Editorial

Collaboration on Plant Genetic Resources in the Pacific

There are two strong arguments for increased collaboration among the Pacific countries for conserving and using plant genetic resources: i) No country possesses sufficient PGR within its borders to meet all its present and future needs, and ii) Species of plants do not restrict to country borders; centres of diversity of plants are often spread across the entire region.

Thus, collaborative efforts both to conserve and to sustainably use and benefit from plant genetic resources are essential.

Even though regional PGR networks have been set up in other parts of Asia, for example RECSEA-PGR in South East Asia, EA-PGR in East Asia and SAN-PGR in South Asia, no regional network has yet been established to strengthen the conservation and utilization of genetic resources in the Pacific. As a result of a meeting held in Lae, Papua New Guinea, March 30-31 1999, organized by the Australian Centre for International Agricultural Research (ACIAR) and the National Agricultural Research Institute (NARI), a recommendation was made to prepare a proposal for establishing regional collaboration on PGR in the region.

The meeting highlighted several strong reasons as to why regional collaboration in the Pacific is justified.

- Agriculture in Melanesian Pacific countries is very old. This part of the Pacific has been a Centre of domestication of many asexually propagated and perennial crops as well as a Centre of Diversity of more recently introduced crops. From the Melanesian Centre, limited diversity of many of these crops, often in the form of clones, were carried eastward to Polynesia and Micronesia. In the different islands across the Pacific, unique diversity has subsequently evolved.
- The traditional crops of the Pacific, including taro, coconut, kava, bananas, yams, sugarcane, breadfruit, fruits and nuts, leafy vegetables and medicinal plants, have formed the basis of food security and traditional culture among the people of the Pacific. The diversity of these crops is now being eroded due to changes in life style, recent introductions of crops from other regions, and genetic vulnerability in the traditional crops. Recently, a blight epidemic destroyed 90 per cent of Samoa’s taro which, up to then, had been the major food and export crop of that country. Thus, exchange and improvement of the crop diversity across the Pacific could enhance and sustain production and resistance in these traditional crops.
- Conserving the diversity of the Pacific’s crops is difficult, risky and expensive because most crops are

About the Newsletter

The International Plant Genetic Resources Institute (IPGRI), formerly IBPGR, is one of the 16 Centres of the Consultative Group on International Agricultural Research (CGIAR) with its Headquarters at Rome. IPGRI’s mission is to encourage, support and engage in activities to strengthen the conservation and use of plant genetic resources world-wide with special emphasis on the needs of developing countries. IPGRI works in partnership with other organizations, undertakes research and training, and provides scientific and technical advice and information. IPGRI operates in five geographical areas: Sub-Saharan Africa (SSA), the Americas, Europe, Central and West Asia and North Africa (CWANA), and Asia, the Pacific and Oceania (APO). APO Regional Office is based in Serdang, Malaysia with offices for East Asia and South Asia located in Beijing, China and New Delhi, India, respectively.

The APO Newsletter is produced thrice a year and is mainly aimed at promoting overall concern on plant genetic resources, with emphasis on their conservation and use. [See box on p.3]
vegetatively propagated or possess recalcitrant seeds. Conservation of this diversity has been mainly in field genebanks in Papua New Guinea and the Solomon Islands. It is important that mechanisms for sharing both conservation costs as well as benefits from exchange and improvements from these crops are developed and shared across the Pacific.

- Pacific Countries are isolated, and poorly equipped to mount conservation and improvement programmes on their own. In addition, Pacific Countries have not yet considered policies for access and benefit sharing of their PGR. As a result, there has been concern following the patenting by groups outside the Pacific of some of the unique traits found in traditional crops, such as kava. Common policies among the Pacific Countries could strengthen their ability to benefit from their own PGR.

- The recommendation for a proposal for regional collaboration in the Pacific culminated in a series of earlier consultation meetings. These were convened in connection with the preparatory and implementation activities under the Global Plan of Action and IPGRI for PGR with FAO in 1995, 1996 and 1998. An Intellectual Property Rights Working Group Meeting held in Fiji in May 1997, also produced specific recommendations for regional collaboration.

The most recent meeting in PNG addressed a number of important issues that need to be considered in developing collaborative arrangements including:

- A variety of conservation methods may need to be considered to adequately conserve and use crop diversity in the Pacific. In addition to field genebanks, breeders’ collections, seeds, cryopreservation, tissue culture collections, in situ and on-farm conservation should be considered as complementary conservation methods. Different methods will be found to be most suitable depending on use, location and breeding system of the genepool or crop in question.

- Methods for assessing costs of conservation can be used to make conservation more cost effective, and to compare costs of different conservation methods.

- A tissue culture collection of the diversity of many of the Pacific’s crops has been assembled at the Secretariat of the Pacific Community (SPC) in Fiji. Agreement is now needed on the status of this collection, and conditions under which collections are exchanged.

- Several programmes and networks are operating in the Pacific on different crops which include coconut (COGENT), taro (TaroGen and TANSAO), forest species (SPRIG) and yam (SPYN). Such networks could benefit by inclusion within the umbrella of regional cooperation on PGR. It was suggested that kava and breadfruit are priority traditional crops for inclusion in such networks in the future.

- Rich knowledge of crop diversity among people in local communities was reported; for example, for yams and taro in Vanuatu and for coconuts in Fiji. Evidence that farmers continue to appreciate and maintain crop diversity, helps strengthen effective in situ or on-farm conservation activities which can complement ex situ conservation methods and may provide less expensive alternatives, where improvement and conservation can be combined. Increased understanding as to how in situ conservation activities can be undertaken in Pacific Countries is needed.

- Documenting existing collections held in the Pacific Countries, and describing their unique traits was considered a high priority. Such documentation can assist not only to use and benefit from this germplasm effectively, but also to prevent inappropriate forms of IPR taking out these accesses.

The meeting concluded that a mechanism for regional collaboration must be developed, and three delegates from the region were charged with the task of preparing a proposal.

IPGRI’s Role

IPGRI has supported a number of activities in the Pacific, which can lead to enhanced collaboration on PGR. These include: support for COGENT networking and activities; supporting a national PGR workshop in PNG in 1997; supporting and participation in the Working Group Meeting on Intellectual Property Rights held in Fiji in 1997; assisting to compile the Pacific Country Reports related to the Global Plan of Action; funding the consultancy report which resulted in the TaroGen project, providing technical advice on documentation and collecting of taro in this project, and finally, participating in the SPRIG project meetings. IPGRI has also prepared proposals for funding for enhancing documentation and strengthening conservation and use of PGR in the Pacific which are presently under consideration. Much of the above activities have been carried out in collaboration with the Secretariat of the Pacific Community, which has proved to be an effective focal point for much of IPGRI’s support in the Pacific. In the future, IPGRI stands ready to strongly support further efforts on regional collaboration in the Pacific.

[Ken Riley, IPGRI-APO, Serdang, Malaysia].

Regional

IPGRI Assists Networking on Taro in Southeast Asia and Oceania

The Second TANSAO (Taro Network for Southeast Asia and Oceania) Annual Meeting was organised by CIRAD and Department of Agriculture on 9-10 March 1999 at Phichit Horticultural Research Centre, Phichit, Thailand. TANSAO was officially launched on 1 January 1998 and it is funded through a grant received from the European Union DGXII-INCO Programme. Dr. Vincent Lebot of CIRAD
is the Coordinator of this project. IPGRI has helped in the development of the project proposal during 1996-97 and is providing some scientific and technical back up to the project. On the invitation of TANSAO, IPGRI participated in the Phichit Meeting, where the progress of the first year of the project was presented and discussed. The results included analysis of existing data on taro germplasm present in Indonesia, Malaysia, the Philippines, Thailand, Papua New Guinea and Vietnam (the participating SEA&O countries). The needs for supplementary surveys and gap-filling germplasm collecting were identified and collecting has largely been completed. A total of 2021 collections (including the existing collections) have been assembled by the five countries, from which a "core sample" of elite material from each country will be identified and conserved in vitro and exchanged among the participating countries. Morpho-agronomic characterization was done using a list of standardised descriptors agreed by consensus by the partners (a condensed version of IPGRI descriptors). The information is being databased, using EXCEL. A regional database, including the standardised descriptors is nearing completion. Two Indonesian scientists from Lembaga Ilmu Pengetahun Indonesia (LIPI), Bogor were trained in the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD) Labs in France on isozymes and molecular markers. Each country has sent samples to Bogor and isozyme analysis for 6 enzyme systems is in progress. Results so far indicate (based onzymotypes) that the diversity is the highest in PNG (67) followed by Indonesia (50), Thailand (40), Vietnam (17), the Philippines (10) and Malaysia (8). Preliminary screening of taro germplasm using AFLPs was conducted by Wageningen University (WAU), Netherlands. Further development of the AFLP technique for DNA fingerprinting of accessions using 45 selected, wild and cultivated genotypes is in progress. Phytophthora colocasiae isolates were collected in each participating country and sent to CIRAD for isozyme fingerprinting. [V. Ramanatha Rao, IPGRI-APO, Serdang, Malaysia].

**IJO Activities on Varietal Improvement of Jute and Kenaf**

The International Jute Organization (IJO) Project on "Varietal Improvement of Jute and Kenaf" was undertaken in two phases over a period of 31 months, ended on 30 June 1998. The objective of this project was to develop new improved varieties and breeding materials by using the available germplasm collected under IJO’s earlier ‘Germplasm’ project through the efforts of nodal institutes in the following jute producing countries: Bangladesh, China, Indonesia, Nepal, and Thailand.

The project helped the participating countries in research and development of Jute and Allied Fibre (JAF) crops, enrichment of improved breeding materials and research facilities, and strengthening of manpower, through the financial support, physical materials, and technical assistance provided by IJO. A number of new varieties and improved breeding materials have been developed, either through direct selection or hybridization using germplasm assembled at IJO. In a few countries, some new varieties have been released to replace the older varieties and are now being cultivated over a large area by JAF farmers.

Several varieties of jute and allied fibres with high yield and other superior traits have been developed which have been

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**APO Newsletter**

It provides information on PGR activities carried out by national programmes and other centres in the region. Information is also periodically abstracted from recent literature (books, periodicals etc.), and brief research contributions published. With over 2500 addressees on its mailing list, the APO newsletter is widely distributed to focus on IPGRI's mandate to advance the conservation and use of plant genetic resources for the benefit of present and future generations.