



APAARI

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EDITORIAL

APAARI's five year perspective plan developed in 1995 highlighted its strategies and action plan focussing on regional collaboration, networking, policy advocacy, human resource development, resource regeneration and publication enhancement. Realizing the potential of this region and the problems it faces to meet challenges of food security and poverty alleviation in particular; ARD scenario in National and Regional perspective, heterogeneity among NARS and their organizational and management needs, R&D priorities of the IARC's and research networks vis-à-vis NARS; it was felt that APAARI may look at its role critically to develop a future perspective harmonizing with the regional needs.

To undertake this task, the Executive Committee of APAARI initiated the preparation of "APAARI Vision 2025" document early this year. This document was revised at a brainstorming meeting organized by APAARI in New Delhi during 23-24 August 1999 and further discussed at the Expert Consultation on APAARI Vision 2025, held along with Fifth Executive Committee meeting from 29 November – 1 December 1999, at FAO Regional Office for Asia and the Pacific in Bangkok.

Over forty participants representing 13 NARS and 7 IARC's and several regional networks critically evaluated the Vision document. Increased concern was expressed on the following:

- Natural Resource Management; Sustainable Use of Bio-resources; Exploitation of Underutilized Diversity;
- Greater emphasis on R&D in forestry and fisheries sectors;
- Stress on new sciences such as Biotechnology, Geographical Information Systems (GIS), Information and Communication Technology (ICT), Remote Sensing, etc.;
- Increased emphasis on the role of diverse stakeholders involving the public sector, NGO's and the private sector;
- Stress on public awareness to promote information dissemination, technology transfer and community participation thus contributing to rural development;
- Human Resource Development (HRD) addressing needs of NARS in research management, policy issues, biotechnology, enhancing publications and incorporating Information Technology.
- Promoting NARS-NARS/IARC's/Networks partnerships for agricultural development, and in establishment of an Asia-Pacific Regional Agricultural Information System (APRAIS).

Based on proposed vision document, APAARI intends to develop an action plan, both on short-term and long-term basis, to meet NARS' future expectations rather more effectively.

Editors

EXPERT CONSULTATION ON APAARI VISION 2025 AND FIFTH EXECUTIVE COMMITTEE MEETING OF APAARI

29 November – 1 December 1999, FAO RAP, Bangkok

The Expert Consultation on APAARI Vision 2025 and the Fifth Executive Committee Meeting of APAARI was held at the FAO Regional Office for Asia and the Pacific (FAO RAP), Bangkok, Thailand. The meeting was inaugurated by Dr Prem Nath, Assistant Director General and Regional Representative, FAO RAP. In their welcome speeches, Dr Ian Bevege, Chairman, APAARI and Dr R.S. Paroda, Executive Secretary, APAARI, highlighted the role of APAARI as an apolitical and neutral regional forum, to promote and coordinate agricultural research and development activities focussing on needs of the national programmes in the Asia-Pacific region where food security and poverty alleviation assumes highest concern. Dr Prem Nath appreciated the role APAARI is playing in this context and stressed on inter-institutional linkages and pointed to the collaboration of FAO RAP in APAARI's activities. The occasion was marked by the release of some recent APAARI publications by the Chief Guest, namely two success stories "Oilseeds in India" and "Integrated Pest Management in Rice in Indonesia" and the book on "National Agricultural Research Systems in the Asia-Pacific Region".

About 40 participants attended the meeting. They represented APAARI member countries, namely Iran, India, Pakistan, Bangladesh, Nepal, Sri Lanka, Malaysia, Philippines, Thailand, Republic of Korea, Japan, Australia and Western Samoa. APAARI associate members were represented from the International Research Centres of the Consultative Group on International Agricultural Research (CGIAR), namely, IRRI, CIMMYT, ISNAR, ICRISAT, IPGRI, ICLARM and ILRI; research networks such as NACA, INIBAP and other organizations namely ACIAR, CABI and GFAR.

EXPERT CONSULTATION

The deliberations of the Expert Consultation were conducted in four technical sessions. Session I with Dr Stein Bie as Facilitator, dealt with 'Future Agricultural Research and Development, Needs and Research Prioritization in the National Agricultural Research Systems'. Sessions II and III with Dr Ian Bevege as Facilitator discussed 'Strengthening of APAARI to meet emerging challenges' and 'Future research directions, development and management'.

Session IV with Drs Alain Derevier and Christian Hoste as Facilitators, related to APAARI activities/collaboration with the Global Forum on Agricultural Research, also focussing on GFAR-2000 meeting being held at Dresden, Germany.

Session I: A key presentation on APAARI Vision 2025 was made by Dr R.S. Paroda, Executive Secretary, APAARI, based on the draft document already circulated to member-participants. In fact, this document was the outcome of the Brainstorming meeting held on this topic by APAARI in August 1999 at Delhi, and thus presented a revised version incorporating views of some of the members. Dr Paroda presented an appraisal of the current scenario of national agricultural research systems prevalent in the developing countries of the Asia-Pacific region, their strengths, weaknesses, opportunities and threats (SWOT analysis) and the future plan for agricultural research and development to strengthen APAARI collaboration and facilitator's role. Emphasis was laid to foster closer linkages among apex agricultural research management organizations in the region. The members discussed the various issues and challenges facing NARS, vis-à-vis their needs in prioritizing of research agenda, and how APAARI can contribute to promote agricultural research for development (ARD) in the region. APAARI's apolitical structure, and bottom up approach as a facilitator to NARS needs was highly appreciated. Concern was expressed on strategic role of APAARI in the emerging scenario of IPR and other policy issues. Stress was laid on national resources richness vis-à-vis their sustainable use and management.

Sessions II and III: These sessions deliberated on the organizational strengths of NARS and focussed on institutional development. The members discussed the need for private sector collaboration and increased role of stakeholders in agricultural research for development. The need for use of new sciences such as biotechnology and the Geographical Information System (GIS), and Information Technology, were discussed. To strengthen networking and faster communication and dissemination of agricultural research and development among member NARS, it was stressed

that Information Communication Technology (ICT) be given high priority in all the subregions: South Asia, Southeast Asia, East Asia and the Pacific, with the need to establish a 'Regional Agricultural Information System'. Regional Knowledge System for Agricultural Research and Development is a prerequisite to Global Knowledge System. The strengthening of such national, sub-regional, regional systems will promote access and use of information technology to end-users. It was felt that a regional consultation to identify NARS needs and strengthen ARD was called for. The initiative provided by ISNAR and CABI to strengthen APAARI's needs in this context was realized; webpage for APAARI, internet connectivity, conferencing through e-mail on special topics of interest to NARS among APAARI members. The reports of the two workshops by CABI and ISNAR with APAARI as a co-sponsor were briefly presented. Future development and overall needs of APAARI were highlighted by Ms Achara, APAARI's Information Technology Manager at its FAO RAP Secretariat in Bangkok. Priority was also laid on capacity building and human resource development (HRD) based on national/regional needs of NARS through APAARI's initiatives.

Session IV: This session deliberated on the participation of APAARI in the forthcoming meeting of the Global Forum on Agricultural Research (GFAR). The members discussed the programme and how best to highlight APAARI's activities. Both oral and poster presentations were highlighted in



Release of APAARI Publications by Dr Prem Nath, Assistant Director General and Regional Representative, FAO RAP, Bangkok

research partnership case studies. These related to: Advances in hybrid rice research (ICAR/DOR, India), Network on Aquaculture in regional context (NACA, Bangkok), Tropical Asian Maize Network, TAMNET (CIMMYT/FAO, Bangkok) and Rice-Wheat Consortium/RWC for the Indo-Gangetic Plains (CIMMYT, IRRI, NARS collaboration in South Asia-Pakistan, India, Bangladesh and Nepal). The members were very appreciative of APAARI publications, particularly the success stories brought out based on NARS initiatives in the region and felt that these be exhibited/distributed for dissemination of information and technology transfer/adoption in other regions through NARS-SC. Also, APAARI Vision 2025 revised document need to be got printed and made available for distribution in the GFAR-2000 as one of the background papers.



Participants attending the Expert Consultation on APAARI Vision 2025

It was felt that APAFRI be requested to present a poster paper on success story of partnership in forestry research in the region, and APAARI should send this information to NARS-SC. Some innovative case studies in regional context, likewise, may also be submitted to NARS-SC. For presentation of APRAIS (Asia-Pacific Regional Agricultural Information System), ISNAR-CABI and APAARI may have a joint paper. GFAR's support to such activities at GFAR-2000 was appreciated.

SUMMING UP: DEVELOPING APAARI VISION 2025

In overall perspective, the discussions on the draft of APAARI Vision 2025 among member participants in different sessions, stressed on the need to further refine/strengthen the document keeping the following items in view :

- Asia-Pacific region is highly diversified and APAARI member countries realised its potential and the opportunities it could provide to meet food security, address poverty eradication, malnutrition and achieve sustainability through agricultural research and development.
- More emphasis on sub-regions is required, addressing the heterogeneity among NARS and particularly the needs of the weaker NARS. Agricultural development needs to stress on rural development.
- Greater emphasis need to be placed on new sciences such as biotechnology, GIS, ICT, etc. to achieve the above goals by exploiting useful diversity and by improved management of natural resources and agro-ecosystems. The potential of forestry and fisheries sectors needs to be highlighted.
- The role of diverse stakeholders in addressing public needs, community participation, promoting bottom up approach, needs to be stressed such as of the NGOs. The private sector needs to be

APAARI VISION

"Agricultural Research for Development (ARD) in the Asia-Pacific region is effectively promoted and facilitated so that it is contributing to sustainable agriculture and natural resource management thus ensuring food and nutrition security, economic and social well-being of all communities while maintaining the integrity of the environment and the services it provides".

involved suitably to the benefit of NARS vis-à-vis active role of APAARI in its involvement with the non-government sector.

- Public awareness as a tool to dissipate message downstream is catching up fast. Participatory research and information dissemination, and transfer of technology to farming communities was advocated.
- Human Resource Development (HRD) at all levels was required, based on collective/common needs of the sub-regions/regions (such as on policy issues (IPR), biotechnology, research management and the needs of individual NARS. In achieving this goal in a cost effective manner, collaboration of CG centres, other centres, and particularly NARS-NARS partnership would be effective.
- Reprioritisation of regional, sub-regional and NARS specific needs to meet the above objectives be reinforced suitably in the vision document, to make it more action-oriented to APAARI and for NARS and other partners.
- Activities of research networks in collaboration with NARS and APAARI's role as a facilitator to promote and strengthen these, needs to be addressed more critically. Many networks such as CORRA, GoFAR, CLAN, Tropical Fruits (MARDI, Malaysia) would like to function under the umbrella of APAARI. However, concern was expressed on sustainability, funding aspects etc. for many of the networks. It was also stressed by members that APAARI should examine the possibilities of establishing new research networks such as on cotton, soybean and mungbean.
- Information, Communication and Technology (ICT) activities were given high priority. These needs could be strengthened by registration of Domain of APAARI homepage, to be hosted on server at FAO, Bangkok. ISNAR and CABI will be required to play an important role in strengthening this system with/for APAARI in regional information development. The need for an ICT Regional Consultation Workshop was proposed.

In the Plenary Session, members endorsed the resolution that publication of this vision document be expedited by APAARI for its distribution in GFAR-2000 at Dresden, and its wider circulation, and implementation by NARS of the region.

APAARI OFFICE INAUGURATED



Dr Prem Nath, Assistant Director General and Regional Representative, FAO RAP, opened the new premises of the APAARI Secretariat at FAO, Bangkok.

APAARI EXECUTIVE COMMITTEE MEETING

The Expert Consultation was followed by the Fifth Executive Committee Meeting of APAARI. The Agenda was discussed and the members noted with satisfaction the progress in diverse activities during 1999, relating to publication of newsletter, success stories, special publications, proceedings etc., support to collaboration with research networks, participation in regional/international meetings/fora such as the meeting of the FAO Global Plan of Action (GPA) held in the Philippines and the participation now proposed in GFAR-2000. Members appreciated the role of APAARI as a co-sponsor in the ISNAR/CABI organized Information Technology Assessment Workshops held at UPM, Malaysia and AIT, Bangkok in November 1999, wherein over 10 regional participants from India, Pakistan, Sri Lanka, Nepal, Malaysia, Thailand, Philippines and Iran participated. Besides this, many senior level scientists/policy makers attended the 2-day deliberations in the workshop held in Bangkok.

The members discussed the issues relating to APAARI membership, possibilities of China and Vietnam joining as members and membership of organizations such as CIRAD, ICUC, IBSRAM, and some networks and private associations like APSA and NACA. Also modalities for signing of MoU with regional and international organizations were

discussed. It was felt that ICUC's request in this context be kept on the agenda during the next General Assembly Meeting to be held in Bangkok.

APAARI's participation in GFAR was also discussed and it was agreed that the Chairman and Vice-Chairman APAARI will be member and associate member for the Asia-Pacific region. For GFAR-2000 also, APAARI's participation from NARS and other concerned organizations was considered, and support requested from GFAR/NARS-SC. It was agreed that APAARI's publications need to be distributed in GFAR-2000, including the APAARI Vision-2025 document.

The Executive Committee welcomed the newly appointed staff of APAARI, Mr Reinier van Hoffen as APO, at New Delhi Office and Ms Achara Jantarasa engaram as IT Manager at APAARI Secretariat in FAO RAP, Bangkok. Establishment/strengthening of Asia-Pacific Regional Agricultural Information System (APRAIS) was considered as a priority activity for APAARI and by member NARS to develop information networking.

The meeting concluded with thanks to Dr Prem Nath, Assistant Director General and Regional Representative, FAO RAP for hosting the meeting and to Mr P.K. Saha, Technical Officer, FAO RAP in particular, for looking after the arrangements. Dr Paroda thanked Dr Bevege for conducting the meeting so efficiently and the members for their effective contributions. Finally, Dr Ian Bevege thanked Dr Paroda for his keen interest and effective inputs to the deliberations of this meeting, besides preparation of the vision document.

RECENT APAARI PUBLICATIONS



ENLARGING THE BASIS OF FOOD SECURITY

- ROLE OF UNDERUTILIZED SPECIES

Besides threats to global and national food security arising from dependence on too few crops, there are also other important reasons why our food security basket needs to be enlarged and diversified. FAO statistics reveal that while about 800 million children, women and men are currently suffering from protein-calorie under-nutrition, over 2 billion suffer from hidden hunger caused by the deficiency of micro-nutrients in the diet, particularly iron. Many of the underutilized crop species like those belonging to the genera *Panicum*, *Paspalum*, *Setaria*, *Chenopodium*, *Amaranthus*, *Fagopyrum* etc are rich in micronutrients. The UN Commission on Nutrition has recently highlighted the harmful effects of micro-nutrient deficiencies in the diet and has also warned about the serious handicaps which nations with a large frequency of low birth weight children will suffer during the merging Knowledge Century. The underutilized crop species which are rich in micronutrients can help to make the diets more balanced and can hence play an important role in combating silent hunger.

The CGIAR System Review Panel has recommended that research on productivity improvement should be based on the foundation of integrated natural resources management. This will call for a paradigm shift in research strategies from a purely commodity-centred approach to a farming systems-centred approach. CGIAR Centres could integrate research on underutilized crop sciences in their farming and cropping systems research programmes. This will enable the choice of crops, which can perform optimally under each agro-ecological and growing condition. For example, in several parts of India, ground water is being tapped unsustainably for growing crops like rice or sugarcane. As a result, seawater is tending to enter the aquifer near coastal areas. The cultivation of grain legumes, millets and other low water requiring but high

nutritional value crops in such areas will help to both improve human nutrition and natural resources management.

Many of the underutilized crops can help in the formulation of balanced animal diets. Farm animals, particularly large and small ruminants and poultry, provide additional livelihood opportunities to small farm families. Feed and fodder are often limiting factors in improving the productivity of such small-scale animal enterprises. Here again, minor crops can play an important role in providing the ingredients necessary to formulate balanced diets for farm animals.

Thus, there are several ecological, economic, social and nutritional reasons why we should prevent underutilized species from becoming "lost crops". The International Agricultural Research Centres of the CG system together with appropriate National Agricultural Research Systems, non-governmental organizations and multilateral and bilateral donors could form a CGIAR Forum on Underutilized Species for Sustainable Food and Nutrition Security for undertaking the following tasks:

- Change the public image of many of the underutilized species by getting the nomenclature of "coarse cereals" altered into a term which reflects their real nutritional value; FAO could take the lead in this area.
- Compile information on underutilized crops from the country reports presented at the world conference on Plant Genetic Resources held at Leipzig. Develop an integrated data base on the

potential such crops offer in different countries; the 158 country reports presented at Leipzig contain a wealth of information which needs to be compiled, classified and assessed.

- Foster an NGO Network on Seeds for Ecological and Nutrition Security for organizing demonstrations, training and extension work relating



Participants at International Consultation on Enlarging the Basis of Food Security—Role of Underutilized Species

to underutilized species. Training should also extend to cooking and the culinary aspects of the use of such grains. Organizations like the Life and Food Association of Japan, the Seeds for Survival Organization of Ethiopia and the M.S. Swaminathan Research Foundation could co-sponsor such a network with such help that CGIAR may be able to extend. MSSRF could serve initially as the Coordinating and Database Centre. The NGO Network should promote an end to end approach in dealing with underutilized species, starting with seeds and extending to the customer's table and food processing factories.

- It may be prudent to select in the first instance 5 to 6 crops to demonstrate the potential of underutilized species. The criteria used for the initial selection in different countries could be:
 - * Market potential
 - * Agro-ecological value in the context of an Integrated Natural Resources Management Strategy
 - * Gender roles and significance for women's occupations
 - * Initial activities could include:
 - * Conservation
 - * Seed multiplication and distribution
 - * Processing and cooking
 - * Marketing
- FAO Regional conferences could help to generate political interest and support in the areas of demonstration, such as production and distribution.
- The CG System can help to integrate the use of underutilized species in major farming systems. A system-wide initiative involving the relevant IARCs, NARS and NGOs could undertake the following tasks:
 1. Standardisation of methodology
 2. Inclusion of minor crops in participatory plant breeding programmes
 3. Information exchange
 4. Development and dissemination of databases
 5. Research on the ecological, economic, nutritional and social impact of underutilized species
 6. Training

IPGRI could be the lead Centre for servicing the CG Forum on Underutilized Species and the system wide initiative. Underutilized crops could be included in several of the programmes of NARS and IARCs such as;

1. Knowledge system for sustainable food and livelihood security
2. Low external input sustainable agriculture (LEISA)
3. Conservation in *ex situ* genbanks and in *in situ*/on-farm conservation programmes.

It would be useful if bilateral and multilateral donors could sponsor in appropriate countries and regions a few Pioneer Projects. This is to deal with the revitalisation of the earlier traditions, being dependent on a wide range of crops for human food and health security. Such Pioneer Projects should be structured on an end-to-end basis, starting with seeds and sowing, and ending with consumption.

Policy research institutions like IFPRI could suggest the packages of technologies, public policies and services which will be needed to promote the inclusion of minor crops in major farming and cropping systems in different agro-ecological areas. Both rainfed and irrigated farming systems need attention.

As we approach a new century and millennium, there is growing concern whether Malthusian predictions relating to an imbalance between population growth and food production may still come true. Large areas in semi-arid and arid environments are yet to witness progress in improving the productivity and profitability of the prevailing cropping systems.

The proposed CG Forum on Underutilized Species and the NGO Network on Seeds for Ecological and Nutrition Security can make valuable contributions to ensuring sustained agricultural growth and household nutrition security.

[Abridged from 'The Summing-up' report of the above International Consultation by Dr M.S. Swaminathan, Chair, Genetic Resources Policy Committee, CGIAR held from 14-19 February 1999 at M.S. Swaminathan Research Foundation, 3rd Cross Street, Taramani Institutional Area, Chennai 600 113].

**APAARI Wishes
Its Members and all
Readers of the
APAARI Newsletter
A Very Happy
New Year 2000**

SAARC ACTIVITIES IN AGRICULTURE

The South Asian Association for Regional Cooperation (SAARC) comprises of the seven countries of South Asia, i.e. Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. There are currently 11 Technical Committees including one on agriculture. SAARC cooperation in agriculture is mainly promoted through the planning, monitoring and implementation of activities of Technical Committee on Agriculture. Comprising representatives from the member states, the Technical Committee formulates programmes and prepares projects, which make up the integrated programme of action under SAARC. The Technical Committee is responsible for monitoring and implementation of agreed activities and submits the reports to the Standing Committee through the Programming Committee.

The Technical Committee has been responsible for identifying five years programme for fostering regional cooperation. The first meeting of Technical Committee was held in 1983. This Committee was instrumental in setting up of SAARC Agricultural Information Centre (SAIC) at Dhaka in 1983—the first SAARC regional institution of its kind.

Under the work of the Technical Committee, member states have been exchanging germplasm, breeding materials on livestock and fisheries, and prototypes of farm tools and equipment. Activities for improved livestock through exchange of animals, frozen semen and vaccine have also been undertaken. The responsibility of compiling information on training, proven technologies, traditional wisdom and practices in agriculture has been entrusted to SAIC. A regular meeting of the counterpart scientists is an important feature of cooperation.

The programmes for the 90s focussed on genetic engineering and biotechnology in crops, horticulture, animal and fishery sectors, homestead vegetable production, food availability and nutritional balance, database on technology and training facilities in agricultural science within the SAARC countries, and meeting of expert groups in different technical areas etc.

SAARC AGRICULTURAL PERSPECTIVE: YEAR 2020

The Committee has initiated thematic discussion on one important agricultural topic annually. During the 16th Technical Committee meeting, the member countries had extensive discussion on the theme

“SAARC Agricultural Perspective upto the Year 2020”. In the light of the discussion on the occasion, the Committee recommended that the member countries should step up efforts to develop comprehensive strategy to address the main challenges facing the agricultural sector in the SAARC region. The main thrusts identified included the following:

1. SAARC Countries would endeavour to promote cooperation to sustain the increase in the production of major cereal crops in order to fulfil the needs of their population growth. To this end, efforts would be made in the following main areas:

- Optimal utilization of land, minimising the risk of its degradation and improvement of soil fertility through effective measures where such degradation has already taken place.
- Introduction of comprehensive measures for the better management of water resources and other natural endowments critical for sustaining the growth in agriculture.
- Develop and implement comprehensive policy packages both at the national and regional level to provide agricultural inputs including seeds, pesticides, fertilisers, energy and farm equipment. Efforts would be made to promote cooperation on the development and introduction of high yielding seeds including hybrid varieties suitable for the region and disseminate information on appropriate technologies.
- Promote cooperation to help individual member countries to meet their anticipated deficit in specific areas.

2. Non-Cereal cash crops and other high value crops are also important for the vitality of the agriculture sector in SAARC countries to supplement the income of farmers. As such, SAARC countries would promote cooperation to augment the production of such crops on the basis of their comparative advantage through application of better technologies including appropriate post-harvest technologies, storage development of marketing and other related infrastructure and better management practices.

3. Similar efforts would be made in the area of livestock, fisheries, horticulture and other high value addition, agricultural pursuits. In case of livestock, special efforts would be made to promote cooperation to address the issues of animal breeding, health, nutrition, post-harvest technology and management.



Inauguration of SAARC Workshop by Hon'ble Minister Sri Som Pal

4. Member countries of SAARC will promote cooperation and work out appropriate modalities for the development and sharing of germplasm, biotechnology, molecular biology, system analysis, GIS informatics etc. They would share information on successful modules developed in their countries in these important areas.

5. Member countries would identify centres of excellence in their respective countries in specific areas of agricultural relevance to promote cooperation among the scientists, planners and others. They would deal with agricultural developmental policies on issues of common concern to the member countries including credit and broader range of institutional issues relevant to agricultural development. They would also share amongst themselves training, including extension training and skill upgrading facilities in order to promote capacity building and human resource development to sustain the development in agricultural sectors.

6. Member countries will integrate gender considerations in their plans to develop the agricultural sector and will share the relevant information in this regard.

7. Member countries of SAARC would also share, where feasible, their research facilities in order to avoid duplication of research activities and derive economic benefits. Interested member countries would be helped in sharing the benefits of basic strategic research carried out in other member countries.

8. Member countries would make conscious efforts to exchange information on specific changes made in their policy orientation on human resource development. This would increase the relevance of agricultural education to the changing context and the perceived needs of the member countries.

9. The innovations in transfer of technologies carried out in member countries will be shared in order to promote effective technology generation, their dissemination to farmers and assessment at all stages.

10. Member countries would closely coordinate their position in mitigating their adverse impact of globalisation on the farmer communities and other related issues.

11. Member countries would further strengthen the existing SAARC tradition of coordination of policies related to agricultural development and specific issues of common interest to them.

HORTICULTURAL DEVELOPMENT IN SAARC COUNTRIES

During the 17th Technical Committee meeting, the member countries discussed "Horticultural Development in the SAARC Countries". The main thrust included: germplasm collection, evaluation for sustainable use and documentation, R&D projects in citrus, apple, banana and vegetables and training programmes in specific areas of post-harvest management, hybrid seed production etc., strengthening data base on horticulture commodities, post-harvest technology, marketing, and vegetable seed production.

For the next (18th) meeting, member countries have decided the theme "Animal Husbandry and Fishery Development in the SAARC Countries". Some of the activities in agriculture also include:

- Holding seminars on training of trainers at Delhi,
- Seminar on production of FMD vaccines in India,
- Seed technology and seed health care at Delhi,
- Soil fertility management under watershed approach at Kathmandu,
- Workshop of experts in SAARC countries on transfer of technology in agriculture at SAIC Centre, Dhaka and Consensus development on germplasm exchange and IPR in Delhi.

It is planned to undertake training-cum-demonstration programme on watershed management approach in India, workshop on walnuts and coconut programme in Nepal, workshop on soil fertility management for increasing productivity in rice-based cropping systems at Sri Lanka and IPM in Pakistan. Steps are also being taken to display the improved agricultural products, implements and technologies during the annual SAARC trade fairs. Overall, these activities will provide direction for promoting important areas for all round development of agriculture in the member countries.

[Contributed by: Dr. Mruthyunjaya, Assistant Director General (ESM & P), ICAR, Krishi Bhawan, New Delhi, India]

THE M.S. SWAMINATHAN RESEARCH FOUNDATION

An Institute Profile

Harnessing Science and Technology for Environmentally Sustainable and Socially Equitable Development

The M.S. Swaminathan Research Foundation (MSSRF) was established in July 1988 as a non-profit and non-political Trust committed to a mission of harnessing science and technology for environmentally sustainable and socially equitable development. MSSRF's research, training, communication, extension and networking programmes in the fields of agriculture and rural development, seek to link ecological security to livelihood security in a mutually reinforcing manner.

MSSRF's activities promote a pro-nature, pro-poor and pro-woman orientation to technology development and dissemination.

Pro-nature: To serve as a centre for research and training for the conservation of biodiversity, with an emphasis on its role in human food and livelihood security.

Pro-poor: To add value to the work of the poor and create innovative income opportunities through the blending of traditional and frontier technologies, and to promote the recognition and reward of tribal and rural people for their contribution to the conservation and enhancement of biodiversity.

Pro-woman: To catalyse more active participation of women in development, and to enable them to derive full benefit from technological progress.

PROGRAMME AREAS

Coastal Systems Research

A Coastal Systems Research (CSR) methodology has been developed to strengthen the linkage between the livelihood security of coastal communities and the ecological security of coastal wetlands, particularly mangrove forests. A Genetic Resources Centre for Adaptation to Sea Level Rise was established at Pichavaram in collaboration with the Forest



MSSRF Campus

Department of the State of Tamil Nadu, for the purpose of gathering and conserving the genetic material of mangroves and wild rice containing genes for tolerance to sea water intrusion. In addition, an international training programme was organized to create a cadre of Mangrove Gene Bank Managers from 12 countries. MSSRF also operates a Mangrove Ecosystem

Information Service on behalf of the International Tropical Timber Organization. A coastal agroforestry system has been developed for parts of Tamil Nadu in order to help local communities meet their fodder, fuelwood and food requirements, without degrading coastal biodiversity. A Coastal Wetland-Mangrove Ecosystem Project, financed by the India-Canada Environmental Facility, aims to standardise technologies and management practices necessary for promoting integrated conservation and development projects in coastal wetland areas.

Biodiversity and Biotechnology

The focus of this Programme area is the conservation and sustainable utilization of biodiversity. In order to ensure that benefits from the utilization of biodiversity are equitably shared between local conservers, breeders and biotechnologists, MSSRF has established a Technical Resource Centre for the Implementation of the Equity Provisions of the Convention on Biological Diversity (CBD). The Centre includes a living genebank and a tissue culture facility to preserve rare and endangered species. This Programme area also promotes the conservation of endangered plant species and habitats as well as the revitalisation of the *in situ* and *ex situ* genetic conservation traditions of local communities. For these purposes, MSSRF is organising an Agro-Biodiversity Conservation Corps of young tribal and rural women and men. The Foundation has also established a Resource Centre for Bio-Monitoring within this Programme area.

Ecotechnology and Sustainable Agriculture

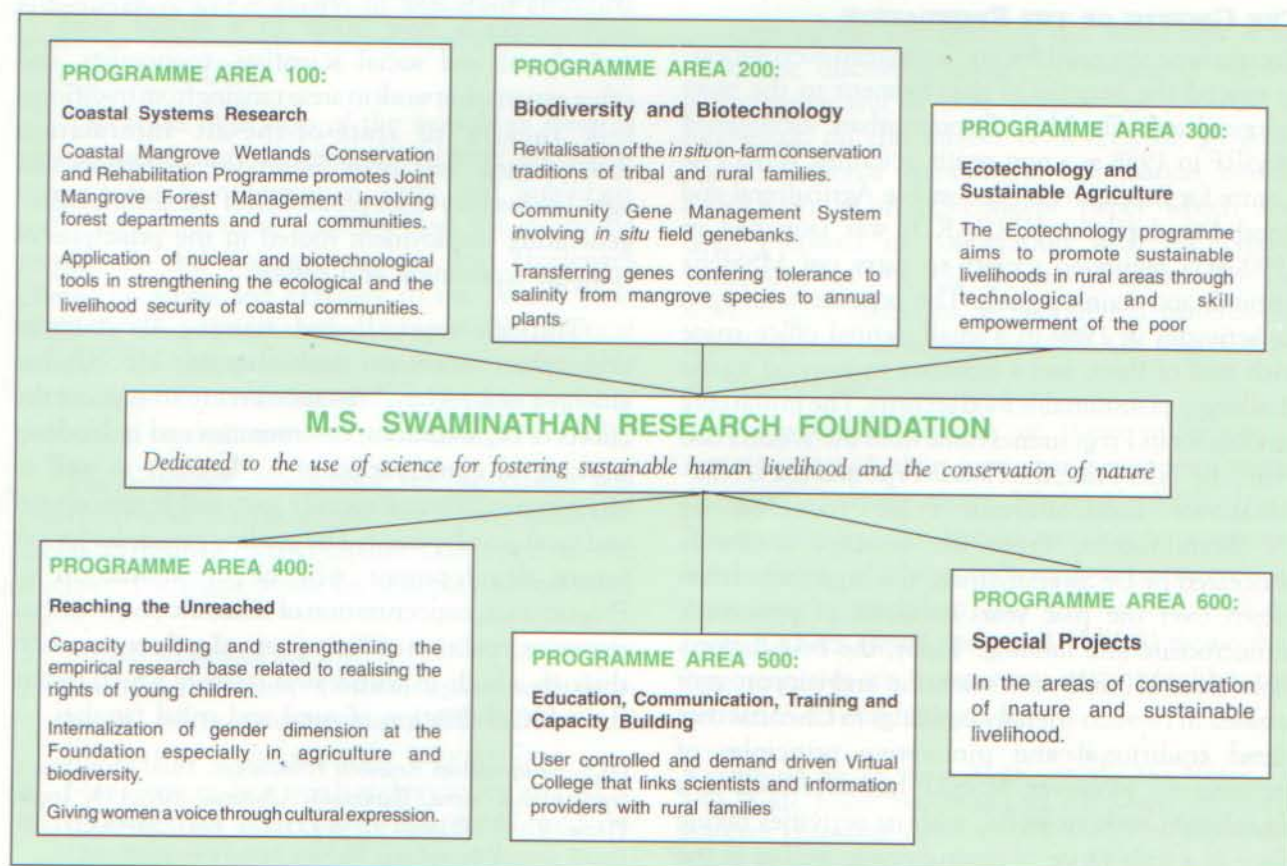
Ecotechnology involves blending frontier technologies such as information, space and biotechnologies with the ecological prudence and practices of local communities, so as to combine the ecological and economic strengths of both approaches. Such technology blending is done jointly with rural families through a participatory research mode undertaken in whole villages, termed Bio-villages, which are laboratories for "Ecotechnology in action". In recognition of the role being played by MSSRF to develop and disseminate ecotechnologies, UNESCO and the Cousteau Society have designated MSSRF as the Coordinating Centre for the Asian Ecotechnology Network. Within MSSRF, the J.R.D. Tata Ecotechnology Centre was established to research, develop and diffuse environmentally sound technologies, including eco-horticulture, eco-aquaculture, integrated intensive farming systems as well as seed and pulse villages. In addition, the ICAR-MSSRF Integrated Pest Management Centre develops and promotes the use of low cost integrated pest management systems in cotton, groundnut, soybean and rice. The Dr B.V. Rao Resource Centre for Sustainable Food Security aims to take the benefits associated with agro-processing to the small farmer.

PATHWAYS TO AGRICULTURAL AND RURAL DEVELOPMENT

- Conservation and enhancement of natural resources
- Promotion of sustainable livelihoods
- Gender equality and voicing the voiceless as well as information and skill empowerment.

Reaching the Unreached

The major aim of this Programme is to take the benefits of scientific research to the economically and socially disadvantaged sections of society, who have often been bypassed by new technological innovations. High priority goes to children and women, since poverty and deprivation generally more adversely affects them. The Foundation has established a Resource Centre for Gender and Development for this purpose. Cost-effective delivery systems for early childcare and education as well as media strategies for advocacy among policy makers and awareness generation among the public have been developed. Training modules have been developed for empowering elected members of grassroots democratic structures to prepare a socio-demographic charter for their village or town. The aim of the socio-demographic charter is to enable the people to view population issues in the context of social development and women's empowerment.



In addition, a detailed design for a National Hunger-Free Area Programme has been developed and is currently being implemented in the state of Tamil Nadu.

Education, Communication, Training and Capacity Building

Work undertaken in this area pertains to organization of workshops, training seminars and interdisciplinary dialogues, as well as the development of communication systems ranging from high technology to the mobilisation of folk media and participatory theatre forms. The Honda Informatics Centre was established to provide researchers in agriculture and the environmental sciences access to a large collection of CD-ROMs and multimedia databases. MSSRF maintains global and national databases, including multimedia databases on: the intellectual property rights of tribal and rural families, mangrove ecosystems, the ecological farmers of India as well as eco-jobs. The Foundation organizes an annual interdisciplinary dialogue on taking the benefits of new technologies to the rural poor. Training Programmes range from "farmer to farmer learning" to international training courses. Several workshops have been held for policy makers on the conservation and sustainable use of biodiversity.

THE GROWTH OF THE FOUNDATION

Recognising the need for an "Evergreen Revolution" to extend the benefits of development to the most marginalized, Dr M.S. Swaminathan established MSSRF in 1988 as a non-profit, scientific trust. The Centre for Research on Sustainable Agricultural and Rural Development (CRSARD) was launched in 1990 as a registered society to carry out MSSRF's research and training goals. The organization began its activities in 1989 in a small, rented office space with staff of three and a mandate to respond to the challenges of sustainable food security. The initial core funding for its Programmes came from the World Food Prize, the Tyler Prize, the Honda Prize and the UNEP-Sasakawa Environment Prize received by Dr Swaminathan. From the concept originally conceived by Dr Swaminathan, the organization has grown over the past years in terms of personnel, infrastructure and funding. Today, the Foundation's more than 150 full-time scientific and support staff is based in two eco-friendly buildings in Chennai that blend traditional and innovative principles of architecture. However, MSSRF has developed as a 'foundation without walls', with its activities taking place at a wide range of institutions as well as at the



Empowering Women: Rural Women Training in Information and Communication Technology

village level. Farmers' fields serve as experimental plots, so that there is genuine partnership between farmers and scientists in technology development and refinement. The funding for the Foundation has now expanded to include a wide range of donors: national and international, organizational and individual, public and private.

The mandate of the Foundation has broadened from a focus on sustainable food security to its current mission of promoting development which is ecologically sound and socially equitable through the harnessing of science for the public good. The organization is now home to a diverse team of agricultural and social scientists, economists, and other experts that work in areas ranging from traditional folk theatre to state-of-the-art information technologies, and from preserving mangrove and agro-biodiversity to the promotion of "ecotechnologies" generating employment rooted in the principles of ecology, economics, and equity.

Through research and training Programmes undertaken since its establishment, MSSRF has emerged as a regional resource centre to support the efforts of organizations, communities and individuals working in conservation of biodiversity as well as environmentally and socially sustainable agricultural and rural development. The guiding principles for our future development will be consolidation of Programmes, concentration of scientific and financial resources, coalition of the concerned and continuation through a built-in withdrawal strategy which fosters the self-mobilisation of rural and tribal families.

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INFORMATION MANAGEMENT FOR AGRICULTURAL RESEARCH - WORKSHOPS FOR THE ASIA-PACIFIC REGION

In November 1999, two workshops have been held on the subject of information on agricultural research and development: The first one on "Harnessing Information for Development" was held at The Universiti Putra Malaysia (UPM) in Kuala Lumpur from 15 to 19 November 1999 and the second on "Information Management for Agricultural Research" at The Asian Institute of Technology (AIT), Bangkok, Thailand, from 22 to 29 November 1999.

Financial support came from ISNAR, CAB International, APAARI, APAFRI, the Government of Australia (ACIAR), and the Government of Japan. The Thailand workshop was the third in a series in a Japan-supported collaboration with ISNAR entitled "New Technologies for Agricultural Research".

The 45 participants in the two workshops represented 15 NARS in Asia and the Pacific (China, India, Thailand, Indonesia, Pakistan, Nepal, Malaysia, Sri Lanka, Philippines, Bangladesh, Vietnam, Cambodia, Laos, Papua New Guinea, Tonga and Fiji). The goal was to expose these senior policy-makers and managers to important emerging issues in Information Management/Information Technology (IM/IT).

The broad objectives of the workshops were to expose participants to some of the most important issues faced by information users and publishers today, especially those resulting from the electronic revolution, and the opportunities and challenges offered by access and exposure to the World Wide Web. It was also intended to provide practical insights to the potential pitfalls of using this technology for information access/generation/publishing in their own environment.

The emphasis throughout the workshops was practical rather than academic. Each participant had access to his/her own computer connected to the Internet. Particular attention was paid to following five subjects.

1. NARS strategies for IM/IT.
2. Documentary data, national agricultural databases, library automation, CD-ROMs and Internet to access scientific information.
3. Management data, needs and priorities, and MISs.
4. Identification of access to PCs, LANs and the Internet.

5. Management challenges in Information Systems Development.

In Malaysia site visits were made to MIMOS, the Multimedia Development Corporation (MDC), and the Malaysian Technology Development Corporation.

During the course of the workshops, the participants worked on a number of case-studies: The first case study dealt with focussing on day-to-day information and communication management problems at institute level. The second case tackled the dissemination of scientific information. It focused around web hosting. Who is the most suitable partner for web hosting? Should an institute do it themselves or search either for a government partner or for a private sector partner? The discussions focussed on critical factors like investment power, efficiency/effectiveness and entrepreneurship study. The third case dealt with strategic approaches to disseminating scientific information. The participants had to develop a national agricultural information strategy based on a SWOT analysis of their national agricultural information system.

One of the outcomes of the workshops is an electronic discussion group, consisting of all the participants and a staff member of ISNAR as moderator, on the subject of developing an Asia-Pacific Regional Agricultural Information System (APRAIS). A RAIS-concept paper which had been prepared in cooperation with the NARS Secretariat of the GFAR was discussed in the workshop. It functions as background material for the electronic conference on APRAIS that runs on an Internet site.

From the evaluation of these workshops it was ascertained that participants were interested in strengthening their National Agricultural Information Systems besides working on a regional level. Some of them indicated their interest in organizing a workshop like this at the national level. Others (from the small NARS) pointed to opportunities to cooperate with neighbouring countries on sub-regional level.

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DOCUMENTATION AND INFORMATION IN PLANT GENETIC RESOURCES - IPGRI ACTIVITIES IN THE ASIA-PACIFIC

Activities related to documentation and information on Plant Genetic Resources (PGR) by the International Plant Genetic Resources Institute (IPGRI) in the Asia-Pacific are directed towards capacity building, facilitating research, encouraging effective data generation, gathering, management, sharing, exchange and use of genetic resources information among partners within country and between countries. These activities which in the long-term will lead to self-sufficiency in PGR conservation and management are briefly highlighted here.

DOCUMENTATION TRAINING COURSES

Documentation training courses being organized to cover use of PGR documentation software such as Genebank Management System (GMS) and PCGRIN. The stress on using standard software for PGR documentation now shifts the stress on making data available for analysis and exchange. National Programmes (NPs) are now more interested in use of latest software for their work. Therefore, information resource people must understand the various software available, linkages between software and new data types that need capturing. It would be better to provide methodologies, examples, functionality of PGR software rather than the software itself as support to NPs in view of rapidly changing hardware and software scenario. Increasing expertise in computer knowledge of NPs staff places demand on information staff to keep up-dated on the options available based on the functionality needed in PGR documentation. NPs that are strong in documentation such as National Bureau of Plant Genetic Resources (NBPGR) in India, Institute of Plant Breeding (IPB) in the Philippines and Institute of Crop Germplasm Resources (ICGR) in China have been approached to organize documentation courses in their respective regions. IPGRI-APO is also contributing significantly for M.Sc. courses on plant genetic resources that have PGR documentation and information components.

INFORMATION EXCHANGE AND DATA INTERCHANGE PROTOCOL

On the exchange of information, at the micro level we see the development of the Data Interchange Protocol (DIP) and the development of web-pages. DIP, essentially a report format in ASCII text is used in electronic germplasm catalogues such as those being developed by NBPGR in India. The formation of information networks in the region to harness the expertise in human resources is facilitated by the

acceptance of the Internet. Information networking has an important role to play in facilitating research and promoting networking within regional PGR networks. It provides the means to link researchers within and between countries as well as provides a medium for electronic discussion. The outcome of the recent national information-networking meeting organized by RECSEA-PGR member of Malaysia, was the setting up of the Malaysian PGR network (MAGNET). Members of the network will be linked via email discussion list initially. RECSEA-PGR members from other countries also participated in the MAGNET meeting and they will see how they can do the same for their country. The process will be propagated to other regional networks in the region such as SANPGR for South Asia and EA-PGR for East Asia.

For data exchange training, the DIPVIEW software facilitated the understanding of the DIP format (DIP manual and DIPVIEW software are available at <http://www.cgiar.org/ipgri/regional/apo/dip.htm>). With the format, capturing data for databases is possible even with text editors. Therefore software should not now prevent NPs from data basing of PGR data collected. The new windows version of DIP Viewer is under development and will be available soon to national Partners. The use of spreadsheets with data validation functions means that rapid and simple data compilation tools are available to genebanks with small number of accessions. The Taro Genetic Resources Network (TAROGN) in the Pacific uses Excel to facilitate data basing their information. Use of commonly used spreadsheet such as Excel is being promoted for training on statistical data analysis for the International Coconut Genetic Resources Network (COGENT) and TAROGN member countries.

IN SITU/ON-FARM CONSERVATION

Work on *in situ* PGR documentation concept is now well developed based on presentations and discussions that were held at the global *in-situ* meeting in Pokhara, Nepal during July 1999. Details of the system are being finalised and this will lead to the development of software for partners to document information relating to *in situ/on-farm* conservation. Three main systems of *in situ* documentation with their linkages to *ex situ* conservation have been identified (Fig. 1) as given below:

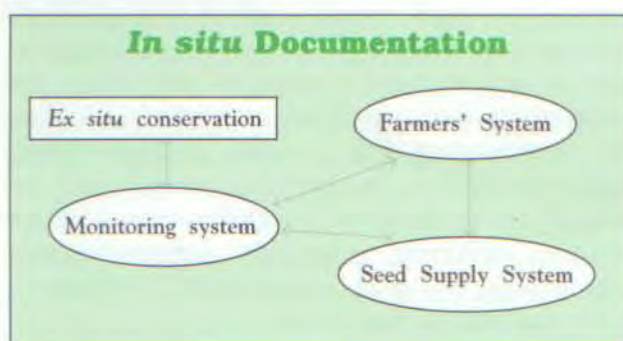
- The Farmers' system consists of the following groups of data relating to Socio-economic,

Environment and site, Crops and farming practices, Seed inventory and movement, Farmers' characterization/ evaluation and IK/Uses of landraces.

- The seed supply system includes information relating to Community biodiversity register, Community genebank, Seed movement & inventory tracking, Seed storage methods and Seed suppliers.

Together with Farmers' system, this information provides feedback to community on seed supply status.

- The monitoring system will include Sites identification tracking, Diversity analysis indicators, Genetic erosion indicators, Population genetics information, Information gaps tracking, *In situ* management/performance monitors and Re-using data from Farmers' system and Seed supply system.



GENEBANK MANAGEMENT MONITORING

The issue of conservation management is being addressed in various activities such as genebank management monitors and regeneration decision system, and it also links to activities relating to genetic erosion studies. The availability of data determines the usefulness of the system developed. Inter-links between the various components that affect conservation in general need more emphasis especially in the way to quantify the components (e.g. genetic erosion). The concept on modelling of genetic erosion on GIS software is now in discussion.

DOCUMENTATION OF INDIGENOUS KNOWLEDGE

Documenting indigenous knowledge (IK) is an important component for *in situ*/on-farm conservation. IK developed and evolved as a result of interactions over time between human activities for selection, conservation and use of various plant species for food, medicine and other purposes. The documentation of IK is important to ensure that the younger generations can learn and build on top of existing knowledge. For documenting IK, the "IK

Journal" concept was tested with the collaboration of Yunnan Academy of Agricultural Sciences (YAAS) and Yunnan Farmers Speciality and Techniques Association (YFTSA) in the Journal of Yunnan Agricultural Science and Technology published by YAAS. Four issues were published during 1998. All sources of articles were from farmers provided through recording on audiotapes. For published articles in the journal, farmers were listed as the first authors. Scientists were involved to further refine the articles and help to keep the original audiotapes. Training for farmers to understand the concepts of documentation have been conducted in Yunnan, China.

INFOBASE

In view of the vast amount of existing information and the rapid use of Internet webpages by National Programmes (NPs), an attempt to link NPs through Websites to harness the Internet for information sharing has been made. The InfoBase project developed by IPGRI-APO essentially is a yellow-page to link NPs' websites for information to assess their PGR conservation programme(s). Thirteen components (awareness, planning & policies, involvement of informal and private sectors, national committee(s), surveys, *in situ*, *ex situ*, information, training and education, collaboration, funding, research, and use) were identified as being indicators of NPs ability to conserve PGR. Assessment of these components is being looked at. To monitor information availability, a database approach is being designed to facilitate access to the information over the Internet.

PUBLIC AWARENESS

Work in this area has been initiated with the development of an education kit for secondary schools in Sabah, Malaysia. This was carried out with the involvement of the various GOs, and NGOs in the state involved in environment education. The kit once developed will be distributed to PGR networks in the region for them to substitute local content to adapt for use in their schools. Another plan in the process is the development of teaching materials for the schools in Malaysia. A teaching kit that covers conservation in a holistic manner will be developed. This will be carried out in collaboration with the National Science Council in Malaysia and UPM. The idea is to bring the private sector in to fund raising, and the GOs and NGOs to develop a clearing house mechanism for materials they have developed.

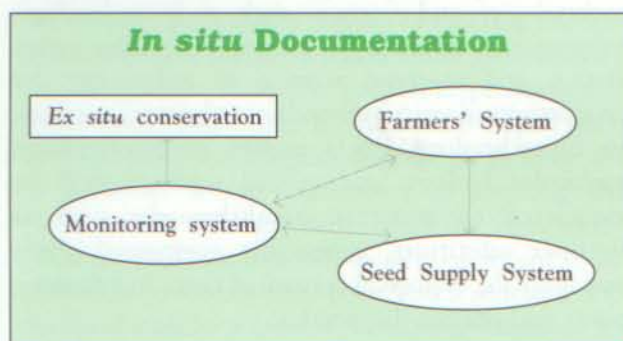
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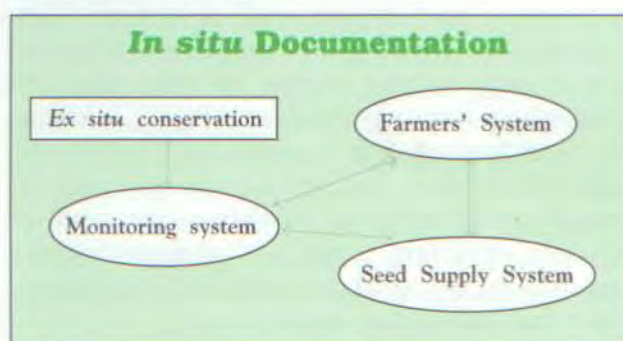
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PCARRD: FUTURE THRUST IN AGRICULTURAL RESEARCH & DEVELOPMENT

The Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD) is one of the five sector planning councils under the Philippine Department of Science and Technology (DOST). PCARRD plays a proactive and dynamic role in harnessing the full potentials of Science and Technology (S&T) through increased productivity, competitiveness, and innovative capacity of the agriculture, forestry and natural resources sectors. Being of service to the government and the Filipino people for 27 years, PCARRD is the government's main arm in planning, coordinating, evaluating, and monitoring the National Programmes on agriculture, forestry and natural resources. Moreover, it continues to ensure the present and future generations an improved quality of life through the promotion and adoption of strategic technologies, services and information.

For the next five years (2000-2004), PCARRD has prioritised its S&T concern to address the government's thrust of modernising Philippine agriculture. The following developmental concerns shall guide PCARRD's S&T interventions: productivity and competitiveness enhancement, diversification of production and resource use, unconditional access to land and other productive resources, promotion of environmental sustainability, rationalisation of institutional structure, empowerment of stakeholders, and spatial-oriented approach in sector planning and development.

These concerns are in the core of PCARRD's vision to be "a responsible and creative S&T leader and effective institutional partner for productive and scientific research that will sustain and enable the agriculture, forestry and natural resources sector to be competitive, environmentally sound and socially relevant". It shall ensure that S&T policies, plans and Programmes will enable research and development (R&D) institutions to produce scientific discoveries that will benefit the environment, industries and the people.

STRATEGIES

The plans and Programmes of PCARRD are being guided by the Agriculture and Fisheries Modernisation Act (AFMA), the Medium-Term Philippine Development Plan (MTPDP), the Convergence Framework for Agriculture, Forestry, Fisheries and Natural Resources Sectors, and the DOST Medium-Term Plan for S&T.

For the next five years, PCARRD shall implement four basic strategies:

1. Focussing basic research on high-end technologies and management systems for sustained growth;
2. Enhancing technology management and promotion/commercialisation;
3. Improving R&D capability and governance, and
4. Formulating and advocating policies for agriculture, forestry and natural resources R&D and S&T development.

The R&D Programme of PCARRD aims to strengthen the foundation for a productive scientific research and ensure the country's long-term technological growth. Through basic researches, PCARRD hopes to strengthen its over-all innovative capacity particularly the application of high-end technologies and sciences such as biotechnology, information technology, geographical information system and material science in enhancing the productivity of agriculture and natural resources sectors. In biotechnology, R&D related to biochemistry, molecular biology, and related sciences shall be supported to generate breakthroughs such as fertiliser substitutes, genetically engineered plants and animals, biological control of pests and diseases, plant and animal diagnostics.

On enhancing technology management, PCARRD will develop, promote and initiate modalities that will facilitate the flow of information from the S&T sector to the end-users through intermediaries such as the local government units (LGU), rural-based organizations (RBO), other service-providers, and the private sector. Improved and innovative methods and systems for multi-agency, multi-stakeholder technology identification, assessment, packaging and promotion are the core outputs of these modalities.

PCARRD shall also maintain decentralisation of R&D management through the regional consortia arrangement to continually empower the regions in the planning, monitoring and evaluation of the R&D projects. Modest investment for upgrading the capabilities of R&D personnel and facilities of strategic R&D centres shall be made to raise the quality of R&D infrastructure to a reasonable and practical level.

CONTRIBUTION TO AGRICULTURAL MODERNISATION

At the heart of the Philippine government's thrust of economic growth with social equity is the implementation of the Agriculture and Fisheries

Modernisation Act (AFMA). Under the AFMA, the unification and complementation of the agriculture, forestry, fisheries and natural resources sectors' Programmes and initiatives becomes inevitable. Hence, PCARRD recognises both the challenge and the accountability to strengthen R&D to steer the present and future of the country towards agricultural modernisation.

PCARRD shall work closely with the Philippine Department of Agriculture (DA), through its various Bureaux and attached agencies which will empower civil society by streamlining, refocusing, and consolidating the national R&D Programmes and initiatives on one hand, and the extension (E) on the other, cross cutting through different disciplines, with increasing involvement by the private sector and the local government units (LGUs).

This unified direction, when translated to collaborative implementation of priority projects under the AFMA, shall fuse the goals of meeting the food requirements of the present and future generations of Filipinos, while attaining profitable production of world-class, competitive products. It is hoped that a national R&D convergence framework shall be able to guide all sectors concerned in ensuring that globalisation will not only make us competitive globally, it will also flourish locally – a decent source of livelihood for the rural poor, and a renewed hope that food shall be accessible, available, nutritious and safe, and affordable to all.

FLAGSHIP PROGRAMMES

Consistent with the above-cited guiding philosophies and strategies, PCARRD is committing its resources to the following Flagship Programmes:

- Biotechnology such as the molecular, biochemical and biological studies related to pest and disease resistance, forest genetic improvement, and microbial technology for fertilisers and animal feed production.
- Agriculture and Natural Resources Information Network (AGRINET) are IT-related activities/projects such as the Commodity Information Network (CIN), Mango Information Network (MIN), and the One-Stop Information Shop (OSIS).
- Natural resources management and required basic researches include biodiversity conservation and management, forest resource management and conservation, soil and water resources management and promotion of organic agriculture and microbial fertilisers and management of farming systems and ecosystems.

- Integrated Research and Development Programme (IRDP) approach shall be sustained to ensure the grants-in-aid funds of PCARRD and other resources generated by PCARRD shall be invested in priority R&D concerns critical to the needs of market-driven commodities, specifically on coconut, ornamentals, swine, poultry, organic agriculture, etc.
- "Techno Gabay Unlad Buhay Para sa Masa Programme" addresses the government thrusts for the poor, vulnerable and underprivileged and the progressive farming sector. The Programme develops, promotes and initiates modalities that will enhance technology promotion and commercialisation activities of the line agencies, LGUs, NGOs, and the private sector. It ensures that the flow of information from the S&T sectors to the end-users will be facilitated and assured.
- Under the Techno-Gabay Programme are several projects: The Farmers' Information and Technology Services (FITS) or Techno-Pinoy Centres, Farmer-Scientists Bureau (FSB) or Magsasaka Siyentista, Information, Education, Communication (IEC) Projects and other promotion modalities.
- Gender Advocacy Programme (GAD) focuses on enhancing the role of women, the youth and the elders as effective partners in development activities. Thus, awareness, sensitisation, and mainstreaming activities in S&T shall be conducted to institutionalise such concerns.
- Impact Assessment Programmes will be implemented to determine and quantify potential and actual benefits from technologies and other S&T data generated from the priority R&D Programmes. Furthermore, through these Programmes, the efficiency, effectiveness and relevance of R&D Programmes to the productivity of farmers, the sectors, and the over-all economy can be established to justify current investments in R&D as well as those to be implemented in the future.

PCARRD IN THE NEW MILLENNIUM

In the next millennium, globalisation will be a central concern. Provided that all stakeholders are true to their commitments, the national R&D agenda, with the corresponding substantial increase in public investment to R&D, will be PCARRD's blueprint in making our domestic producers more competitive through exposure and access to better technology, improved production efficiency, and higher product standards.

PCARRD points out the need for functional linkages among all concerned agencies of the Philippine government. This will allow sharing of institutional resources in the conduct and implementation of mutually reinforcing and complementary undertakings in agriculture and fisheries – a multi-sector R&D convergence framework for effective governance. PCARRD shall continue to uphold this convergence framework to provide the operational basis for the evolution of a unified, harmonised, coherent, functionally integrated, and appropriate R&D working relationship among the agriculture, fisheries and natural resources sectors.

DOST-PCARRD, as the lead secretariat of the National Agriculture and Resources Research and

Development System (NARRDS), shall continue as an effective partner of the Agriculture Department in ushering in a new era in R&D collaboration towards the country's technological self-reliance and agricultural modernisation. The groundwork for excellence, cooperation and relevance in R&D has already been laid out within the NARRDS. What counts next is a common commitment among all concerned agencies to achieve a shared goal of a modernised agriculture towards sustainable development and improved quality of life for all.

[Contributed by: Ms. Cristina B. Gloria and Ms. Clarinda Llamas-Apolinar, Office of the Executive Director, PCARRD, Los Baños, 4030, Laguna, Philippines]

KLONG LUANG 1: AN AROMATIC RICE VARIETY OF THAILAND

A Short Success Story of 15 years Breeding Efforts

On December 9, 1998 the Executive Committee of the National Research Council of Thailand announced its decision to award its first-prize for 1998 'Outstanding Research Innovation', to the non-photosensitive non-glutinous aromatic rice variety Klong Luang 1. Almost one year prior to the announcement, the Research and Development Committee of the Department of Agriculture had approved Klong Luang 1 as certified variety on October 21, 1997.

The breeding of the Klong Luang was initiated on July 1983, at the Klong Luang Rice Research Experiment Station at Pathum Thaw by crossing the Thai aromatic rice variety Nang-Mol 54 as the female plant with the IRRI aromatic breeding line JR841-SS-1-1.2 as the male plant. Subsequent selection of F1 – F8 generation by pedigree method was used and KLG83055-1-1-J-2-14 line was selected. The line was planted in observation plot at the Klong Luang Rice Experiment Station in 1990.

Intra-station yield trial was conducted at the Klong Luang Rice Experiment Station in the dry season of 1991. During 1992 to 1997, inter-station yield trials were conducted at the Pathum Thani Rice Research Centre, Bangkhen Rice Experiment Station, Suphanburi Rice Experiment Station, and the Ratchaburi Rice Experiment Station. The random sampling at four replications revealed the average yield of the aromatic non-glutinous rice variety Klong Luang 1 at 3.5 to 4.8 tonnes/ha.

During 1991-1996, the developed variety was tested for its resistance to major insect pests and diseases. The test showed that Klong Luang 1 possessed higher resistance to blast, and brown plant hopper as compared to Khao Dawk Mali 105.

Some of the outstanding features of Klong Luang 1 are as follows: medium maturing variety with production span ranging from 118-125 days, approximately 110 cm height, upright tillers, strong culms, dark green leaves, long and straight leaf sheath, retarded leaf senescence, long panicles and high grain development potential. Klong Luang 1 is a photo insensitive variety of aromatic rice allowing the production of two crops per year during the wet and dry seasons like the Khao Dawk Mali variety which could only be planted during wet season. The yield potential is 25 per cent higher than Khao Dawk Mali 105 which is a popular aromatic rice in the world market.

The Ministry of Commerce classified Klong Luang 1 variety as aromatic rice attributed to its good chemical composition of the rice grain with good cooking and eating quality comparable to the Khao Dawk Mali 105. Klong Luang 1 makes an addition to aromatic rice of Thailand now available in the domestic and foreign market, contributing to the boost in country's economy.

In 1987, the Department of Agriculture was able to produce approximately 200 tonnes of foundation seed. It was then distributed to the Department of Agricultural Extension and to the Co-operative Promotion Department for seed multiplication as extension seed, for further distribution to farmers. In 1999, the area planted under Klong Luang 1 has expanded to 3.75 million hectares.

Klong Luang 1 is the prize of 15 years of breeding efforts and the living momento of the breeding excellence in plant breeding by the Department of Agriculture.

[Contributed by: The Department of Agriculture, Bangkok, Thailand].

FIFTH STEERING COMMITTEE MEETING OF UTFANET

The Fifth Steering Committee Meeting of the Under-Utilized Tropical Fruits Asia Network [UTFANET] was held at the Philippine Council of Agriculture, Forestry and Natural Resources Research and Development [PCARRD], Los Baños, Philippines from 12-14 August 1999. The meeting was opened by Dr Beatriz Rosario, Officer-in-charge, PCARRD who welcomed the national coordinators and other invitees. Dr N. Haq, the Coordinator of UTFANET briefed the members on activities undertaken since the last steering committee meeting. He also informed that the main objective of the meeting was to agree on budget and work plan according to the rules and conditions of the grant received by ICUC from the UK National Charities Board for the implementation of the project on 'Germplasm evaluation, propagation and management of jackfruit, mangosteen and pummelo in Asia'. The national coordinators agreed on the budget and discussed the work plan presented by Dr Haq. A second project on the development of economically viable and socially acceptable marketing strategies for underutilized fruits in Asia was also discussed for submission to donors. The project will operate in South and Southeast Asian countries. The crops will be mandarin orange, jackfruit and aonla (Indians gooseberry) for India, Bangladesh and

Pakistan; rambutan and durian for the Philippines and Thailand, and mangosteen for Indonesia.

The members agreed that the UTFANET regional coordinating office may be hosted by one of the member countries and Pakistan, India and Philippines offered to host this key office. The members asked Dr Haq to send these countries the criteria for hosting the regional coordinators' office.

The Bangladesh National Coordinator, Dr N.I. Bhuian, took over the Chairmanship from the Philippines and Professor Van Lai from Vietnam was elected as Vice Chairman for two years. IPGRI was requested to explore possibilities of developing descriptors for pummelo, and mangosteen, and to organize a genebank-training course for scientists and technicians from UTFANET member countries. IPGRI became an associate member of UTFANET and the MoU between IPGRI and UTFANET was signed. The meeting was attended by Dr Bhag Mal of IPGRI and Dr N. Urquia of the FAO who briefed members on their organization's activities. Dr L. Escano of PCARRD thanked all participants.

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REGIONAL WORKSHOP ON CONSERVATION AND USE OF TRADITIONAL VEGETABLES

The International Centre for Underutilized Crops (ICUC) in collaboration with FAO convened a regional workshop on "Conservation and Use of Traditional Vegetables in Asia and the Pacific" at the Philippines Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), Los Baños, Philippines from 10-12 August 1999. The workshop was attended by representatives from Bangladesh, China, India, Indonesia, Nepal, Pakistan, Papua New Guinea, Philippines, Sri Lanka, Thailand, and Vietnam besides IPGRI and AVRDC.

The objectives of this workshop were: to assess the present status of genetic resources of traditional vegetables (including aquatic vegetables) and their use in the region, to identify gaps/needs for conservation and utilization, training in collecting, evaluation, documentation and conservation and to develop appropriate programme strategy for promoting traditional vegetables through a regional network on traditional indigenous vegetable crops. Sub-regional status reports and country papers were

presented. The following recommendations emerged: i) Establishment of a network UTVAPNET (Under-utilized Traditional Vegetables Asia-Pacific Network) for which ICUC will provide secretarial support. The network will function on voluntary basis, ii) The Indian Council of Agricultural Research will undertake the role of regional coordination, with Dr S.P. Ghosh, DDG (Horticulture), ICAR as the chairperson of the Steering Committee, iii) Five vegetable commodities, namely taro, amaranth, *Momordica* spp., Lablab bean and *Ipomoea aquatica*, were identified as priority crops, iv) Networking activities under UTVAPNET will be complementary to those carried out by TANSOA, v) Need for developing standard descriptors of these priority crops was highlighted and it was decided to seek IPGRI's assistance, vi) PGR collecting, evaluation, characterization and conservation activities together with production technologies will be carried out as per the interest of individual countries and vii) Information/results of trials will be shared between the participating countries.

[For more details contact: Dr N. Haq, Director ICUC]

APAARI PUBLICATIONS

SUCCESS STORIES

- **Baby Corn Production in Thailand** (1994/1)
by Dr Chamnan Chutkaew and Dr R.S. Paroda
- **Tilapia Farming in the Philippines** (1994/2)
by Dr Rafael D. Guerrero III
- **Hybrid Rice in China** (1994/3)
by Mr Lou Xizhi and Dr C.X. Mao
- **Dairying in India** (1994/4)
by Dr R.P. Aneja
- **Hybrid Cotton in India** (1995/1)
by Dr A.K. Basu and Dr R.S. Paroda
- **Palm Oil Industry in Malaysia** (1995/2)
by Dr Y.B. Basiron
- **Transformation in Korean Farming – A Success Story of Effective Linkages** (1996/1)
by Dr Chae Yun Cho
- **Cotton Production in Pakistan** (1996/2)
by Dr Badruddin Soomro and Dr Parvez Khaliq
- **Orchids in Thailand** (1997/1)
by Dr Kanchit Thammasiri
- **Wheat Production in Iran** (1997/2)
by Dr Abbas Keshavarz and Dr M.J. Mirhadi
- **Agro-Tourism in Australia** (1997/3)
by Dr Tom Connors
- **Direct Seeded Rice in Malaysia** (1998/1)
by Dr Cheong Ah Wah
- **Groundnut in China** (1998/2)
by Dr Duan Shufen, Dr Hu Wenguang and Dr Sui Qingwei
- **Oilseeds in India** (1999/1)
by Dr Mangala Rai
- **Integrated Pest Management in Rice in Indonesia** (1999/2)
by Dr Soejitno

OTHER PUBLICATIONS

- Directory of Agricultural Research Institutions in the Asia-Pacific Region : South Asia, 1995.
- Directory of Agricultural Research Institutions in the Asia-Pacific Region : Southeast Asia, 1997.
- Proceedings – Fourth Executive Committee Meeting of APAARI and Expert Consultation on Management and Strengthening of Regional Research Networks in the Asia-Pacific Region, October 19-21, 1997, Tehran, Iran.
- Proceedings – Fifth General Assembly of APAARI and Expert Consultation on Research Management Mechanisms of National Agricultural Research Systems (NARS), October 13-15, 1998, Suwon, Republic of Korea.
- APAARI. 1999. National Agricultural Research Systems in the Asia-Pacific Region – A Perspective. Asia-Pacific Association of Agricultural Research Institutions, FAO Regional Office for Asia and the Pacific, Bangkok.

FUTURE CONFERENCES

- | | |
|---------|---|
| Title | : Conference on Aquaculture in the Third Millennium |
| Venue | : Bangkok Convention Centre, Central Grand Hotel, Bangkok |
| Period | : 21-25 February 2000 |
| Contact | : Secretary General/NACA Coordinator
Aqua Millennium Conference
P.O. Box 1040, Kasetsart Post Office
Bangkok 10903, Thailand |
| Fax | : 00662 - 561727 |
| E-mail | : NACA@fisheries.go.th |
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- | | |
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| Title | : International Rice Research Conference: "Rice Research for Food Security and Poverty Alleviation" |
| Venue | : Los Baños, Laguna Philippines, IRRI |
| Period | : 31 March - 3 April 2000 |
| Contact | : Dr Shaobing Peng
International Rice Research Conference 2000
International Rice Research Institute
P.O. Box 3127, 1271 Makati City, Philippines |
| Fax | : 63-2-891-1292 |
| E-mail | : s.peng@cgiar.org |
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|---------|---|
| Title | : International Symposium on Participatory Plant Breeding in Asia: An Exchange of Experiences |
| Venue | : Pokhara, Nepal |
| Period | : 1-5 May, 2000 |
| Contact | : Mr Barun Gurung
International Centre for Tropical Agriculture
c/o Resources Nepal
GPO Box 2448, Kathmandu, Nepal |
| Phone | : 977-1-537502 |
| Fax | : 977-1-537013 |
| E-mail | : b.gurung@cgiar.org |
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| Title | : Strengthening Partnership in Agricultural Research for Development in the Context of Globalization |
| Venue | : Dresden, Germany |
| Period | : 21-23 May, 2000 |
| Contact | : Dr Alain Dervier
C/o World Bank 1818, H Street NW
Washington DC, 20 433 USA |
| E-mail | : Alain.Dervier@worldbank.org |
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|---------|---|
| Title | : Rice Research and Production in the 21st Century: A Symposium Honoring Robert F. Chandler, Jr. |
| Venue | : Cornell University, Ithaca, New York |
| Period | : 15-17 June, 2000 |
| Contact | : Dr Edwin B. Oyer
International Agriculture
Box 14, Kennedy Hall, Cornell University
Ithaca, New York 14853-4203, USA |
| Fax | : (607)255-1005 |
| E-mail | : ebo2@cornell.edu |
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- | | |
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| Title | : The Third International Soybean Processing and Utilization Conference (ISPUC-III) |
| Venue | : Tsukuba International Congress Centre, Ibaraki, Japan |
| Period | : 15-20 October 2000 |
| Contact | : Secretariat for the Third International Soybean Processing and Utilization Conference (ISPUC-III)
C/o Congress Corporation, 7th Akiyama Bldg,
5-3 Kojimachi, Chiyoda-Ku, Tokyo 102-8481, Japan |
| Phone | : 81-3-3263-5896 |
| Fax | : 81-3-3263-4032 |
| E-mail | : ispuc3@congres.co.jp |

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