SPGRC and prepared the Memorandum of Understanding Establishing SPGRC. The formal reporting to SADC Council of Ministers is done through SACCAR.

The Swedish International Development Co-operation Agency (Sida) is co-ordinator of the donors and the Nordic Gene Bank (NGB) is the executing agency whose role is that of a backstopping institution in managerial, administrative and technical aspects of running the SPGRC network. The support is aimed at ensuring that the professional quality of SPGRC is built up and maintained at the intended level. The Nordic Gene Bank has successfully assisted in the establishment of the SPGRC network, development of SPGRC and national plant genetic resources programmes, training SPGRC and NPGRC staff in plant genetic resources as well as the establishment of the SPGRC Documentation and Information System (SDIS) among others.

The SADC Member States have continued to contribute to the project both in cash and in kind by way of salaries for NPGRC staff, operation and buildings. The Member States have also put in place the National Plant Genetic Resources Committees who actually provide the leadership to the NPGRCs. The chairperson of each NPGRC is a member of the board of the SPGRC.

The NPGRC activities are co-ordinated by NPGRC Committees to ensure that the PGR activities are conducted according to the agreed national priorities as well as to ensure efficient and effective utilisation of the plant genetic resources.

The SPGRC programme recognises the comparative advantage of the NPGRCs for organising exploration and collecting expeditions in their countries. The NPGRCs have comparative advantage for multiplying, rejuvenating, characterising and evaluating germplasm in environments, which are similar to the original collection sites. Active collections are also held by NPGRCs to ensure that national plant breeding and research activities are directly attended to. The NPGRCs also handle in situ/on-farm conservation in their countries in collaboration with SPGRC.

The need for the establishment of the SPGRC network by the SADC Member States came in response to the realisation of the need for the region to collect and conserve its rich heritage of plant germplasm and to join the world wide effort for the maintenance of valuable plant genetic resources, their characterisation, documentation and utilisation. Because of scarce financial resources, SPGRC has to identify those areas in which it will be able to make substantial contribution. This led to the formation of Regional Crop Working Groups (RCWGs) whose major task is to advise on the needs and priorities of genetic resources collection, maintenance, documentation and utilisation of the indigenous, adapted and endemic plant species of the SADC region. Apart from the Cereals and Food Legumes and Forage and Fodder Regional Crop Working Groups, the following RCWGs are still in existence:

a) In situ and Under-utilised Plants regional Crop Working Group
b) Vegetables Regional Crop working Group
c) Vegetatively Propagated Species Regional Crop Working Group
d) Tree Fruits and Tree Nuts Regional Crop Working Group Meeting
e) Oilseed and Industrial Crop Working Group
International Agricultural Research Centres (ICRISAT, IRRI, CIMMYT, ITTA, ILRI, ICRAF, CIAT and IPGRI) also participate in the SPGRC Network largely through SPGRC and the RCWG meetings but sometimes they participate in the network directly through the NPGRCs. The International Rice Research Institute has been involved in wild rice collections missions in the region. SPGRC has collaborated with ICRISAT in the multiplication of sorghum samples while a number of publications from IPGRI have been of great value to SPGRC.

The Convention on Biological Diversity (CBD) clearly calls for the participation of Non-Governmental Organisations (NGO), local communities, indigenous people, traditional leaders, traditional healers and women in the conservation and sustainable use of biodiversity. NPGRCs have started to incorporate NGOs and traditional healers who are working on plant genetic resources into their NPGRC committees and National Crop Working Groups (NCWGs). The lack of social scientists in some NARs benefits from the NGOs especially in the area of on-farm conservation.

2 Added Value of the Partnership

Training plant genetic resources personnel in SADC has been one of the major achievements made so far. Whereas there were only three trained staff knowledgeable on plant genetic resources activities at the beginning of the project, by 1999 there were 34 staff trained up to MSc degree level and 118 staff trained up to certificate level. These trained personnel now man the NPGRCs in the SADC Member States and some are recruited to fill regional posts at SPGRC.

SPGRC has been instrumental in fostering the need for protection and promotion of biological resources in the SADC region. A task force set up by SPGRC has produced a draft African Model Legislation for Recognition and Protection of Rights of Local Communities, Farmers and Breeders and the Regulation of Access to Biological Resources. This draft has been adopted by SADC and the OAU as a guide for developing policies, regulations and laws for protecting Africa's biodiversity. The policies, regulations and laws are necessary for achieving the objectives of the Convention on Biological Diversity.

National Plant Genetic Resources workshops to create awareness on the need to conserve plant genetic resources in the region have been held in almost all the SADC Member States. SPGRC Board members have participated in all negotiations of the revision of the FAO International Undertaking on Plant genetic Resources to bring it into harmony with CBD. Information has also been disseminated through newsletters, posters, leaflets and calendars.

E CONCLUSION

The SADC Plant Genetic Resources Centre is the co-ordinating hub of the SADC Regional Network and plays an essential role as a plant genetic resources centre for food security of the entire SADC region. The institution has been established as a centre of excellence with an entirely regional cadre of highly trained and qualified staff enabling it to become an international genebank within the Global System of Genetic Resources Centres. The institution has extended capacity building, which has led to-date in the training of at least two post-graduate specialists in plant genetic resources, conservation in every Member State.