



APAARI

Newsletter

Asia-Pacific Association of Agricultural Research Institutions

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Editorial

Most countries in the Asia-Pacific region recognize the significant role of biotechnology for meeting the food and nutrition needs of their people. Along with other biotechnologies, genetic modification (GM) technology has been adopted by a number of countries. In 2012, different GM crops comprising cotton, maize, canola, papaya, poplar, tomato and sweet pepper were grown in the farmers' fields in Australia (0.7 m ha), China (4.0 m ha), India (10.8 m ha), Myanmar (0.3 m ha), Pakistan (0.2 m ha) and the Philippines (0.8 m ha). Besides, China, Japan, Korea, Malaysia, Chinese Taipei and Thailand have also approved import of some GM crops for food/feed, though not for cultivation. Several studies concerning impact of GM crops have revealed that farmers, irrespective of their farm size, have been benefited through increased yield as well as reduced pesticide use. GM technology has also resulted in higher income and improved livelihood opportunities.

While the potential of GM technology is well recognized, strong concerns are being expressed over the likely risks to human health and environment, beside the extent to which these technologies are truly effective solutions for resource-poor smallholder farmers. At the same time, application of GM technology must ensure systematic assessment of potential impacts on the safety of food, feed and environment, including the diversity of flora and fauna. Accordingly, in conformity with the national and international obligations, several countries in the region have put in place legislative measures to manage the potential risks associated with GM technology. The regulatory systems do vary across countries; some have developed entirely new GM specific biosafety systems, while others have modified existing regulations to address biosafety issues. The legal instruments used for the purpose have been either new or modified laws, acts, decrees, guidelines and rules. Alongside, administrative systems and infrastructure have been developed to operationalize the legal instruments. Adopting one or the other approach, several countries have currently in place the regulations on development, contained use, environmental release, commercialization and import of GM crops and products. Several other countries have their biosafety regulations at drafting stage or in the process of clearance for implementation. However, there is little conformity among national regulations or consistency among national capabilities to implement them, which becomes an impediment to rapid diffusion of this technology.

Recognizing the potential of regional cooperation in strengthening national biosafety systems, the biotechnology program of APAARI, the Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB), has undertaken a number of activities during recent years, including organization of a "Workshop on biosafety regulations and the need for harmonizing them in the Asia-Pacific Region" (2006) and also published the status of "Biosafety Regulations of Asia-Pacific Countries" (2008). In continuation, APCoAB recently organized "Stakeholders' Dialogue on Biosafety Regulations in the Asia-Pacific Region" in Bangkok on 16-17 April, 2013. This well attended program highlighted the priorities of GM food crops R&D to benefit smallholder farmers, enhance communication for better public awareness, and regional cooperation for biosafety regulatory management. It is hoped that the expert views and recommendations emanating from the Dialogue will translate into actions facilitating adoption of safe biotechnologies by the developing countries of the region for greater benefits to all stakeholders, especially the smallholder farmers.

Editors

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Executive Committee

Chairman	: Dr. Simon Hearn
Vice-Chairman	: Dr. Masa Iwanaga
Members	: Dr. S. Ayyappan Dr. Iftikhar Ahmad Dr. Sae-Jung Sur Mr. Misa Konelio Dr. Mark Holderness Dr. Thomas Lumpkin
Executive Secretary	: Dr. Raj Paroda

Editorial Committee

• R.S. Paroda	• R.D. Ghodake
• P.S. Faylon	• J.L. Karihaloo



APAARI Executive Committee Meeting

The first meeting of the new APAARI Executive Committee was held at the new APAARI Secretariat Office located at the FAO Annex. building, Larn Luang Road, Bangkok on 15 April, 2013 under the chairmanship of Dr Simon Hearn, Chairman, APAARI and Principal Adviser, Australian Center for International Agricultural Research (ACIAR). The meeting was attended by five members and some special invitees. Dr. Mark Holderness, GFAR participated electronically through Skype link.

At the outset, Dr. Raj Paroda, Executive Secretary, APAARI welcomed Dr. Simon Hearn for chairing the meeting and for extending support to APAARI activities. He also welcomed all the new members of the committee and the special invitees for their participation in the meeting. Dr. Paroda expressed his appreciation to the APAARI members, FAO, GFAR, ACIAR, CG Centers and other stakeholders for their active participation in APAARI meetings.

Dr. Simon Hearn welcomed the Executive Committee members and appreciated the remarkable progress made by APAARI through organization of several expert consultations, international conferences, regional dialogues and workshops in collaboration with its members and with the support of GFAR, FAO, ACIAR, COA and CG Centers. APAARI has a clear mandate and role in addressing the challenges due to increasing population, depleting natural resources and climate change in the region. He stated that APAARI had successfully addressed major issues like women and youth in agriculture, household nutrition security, research prioritization to meet future needs, emphasis on agricultural innovations, linking farmers to markets, conservation agriculture, climate-smart agriculture, agrobiodiversity, information technology and application of biotechnology in collaboration with NARS and other stakeholders in the region.

He appreciated the sincere efforts of Dr. Raj Paroda and the APAARI Secretariat in organizing these meetings very successfully. He further emphasized that APAARI became partner of Tropical Agricultural Platform (TAP), member of CG Fund Council and also a member of the Evaluation and Impact Assessment Committee of the CG Fund Council. He stated that ACIAR would continue assisting APAARI in the area of AR4D. Dr. Raj Paroda as the Chair of Organizing Committee had successfully organized the GCARD2 at Punta del Este, Uruguay in October-November, 2012. Dr. Paroda is also member of the Search Committee for the selection of GFAR Chair. The Chairman and Executive Secretary of APAARI are the members of GFAR Steering Committee.

Dr. Paroda appreciated and placed on record the contribution of COA in establishing a new office for APAARI Secretariat in Bangkok. He appreciated the role of FAO, GFAR, ACIAR, CG Centers, other regional fora and international organizations for their strong and continued support to APAARI in implementing its programs. He hoped that with the strong support of partners, APAARI will fulfil its commitment of promoting and helping the NARS to strengthen agricultural research systems in the region.

Dr. Raj Paroda welcomed all the participants to the new APAARI Secretariat Office in Bangkok which was inaugurated on 18 January, 2013 by Mr. Hiroyuki Konuma, ADG and FAO Regional Representative for Asia and the Pacific. He welcomed and thanked Dr. Simon Hearn and Dr. Masa Iwanaga for accepting the responsibility as Chair and Vice-chair of the APAARI Executive Committee, respectively, for the biennium 2013-2014. He also welcomed the new members Dr. Iftikhar Ahmad, PARC; Dr. Etienne Duveiller, CIMMYT who represented Dr. Thomas Lumpkin; special invitees Mr. Peter Sha-Li Lan, Taipei Economic & Cultural Office in Bangkok who represented Dr. Su-san Chang, COA; Dr. K.K. Sharma, ICRISAT and Dr. Raghunath Ghodake, DG, NARI, Papua New Guinea. He also thanked Dr. Mark Holderness, GFAR for participating in the meeting through Skype link. He informed that Dr. S. Ayyappan, ICAR, India and Mr. Misa Konelio, MAFFM, Samoa could not attend the meeting due to other pressing commitments.



Participants of Executive Committee Meeting

Based on Dr. Paroda's presentation, the members made following suggestions/ comments:

- i) The Chairman expressed his appreciation of the excellent progress made by APAARI, a view which was also endorsed unanimously by the members.
- ii) Dr. Mark Holderness appreciated the commendable role of APAARI in strengthening agricultural research for development. He was also pleased for having GFAR's participation in APAARI activities. He emphasized the need for greater stakeholders participation. He highlighted the success of Global Conference on Women in Agriculture, which adopted Gender in Agriculture Partnership Program (GAP), held in March, 2012 at New Delhi. It was a transformational event in the global agricultural research system. He thanked Dr. Raj Paroda for his excellent leadership as the Chair of GCARD2 Organizing Committee. GCARD2 established a clear framework for partnerships by all stakeholders, and it is in this context that the engagement of APAARI members is crucial in transforming agricultural research for development.
- iii) Dr. Simon Hearn commented that while there is need for inclusion of representatives of farmers and other stakeholders such as NGOs, private sector and other groups of people in APAARI activities, he felt the need to have continuous dialogue on the issue of inclusion of representatives of farmers and other stakeholders.
- iv) Dr. Masa Iwanaga appreciated the role of APAARI website as an important mechanism for sharing information about events, meetings, proceedings and publications, etc., and suggested that the best way to assist change at national and regional levels is through providing proper access to these important information resources with regular monitoring on who is accessing and how many are accessing such information. He suggested to monitor users' access to APAARI website on regular basis.
- v) Dr. Raj Paroda mentioned that APAARI has been distributing its publications free of cost in print form to more than 600 persons/organizations on the mailing list from the very beginning and also disseminating the same as digital copies through website. He, however, noted the need to reach wider audience at the national level by using better communication strategies with the help of web technologies and involving National Information Nodal Points.
- vi) Dr. Raghunath Ghodake opined that it is possible to ensure representation at the national level by research centers/NARS and through them connect with respective stakeholder groups.

- vii) Dr. Iftikhar Ahmad expressed the need for distributing all APAARI publications as PDF to all national organizations in order to disseminate further to their constituent institutions and members. There is need to develop capacities in impact assessment systems to evaluate agricultural research programs at the national level. He mentioned that Pakistan needs such assistance and help from the organizations like ACIAR. Dr. Simon Hearn pointed out that funding agencies world over want to know the impact for their investment in research and, hence, most of the national agricultural research systems currently require capacity building.
- viii) Dr. Etienne Duveiller appreciated the range of APAARI activities and commended the efforts of APAARI, even with limited resources, for the priority setting activities in the region. He mentioned that the prioritization was evident from the perspective of the national program such as gender in agriculture and conservation agriculture which demand much better advisory role from the regional and global organizations.

The major decisions/action points that emerged are as follows:

- CABI has joined as new Associate Member from January 2013 and SHIATS, Allahabad has upgraded its membership to Associate Category. The total number of APAARI members now stands at 55 (Regular members 20, Associate members 15, Affiliate members 12 and Reciprocal members 8). Some NARS members will be approached to upgrade their membership category voluntarily.
- Restoring the membership of Indonesia should be pursued through CAPSA which is an affiliate member based in Indonesia. Membership of New Zealand and CAAS, China also needs to be pursued. The need for advocacy was felt by all members in ensuring new membership of Myanmar, Cambodia, Laos, and the countries in Pacific region. Further, it was expressed that efforts are needed to increase membership of countries in the Pacific region.
- The Audited Accounts for 2012 were presented and the statement of Assets and Liabilities along with bank statement regarding available funds were examined and reviewed by the members. It was explained that APAARI received additional funding support from GFAR for GCARD process. In addition, support from co-sponsors like FAO, CG Centers, ACIAR, COA, ASTI, JIRCAS, etc., was also received for specific activities.
- ICRISAT has already returned a sum of US \$ 536,389 to APAARI account in Bangkok after maturity. The same has already been deposited in the APAARI fixed deposit account with Siam Commercial Bank, Bangkok. The members were requested to suggest any better investment strategy.
- Audited accounts were unanimously approved by the Executive Committee. Members were also appreciative of support received in particular from GFAR, ACIAR and COA.
- ICRISAT should be requested to provide audited accounts for APCoAB from the next year onwards since most of the expenditure is done through its office in New Delhi/Patancheru.
- APAARI is a self-supported and not a donor-driven organization. It is very important to have reserve funds for sustaining APAARI activities. The Executive Committee and the General Assembly have all authority to take a decision regarding utilization of reserve funds in case of any financial constraints for running the activities and hence, the reserve funds be maintained. It was suggested to have a pragmatic approach for the use of reserve funds so that the same can be placed before General Assembly for endorsement.
- APAARI in partnership with GFAR will continue to implement committed activities at the global and regional levels. APAARI

would undertake activities once MTP is approved and additional funds are made available.

- The process of choosing auditor has been transparent. An auditor is identified after receiving competent quotations from the qualified government auditors in Thailand and a suitable auditor is selected finally by the General Assembly for a period of two years at a time. It was suggested to have a written policy on record for selection and appointment of the external auditor in future.
- It was suggested to have a long-term APAARI investment policy. Dr. Raghunath Ghodake and Dr. Masa Iwanaga under the chairmanship of Dr. Simon Hearn would develop a policy for investment, utilization of reserve funds and appointment of external auditor based on the existing principles and practices.
- APAARI has been functioning as an entity under FAO umbrella and does not have any separate legal status. The members felt the need to attain legal identity for APAARI and discussed the relating challenges that might arise in future such as: operation of banking transactions including reserve funds, relocation of secretariat, etc. It was agreed that the proposed committee comprising Dr. Simon Hearn, Dr. Masa Iwanaga and Dr. Raghunath Ghodake would look into possible options relating to attaining legal status for APAARI.
- The Work Plan for 2013, was endorsed by the Executive Committee as approved by GAM in October 2012. The workplan covered mainly the prioritized activities such as: (i) Publications, (ii) Meetings/Expert Consultations/Symposia, etc., (iii) APARIS activities, (iv) APCoAB activities, and (v) Initiatives concerning Inter-regional Cooperation. It was indicated that any requirements for additional programs from bodies like FAO, GFAR and other partners would be accommodated as per the need.
- An Expert Consultation on the theme 'Role of Youth in Agriculture' should be organized in Pakistan along with next Executive Committee meeting during October, 2013. Realizing the importance of Food Safety in the context of emergence of value chains in food markets, it was suggested that APCoAB should address this theme in future.
- GCARD2 has proposed about 20 different thematic areas needing commitments for collective action. MTP would provide good opportunity for the Regional Fora to implement GCARD Road Map to ensure action on the ground level. Dr. Iftikhar Ahmad expressed that participation of stakeholders in the decision making process at the national level is a big challenge, and needs to be addressed.
- For filling vacant seat on the APAARI Executive Committee, it was proposed that the Bangladesh Rural Advancement Committee (BRAC) in Bangladesh, being an active and well known NGO may be requested to attend next meeting as a special invitee. Hence, the Committee members agreed to invite both Asian Farmers Association (AFA) and BRAC to join APAARI as reciprocal members and later consider them for the Executive Committee for the current biennium (2013-14).

In his concluding remarks, Dr. Simon Hearn thanked all the members of Executive Committee for making it convenient to attend the meeting. He also thanked Dr. Raj Paroda, Executive Secretary for his dedicated service and efforts of APAARI Secretariat in achieving excellent progress.

Dr. Raj Paroda thanked the Chair, Vice-Chair and all the members for their valuable contributions and advice. He thanked FAO, GFAR, ACIAR, COA, CG Centers, and other partners for their support to APAARI programs. Dr. Paroda thanked Dr. Iftikhar Ahmad for agreeing to host the next Executive Committee meeting in Pakistan.

Workshop on Foresight and Future Pathways of Agricultural Research through Involvement of Youth



Participants of the National Workshop at NASC Complex, New Delhi

The challenges of retaining youth in agriculture are being well recognized globally. During the second Global Conference on Agricultural Research for Development (GCARD2) organized by Global Forum on Agricultural Research (GFAR) at Punta del Este, Uruguay during 2012, the “Youth and Agriculture” was one of the focal discussion points. Empowering youth, developing their capacity, creating awareness on new opportunities in agriculture and involving them in policy planning is the way forward for transitioning rural youth from 'Job Seekers' to 'Job Providers'. The Chair GCARD2, quoted “globally agriculture is an ageing and undervalued profession and youth needs special encouragement in all aspects of AR4D”. As a follow-up action of GCARD2, the Asia-Pacific Association of Agricultural Research Institutions (APAARI), Indian Council of Agricultural Research (ICAR) and Trust for Advancement of Agricultural Sciences (TAAS) jointly organized a national workshop on “Foresight and Future Pathways of Agricultural Research Through Involvement of Youth in India” on 1-2 March, 2013 at NASC Complex, New Delhi. A total of 300 participants from different ICAR institutes and agricultural universities, including farmers, students and private sector representatives; and senior resource persons attended the workshop. Dr. Raj Paroda, Executive Secretary, APAARI and Chairman, TAAS, delivering the inaugural address, exhorted the young agricultural professionals to commit themselves to meaningful inter-institutional and inter-disciplinary agricultural research and to make it more relevant to the needs of small and marginal farmers. He further emphasized that we must be happy with our past glorious agriculture, but the success has to be accomplished. For this, we need competent young human resource as well as to work with a theory of “Think Globally and Act Locally”. He asked the young professionals to keep farmer first and emphasized on research on innovations. Dr. S. Ayyappan, Secretary, DARE & DG, ICAR emphasized that young professionals should concentrate on long-term vision of the Indian agricultural research. He elaborated that country has about 7,000 agricultural scientists in NARES system of which more than 40 per cent are below the age of 40 years. Dr. Thomas Lumpkin, Director General CIMMYT, emphasized on close linkages with different national and international institutions, and partnership with the private sector. The two days' deliberations by young and senior agricultural professionals covered wide range of disciplines and components of Indian agriculture and identified that there is a need to reorient the agricultural research towards inter-institutional and inter-disciplinary mode through creating state of art integrated and collaborative research facilities, creating seed grant facilities for young professionals and more collaborative research with advanced foreign institutions. The deliberations also emphasized on capacity

development of young professionals through short to long-term trainings for young scientists at advanced international institutions and involving them in different decision making processes. The plenary session had Prof. R.B. Singh, President, National Academy of Agricultural Sciences (NAAS) as the Chief Guest and Dr. Ashok Gulati, Chairman, Commission for Agricultural Costs and Prices (CACP) as the Guest of Honour. Dr. Yash Saharawat, IARI played the pivotal role in organization and successful completion of the event.

Recommendations Research

- Reorient the agricultural research towards inter-institutional and inter-disciplinary mode through creating state of art integrated and collaborative research facilities
- Emphasize on joint research with private sector through development of common facilities
- Create seed grant (10-15 lacs) for newly recruited scientists to initiate research in a program mode rather than project mode
- Emphasize on collaborative research with advanced foreign institutions
- Make provision of special grant for young scientists on competitive basis
- Encourage scientists to develop patents and use of newer innovative scientific tools like nanotechnology, etc.

Development

- Sponsor young scientists for short to long-term trainings at advanced international institutions
- Provide institutional grant to present research work in International Conferences and its publication in referred journals
- Involve young scientists as members in decision making committees like RAC, SRC, etc.
- Make provision of training program by NAARM for young, mid-carrier and senior-level scientists for developing scientific leadership

Policy

- Emphasize more on human resource development through a bottom up approach
- Balancing the funding resources for basic, applied, strategic and participatory research
- Creating ICT facilities to discourage the repetitive research as well as for timely scientific accounting of the scientists
- Adopt a bottom up approach for more scientific and administrative freedom
- Creating centralized research facilities in collaboration with private sector

Global Consultation on Use and Management of Agrobiodiversity for Sustainable Food Security

The Global Consultation on Use and Management of Agrobiodiversity for Sustainable Food Security was jointly organized by the Indian Council of Agricultural Research (ICAR), Ministry of Agriculture, Government of India in collaboration with Bioversity International and with support from the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), Food and Agriculture Organization of the United Nations (FAO), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), International Center for Agricultural Research in the Dry Areas (ICARDA) and Asia-Pacific Association of Agricultural Research Institutions (APAARI) at National Agricultural Science Centre (NASC), Pusa Campus, New Delhi on 12-14 February, 2013.

The Consultation was attended by 55 delegates from 32 countries and 60 participants from national agricultural research system (NARS). The Consultation discussed on issues related to management, exchange and use of agrobiodiversity for sustainable development. The deliberations led to enhancing the capacity and capabilities of national partners through South-South cooperation and further strengthening of North-South partnership.

Dr. K.C. Bansal, Director, National Bureau of Plant Genetic Resources (NBPGR) welcomed the participants and briefed about the Indian national plant genetic resources program. Dr. P.N. Mathur, South Asia Coordinator emphasized on South-South cooperation for conservation and use of plant genetic resources for sustainable agricultural production and highlighted the significance of the global consultation. Dr. S. Ayyappan, Secretary, DARE and Director General, ICAR highlighted the need of forming a strong active network and extensive learning from each other across different countries. He highlighted the need of developing capabilities of genebanks globally in the area of risk management. Dr. Emile Frison, Director General, Bioversity International introduced the objectives of the Consultation and emphasized on the importance of close link between conservation and use. Prof. R.B. Singh, President of the National Academy of Agricultural Sciences of India mentioned the need of science to serve the society. He stressed that modern tools and technologies be employed to better harness the diversity. Dr. Raj Paroda, Chairperson of Haryana Farmers Commission and Executive Secretary, APAARI drew attention to the poor exchange of germplasm among stakeholders. He said legal systems and tools such as DNA fingerprinting and documentation should be developed to safeguard the countries' interest but the use of diversity should not be restricted because of changing regimes. He urged to strengthen the Gene Fund to reward the farmers and farming

communities conserving biodiversity. Shri Tariq Anwar, Hon'ble Minister of State for Agriculture and Food Processing Industries, Government of India emphasized on the need of enhanced South-South cooperation to complement North-South endeavours and called for greater emphasis on underutilized species to enhance nutritional security of rural population. Dr. Charan Das Mahant, Hon'ble Minister of State for Agriculture and Food Processing Industries stated that scientific approach to on-farm conservation is possible only if challenges faced by traditional farming system are critically addressed. He also stated that the custodian farmers be equipped technically and financially to enhance on-farm conservation.

The Global Consultation deliberated on five themes: i) genetic resources conservation strategies at global, regional and national level; ii) documentation and sharing mechanism for effective use of genetic resources; iii) collaborative research, capacity building and sharing of expertise; iv) strategies for implementation and monitoring of the Second Global Plan of Action (GPA), International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and Global Research Initiative, and v) conservation and use of animal, fish, microorganisms and agriculturally important insects.

Participants stressed that the Contracting Parties should use the Standard Material Transfer Agreement (SMTA). Provision of Easy-SMTA, is a positive development for facilitating further the exchange of germplasm. However, the systematic use of SMTA for the exchange of Annex. I crops still faces a number of impediments given the different situations in different countries. In some countries which are Parties to the Treaty, further work is needed to put in place an enabling administrative and/or legal framework for the implementation of the Multi-lateral System (MLS). In this regard, guidelines for the implementation of the International Treaty were welcomed and considered useful.

It is recognized that countries through their national programs have the primary responsibility to fund and implement the second GPA in accordance with their own national priorities. Stakeholders, including governments, public (research, education and extension) organizations, private enterprises, farmers and local communities, are urged to contribute to the implementation of the GPA, for example, through cooperation with countries, including countries with advanced agricultural research systems. Participants recognized the Benefit-Sharing Fund (BSF) of the International Treaty and the Global Crop Diversity Trust (GCDDT) as essential for the implementation of the second GPA. However, their



Participants of the Global Consultation at NASC Complex, New Delhi

current financial resources are not sufficient to address the gaps and needs for the conservation and sustainable use of all PGRFA, and only Contracting Parties of the Treaty are eligible for support under the BSF. Additional funding needs to be mobilized in order to enhance the outreach of the existing funding strategy of the International Treaty and to fully implement all 18 priority activities of the second GPA. The importance of an efficient system for monitoring progress in the implementation of the second GPA is widely recognized and can provide a useful basis for elaborating national plans and strategies that promote synergies towards common goals and help coordinating and integrating efforts for the conservation and sustainable use of PGRFA. The web-based approach adopted to manage the proposed indicators for monitoring the second GPA will help increase transparency.

Key Recommendations

- Genetic resources management requires a national action plan like GPA. This needs to be paid required attention.
- *In situ* conservation cannot be replaced by *ex situ* conservation. To make *in situ/on-farm* conservation more effective, involvement of local communities is essential and can be achieved by providing more support and sharing of benefits.
- There is a great need for expansion of Annex. I crops of the Treaty by adding more species in the list.
- GPA is in place and needs to be further revisited for follow-up, in the best interest of parties/ stakeholders.
- There is a need for involvement of committed people with service motive in PGR/ FAO initiatives.
- National Biodiversity Laws in each country need to be enacted in harmony with the provisions of the Treaty.
- Activities need to be undertaken to further improve genebanks to avoid duplication of samples and for safe duplication using modern approach or tools. Wherever possible, safety duplicates should be maintained to conserve PGRFA.
- There is need to exchange experience with other research institutes to understand as to how the regulations of Convention on Biological Diversity (CBD) and ITPGRFA are harmonized.
- The global donors should provide greater funding support for PGR activities in various countries, particularly for *ex situ* conservation.
- Training and capacity building in PGR, research funding and grants for country projects for PGR activities need to be encouraged
- Priority attention needs to be given to the development of trait-specific PGR, biotic and abiotic stress tolerant varieties to overcome climate change and impart heat and salt tolerance and for development.
- Partnership among different centres and countries and capacity building in PGR need to be strengthened.
- Prebreeding initiatives, viz., Prebreeding 1 (base broadening, wide hybridization) and Prebreeding 2 (gene discovery, genotyping, phenotyping and association genetics) for further breeding programs should be given greater thrust.

APAARI in Other Fora/Committees

- Member of CG Fund Council representing all the Regional Fora, represented by Dr. Simon Hearn, Chairman, APAARI
- Member of Evaluation and Impact Assessment Committee of the CG Fund Council represented by Dr. Simon Hearn, Chairman, APAARI
- Member of Tropical Agriculture Platform (TAP) represented by Dr. Raghunath Ghodake, DG, NARI, Papua New Guinea
- Member of GFAR Steering Committee : Dr. Simon Hearn, Chairman and Dr. Raj Paroja, Executive Secretary, APAARI are members.

APCoAB Steering Committee Meeting

The XV Steering Committee Meeting of the Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB) was held at Bangkok on 15 April, 2013. The meeting was chaired by Dr. Simon Hearn, Chairman, APAARI and attended by eight other Steering Committee (SC) members/their representatives and special invitees. Dr. Raj Paroda, Executive Secretary, APAARI, welcomed the participants and requested Dr. Simon Hearn to chair the meeting. Dr. Hearn, while welcoming the participants, thanked the members for their consistent



APCoAB Steering Committee meeting in progress

support to APCoAB. He mentioned that over the years APCoAB had made commendable headway in its mandated activities on policy advocacy, capacity building and knowledge dissemination. Dr. Hearn recalled his participation in expert consultation on “Managing Trans-boundary Diseases” organized by APCoAB at New Delhi during October, 2012, which highlighted national and regional actions required to combat the serious threats to agriculture posed by trans-boundary diseases. Important recommendations were made in this meeting, including the need for regional cooperation in disease surveillance, forecasting and control.

Dr J.L. Karihaloo, Coordinator, APCoAB presented a brief on Action Taken Report and Progress Report for 2012. The reported activities included: i) organization of four expert consultations and workshops, ii) publication of three status reports and proceedings, and iii) other outreach and communication activities. The committee appreciated the progress made and recommended, among others, organization of future activities on food safety and GM for abiotic stress.

Following recommendations and important points emerged during the discussion:

- Soft copies of new APCoAB publications should be emailed to all members for their use and sharing with other interested users.
- Strategic planning is required to enable all APAARI member organizations to benefit from APCoAB training programs and workshops. These should be tailored so as to cater to the needs of less advanced NARS as well.
- Training programs on GM technology, MAS and biosafety should be organized on priority.
- Information on group meetings and training programs being organized by APCoAB should be circulated well in advance to enable timely response from the member organizations.
- It was suggested to organize an expert consultation on food safety in 2014 in collaboration with JIRCAS.
- A proposal was also made to organize a training program on food safety in 2014 at ICRISAT.

- During the discussion on budget, it was recommended to request ICRISAT to issue, from 2014 onwards, audit certificates for the APCoAB accounts maintained and operated by ICRISAT.

Other suggestions

- Members expressed a strong need for regional cooperation to accelerate application of GM technology to address priority problems like abiotic stress. It would be desirable to pool resources and launch regional network programs to benefit from expertise available in the region. In this regard, commendable research has been done by JIRCAS on DREB gene which needs to be carried forward by other national systems through collaborative efforts. APAARI could play a facilitation role in establishing the collaborations with NARS.
- Public sector by and large has not delivered to the expected level towards development of GM crops aimed at meeting the local agricultural R&D priorities. There is an urgent need to streamline and accelerate public sector GM crops development programs. Success of public sector in development of GM crops would also remove the perception that GM crops are a private sector monopoly. In this regard, PARC has made commendable progress by releasing a number of GM cotton varieties in Pakistan.
- There is a need to develop consumer confidence in GM products. This can be achieved through creation of a robust regulatory system and vigorous public communication of facts and figures.

Since the term of this Steering Committee had expired, a new Steering Committee was constituted as follows:

Chairman	: Dr. Simon Hearn, ACIAR, Australia
Members	: Dr. Masa Iwanaga, JIRCAS, Japan Dr. Su-San Chang, COA, Chinese Taipei Dr. William Dar, ICRISAT, India Dr. Iftikhar Ahmad, PARC, Pakistan Dr. Raj Paroda, APAARI, India

Member Secretary : Dr. J. L. Karihaloo, APCoAB, India

The Audited Report for 2012 and budget for 2013 were presented and approved unanimously by the Steering Committee.

The following workplan for 2013 was also approved.

- APCoAB Steering Committee Meeting, Bangkok, 15 April, 2013
- Stakeholders' Dialogues on Biosafety Regulations in the Asia-Pacific Region, Bangkok, 16-17 April, 2013
- Seminar on molecular breeding, AVRDC, September, 2013
- Training program on biotechnology in Chinese Taipei in consultation with COA
- Publication on "Proceedings of Expert Consultation on Managing Trans-boundary Diseases of Agricultural Importance in Asia-Pacific"
- Publication on "Proceedings of Stakeholders' Dialogue on Biosafety Regulations of Asia-Pacific Region"
- Publication on "Biosafety Regulations of Asia-Pacific Countries" (revision)
- Regular update of contents, databases and new/events on agricultural biotechnology developments in Asia-Pacific region on APCoAB website

Stakeholders' Dialogue on Biosafety Regulations in the Asia-Pacific Region

APCoAB organized a Stakeholders' Dialogue on "Biosafety Regulations in the Asia-Pacific Region" in Bangkok on 16-17 April, 2013. The meeting was inaugurated by Dr. Hiroyuki Konuma, ADG, FAO RAP and attended by 25 participants from Asia-Pacific countries, including APAARI members, CG Centers, FAO, CABI and other international and local organizations. The program included presentations on overview of biotechnology and biosafety in Asia-Pacific, country status reports,



Stakeholders' Dialogue on Biosafety Regulations

key-note lectures on related topics, discussion on key issues and plenary discussion. Following are the major recommendations made in the meeting:

Biotechnology R&D priorities especially aimed at smallholders

- GM technologies need to be focused to address the still unmet needs of smallholder farmers.
- Since private sector is putting most of its efforts on major crops, there is a need to give more attention by public sector organizations to niche crops, like cassava and Bt brassica.
- Countries need to adopt best technology options for GM production.
- Regional prioritization of crops for GM intervention should also be based on agroecology.
- There is a need to address those problems on priority for which the entire technology can be packaged into seed.
- Biosafety compliance costs can be lowered by assisting countries in implementing biosafety policies through collaboration and optimization of testing.

Enhancing communication for public awareness

- Enlist farmers' support for technology awareness and inputs at the field trial stage itself rather than later when the tests have been completed. To ensure their greater acceptance, it is important to make farmers a part of the product development process.
- Make use of farmer champions post-introduction for disseminating the practical experiences with the technology.
- Resources need to be allocated by research institutes/technology developers for adopting appropriate communication strategies developed through professional communicators.

Regional cooperation for biosafety management

- Cooperation, collaboration, linkages and networking in modern biotechnology/biosafety among the Asia-Pacific countries need to be initiated, implemented and strengthened.

- There is a need for alignment and synergies among the existing biosafety policies under different national component authorities in each Asia-Pacific country and within sub-regional or regional economic/political associations.
- There exists an acceptable resolution on the co-existence issues among conventional agriculture, organic farming and biotech crop cultivation. A settlement of this issue is urgently needed within and among Asia-Pacific countries.
- In order to accomplish these aims and make them sustainable, there is a need of an effective financial assistance mechanism at the regional level similar to the one existing under GEF.

ERA-ARD Steering Committee Meeting

The Steering Committee meeting of ERA-ARD II Project was held at the Ministry of Economic Affairs, Brussels, Belgium on 4 June, 2013 and attended by 26 participants, mostly from the European countries and the representatives of regional fora. Dr. Bhag Mal, Consultant, represented APAARI in this meeting. The Chair of the ERA-ARD Steering Committee, Ms. Annette Wijering, welcomed the members and appreciated the presence of regional fora, namely, APAARI, AARINENA, FARA and FORAGRO. Dr. Bhag Mal highlighted APAARI's major programs

including APARIS and APCoAB activities, significant achievements, workshops/conferences/ expert consultations/training programs organized and publications, proceedings and success stories. He also highlighted the need to have concrete plans, financial resources and strong will for greater collaboration between Europe and Southern Emerging Economies on equal partnership basis which was also endorsed by the participants from other regional fora. Ms. Patricia Wagemaker presented the report of ERA-ARD II which was followed by other agenda items. During the discussion, the following important points emerged: i) formation of regional alliances was agreed by SC; ii) proposals for improving European research contribution to IAR agenda were approved; iii) SEAG emphasized the importance of partnerships especially with regional fora; iv) for increasing the sustainability of established joint activities, a briefing paper will be prepared; v) portal of portals needs to be developed to address the European fragmented information landscape with respect to ARD actors and programs; vi) there is a need to establish a new Strategic Working Group which should have an advisory role to EIARD and SCAR and should involve SEAG. Regional Fora can help the Strategic Working Group by way of advisory role; vii) there was strong agreement of SC on the need for long-term partnerships, sustainable programs and alliance concept. SEAG stressed the need for linking mid-term plans of regional fora through GFAR.

(Source: Dr. Bhag Mal, Consultant, APAARI, b.mal@apaari.org)

International Conference on Better Linkages between Agricultural Research and Development for Greater Impact on Global Challenge



Participants of the International Conference

The International Conference was attended by 150 participants. The Conference was opened by Ms. Annette Wijering, Chair of ERA-ARD Steering Committee and the welcome remarks were given by Frank de Wispelaere, Director Thematic Services, Directorate General for Development Corporation, Belgium and Rudolf Strohmeier, Deputy Director General, Research Programs DGRTD. There were five technical sessions, viz. i) Global Challenges: Europe and the GCARD Road Map, ii) ERA-ARD: Lessons Learnt, iii) Research and Innovation Partnerships between Europe and Other Regions of the World: Learning from Diversity of Approaches, iv) Improving the Contribution of European Agricultural Research to Address Global Challenges, and v) linking the Past with the Future. In all, 18 presentations were made by senior experts in different fields. The closing remarks were given by

Frank de Wispelaere and Michael Berkelmans. The following major recommendations/points emerged:

- For enhanced cooperation, there is a need for adopting a coherent approach by Europe to attract the Southern countries to join. It needs to be critically analyzed as to how Europe can work with regions other than Africa.
- Research priorities need to be identified and research networking has to be very strong to be useful to end users. Research on bio-economy along with value chains need to be initiated.
- Strong collaboration needs to be built: i) between agricultural research (AR) and agricultural research for development (ARD) in Europe, ii) between Europe and non-European countries and outside partners.

(Continued on Page 13...)

Anand Agricultural University, Anand - A Profile

Anand Agricultural University (AAU) was carved out from the erstwhile Gujarat Agricultural University, as a separate institution to incorporate teaching and imparting education in Agriculture and Allied Sciences in the State of Gujarat, by the Government of Gujarat, through enactment of Gujarat Act No. 5 of 2004. The Act was passed by the Gujarat Legislative Assembly and was assented by H.E. the Governor of Gujarat on 4 March, 2004. The Institute had a strong foundation laid by the Sardar Vallabhbhai Patel and Dr. K.M. Munshi as Krushi-Go-Vidhya Bhavan or Institute of Agriculture and Animal Genetics, Anand in 1938 to revitalize agriculture and animal husbandry.

Vision

Agriculturally prosperous Gujarat and India is the vision of Anand Agricultural University. Priorities and concerns keep on changing by time and the University has made all the efforts to match with stride. The University is aimed at addressing the basic and applied issues related to agriculture production and livestock wealth in addition to human resource development and overall improvement in the socioeconomic status of farmers. The University has provided a meaningful scientific and technological support to farmers through its different faculties, research stations/sub-stations/centres and krishi vigyan kendras located in different parts of the Gujarat State.

Mission

The mission of the Anand Agricultural University is to provide teaching, research and extension education services related to Agriculture, Dairy, Veterinary and Allied Sciences including newer sciences like Agricultural Information Technology, Agricultural Engineering Technology, Food Processing Technology, Agricultural Business Management, etc. and thereby develop excellent human resource and innovative technologies to serve the farming community with the motto of making Gujarat and India agriculturally prosperous.

Objectives

- To impart education and thereby develop quality human resource
- To further the advancement of learning through research
- To disseminate the knowledge gained through research to the stakeholders – the farmers, through extension education
- To promote partnership and linkages with national and international institutions
- To develop cutting edge technologies for national and international arena/markets

Education

AAU imparts effective education in agriculture and allied sciences through residential semester system of undergraduate and postgraduate degree programs, awarding degrees in various faculties and there are several constituent colleges. Also, there are three year diploma programs which run through several polytechnics.

The University runs PG courses leading to Masters and Ph.D. in 42 disciplines. The University has well equipped laboratories. Also, the University has two commercial dairy training centers, one Anubhav Dairy and another Vidya Dairy where one full year of residential hands-on-training is imparted. Two pilot plants, one for pulse processing and another for biodiesel production are also installed. In addition to above facilities, eleven experiential learning centers in faculties of Agriculture, Veterinary, Dairy, Horticulture and Food Processing Technology have been established.



Administrative Block, AAU, Anand, Gujarat

Research

Research activities of AAU focus on productivity, sustainability and improvement of the socioeconomic conditions of the farming community. These goals of AAU encompass newer areas such as biotechnology and nanotechnology, organic farming, seed technology, climate change, soil health, medicinal plants along with the conventional crops and processing of food products, watershed development and development of farm equipments. It has focused on distant hybridization on field crops including fruits and vegetable crops. High quality research like identification of genome for preventive and curative measures against infection/infestation of diseases adversely affecting higher productivity in poultry/livestock has been started in veterinary field besides different measures in animal nutrition. Emphasis is also given on uplifting the standards of milk and milk products to compete at the international level under the dairy technology research. Food processing technology and bioenergy are new and promising areas in post-harvest technology, food irradiation and biofuel. It has the distinction of developing an end-to-end integrated processing plant. The University has ultra modern laboratories with sophisticated instruments and excellent trained research staff besides well managed farms at different locations. Besides, state non-plan schemes as well as ICAR coordinated schemes, 437 ad-hoc schemes / projects were implemented during 2004-12.

All India Coordinated Research Projects (AICRPs) on rice, maize, castor, forage crops, AINRP on Tobacco, AINRP on Medicinal & Aromatic Plants, Micro and Secondary Nutrients and Pollutant Elements in Soils and Plants, Weed Control, Cropping System Research-OFR, biological control of crop pests and weeds, plant parasitic nematodes, AINP on pesticide residues, agrometeorology, seed technology research (crops), AINP on agricultural ornithology, poultry for eggs, improvement of feed resources and nutrient utilization in raising animal production are functioning at the University. More than 400 technologies have been recommended for farmers/scientists/entrepreneurs

Technologies Generated

The Anand Agricultural University has developed large number of need based technologies for enhancing agriculture productivity and bringing rural prosperity. Recommendations in the field of animal science helped to increase income of farmers/animal keepers through increasing the production of milk, meat, eggs and dairy industries/entrepreneurs in particular.

Plant Science

- A total of 24 high yielding varieties of rice (5), chilli (3), tomato (2), ridge gourd (1), pumpkin (1), pigeonpea (2), cowpea (1), cotton (1), tobacco (2), forage crops (3) and medicinal and aromatic plants (3) have been released for commercial cultivation.
- Protocols for plant tissue culture have been developed for date palm (*Phoenix dactylifera* L.), Kankoda (*Momordica dioca*), parwal (*Trichosanthes dioca*) and Stevia. Protocol of Barheex variety for date palm is under refinement.

Animal Biotechnology

- Whole genome sequencing of Jaffrabadi buffalo (*Bubalus bubalis*) has been initiated and 64,212 nucleotide sequences have been deposited at National Center for Biotechnology Information (Project ID-40113), Genbank, BIJ, USA. This is the first report of buffalo genome sequencing.
- Differentiation of cow and buffalo meat through molecular genetic techniques – Patent processed.
- Detection of adulteration in meat and meat products through molecular genetic techniques has been standardized.
- DNA based diagnostic test for a number of diseases in livestock has been established.
- Breeds of livestock (cattle, buffalo, goat, sheep and horse) have been genetically characterized.
- Genes associated with lactogenesis in buffaloes have been identified.
- Many genes for production traits have been characterized

Poultry Science

- Developed Anand Commercial Layer (Hybrid) with genetic potential to produce more than 300 eggs annually with an average egg weight of 55 g, and high feed conversion efficiency.
- Developed Bantamised White Leghorn stock for improvement of feed efficiency and exploiting utility of its male line as convertor line for commercial stocks.

Animal Nutrition

- Developed non-conventional ration with economic inputs for animals during adverse environmental conditions.
- Developed area based mineral mixture.
- Conducted survey of almost all the districts of Gujarat State for animal nutrition requirement.

Dairy Science

- A product 'peanut spread' has been developed, with better nutritional value to replace butter.
- Continuous basundi making machine has been developed which is economical as compared to traditional method.
- Scraped surface heat exchanger for continuous shrikhand thermization machine has been developed having only Rs. 0.65/kg processing cost for thermization.
- New functional dairy product symbiotic *dahi* (curd) has been developed.
- Fruit grader has been developed for mango.

Seed Production

Seed is the key factor for raising the production and productivity of any crop and for wide adoption of released varieties. Anand Agricultural University is producing nucleus as well as breeder seeds in enough quantities to cater to the needs of seed industry in public and private sectors. The major quantity of seeds is produced in paddy and wheat followed by maize. Nucleus seed of different crop varieties is produced keeping in view the spread of the variety and future needs. The University has managed to produce foundation / certified / truthful / general seed of the most adapted varieties in large quantity for their distribution among the farmers in the brand name "Anubhav Seed".

Extension

The main objectives of the extension education in the University are : i) to impart training to the officers and extension workers of line departments of Government of Gujarat and India, field functionaries,

staff of the University, NGOs, farmers, entrepreneurs etc., ii) to conduct short and long duration vocational training for farmers, farm women, farm youth, entrepreneurs and tribals, iii) to assess, refine and demonstrate the latest agricultural technologies of University through front line demonstrations for their wider adoption, and iv) to transmit agricultural technologies to the farmers and rural masses of Gujarat through mass media, information technologies and video conferencing.

Extension Education Institute

The Extension Education Institute, Anand caters to the extension training needs of middle level functionaries of various development departments of Western Zone States, namely, Gujarat, Rajasthan, Madhya Pradesh, Chhatisgarh, Maharashtra, Goa and Union Territories of Diu, Daman and Dadara Nagar Haveli. The aim is to improve upon their job performance, wherever they are working in different capacities.

Certificate Course

The University also conducts certificate courses of short duration for various need based disciplines like baking technology, poultry training, gardeners training, food processing technology, organic farming, weed management, integrated pest management, medicinal & aromatic plants, seed production, etc.

New Extension Centers

After the inception of Anand Agricultural University, new extension centers at various locations in the University were started, viz., Pashu Vigyan Kendra at Limkheda, Dairy Vigyan Kendra at Vejalpur, Training Center at Jabugam, Transfer of Technology Center at Godhra, Farm Technology Training Center at Sansoli.

Information Technology Center

This center is the backbone of services providing online Email account, handling the online application for the students, and has developed online admission application for four universities. Information Technology Center has introduced the website first time in SAUs of Gujarat for online job application and established a new computer laboratory for students and farmers and started Wi-Fi internet connection covering the campus region. The University has installed 2 mbps LAN connectivity with fiber optic which connects more than 500 computers across the University campus. ITC has prepared a website www.aau.in for Anand Agricultural University which includes various aspects and activities of Anand Agricultural University.

Soil Health Card

AAU has the distinction of developing the soil health card for the entire State with headquarters at AAU, Anand. The card is a result of soil health data collected from farmers fields across Gujarat. Exclusive software providing a decision support to any farmer across the State is achieved just by logging at the specially created website. It is an endeavour to put crop knowledge at the farmers' fingertips. The National Award was conferred upon Anand Agricultural University for e-Governance (2008-09) by the Department of Administrative Reforms & Public Grievances, jointly with Department of Information Technology, Government of India, New Delhi, in 2009 at GOA for its contribution in the field of outstanding performance in citizen-centric service delivery.

Business Planning and Development

Business Planning and Development (BPD) Unit at AAU is a sub-project under component -1 of the National Agricultural Innovation Project of ICAR functioning since 2010 with majority funding from World Bank. The unit carries out agricultural business incubation activity by promotion of start-up agribusinesses, promotion of agricultural entrepreneurship and nurturing agricultural innovations. The BPD Unit has won over a dozen awards and laurels.

(Source: Dr. A.M. Shekh, Vice Chancellor, AAU, vc_aau@yahoo.com)

Bhutan

The School Agriculture Program in Bhutan: A Promising Strategy to Enhance Food and Nutrition Security

Introduction

The School Agriculture Program (SAP) in Bhutan integrates agricultural activities and concepts within the educational system. The SAP is coordinated nationally by the Council for RNR Research of Bhutan (CoRRB) within the Ministry of Agriculture and Forests (MoAF) in close collaboration with the Department of School Education (DSE) within the Ministry of Education (MoE). The Program was initiated in Bhutan as early as in 2000 and there are approximately 223 schools currently participating in the SAP representing almost 40 per cent of the total schools in the country. It is implemented in both rural and urban schools and primarily targets government boarding schools where feeding is provided by the State. Based on the available financial status, 10-20 new schools are targeted to be introduced to the program every year.

Objectives

The objectives of the SAP are many fold. Other than the obvious aspect of "creating awareness and hands-on training in agriculture", it covers concepts such as inculcating the dignity of labour and provides avenues for ideas and skills associated with a means for future



A. Students preparing the land for SAP : "inculcating dignity of labour"
 B. Children watering SAP plot, "learning by doing"

livelihoods. Increasingly becoming important is the association of the Program with the objective as a basis for enhancing food and nutritional security through organically produced food, of importance in rural state run schools.

General Activities

Given the nature of the dependence of most Bhutanese on various natural resources for their livelihoods, the SAP attempts to replicate and demonstrate the largely integrated farming scenarios practiced in Bhutan by using scientifically based approaches.

These initiatives may include some but not necessarily all activities associated with livestock, crops, and vegetable farming. The concepts such as school greening for maintaining pleasant aesthetics of the school compound, are encouraged and floriculture activities promoted. The growing of medicinal plants and herbs including mushroom cultivation are especially promoted in urban schools with limited land for SAP. The concept of zero wastage and the associated activity of compost making also play an important part in establishing a holistic program. The students are also introduced to basic agricultural

economics and financial management" aspects through activities such as book keeping and the management of a revolving fund generated through sale of agricultural produce to their school kitchen.

SAP facilitates technical agricultural trainings and guidance to selected school teachers to identify them as the focal agricultural teachers (FATs) in their respective schools. Further, the SAP annually celebrates the World Food Day on 16 October in schools and shares the FAO theme with participating schools. Competitions such as debates and quizzes are organized and awards presented to the schools and students to make the SAP more interesting and sustainable.

Recent Trends

The World Food Program (WFP) has been assisting Bhutan in feeding some of our rural school children since 2004 and will be phasing out the support by 2018, to support other countries on their priority list. In order for Bhutan to prepare for this transition, SAP is exploring new strategies to cater to the challenge of school feeding especially the boarding schools situated in rural settings. One of the strategies being explored and currently being piloted by CoRRB is the involvement of the local communities in sharing the responsibilities with the State for school feeding.

A program titled "Farmer to School (F2S)" through the funding of FAO is being piloted which is considered a win-win situation at many levels. Farmers are one of the primary beneficiaries as they are encouraged to sell their local produce to schools in their vicinity thus reducing the need for long distance expensive transportation for perishable vegetables to urban markets. They are encouraged to form Cooperatives so that the economies of scale are addressed and as groups receive more readily the technical assistance and inputs from the MoAF. Children on the other hand have access to largely organic and fresh produce and a diversity of fresh vegetables to their diet.

Her Royal Highness Princess Maha Chakri Sirindhorn of Thailand who is also a goodwill ambassador to WFP is supporting SAP in three schools in Bhutan. The Thai experiences adding value to the program involve the post-harvest processing of food to make vegetables available in the lean season, management of the nutritional health status of the school children by requiring regular monitoring of the weight and height of students. Very important for a developing country like Bhutan which can be replicated is the use of cost effective locally available materials for building simple designed infrastructure required for SAP such as livestock sheds and perimeter fencing.



A. The agriculture plot in the school : "enjoying the fruits of their labour"
 B. School feeding supplemented by SAP

Internationally recognized organization such as the World Vegetable Center (AVRDC) is in the process of replicating components of SAP in local schools in five other countries, to address malnutrition and associated health related disorders through the production and consumption of green and fresh vegetables. The Director General of AVRDC while in Thimphu in May 2013 stated "Bhutan should take pride due the fact that they are the pioneers of the concept of SAP and should share the experiences with others". AVRDC's program will substantiate whether efforts such as SAP will fulfill the expectation of many in reducing nutritionally imbalanced health related problems in young school going children.

Conclusion

The SAP in Bhutan is expanding and also at the same time experiencing a paradigm shift in its institutional set-up. While some generous support is being received from International Organizations, the Royal Government of Bhutan (RGoB) provides the major funding for the SAP activities. The RGoB is up-scaling the support to SAP and has policies to encourage students to become educated and environmentally conscious farmers and citizens. Such interventions will also be an important avenue to improve the health and nutrition of the current school going rural children. The RGoB has also approved the piloting of SAP from a "Club Perspective" to a "Curriculum Based Optional Subject" for students in the middle to higher secondary classes. Currently, 20 schools have initiated the "Curriculum Based Optional Subject" as a formal course. Therefore, it is envisioned that SAP will not only contribute to assisting the efforts of the RGoB in enhancing food and nutrition security in schools, but will also create an enabling environment to sow the seeds of interest among the youth in the agriculture sector.

[Source: Medon Yaganagi, Dy. Chief Res. Officer, B.B Rai, Program Officer, and Tashi Samdup, Director, CoRRB, t_samdup@moa.gov.bt]

Philippines

Indigofera, Now Known as a Good Goat Feed

Indigofera tinctoria was reportedly first introduced, propagated, and promoted in Bansalan, Davao del Sur by the Mindanao Baptist Rural Life Center sometime in the 1980s. Only a few ruminant raisers then took notice and valued it as a forage crop. *Indigofera* is a forage tree/shrub with many shoots bearing pinnate bright green leaves. Some plant the legume just to be part of a vast landscape, while others plant it for shade and windbreak. As feed, farmers initially cited the unpalatability of the feed material due to toughness of the leaves. Hence, the material remained unknown and was neither promoted nor became popular in the countryside.



A. The legume tree "*Indigofera*"

B. Milking goats at AGF are fed with diets supplemented with *Indigofera*

Recently, the popularity of *Indigofera* soared when Rene Almeda, an innovative commercial raiser of dairy goats, discovered the nutritional potential of the feed material. Rene who serves as consultant at the Alaminos Goat Farm (AGF) is a strong advocate and promoter of *indigofera*.

Indigofera has 27-31 per cent crude protein, which is relatively higher than any of the locally available leguminous forages. Leaves and twigs are harvested every 30 days to maintain their succulence.

At the AGF in Alaminos, Laguna, *Indigofera* was initially planted as shade and windbreak beside the dairy shed. However, out of curiosity and dire need for additional feed resource, Rene tried feeding it to goats. The animal's initial resistance broke down eventually and consumption improved. With the continuous use of *Indigofera*, milk production increased to 150 liters per day up from 120 liters. Rene attributed the dramatic increase to the nutritional value of the forage material. Moreover, adding 30 per cent *Indigofera* in the diet lowers the feed cost by 25 per cent. AGF also generates income from the sale of seeds. Seeds are sold at P600 per kilo (vacuum packed).

With these benefits, Rene included the *Indigofera* as a component to the Alaminos Salad Garden. The garden aims to supply a sustainable and nutrient-packed forage for farm animals. Also planted in the garden are combined forages (grass-legume) in rows composed of *Centrosema*, napier, mulberry, and *Moringa*.

Rene also embarked on pelletizing the leaves and mixing it in feed concentrate to make it more palatable and digestible for animals. A pelleting machine has been locally fabricated to the specifications. Once an unfamiliar forage, *Indigofera* has become a livestock farmer's favourite in improving animal productivity.

(Source: Alfred Parungao, S&T Media Service)

Dr. Raj Paroda honoured

Dr. Raj Paroda, Executive Secretary, APAARI was honoured with Life-Time Achievement Award "Krishi Shiromani Samman" for his outstanding contributions in the field of agricultural research, education, out reach programs and development of most modern infrastructure facilities for strengthening NARS in India.

The award has been instituted by Mahindra and Mahindra Limited under the series 'Mahindra Samridhi India Agri Awards' and was presented by Mr. Tariq Anwar, Minister of State for Agriculture & Food Processing in a glittering function organized in the Convention Hall of 'The Ashoka' Hotel on 21 March, 2013.



Coconut Scale Insect : A Voracious Pest

Brontispa, one of the most damaging pests of coconut and other palms, has apparently found another equally notorious match – the dreaded coconut scale insect (CSI) or scientifically named as *Aspidiotus* sp. Signoret.

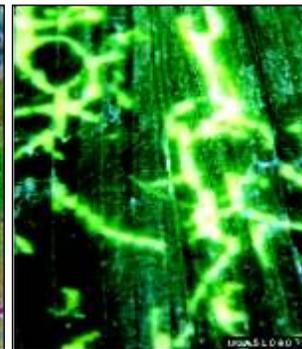
Equipped with specialized mouth parts for sucking, this small yet terribly voracious pest feeds on sap directly from the tree's vascular system. CSI's feeding causes yellowing or chlorosis, wilting, premature nutfall, and low yield. Experts explain that as CSI sucks the sap and injects toxic enzymes, these result in discolored leaves and deformed plant tissues.

Usually a minor pest of young coconut in nurseries, CSI is also a destructive pest to mature coconut palms. As they settle on the leaves, they continuously suck the sap that is essential for the growth of the crop. In young palms, this pest appears on the underside of coconut palms. In bearing palms, it also attacks the surface of the fruits and the petioles.

Coconut plantations in Batangas attest to how menacingly destructive CSI can become. Having been first noticed in three barangays of Tanauan in 2011, CSI has spread in nearby coconut farm towns of Sto. Tomas, Laurel, Malvar, Lemery, Agoncillo, and Balete. Recent report shows that CSI has now affected about 780,000 coconut trees in nine municipalities of Batangas including nearby provinces, Laguna, Quezon, and Cavite. The havoc caused by the pest was enough for the affected communities to declare a state of calamity. Farmers were forced to cut down infested trees and sell them as lumber to mitigate losses.



Adult coconut scale insect



CSI damage on leaf

known predators and parasites that can regulate CSI populations. Such biological agents may consist of coccinellid beetles, lacewings, and parasitic wasps.

Being in the forefront of the battle against CSI, the Philippine Coconut Authority (PCA) felt the need to fast track the mitigation of pest infestation and slow down the rate of infestation to allow the recovery of severely damaged palms. PCA likewise realizes the importance of a science and technology-based mapping of CSI infestation and evaluation of the efficient and safe delivery system of chemical treatments.

(Source : Ricardo R. Argana, S&T Media Service)



CSI infestation on coconut

All is not well for this vicious pest though. Hopefully, with the right technology, it can also be controlled, as it was in other countries. In controlling the disease, experts recommend the use of an integrated management approach. Such approach must begin with the early detection and identification of the pest.

On young palms and seedlings, CSI can be controlled manually by picking them off or spraying them with a jet of warm water or by leaf pruning. The use of insecticide is advised in some instances, particularly when other methods proved unsatisfactory.

Effective insecticides can lower CSI population in the field dramatically but it is important to select appropriate insecticides; observe timing and application methods to protect CSI's natural enemies, and avoid environmental contamination to protect human health and economic viability of the enterprise. As proven by many countries with coconut scale infestation, biological control can be a long-term solution for the control of this pest. This calls for the use of

International Conference of Better Linkages ...Continued from page 8

- AR and ARD needs to be linked and strong partnerships need to be developed. GFAR umbrella with regional fora may be used and the impact has to be shown based on experiences.
- Strategic Working Groups need to be developed and made functional for effective implementation of programs and activities.
- Research on production, post-harvest management and utilization aspects of plants, livestock and fisheries needs to be paid adequate attention with greater focus on farming system approach.
- Interaction between researchers and other stakeholders needs to be strengthened and smallholder farmers need to be given attention and be involved.
- Innovative research approaches and methods need to be devised.
- There is a need to establish multi-stakeholders platforms and agri-entrepreneurs.
- Collaboration of GFAR and regional fora with Europe is very important. Collaboration with CRPs also needs to be strengthened.
- For information dissemination, appropriate mechanisms need to be developed within Europe and from outside Europe with proper access point of entry.
- Current funding mechanism is not linked to ARD and, therefore, there is a great need for diverse funding sources and mechanisms
- Food and nutritional security need to be achieved while maintaining environmental resources with well tailored research programs.
- Research needs to be put in the wider development context and gender in agriculture partnership (GAP), youth involvement and rebuilding partnerships need to be given high priority

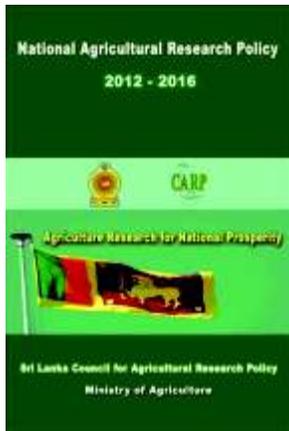
(Source: Dr. Bhag Mal, Consultant, APAARI, b.mal@apaari.org)

Sri Lanka

The National Agricultural Research Policy 2012-2016

Agricultural research has to be competitive in nature under the prevailing open market policies and trade liberalization and should be able to respond to the new challenges by generating technologies to increase productivity and quality of productivity.

The Sri Lanka Council for Agricultural Research Policy (SLCARP) being the mandatory organization for agricultural research policy decided to formulate and implement a reviewed agricultural research policy in order to enable the agricultural sector to achieve overall growth and challenging demands of the economy. Thus, SLCARP, appointed a committee to develop the National Agricultural Research Policy for 2012-2016 through a process of broader stakeholder consultation.



The National Agricultural Research Policy has been published in year 2013 and is available at the SLCARP website, www.slcarp.lk. It is hoped that this document will be a guide to facilitate national level accurate decision making in mobilizing human, physical and financial resources to meet the challenges of the agriculture sector.

The National Agricultural Research Policy has been formulated taking into consideration adaptive, anticipatory and integrated approaches to face the challenges of development in agriculture. The aim is to help Sri Lanka achieve the long-term goals of sustainable development.

This document contains policy statements covering nine thrust areas that are cross cutting important subject areas. Indicated below are the nine thrust areas along with the relevant policy actions/statements.

1) Legal and Regulatory Mechanism

- Ensure appropriate updating of the NARPol keeping in line with the changes in national policies related to agriculture.
- Facilitate the updating of other policy and regulatory instruments enabling the effective and efficient adoption of NARPol.
- Strengthen and manage regulatory systems on protection of all biological materials including those of plant, animal and microbe, intellectual property rights and biosafety issues to encourage investment in agricultural research.

2) Institutional Framework and Coordinating Mechanisms

- Strengthen the institutional coordinating, monitoring and evaluating mechanism for national agricultural research.
- Support establishment of advisory boards to different thematic disciplines in NARS to focus agriculture research programs according to the NARP.
- Promote periodic external review and evaluation of NARS for the agriculture research outputs and outcomes.
- Encourage and facilitate private-public partnership for agricultural research with benefit sharing mechanisms, for national development.

3) Priority Setting

- Facilitate establishment and periodic upgrading of national agricultural research priorities based on existing universal priority setting codes and national development needs.
- Ensure amending and upgrading of NARP on an annual basis.

4) Financing and Resource Mobilization

- Ensure adequate, sustainable and flexible financial and administrative mechanisms to support agricultural research in achieving the objectives of the NARP.
- Ensure that trained human resources and other research facilities are mobilized appropriately to stakeholder organization involved in agricultural research in accordance with the NARP.

5) Capacity Building

- Ensure capacity building in agriculture research methodologies and research management of the NARS through long-term and short-term approaches for developing and retaining scientific manpower.
- Strengthen research capacity of institutions for supporting of inter-institutional and multi-disciplinary agricultural research based on national research priorities.

6) Knowledge Management

- Ensure access to information through multiple approaches such as databases and web-based information repositories, to broaden knowledge and skills of different stakeholders.
- Encourage strategic partnerships and sharing knowledge among partners on agricultural research methodologies and innovations focusing on current and emerging issues such as climate change.

7) Technology Transfer

- Harness and patronize introduction of appropriate technologies generated through sound agricultural research while safeguarding intellectual property rights.
- Strengthen the capacity of research institutions in support of technology transfer to end users.
- Promote public-private partnerships for revitalization and commercialization of technologies.

8) Sustainable Use of Biodiversity and Natural Resources

- Ensure identification, conservation and safe exchange of germplasm and molecular characterization for interested traits utilization in breeding programs.
- Facilitate collection, documentation, validation and development of traditional knowledge pertaining to agriculture.
- Promote research on environmentally friendly agricultural practices.

9) International Cooperation

- Encourage and facilitate regional and international collaboration and networking to support agricultural research and attract researchers.
- Strengthen the position of SLCARP in the global agricultural research system responding to new challenges and exploiting opportunities to access agriculture innovations.

(Source: Prabath Wimal Kumara, Director, SLCARP; prabathwk@gmail.com)

India

'SWARN': A Male Cloned Buffalo Calf Born

A male cloned buffalo calf named 'SWARN' produced through the new and advanced 'Hand-guided Cloning Technique' was born at the National Dairy Research Institute (NDRI), Karnal, India on 18 March, 2013. The calf was born by normal parturition, and its weight at the time of birth was 55 kg. The newborn calf is keeping good health and has started sucking milk. This cloned buffalo calf is unique and is different from the earlier clones because, in this case, the donor somatic cell used was isolated from the seminal plasma of a bull which is currently being used for donating semen at Animal Breeding Research Center (ABRC) of NDRI, Karnal. The scientists involved Dr. S.K. Singla, Dr. M.S. Chauhan, Dr. R.S. Manik, Dr. P. Palta, Dr. Shiv Prasad, Dr. Naresh Selokar and Ms. Monika Saini.

Dr A.K. Srivastava, Director, NDRI emphasized that there is an acute shortage of outstanding bulls, and that this achievement may enable us



Mahima: Female calf born from cloned buffalo 'Garima'



Swarn: A male cloned buffalo calf

to decrease the gap between the demand and supply of these bulls in the shortest possible time.

"MAHIMA" Born from Cloned Buffalo "Garima"

One more feather is added to the NDRI's cap when a female calf was born from cloned buffalo Garima. NDRI has named the newborn female calf "Mahima". In the world, it is the first calf born from cloned buffalo, produced through hand guided cloning technique. Mahima, weighing 32 kg, was born on 25 January, 2013 by normal parturition. The newborn "Mahima" started suckling of milk within 30 minutes of birth and is keeping very good health. The National Dairy Research Institute, Karnal came in lime light globally for production of World's first buffalo cloned calf Garima. This institute is continuing this frontier technique for producing more cloned animals. "Garima" born on 22 August, 2010 attained early sexual maturity at 19 months of age compared to her contemporaries (around 28 months) and was inseminated with frozen-thawed semen of a progeny tested bull of NDRI No. 1875 on 27 March, 2012, which resulted in conception.

(Source : Dr A.K. Srivastava, Director, NDRI, Karnal, dir@ndri.res.in)

Iran

Two projects between Iranian Agricultural Research, Education and Extension Organization (AREEO) and FAO signed

The long lasting cooperation between Islamic Republic of Iran and Food and Agriculture Organization of the United Nations has been further strengthened by signing two technical projects on agricultural genetic resources. On Wednesday, 1 May, 2013, in a session which was held at Agricultural Research, Education and Extension Organization (AREEO), two FAO projects were signed by Dr. Jahangir Porhemmat, Deputy Minister of Jihad-e-Agriculture and Head of AREEO, and Dr. Mona, FAO Representative in the Islamic Republic of Iran.

The first project, "Development of Fodder Production and Regeneration of Cross Pollinated Forage Crops Germplasm for Improved Rural Livelihoods", will address the standardization of fodder seed quality and developing methods for introducing new varieties from testing programs into the traditional seed marketing and production process. The project's objective is to increase farmers' incomes through the provision of better fodder for dairy and other livestock production and building up a cadre of technical staff capable of improving the Iranian fodder sector.

The second project, "Optimizing the Use of Plant Genetic Resources for Food and Agriculture for Adaptation to Climate Change", which will be simultaneously executed in Iran, Egypt, Jordan and Lebanon,



Collaborative Projects between AREEO and FAO being signed

mainly aims at developing national strategies for PGRFA to address capacity needs. Strengthening linkages between germplasm conservation, utilization and delivery of high quality seeds of improved crop varieties to farming communities, and enhancing national and regional capacities for the conservation and sustainable use of PGRFA are the major objectives of this project. These projects are planned to be completed during 2013 - 2015.

(Source: D.G. Office, Iranian Agricultural Research, Education and Extension Organization, ajabbaigy@gmail.com)

CAPSA

Stronger Partnership between Farmers, Scientists and Policy Makers Required to Support Sustainable Smallholder Agriculture in the Region

A high level policy dialogue on “Technology Transfer for Smallholder Farmers” was organized by the Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA) of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), in collaboration with the European Union (EU) and the Government of Indonesia in Bogor on 13 February, 2013. It brought together 100 representatives from agricultural ministries, national agricultural research centers, universities, and non-governmental organizations (NGOs) from all over the Asia-Pacific region.

While many agree that a paradigm shift is required to ensure that our food systems produce safe and affordable food for all, we may not be effective to make that shift happen fast enough to address the challenges our world is facing. The policy dialogue explored how science and research, but more importantly, enhanced processes for technology transfer, can better reach small farmers and contribute to sustainable agriculture.

One of the key messages of the meeting was that technology transfer should not be seen in isolation but in the context of adoption and adaptation processes. There needs to be a connection in terms of provision, delivery and end-users of technologies. One also needs to look beyond production and productivity to address processing and market access. Technologies need to be tailored to the socioeconomical and agroecological conditions of countries and address local specificities.

But, this can only happen by working together to ensure that small farmers can access the right technologies and put them into use. Participation of governments, researchers, NGOs, farmers' organizations and the private sector has, therefore, been recognized as one of the key factors in building successful innovation systems.

Participants in the event emphasized that it is important to empower farmers by involving them as partners in the discussion. Governments have in the past often neglected the roles and rights of farmers and farmers still have relatively limited involvement in the formulation of national policies for the agricultural sector.

Although farmer empowerment has been put on the agenda, a consistent strategy that contributes to the empowerment of farmers and strengthens civil society is still lacking in many countries of the region. Given that smallholders are the backbone of agriculture in the Asia-Pacific region, if rural poverty is to be alleviated, it is necessary to promote dialogue between government and the farmer community as



A group of delegates at the dialogue

equal partners. It is also important to fully recognize farmers as providers and not only recipients of research and give them the necessary space to share their views and findings.

Supporting mobilization, strengthening of farmer organizations, facilitating the access of farmers to information, networking and linking them to other organizations at different levels, and providing support to groups for development of service provision can be an effective means to achieve farmer empowerment. These were all discussed during the policy dialogue as viable mechanisms to strengthen and support farmers and thus facilitate the process of technology transfer. Policies should be prescriptive and descriptive and serve to empower farmers. It is unlikely that great progress towards sustainable agriculture will be made without substantive government buy-in and strong public investment into the sector.

Governments need to respond to continuing food price volatility and keep food prices affordable while also supporting adequate scientific, technical, policy and institutional options that address a degraded and shrinking natural resource base. In the context of technology transfer, investment into research, education and infrastructure is required. Bottlenecks related to markets and value chains also need to be addressed to facilitate smallholder market access.

Much discussion during the meeting also centred on the need for specific policies to reflect the heterogeneity of farmers. There was strong agreement that rather than implementing one-for-all policies, different policies need to be implemented for subsistence and small-scale farmers and for farmers that are well integrated into markets. However, many participants felt that governments cannot fix all farmers' needs and that greater involvement of the private sector could help fill those gaps leading to improved rural livelihoods and overall welfare as well as to sustainability of agricultural research.

(Source : Martina Spisiakova, CAPSA, Indonesia; m.spisiakova@uncapsa.org)



The Policy Dialogue in session

New APAARI Publications



All recent publications are available at www.apaari.org

Bioversity International

Custodian Farmers Catch Imagination of Conservers, Researchers and Policy Makers in Asia

The Global Environment Facility (GEF), United Nations Environment Programme (UNEP) and Bioversity International, in collaboration with the Indian Council of Agricultural Research (ICAR), National Bureau of Plant Genetic Resources (NBPGR) and Protection of Plant Varieties and Farmers' Rights Authority (PPVRA), organized a Workshop titled "Workshop on Custodian Farmers of Agricultural Biodiversity: Policy Support for Their Roles in Use and Conservation" in New Delhi, India on 11-12 February, 2013.

In total, 20 farmers from five countries (India, Indonesia, Malaysia, Nepal and Thailand) participated in the workshop. Farmers from India came from eight different states, including a woman farmer from the State of Tamil Nadu. The group included a farmer who maintains 135 rare farmer varieties of mango within his orchard, a farmer who has gathered over 80 varieties of rice, and a farmer who experiments with and cultivates a wide range of tuber crops and vegetables at his home in Nepal. Many farmers in the group have domesticated wild tree species of *Garcinia* and *Mangifera*, including some farmers who have developed varieties that grow in sandy soils.



Dignitaries lighting the lamp during inauguration of workshop

The motivations to maintain a wide range of crop species and landraces were diverse responding to the personal, socio-cultural, economic and environmental needs of each farmer.

The workshop assisted in redefining the working definition of "custodian farmer" as follows:

Custodian farmers are those farmers (men and women) who actively maintain, adapt and promote agricultural biodiversity and related knowledge over time and space, at farm and community levels, and are recognized by community members for doing this. Often, custodian farmers are actively supported in their efforts by family or household members.

The workshop confirmed that custodian farmers exist and play a distinct and important role in agriculture. They maintain and conserve a wide range of crop species and varieties based on their own interest. They are often a nodal point for the informal exchange of seed and planting material among farmers. They are key providers of seed and planting material and related knowledge to breeders and seed improvement or adaptation programmes. Custodian farmers undertake key functions that link the traditional and modern seed systems and their efforts contribute to the evolutionary process of crop adaptation in a changing context.

The workshop advocated for the formal recognition of (the concept of) custodian farmers from the local and national government agencies, similar to the special recognition of concepts such as outstanding,

progressive farmers or genebank curators as steward of the world's food and nutritional security.

The workshop was instrumental in developing a "responsibilities and rights" framework for the identification of policy support to custodian farmers. This framework was based on the principle that farmers are de facto the primary actors in on-farm/*in situ* conservation for which they deserve full recognition and appreciation from the global community.

The deliberations also resulted in some clarity about the sustainability of conservation efforts by the custodian farmers. Although in some farmer families, the custodianship will be passed on to the next generation, there are numerous occasions where this is not guaranteed. A proposed mechanism to maintain custodianship is through the establishment of a network of custodian farmers in which the tenure of one custodian farmer can be taken over or shared by one or more farmers in the network when they are no longer capable of continuing their efforts. Custodian farmers at the workshop seconded the idea of establishing this type of network, which could be organized based on geography, type of crop/species (perennial, annual, etc.) and other key issues.

Considering the key roles of the custodian farmers in on-farm conservation of agricultural biodiversity, the workshop also recommended to use a community-based approach to build capacities of custodian farmers on: i) protection of traditional knowledge of PGRFA, through documentation, use and conservation of traditional knowledge (e.g. community fruit catalogue, community biodiversity register, community seed banks, etc.), ii) the right to save, use, exchange and self-farm saved seed/ planting material (e.g. community seed banks, community based seed production (CBS) and participatory crop improvement (grassroot breeding, participatory variety selection, participatory plant breeding, farmer field schools, etc.), iii) the right to participate in making decisions at the national level on the matter of conservation and use of PGRFA and overall community development (e.g. community biodiversity management, institutional strengthening and governance, establishing CBM fund, etc.), iv) the right to equitably participate in sharing benefits arising from the utilization of PGRFA by creating economic and nutritional benefits (e.g. product development, marketing and home processing).

(Source: Bhuwon Sthapit and Maninder Kaur, Bioversity International, New Delhi Office, B.sthapit@cgiar.org, Maninder.kaur@cgiar.org)

Linking Gender and Forest Genetic Resources in Bioversity's Gender Research Fellowship Program

Between 15-19 April, 22 scientists met in Kuching, Malaysia, to launch Bioversity International's Gender Research Fellowship Program. The five-day inaugural workshop brought together biophysical and social scientists from around the world to discuss why gender considerations matter in research on forest genetic resources.

Participants included Bioversity scientists as well as national partners and Bioversity's Gender Fellows working on four collaborative projects in Africa, South and Southeast Asia, and Central Asia. Social scientists conducting gender research in other CGIAR centres, including ICRAF and World Fish, as well as academics from the University of Freiburg's Centre for Anthropology and Gender Studies, which co-organized the workshop with Bioversity International, also took an active part in the week-long activities. Through a participatory, learning-by-doing process, workshop participants identified the major gender considerations relating to their work. These included distinctions in women's and men's ecological knowledge, access to forest resources, and access to markets for non-timber forest products, among other themes. During the one-year Gender Research Fellowships Program, Gender Fellows will examine these themes in a comparative way, across regional contexts. Understanding the different ways men and women manage and benefit from forests and their genetic resources can



Participants of the workshop

promote the development of more effective and equitable conservation and management opportunities.

The workshop also focused on the potential participatory research holds for triggering gender transformative processes that can make tree use and management more sustainable while promoting gender equality. Participants practiced using various participatory methods that encourage learning through action and reflection. They also spent a day in the field acquiring first-hand experience using these methods with women and men from Kampung Kakeng, a village surrounded by a lush forest teeming with biodiversity. The workshop participants' eclectic backgrounds and perspectives stimulated discussions on these themes throughout the week. For many participants, this was a first attempt to integrate gender-responsive social analyses in their work on tree genetic resources. For others, it was an initiation to participatory, social learning approaches that can build on local traditions of biodiversity management, and foster positive social changes in the communities where they work. The participants agreed that bridging the social and biophysical sciences, and doing research in a participatory way, are essential to generate relevant, meaningful, and quality research results that promote social equity and the conservation of forest genetic resources.

(Source: Marlene Elias, Bioversity International, Serdang, Malaysia, m.elias@cgiar.org)

IFPRI

Time to Walk the Talk

The International Food Policy Research Institute's 2012 Global Food Policy Report, launched earlier this year, shows mixed results on worldwide efforts to reduce hunger and malnutrition. According to the report, world food security remained vulnerable in 2012. Progress in the fight against hunger and malnutrition has been piecemeal, at best, and levels remain unacceptably high, with 870 million people hungry and 2.0 billion suffering from micronutrient deficiencies. New data from the Food and Agriculture Organization of the United Nations (FAO), and results from IFPRI's own scenario modeling, suggest that on its current trajectory of tepid promises and unfulfilled commitments, the international community will fall far short of the Millennium Development Goal (MDG) of halving the proportion of people who suffer from hunger by 2015.

Despite notable increases in investment in agriculture, food security, and nutrition, and the international community - development agencies, financial institutions, governments, and others - continues to miss major opportunities to take decisive action. "With agriculture and food security now at the forefront of the global policy agenda, we have an unprecedented opportunity to 'Walk the Talk' with concrete steps," said IFPRI Director General Dr. Shenggen Fan.

Some of the steps outlined in the report include:

- Investing in agriculture, particularly agricultural research, which

remain low in many developing countries in Africa south of Sahara and South Asia. Investments by governments, the private sector and farmers must increase and priorities must be carefully selected.

- Developing and implementing an action plan to improve smallholders' livelihoods while maintaining environmental sustainability. This can turn farming into a modern, forward-looking occupation that offers a future for young, rural people.
- Designing policies, strategies and development projects with a greater focus on gender, to back up the talk about the positive impact of gender equality on improving agricultural productivity. Reforming the agricultural policies in OECD countries to mitigate the negative impact on smallholder farmers in developing countries and stopping the distortion of markets from subsidies, trade restrictions, and other policies that have far-reaching repercussions.

With a call to action on gender rights, employment in agriculture for youth, a needed evolution of US and EU support for their farmers, and regional policy reforms to promote food and nutrition security, the report asks: Will 2013 prove different? According to Dr. Shenggen Fan, it must. "In a landscape of rhetoric and promises, on-the-ground implementation must improve if the lives of the hungry and malnourished are to improve," he said. "It is time to walk the talk".

The full report may be downloaded from www.ifpri.org

(Source: Ms. Marcia MacNeil, Communication Specialist, IFPRI, m.macneil@cgiar.org)

ICRISAT

Baseline Survey Supervisors on Resilient Dryland Systems Trained

Baseline survey supervisors of the Research Program – Resilient Dryland Systems for South Asia were trained in survey tools, village mapping techniques using latest GPS tools, techniques in sampling and interviewing farmers, and mainstreaming gender issues at a recent two-day training workshop held at the ICRISAT headquarters at Patancheru, Andhra Pradesh, India.

The baseline survey is expected to be launched soon and the data will be used by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) for vulnerability, production risk and farm technology adoption studies in climate change-prone rainfed and irrigated systems in Karnataka, Andhra Pradesh, Tamil Nadu and districts of West Rajasthan.

The training was organized by ICRISAT, the International Water Management Institute (IWMI) and the International Livestock Research Institute (ILRI). Experts from implementing partner institutions such as the Gramin Vikas Vigyan Samiti, Acharya NG Ranga Agricultural University, University of Agricultural Science at Dharwad and other CGIAR partners participated in the workshop.

(Source: ICRISAT Happenings 8 March, 2013)



Participants of the training program

APAARI New Office Inaugurated

The new APAARI office in the FAO Annex. building located on the Larn Luang Road, Bangkok was inaugurated by Mr. Hiroyuki Konuma, Assistant Director-General and FAO Regional Representative for Asia and the Pacific on Friday, 18 January, 2013 . The inaugural function was attended by senior officials of FAO RAP, colleagues from AFMA, NEDAC and MicroBankers Project.

Dr. Raj Paroda, Executive Secretary, APAARI welcomed the guests and specially thanked Mr. Konuma for his kind support for providing space, establishing the office and inaugurating the same. He urged that Associations like APAARI need required support and nurturing by FAO RAP so that they are able to achieve successfully their respective goals.

Mr. Hiroyuki Konuma, congratulated Dr. Raj Paroda and the APAARI staff for having created good facilities in the new premises and wished good luck for the success in all future endeavours. He mentioned that the role and scope of APAARI is increasing in the context of growing challenges in agriculture in the region. He envisioned greater opportunities in future for collaborative activities between FAO and APAARI in addressing important issues such as research-extension linkages, improving productivity of rice and wheat, agricultural biodiversity, biotechnology and biosafety as well as information and knowledge management.

During the function, Mr. Konuma released a joint publication by FAO and APAARI entitled "Regional Consultation on Improving Wheat Productivity in Asia: Proceedings and Recommendations". At the end of the function, APAARI hosted a lunch for the guests at Hotel Royal Princess.



Inauguration of APAARI New Office at FAO Annex. Building

New Appointment



Ms. Ann Tutwiler has been appointed as Director General, Bioversity International. She will take over the post currently held by Dr. Emile Frison in August 2013. Ms. Ann Tutwiler has 30 years of experience in agricultural policy and development working in the public and private sectors. She served as Deputy Director General (Knowledge) in the Food and Agriculture Organization of the United Nations (FAO) from January 2011 to November 2012. As a member of senior management in FAO, she managed five technical departments and initiated a revisioning of FAO'S Strategic Plan, Chaired FAO'S Evaluations Committee, and Co-Chaired the Information Technology-Knowledge Management Committee.

From June 2009 to January 2011, she worked in the Office of the Secretary for the U.S. Department of Agriculture, where she played a leading role in creating the strategy for the President's Feed the Future initiative and coordinated the engagement of FAO in Feed the Future. She also served as senior advisor to the undersecretary for research, economics and extension .

Previously, she served as Senior Advisor of International Affairs for the U.S. Agency for International Development, where she recommended reforms to USAID programs in relation to international development in Africa. She was Managing Director of Agricultural Markets at The William and Flora Hewlett Foundation from 2006-2009. She led and founded a think tank on agricultural trade policy, and was Head of U.S. Government Relations for an International Soy and Grain Processing Firm.

Ms. Ann Tutwiler holds a master's degree from the Kennedy School of Government at Harvard University, and a bachelor's degree from Davidson College, where she received the John W. Kuykendall Award for Community Service in 2005. She has certificates for professional courses in Agribusiness Management from Purdue University and INSEAD.

Celebrating the International Year of Quinoa

The United Nations (UN) has declared 2013 as the International Year of Quinoa (IYQ). The existence of this "miracle" plant has been a well kept secret from most of the world. It is time for "*Chenopodium quinoa Willd.*" more commonly known as "quinoa" to make its debut in the international scene and in what better circumstances than through an international year?

Quinoa can play an important role in eradicating hunger, malnutrition and poverty. It is a new ally in the fight against hunger and food insecurity. It is a healthy food due to its high nutritional value. It has a high protein content (9.1-14.8%), contains all of the essential amino acids and fatty acids and is rich in minerals, vitamins and other nutrients. Quinoa is a hardy crop and is resistant to drought and salinity and hence can adapt to different climates and geographical conditions. Different quinoa varieties are known to grow in a temperature range from -4 °C to 35 °C and from sea level to 4,000 meters above sea level.

The beneficiaries are multiple and diverse – from governments to small farmers and indigenous populations, from the private to the agro-bio sector - fair trade, slow food, organic agriculture, cosmetic and pharmaceutical industries and others. At least 130, 000 small quinoa growers from South America will benefit from increased sales, higher prices for their crops and a return to indigenous practices in a sustainable manner. It has the potential to be successfully grown in many countries in the Asia-Pacific region. More details are available at <http://www.fao.org/quinoa-2013/en/>



Source: Mr. Salomón Salcedo, Senior Policy Officer, FAO Latin America, Salomon.Salcedo@fao.org

Forthcoming Events

Forthcoming APAARI Meetings/Workshops

- National Workshop on Outscaling Farm Innovations at New Delhi, India on 3-5 September, 2013 in collaboration with ICAR, TAAS, PPV&FRA, NARA, BKS and NIF
- APAARI Executive Committee Meeting at PARC, Islamabad, Pakistan, on 22 October, 2013
- Regional Consultation on “Youth and Agriculture Challenges and Opportunities”, at PARC, Islamabad, Pakistan, 23-24 October, 2013
- Expert Consultation on Promotion of Medicinal and Aromatic Plants in Asia, in collaboration with FAO at Bangkok on 2-3 December, 2013

Forthcoming International Conferences/Events

- International Conference on Agriculture: Environmental Studies and Engineering (AESE), 26-27 August, 2013, Singapore. For details, please see <http://agri-conf.org/>
- 4th International Symposium for Farming Systems Design, August 19-22, 2013 at Lanzhou, China. For details, please see www.fsd2013.com
- IV International conference Large Farm Management: Organization and Strategy, 19 September, 2013, Kiev, Ukraine. For details, please see <http://www.agrievent.com.ua/en/19-09-2013-iv-international-conference-large-farm-management.html>
- 1st Central Asia Congress on Modern Agricultural Techniques and Plant Nutrition, 1-3 October, 2013, Bishkek, Kyrgyzstan. For details, please see <http://www.agricasia2013.com/>
- 6th International Food Legumes Research Conference and 7th International Conference on Legume Genetics and Genomics, 7-11 July, 2014, Saskatoon, Saskatchewan, Canada. For details, please see www.knowpulse2.usask.ca/irfrc-iclgg/E

Dr. S. Attaluri Repatriated



Dr S. Attaluri, APARIS Coordinator, stationed at APAARI Office, Bangkok, has repatriated to his parent organization “MANAGE”, Hyderabad in the end of June, 2013. Dr. Attaluri had served APAARI for almost 4 years. During his tenure, he successfully managed the APARIS program and made significant contributions in the area of information communication technology (ICT).

APAARI shall miss him in its team but would fondly remember his significant contributions. APAARI wishes him and his family a very happy and successful future.

New APAARI Staff



APAARI Secretariat Office in Bangkok, Thailand has a new staff, Ms. Chanerin Maneechansook, who joined as a Program Assistant on 1 June 2013. She is an Agri-Business Management graduate from Asian Institute of Technology (AIT). She was previously the Program Assistant of the Agricultural and Food Marketing Association for Asia and the Pacific (AFMA) and gained experience in working with national and international organizations to promote agricultural marketing in the region. She will look after APARIS Program and APAARI website.

APAARI Participation in other Fora/Meetings

Dr. Raj Paroda, Executive Secretary, APAARI

- Global Consultation on “Use and Management of Agrobiodiversity for Sustainable Food Security”, organized by Bioversity International and ICAR, New Delhi, 12-14 February, 2013.
- National Workshop on Foresight and Future Pathways of Agricultural Research through Youth in India, New Delhi, 1 March, 2013.
- 28th Meeting of GFAR Steering Committee, Istanbul, 28-30 April, 2013.

Dr. J. L. Karihaloo, Coordinator, APCoAB

- Global Consultation on “Use and Management of Agrobiodiversity for Sustainable Food Security”, organized by Bioversity International and ICAR, New Delhi, 12-14 February, 2013.
- National Workshop on “Foresight and Future Pathways of Agricultural Research Through Youth in India”, organized by APAARI, TAAS and ICAR, New Delhi, 1-2 March, 2013.
- Workshop on “Application of Molecular Tools for Farmers' Prosperity”, organized by Sardar Vallabhai Patel University of Agriculture & Technology, Meerut, Uttar Pradesh, 19 March, 2013.
- FAO Regional Workshop on Strengthening Regional Cooperation and National Capacity Building on Biosafety in Asia, Bangkok, Thailand, 17-20 June, 2013.

Dr. S. Attaluri, Coordinator, APARIS

- The First Regional Steering Committee meeting for Asia and the Pacific of the Global Strategy to Improve Agricultural and Rural Statistics held at FAO RAP, Bangkok, Thailand on 9-10 April, 2013.
- CIARD Global Consultation organized by FAO, GFAR and CTA at ILRI, Addis Ababa, Ethiopia on 6-8 May, 2013.
- Expert Consultation on Livestock Research for Food Security and Poverty Reduction-ILRI Strategy 2013-2022: Implications for Southeast Asia held by ILRI at Bangkok, Thailand on 31 May, 2013.

Dr. Bhag Mal, Consultant, APAARI

- Global Consultation on “Use and Management of Agrobiodiversity for Sustainable Food Security”, organized by Bioversity International and ICAR, New Delhi, on 12-14 February, 2013.
- Steering Committee Meeting of ERA-ARD II Project at Brussels, Belgium on 4 June, 2013
- International Conference on Better Linkages Between Agricultural Research and Development for Greater Impact on Global Challenge, Brussels, Belgium on 5 June, 2013.

All queries relating to APAARI Newsletter be addressed to:

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