



APAARI

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Editorial

Around 50% of the people in Asia-Pacific region are engaged in agriculture and related activities. While Green Revolution boosted agricultural production in some countries during 1970s-80s, the challenges of food and nutrition security still loom large, particularly in developing countries with high population growth and poverty. The increasing threats on account of biotic and abiotic stresses and declining natural resources necessitate adoption of modern technologies to accelerate development of high yielding and nutritious crop varieties that can also withstand environmental stresses. As demonstrated by the performance of genetically modified (GM) crops currently grown in some countries including those of Asia-Pacific. GM technology holds promise of fulfilling these needs. In India, the experience with Bt cotton which now covers more than 80% of the cotton growing area, clearly reflects the great potential of GM technology in benefiting the smallholder farmers. Similar growth has been witnessed in case of GM food crops like corn, soybean and canola in Argentina, Australia, Brazil, Canada, the Philippines, South Africa and U.S.A. China has already approved Bt rice which is expected to be in farmers' fields in one or two years.

On the other hand, GM technology faces opposition due to its perceived human health and environmental risks. Both public and policy support, that enabled rapid agricultural growth in the past, seem to be dwindling. It appears that research and innovation are at crossroads since genuine scientific accomplishments, public-private-partnership in R&D and efforts to outscale innovations for helping the resource poor farmers are being seen with suspicion. Obviously, business as usual will not work. Concerns for biosafety and biosecurity, if any, will have to be addressed in a given timeframe with a clear and strong commitment to move forward.

Considering the above, the Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB), a program of APAARI, in collaboration with Trust for Advancement of Agricultural Sciences (TAAS) and the Indian Council of Agricultural Research (ICAR) organized a "Stakeholders' Interface on GM Food Crops" at New Delhi on 19 May 2011 with the objective of discussing all the relevant issues related to the potential of GM food crops in meeting the food and nutritional needs of India vis-à-vis their economic, health and environmental impacts. The meeting attended by a wide cross section of stakeholders comprising policy makers, technical experts, representatives of seed sector, NGOs and farmers provided an excellent opportunity to share views and build consensus. An important outcome of the meeting was the endorsement of the important role of biotechnology in meeting the food and nutrition requirements and the need for proactive public engagement to dispel doubts and concerns about GM technology.

It is our hope that the recommendations of this important consultation reported elsewhere in this issue will help researchers and policy makers in evolving appropriate policies and strategies to harness the benefits of GM technology in accelerating agricultural development and farmers' income in the region.

Editors

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Executive Committee

Chairman	: Dr. S. Ayyappan
Vice-Chairman	: Mr. Mason Smith
Members	: Dr. Abd Shukor Abd Rahman Dr. Simon Hearn Ms. Su-San Chang Dr. Tashi Samdup Dr. Colin Chartres Dr. Mark Holderness
Executive Secretary	: Dr. R.S. Paroda

Editorial Committee

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• P.S. Faylon	• J.L. Karihaloo

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APAARI Executive Committee Meeting

The first meeting of the APAARI Executive Committee during 2011 was held on 14 February at the National Agricultural Science Center (NASC), Pusa, New Delhi under the chairmanship of Dr. S. Ayyappan, Chairman, APAARI and Secretary, Department of Agricultural Research and Education (DARE), Govt. of India and Director General, ICAR. The meeting was attended by nine executive members and some special invitees.

Dr. Raj Paroda, Executive Secretary, welcomed Dr. S. Ayyappan and other members of the Executive Committee. He extended special welcome to the new Executive Committee members, Dr. Colin Chartres (DG, IWMI), Dr. Su-San Chang (DG, COA), Dr. Simon Hearn (Principal Advisor, ACIAR) and Dr. Tashi Samdup (Director, CoRRB). This was the first meeting under the chairmanship of Dr. Ayyappan representing Indian NARS which incidentally happened for the first time since its inception. The Executive Secretary also extended his thanks to ICAR, New Delhi for hosting the meeting.

Dr. S. Ayyappan welcomed the Executive Committee members, and lauded the excellent progress made by APAARI during 2010-2011, especially in organizing a number of expert consultations/meetings, workshops, training courses, bringing out new publications and in developing the APAARI communication strategy. He thanked the previous Chairman Dr. Abd Shukor Abd Rahman and Executive Secretary, Dr. Raj Paroda for significant achievements, including the sound financial position of APAARI.

Dr. Paroda presented the progress report on various activities undertaken during the year 2010. The major activities and the work plan for 2011 included symposia, workshops, expert consultations, training courses, communication strategy, signing of MoU for collaboration with AIT, Bangkok, review of new publications brought out during 2010 including proceedings, success stories, newsletter, flyer and new APAARI and APCoAB websites.

The members made following suggestions/ comments:

- i) The Chairman expressed his appreciation of the excellent progress made by APAARI, a view endorsed unanimously by all the members.
- ii) Dr. Simon Hearn expressed the need for APAARI to effectively engage with CGIAR Research Programs (CRPs) so that the regional NARS are well represented. Dr. Paroda informed that APAARI had communicated its concern on this issue to the Chairman, CGIAR Consortium. Dr. Holderness felt the need for a dialogue as to how CRPs will align with the national programs. He opined that APAARI would have an important role in building such partnerships.
- iii) Dr. Abd Shukor informed that some NARS programs in the region were well supported by the respective governments. MARDI in collaboration with University of Nottingham and Bioversity International had been actively engaged in a new initiative 'Crops for the Future'.
- iv) Dr. Su-San Chang expressed interest in partnership with the consortium on climate change since Chinese Tapei faces serious challenges of major typhoons and uncertain climate. COA would be interested in research on stress resistance breeding, rice productivity enhancement and the indigenous vegetables as crops for the future.
- v) Dr. Holderness expressed that in the forthcoming Rome Workshop on Agrobiodiversity, Crops for the Future is an important GFAR initiative towards agricultural sustainability,



Participants of Executive Committee meeting

nutrition and health. He appreciated APAARI's role in coming out with Suwon Agrobiodiversity Framework.

- vi) Dr. Colin Chartres emphasized the importance of information technology in agriculture for the developing countries and the need to support its application in the region.
- vii) Dr. Simon Hearn expressed the opinion to build partnership in agricultural research with health sector since funding for health research is quite substantial in many countries.
- viii) Dr. Ayyappan informed that ICAR had established a National Research Center for Women in Agriculture and invited suggestions on developing a roadmap for this center. In response, Dr. Paroda informed that women in agriculture has been identified as a priority in the GCARD Road Map. As such, GFAR will be organizing an 'International Conference on Women in Agriculture', in which ICAR could be a co-sponsor.
- ix) Dr. Abd Shukor expressed interest in cooperation for research on early warning system, since some exotic pests pose threat to the commercial crops in Malaysia.
- x) Regarding representation of Farmers' Organizations and NGOs on the Executive Committee, the members made several suggestions but could not come to any specific decision as to whom to invite to serve on the Executive Committee. It was, however, suggested that APAARI should continue ensuring participation of farmers and NGOs as well as Private Sector in its various meetings and expert consultations till such time regional organizations of different stakeholders get established or reactivated.

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

- The work plan for 2011 was approved by the Executive Committee. It was agreed that need based reorientation of the program be made to ensure required implementation of GCARD Road Map under additional funding support likely to be received from GFAR.
- The members were pleased to note that during 2010, ten new members joined APAARI. These are AAU, ARIA, BAU, CAU, CoRRB, IAU, NAU, NMC-CREES, SDAU and SPC. Accordingly, the total number of APAARI members now stands at 56 (Regular members-20, Associate members-18, Affiliate members-10, Reciprocal members-8).

- The audited accounts for the year 2010 were unanimously approved by the Committee. The details of budget allocation of US\$ 345,000 made by GFAR to APAARI were also circulated. Members were appreciative of support received from GFAR, ACIAR and COA. The Committee also approved the budget for 2011-2012 and desired to realign the program of work in view of external funding, especially to implement GCARD Road Map.
- The appointment of new Auditor (M/s. A Group of Persons Proplus, Bangkok) was approved for a period of two years.
- An investment of US\$ 500,000 through ICRISAT, based on the recommendations of a committee comprising of Dr. Robert Zeigler, Dr. Raghunath Ghodake and Mr. Raju Barwale, was approved.
- To implement the Road Map, GFAR will launch new programs in 2011 through APAARI and other partners in Asia. The components of this program will include: i) Advocacy, ii) Transforming institutions, iii) Inter-regional partnerships, and iv) Bridging knowledge gaps.
- The Committee members were apprised of two years extension accorded to Dr. J.L. Karihaloo, which was approved earlier by the APCoAB Steering Committee and the Executive Committee. Similarly, Dr. Attaluri's extension for two years was approved by

the APARIS Steering Committee and agreed by the Executive Committee. Dr. Paroda also apprised the committee about the completion of consultancy contract of Mr. P. K. Saha on 31 December, 2010.

- The Executive Secretary highlighted the progress relating to next GAM and Symposium on Animal Trans-boundary Diseases to be held in October 2012 and to be hosted by ICAR. Next APAARI Executive Committee and Expert Consultation on "Biotechnology, Biosecurity and Biosafety" will be hosted by COA and held in Chinese Taipei in October, 2011.
- Dr. Paroda also requested the Executive Committee to expedite the process of recruitment of new Executive Secretary before his current term expires in December, 2012. Accordingly, it was agreed to have a sub-committee of Dr. Ayyappan, Dr. Abd Shukor and Dr. Simon Hearn to discuss the modalities for required action in the matter.

In his concluding remarks, Dr. S. Ayyappan extended his thanks to the Executive Committee members for making it convenient to participate in the meeting. He also thanked the Committee, especially the Executive Secretary for his dedicated service to APAARI. The meeting ended with a vote of thanks to the Chair.

New Publications of APAARI

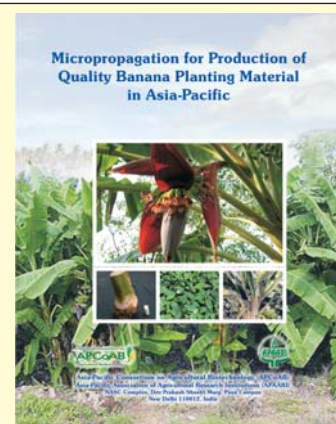
- APAARI Communication Strategy, 2010-2015
- Proceedings of the Workshop on ICT/ICM for National Agricultural Research Information Systems in the Asia-Pacific Region
- Proceedings of the Eleventh General Assembly Meeting of APAARI
- The Suwon Agrobiodiversity Framework: The Way Forward for Managing Agrobiodiversity for Sustainable Agriculture in the Asia-Pacific Region
- Success Stories on ICT/ICM in AR4D in Asia and the Pacific Region
- International Symposium on Sustainable Agriculture Development and Use of Agrobiodiversity in the Asia-Pacific Region - Proceedings
- Strengthening of Plant Genetic Resources for Food and Agriculture: Conservation and Utilization in the Pacific - A Status Report
- APAARI Flyer



APCoAB: Latest Publication

Micropropagation for Production of Quality Banana Planting Material in Asia-Pacific

Jointly authored by ICAR and APCoAB scientists, this publication is third in the series on micropropagation of vegetatively propagated horticultural crops brought out by APCoAB. It is divided into five main chapters: 1) Introduction, 2) Banana Propagation, 3) Micropropagation for Quality Banana Planting Material, 4) Health Management in the Production of Disease Free Planting Material Through Micropropagation, and 5) Prospects of Banana Micropropagation for Quality Planting Material Production in Asia-Pacific. The eight Annexures provide detailed tissue culture and disease indexing protocols and standards for establishment of micropropagation facilities. The publication is available at www.apcoab.org



APCoAB Steering Committee Meeting

The XIII Meeting of the Steering Committee of Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB) was held at National Agricultural Science Centre, New Delhi on 14 February, 2011 under the chairmanship of Dr. S. Ayyappan, Chairman, APAARI and Secretary, DARE & DG, ICAR. Twelve members and special invitees attended the meeting. The participants were welcomed by Dr. Raj Paroda, Executive Secretary, APAARI who expressed appreciation of the support to APCoAB from ICRISAT, COA, ACIAR and Mahyco. He also thanked ICAR and MARDI for hosting a number of activities conducted by APCoAB over the last few years. Dr. Abd Shukor speaking on behalf of the Chair appreciated the achievements of APCoAB, particularly the organization of training programs and expert consultations, a view shared by all the members. Dr. J.L. Karihaloo, Coordinator, APCoAB presented the Action Taken Report and Progress Report.

- The Action Taken Report on the recommendations of XII Meeting of APCoAB Steering Committee followed by the progress made during the period under report were presented. The Progress Report included organization of expert consultation on "Post-harvest and Value Addition of Horticultural Produce", three training programs in collaboration with Council of Agriculture, Chinese Taipei and Indian Council of Agricultural Research, and publication on "Micropropagation for Production of Quality Banana Planting Material in Asia-Pacific".
- The Steering Committee unanimously appreciated the progress made by APCoAB during the period under report. Particular mention was made about the high quality of expert consultations and the number of relevant training programs organized by APCoAB.
- Following the recommendation of the Expert Consultation on Post-harvest and Value Addition for Horticultural Produce, Dr. Ayyappan offered to establish a Regional Center for South Asia on Post-harvest Technology in India. Dr. Abd Shukor offered to set up a center for South East Asia in Malaysia.
- Dr. Paroda highlighted the need for policy advocacy and public awareness on GM food crops in view of the current controversy and moratorium on release of Bt brinjal in India. He proposed that ICAR and DBT should address these issues for which APCoAB could play a facilitation role.
- Dr. Holderness highlighted the diverse perspectives about biotechnology and the need for APCoAB to project these views in a balanced manner. He also emphasized the importance of proper needs assessment before initiating biotechnology R&D projects.
- Dr. Su-San Chang suggested participation of APCoAB in high level policy dialogues on biotechnology conducted by APEC and create linkages with other organizations in South East Asia with similar objectives.
- It was suggested to make the training materials like lecture notes and laboratory protocols available on APCoAB website.
- Since the term of the current Steering Committee had expired, a new Steering Committee was constituted as follows:

Chairman	Dr. S. Ayyappan, ICAR, India
Members	Dr. Simon Hearn, ACIAR, Australia Dr. Su-San Chang, COA, Chinese Taipei Dr. William D. Dar, ICRISAT, India Dr. Malcolm Hazelman, FAO RAP, Thailand Mr. Raju Barwale, MAHYCO, India Dr. Raj Paroda, Executive Secretary, APAARI

Member Secretary Dr. J. L. Karihaloo, APCoAB



Participants of the APCoAB Steering Committee Meeting

The Audited Report for 2010 and Budget for 2011 were presented and approved by the Steering Committee. The following work plan for 2011 was also approved:

- Expert Consultation on "Biotechnology, Biosafety and Biosecurity", 27-28 October, 2011 in Chinese Taipei in collaboration with COA.
- Stakeholders' Interface meeting on "Genetically Modified Food Crops", 19 May, 2011, New Delhi.
- Training Program on "Rapid Bioassay for Pesticide Residues (RBPR) on Fruits and Vegetables for Market Inspection and Farm Education", 27 June - 1 July 2011 in Chinese Taipei in collaboration with COA.
- Training Program on "Livestock Genetic Improvement", 20-25 November, 2011 in Chinese Taipei in collaboration with COA.
- Training Program on "In vitro and Cryopreservation Techniques for Conservation of Plant Genetic Resources", National Bureau of Plant Genetic Resources, New Delhi.
- Publication on "Proceedings of Expert Consultation on Post-harvest and Value Addition of Horticultural Produce".

Workshop on Rapid Bioassay for Pesticide Residues (RBPR) on Fruits and Vegetables for Market Inspection and Farm Education

The training workshop was organized in collaboration with Council of Agriculture, Chinese Taipei at Taiwan Agriculture Research Institute, Taichung on 27 June-1 July 2011. Six trainees from Malaysia, Vietnam, India, Iran, Sri Lanka and Philippines were sponsored by APCoAB, of whom four attended. The program comprised lectures, laboratory demonstrations on qualitative and quantitative RBPR analysis of insecticide residues. Visits to farmer cooperatives and vegetable markets provided first hand experience of the application of RBPR technology at the field level. The participants also visited the museum of Miaoli District Agricultural Research and Extension Station where they had a glimpse of the history and development of agriculture in the country.



Participants of training workshop

(Source: Dr. J.L. Karihaloo, APCoAB Coordinator, j.karihaloo@cgiar.org)

Stakeholders' Interface on GM Food Crops

The Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB) and Trust for Advancement of Agricultural Sciences (TAAS) organized a "Stakeholders' Interface on GM Food Crops" at National Agricultural Science Centre, New Delhi on 19 May, 2011 to deliberate on issues relating to adoption of GM food crops in India. The event was co-sponsored by the Indian Council of Agricultural Research (ICAR). The meeting was attended by 45 participants representing a wide cross-section of stakeholders including policy makers, technical experts on biotechnology and biosafety, agricultural scientists, representatives of seed sector, NGOs and farmers. The participants expressed clear consensus that adoption of GM technology is a must for ensuring both food and nutrition security of fast increasing population in India. This technology also offers new options to meet the challenges of biotic and abiotic stresses and the emerging global climate change. The important recommendations emerged from the deliberations are given below:

- Development and adoption of appropriate GM technologies would need a mission mode approach for which a strong public research system needs to be built/strengthened. Along with, the private sector investments on GM technologies must be ensured through enabling environment.
- There is a strong need for the prioritization of crops and traits in order to effectively use GM technologies for improving specific traits.
- The biosafety regulatory system needs to be made more efficient and foolproof so as to facilitate effective and safe application of biotechnology. At the same time, it should not be too stringent to slow down the release process.
- There is also a need to have a strong post-release monitoring system for which an appropriate mechanism has to be put in place.
- Plant breeders and biotechnologists must join hands and work as one team to address specific research problems. Their efforts should be synergistic and not competitive. Similarly, strong public-private-partnership right from the beginning of the project, with needed understanding, mutual trust and defined roles for research and benefit sharing, be encouraged through enabling environment.
- Public perceptions about GM technology are often not based on scientific facts. Information communication system, including public extension and awareness services need to be considerably improved in order to effectively deliver correct and unbiased information to farmers and the general public.
- Priority investments are needed on capacity building, especially in areas of biosafety research, regulatory systems (including legal aspects), communication tools and IPR issues since they all are critical for outscaling innovations for greater impact.
- The second Green Revolution is needed in India especially for nutrition security, since India has the maximum concentration of malnourished children and anaemic pregnant women in the world. We also need good nutrition now than food alone. For this, the use of GM technology is highly relevant in the present context. This technology offers new options to enhance nutrition security through designer crops and to meet the



Dr. M.K. Bhan, Secretary, DBT, delivering Keynote Speech

challenges of biotic and abiotic stresses as well as those of global climate change. Moreover, the poverty of smallholder farmers can be overcome by providing them new technologies that can reduce cost on inputs, build resilience in farming and increase their income by linking to the markets. In this context, we do see a prominent role of biotechnology, which needs to be harnessed on priority.

- It was strongly felt that the Biotechnology Regulatory Authority of India (BRAI) Bill, which is already with the Parliament, must be cleared soon and a strong message in this regard needs to be



Participants of Stakeholders' Interface on GM Food Crops

sent to all concerned policy makers and authorities since we have already lost valuable five years. The proposed BRAI is also recommended in order to ensure a single window system for testing, clearance and monitoring. At the same time, the regulatory system should not be too stringent to slow down the release process.

- There must be a defined focus on agri-business and agri-biotechnology in the 12th Five Year Plan for which ICAR should take a major initiative and Department of Biotechnology (DBT) must extend required funding support. Agri-business Platforms and Technology Parks have to be established for building much needed public-private-partnership and for faster delivery of GM products to both the farmers and consumers.

(Source: Dr. J.L. Karihaloo, APCoAB Coordinator, j.karihaloo@cgiar.org)

Training Workshop on Coherence in Information for Agricultural Research for Development (CIARD) and Strengthening RAIS in the SAARC Countries

A three-day "Training Workshop on Coherence in Information for Agricultural Research for Development (CIARD) and Strengthening RAIS in the SAARC Countries" was organized jointly by SAARC Agriculture Center (SAC), APAARI, Bangladesh Agricultural Research Council (BARC), FAO and GFAR at SAC, BARC Campus, Dhaka on 10-12 May, 2011. The objective of the workshop was to strengthen capacities and skills of Information and Communication Managers (ICM) in the SAARC countries to improve their participation in the Regional Agricultural Information Systems (RAIS) activities, participate better in CIARD initiative and develop as trainers to support ICM managers of CIARD partners in their organizations and countries. The workshop focused on improving capacities for information and communication management (ICM) among national systems for agricultural research and innovation using concepts, pathways, tools and applications developed and made accessible under the CIARD initiative.

The workshop was attended by 32 participants from SAARC member states, viz., Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka and Iran as an observer. The Chief Guest Dr. M. A. Sattar Mandal, Vice Chancellor, Bangladesh Agricultural University, Mymensingh inaugurated the workshop in a function chaired by Dr. Wais Kabir, Executive Chairman of Bangladesh Agricultural Research Council (BARC). Dr. Abul Kalam Azad, Director, SAC; Dr. Ajit Maru, Senior Knowledge Officer, GFAR; Dr. S. Attaluri, APARIS Coordinator, Mr. Gerard Sylvester, Knowledge & Information Management Officer, FAO-RAP and Ms. Valeria Pesce, Knowledge & Information Management Officer, GFAR were also present.

The technical sessions began with the presentation from SAARC Agriculture Center on its activities in the South Asian region. APAARI made a presentation on APARIS program and its role in strengthening NARS and Regional Agricultural Information Systems, implementation of APAARI Communication Strategy and shared the draft of the ICT/ICM status report.

The workshop followed group work methodology to enable all the participants to actively take part in the deliberations and panel discussions. On day one, participants were divided into four groups and asked to brainstorm and present group reports on users of information, users' needs and gaps in exchange of agricultural information in South Asia. GFAR provided inputs on the changing scenario of agricultural information flows at the national, regional and global levels and how CIARD concepts contribute to make agricultural research information publicly available. Emphasis was made on understanding new developments in the use of ICTs such as mobile computing through the use of mixed media, reduction in costs of IT tools and use, widespread broadband, high speed connectivity through WI-FI even in rural areas, more efficient tools and applications useful to agricultural communities, "cloud" computing and "crowd" computing. All groups presented their group reports in the plenary session followed by discussions. On day two, technical sessions focused on the CIARD movement, its vision and checklist as well as on how agricultural research and innovation institutions can effectively participate and contribute to CIARD activities such as Pathways, the CIARD.RING and the

CIARD FAIR. Some CIARD pathways such as those contributing to the development of "open" access repositories with examples such as National Food Policy Capacity Strengthening Programme



Participants of the workshop at Dhaka, Bangladesh

(NFPCSP) AgriDrupal Repository (Bangladesh), Agropedia and Agrotag (India) and GFAR repositories were illustrated in depth. Experiences of "open" access to scientific journals published by the Indian Council of Agricultural Research (ICAR) were also shared.

Later, the participants expressed that while most organizations are ready in principle to share their information openly, they do not have the institutional and infrastructural capacities and resources, awareness and skills to do this effectively. Most of the capacities needed are around the use of Web 2.0 tools and applications.

It emerged during the deliberations that there was a significant awareness gap in understanding how new Social Media and Web 2.0 tools can be used by the national systems in agricultural research, education and extension. There is a need for increased advocacy among policy makers, research managers and ICM specialists as well as users, especially researchers, teachers and extension agents, in the use of these new tools and applications. There is also the need to build capacities of those who can manage these new information services.

The workshop on its third day had a hands-on session on the CIARD-RING starting from an explanation of the concept of the RING and how it contributes both to sharing information at national level and to integrating the information flows within a national system for agricultural research and innovation. It was impressed on the participants that their greater participation in the RING will enhance the sharing of information related to agriculture across the world.

The workshop ended with a discussion on "open" data access following a video presentation of Dr. Tim Berners-Lee and a presentation of the CIARD Virtual Fair. The Chief Guest Dr. S. K. Ghulam Hussain, Member-Director (Policy Planning & Evaluation), BARC and Governing Board Member, SAC gave the closing address. Dr Hemal Fonseka, Senior Program Specialist, SAC proposed vote of thanks at the end.

(Source: Dr. S. Attaluri, Coordinator, APARIS, attaluri@apaari.org)

Regional Consultation Workshop on Supporting Southern-European Alliances/ Platforms on ARD

A regional consultation workshop on “Supporting Southern-European Alliances/Platforms on Agricultural Research for Development” was organized at the Asian Institute of Technology (AIT), Bangkok on 16-17 March, 2011 to explore the scope for an Asia-Europe Platform on Agricultural Research for Development



Participants of the workshop

(ARD). The workshop was hosted by the AIT with the collaboration of APAARI, Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) and AIT. The event was part of a pre-feasibility study funded by the European Commission to investigate the potential for bi-regional platforms on ARD for Europe and Asia, and Europe and Latin America. The workshop was facilitated by the Core Team comprising Alex Percy Smith (Team Leader), consultant for NRI, UK and Tim Chancellor, NRI, UK. The workshop was inaugurated by Prof. Sudip K. Rakshit, Vice President of Research, Asian Institute of Technology (AIT), Bangkok, Thailand. A total of 19 participants representing farmers' organizations, non-government organizations, research institutes, educational organizations, policy institutions and regional bodies attended the workshop. APAARI was represented by Dr. Bhag Mal, Consultant and Dr. S. Attaluri, APARIS Coordinator.

There was a general agreement among participants that there is a need for an Asia-Europe Platform on ARD. Such a platform is required to help address the serious challenges of food insecurity, poverty and climate change which continue to affect the Asia region. It was considered important to build on existing institutions. The niche of the bi-regional platform is in facilitating the pooling of expertise and assisting with mobilization of additional resources. This would draw on skills and innovations available in Asia and Europe and benefit the organizations in both continents. The participants agreed on some basic features of a bi-regional platform. The platform should be multi-stakeholder, address the needs of stakeholders and facilitate interaction between organizations with interest in ARD. It was agreed that a concept note on development of Asia-Europe Platform will be developed by the core team and will be shared with the participants/ organizations for providing further feedback.

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

Implementation of GCARD Road Map

APAARI played an active role in facilitating the GCARD process in Asia and the Pacific region with the involvement of ARD stakeholders and inputs in preparing the GCARD Road Map. To implement GCARD Road Map in the region, APAARI, with the support of GFAR will undertake the following activities in 2011:

AR4D Advocacy

- Policy level dialogue to catalyze the policy facilitation initiatives in the region - Policy dialogue on improving research and development linkages in collaboration with ADB, IFPRI and others
- Assessment of regional investments and capacity building for AR4D : South East Asia - ASTI collaboration for data collection/assessment
- Stakeholders participation in CGIAR Consortium Research Programs (CGIAR CRPs) to ensure greater impact: i) Stakeholder input solicited to CRPs under development ii) Documentation of stakeholders participation in CRPs in the region

Building AR4D Institutions

- CSO involvement in AR4D activities in the region : Documentation of information on CSO involvement in APAARI/APARIS related events

Inter-regional Partnerships

- Inter-regional (North-South and South-South) research partnership platform : leveraging collaborative actions & networks in new international AR4D architecture i) Joint APAARI/EFARD interface on inter-regional linkage based on the outcome of Bangkok meeting
- Collective foresight actions : regional stakeholder participation in biannual international meetings including climate change implications - Asia-Pacific input to CGIAR Science Forum foresight session
- Linking small farmers to markets: regional evidence gathering, case studies and knowledge sharing with emphasis on documentation and learning process - success stories on linking farmers to markets
- Organizing consultations/meetings on agrobiodiversity, biotechnology & crops for the future: New partnership building from previous actions i) development of regional business plan from Suwon Framework, ii) expert consultation on biotechnology, biosafety and biosecurity
- Conservation/ Sustainable agriculture: Regional dialogue on CA in South Asia - Assessing the impacts - i) regional dialogue and evidence gathering and ii) participation in world congress on conservation agriculture in Australia

Building Knowledge Gaps

- Coherence in Information in ARD (CIARD & CIARD-RING) through sub regional workshops for South Asia, Southeast Asia and the Pacific and ICT support of building and training of trainers for their effective use
- Strengthening of RAIS/RAILS: i) enabling & supporting of development of databases for ARD experts and projects; ii) strengthening APARIS web space and implementing communication strategy; iii) production of success stories/cases in ICT/ICM for sharing and advocacy and iv) improving capacities and knowledge transformation/sharing between research and farmers in the region

Bangladesh Agricultural Research Institute - A Profile

Bangladesh Agricultural Research Institute (BARI) is the largest multi-crop research organization of Bangladesh. Its origin dates back to 1906 with the establishment of Bengal Department of Agriculture under the then Department of Land Records, which later became an autonomous and viable research organization in 1976. This Institute is committed to increase agricultural production with a view to achieving food and nutrition security of the country, increasing farmers' income and employment generation through research on crop improvement, biotechnology, crop production and protection, soil and irrigation management, farm tools and machinery, post-harvest handling and storage and socioeconomic studies.

Mandate

The mandate of the Institute include: i) approve the course study in broad outlines; ii) undertake research to ensure a stable and productive agriculture through scientific management of land and water, development of new varieties, pest management and development of appropriate technologies; iii) provide farmers with information necessary for carrying out their farming business efficiently and profitably; iv) set-up research centers and sub-stations in different regions; v) carry out demonstrations, tests or trials of new varieties of crops and their management practices; vi) publish annual reports, agricultural manuals, monographs, bulletins and other relevant literature; vii) train research and extension officers in the improved technology of crop production; viii) provide post-graduate research facilities; ix) organize seminars, symposia and workshops on selected problems and recent advancements in agriculture; and ix) perform such other function as may be necessary for the purpose of the Act.

Management

General administrative policies of the Institute are formulated by the Management Board and subject to the rules and regulations and the general direction, administration and supervision of the activities of the Institute vest in the Board of Management. The Board in discharging its duties is guided by national policy on agricultural development. Meeting of the Board is convened by the Secretary in consultation with the Chairman at least once in every quarter of a year but additional meetings may also be convened as frequently as necessary. Emergency meetings may be convened on twenty-four hours' notice.

Operational Structure

Director General is the chief executive of the Institute. He has the overall responsibility for administration, finance, development and execution of programs related to research, manpower development, dissemination of information, transfer of technology and other extension activities. The Director General is assisted by three Directors: Director (Research), Director (Support Service), and Director (Training and Communication).

Director (Research) is responsible for program planning, monitoring and evaluation of the research activities as performed by the research divisions, centres and the regional stations and sub-stations. Personnel management, finance, procurement and stores, buildings and grounds, security, transportation and repair and maintenance are the major responsibilities of the Director (Support Service). The Director (Training and Communication), on the other hand, is responsible for the transfer of technologies to the users



BARI Campus, Dhaka, Bangladesh

through trainings, seminars, workshops, publications, electronic media, etc. Human resource development through trainings and higher studies at home and abroad also fall within his responsibilities. Each research division and research center is headed by a Chief Scientific Officer (CSO) and Project Director (PD), respectively, and assisted by a number of Principal Scientific Officers (PSOs), Senior Scientific Officers (SSOs), and Scientific Officers (SOs). Regional stations are headed by Senior Scientists equivalent in status to the CSOs, while the sub-stations are headed by the Scientists of the rank of either PSOs or SSOs.

There are 2723 sanctioned positions in the Institute and 2581 posts are already filled. Out of 704 sanctioned posts of scientists, 631 are now working in different positions and disciplines.

Experiment Stations

The Institute has its central research station at Joydebpur about 35 km north of Dhaka, and spread over 176 ha of land of which 126 ha are experimental fields. The Institute has six regional stations in six agro-ecological regions of the country, seven crop research centers: Tuber Crops Research Center (TCRC), Oilseed Research Center (ORC), Horticulture Research Center (HRC), Wheat Research Center (WRC), Plant Genetic Resource Center (PGRC), Pulses Research Center (PRC), and Spices Research Center (SRC). Apart from these, the Institute has 28 research stations including three hill research stations spread over the country. Furthermore, BARI conducts technology validation trials and farmers' field trials through its On-Farm Research Division (OFRD) in nine Farming System Research (FSR) sites and 70 Multilocation Testing (MLT) sites in different regions of the country.

Research Review and Planning

The research review and planning is undertaken in three phases to finalize the work plan. The first stage is the regional review and planning in which the initial planning workshops are conducted at the regional stations and the centres, generally in the month of June. All BARI scientists, related NARS scientists, Department of Agricultural Extension (DAE) personnel, NGOs and progressive farmers take part in the workshops in which the experimental results are discussed thoroughly. Based on regional problems and priorities, the regional research proposals are developed. The next stage is the internal review of centers/divisions which is held at BARI central station at Joydebpur in the month of July. The

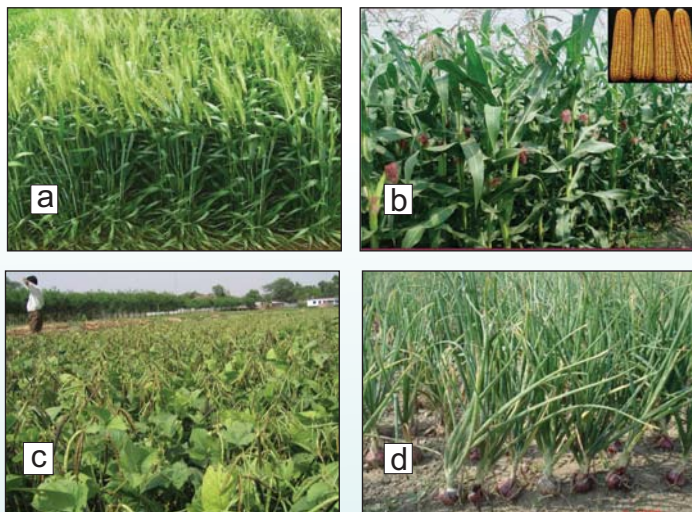
scientists of research divisions/centers of BARI, Heads of RARS, scientists from other centers/divisions, relevant personnel from DAE, Bangladesh Agricultural Development Corporation (BADC), Bangladesh Agricultural Research Council (BARC), farmers, NGOs, private sector and experts from other NARS institutes and universities participate. They thoroughly discuss and review the results of previous year along with regional feedback and finally chalk out the work plan for the next year. The final stage is the central research review and planning workshop which is attended by the program leaders of BARI, senior representatives from DAE, BADC, BARC, Planning Commission, Bangladesh Agricultural University (BAU), Bangbandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Sher-e-Bangla Agricultural University, and subject matter specialists from other institutions. Based on valuable suggestions and comments, research programs are finalized.

Research Programs

BARI has sixteen research programs on: i) Varietal improvement of field crops - Cereal crops: wheat, maize, millets and barley; Oilseed crops: rapeseed and mustard, sesame, groundnut, sunflower, safflower, linseed, niger, soybean, etc.; Pulse crops: lentil, chickpea, mungbean, blackgram, lathyrus, etc.; Tuber crops: potato, sweet potato, yam, aroids, etc.; ii) Varietal improvement of horticultural crops (vegetable, fruit, flower crops; iii) Spice crops (onion, garlic, ginger, turmeric, fenugreek, coriander, etc.); iv) Crop husbandry (field and horticultural crop); v) Soil-plant nutrient management; vi) Disease management (fungal, bacterial, viral disease, nematode); vii) Invertebrate pest management (insects and mites); viii) Vertebrate pest management; ix) Socioeconomic studies on production, utilization and marketing; x) Irrigation and water management; xi) Agricultural machinery and equipment; xii) Farming systems research and on-farm verification of advanced technologies; xiii). Maintenance and preservation of genetic resources; xiv) Post-harvest technology; xv) Hill farming; and xvi) Coastal agriculture.

Major Achievements

Since inception, BARI has been successfully contributing to national agricultural production by evolving technologies that are suitable for the country's climate and appropriate for the farmer's conditions.



Important varieties/hybrids released by BARI : a) Wheat - Shatabdi, b) Maize - Hybrid-9, c) BARI Mungbean-6, d) BARI Piaz-5

BARI has so far developed a total of 712 technologies of which 333 are crop varieties. The improved crop varieties are given in Table 1.

Table 1. List of crop varieties released by BARI

Crops groups	No. of released varieties	Total
Cereal crops	Wheat (28), maize (19), barley (6), millets (4)	57
Oilseed crops	Mustard (16), groundnut (9), soybean (6), niger (1), sunflower (2), sesame (4), safflower (1), linseed (1)	40
Pulse crops	Chickpea (8), lentil (6), mungbean (6), blackgram (3), lathyrus (2), cowpea (2)	27
Tuber crops	Potato (44), sweet potato (9), aroids (4)	55
Vegetables	Eggplant (10), tomato (19), cabbage (2), cauliflower (2), radish (4), Chinese cabbage (1), China shak (1), bean (5), bottle gourd (5), sponge gourd (2), ridge gourd (1), ash gourd (1), okra (1), garden pea (3), french bean (2), bitter gourd (1), yellow bean (1), pointed gourd (2), lettuce (1), stem amaranth (2), red amaranth (1), green amaranth (1), Indian spinach (2), kangkong (1), chinakopi (1), watermelon (1), capsicum (1)	73
Spice crops	Onion (5), black pepper (1), garlic (2), turmeric (3), coriander (1), pepper (2), methi (2), b. leaf (2), ginger (1), kalijira (1)	20
Fruits	Mango (8), jackfruit (1), banana (4), litchi (4), guava (3), papaya (1), lemon (3), coconut (2), batabi lebu (4), sapota (3), longon (2), taikar (1), orange (1), ber (3), pear (1), golden apple (2), passion fruit (1), malta (1), wax jambu (1), satkara (1), kamranga (2), strawberry (1), lotkan (1), rambutan (1), golden apple (1), strawberry (1), tamarind (1)	52
Flowers	Gladiolus (3), orchid (1), chrysanthemum (2), anthurium (1), gerbera (2)	9
Total		333

BARI has been effectively contributing through improvement of varieties of mandated crops and innovation of other technologies. It is now preparing to face newer challenges in agriculture due to climate change. Application of the most sophisticated breeding techniques, such as genetic engineering is now the priority. BARI has the capacity and scope to pull out of food and nutrition insecurity. The targets are being accordingly set and research programs and activities in this direction are getting momentum.

(Source: Dr. Md. Rafiqul Islam Mondal, Director General BARI, Dhaka, Bangladesh, dg.bari@bari.gov.bd)

Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA) - A Profile

Towards a Future without Poverty: Supporting Sustainable Agriculture in Asia and the Pacific

Based in Bogor, Indonesia, the Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA), is a subsidiary body of the Economic and Social Commission for Asia and the Pacific (ESCAP). It was established in April 1981 as the CGPRT Centre (The Regional Coordination Centre for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific). In 2010, the Centre was renamed as the Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA), to reflect a changed mandate due to a changing agriculture landscape in the region.

Mission and Activities

CAPSA's mission is to strengthen South-South dialogue and intra-regional learning on poverty, food insecurity and sustainable agriculture through research, advocacy and networking, capacity development, and policy advice. Specifically, CAPSA engages in the following four activities:

- Identify, coordinate and promote research across the region on issues related to CAPSA's mandate and of relevance to member states
- Synthesize research findings from across the region (and beyond) and translate them into policy recommendations
- Develop capacity of governments and civil societies for introduction and implementation of policy recommendations and good practices
- Disseminate policy recommendations and good practices to policymakers, opinion leaders and civil societies.

Through these activities, CAPSA expects to contribute to reducing poverty and enhancing food security in Asia and the Pacific by promoting sustainable agriculture. CAPSA's vision is an Asia and Pacific region free of hunger and poverty, where policymakers base their decisions and investment allocations on sound science that reflects the needs and perspectives of the rural poor, especially those who depend on agriculture for their livelihoods.

New Role for CAPSA

CAPSA recently published a Strategic Plan 2011-2020 (www.uncapsa.org). This Plan articulates CAPSA's vision for the next 10 years in the context of challenges that the agricultural sector faces in the region, and what steps CAPSA will undertake to transform the center into a highly visible, well-resourced and efficiently run organization with a clear mandate and mission that is valued, supported and made use of by all of its partners and stakeholders. The Centre wishes to position itself more explicitly based on its comparative advantages that include (i) its regional mandate coupled with the regional network of national agricultural research systems; (ii) as a subsidiary body to ESCAP, it can easily gain access to policymakers and participate in policy platforms in the region; and (iii) the mandate it has received from governments in the region to contribute to the reduction of hunger and food insecurity through research and development activities on sustainable agriculture. A number of changes in the way CAPSA is functioning are already underway.

Over the past years, CAPSA has established a large network with many national agricultural research institutes in the region, the focal institutes. This network is currently being expanded, strengthened and formalized, inclusive of closer collaboration with

the Asian-Pacific Association of Agricultural Research Institutions (APAARI). The joint expertise is used to work towards common goals, by actively involving scientists in focal institutes into the development of research proposals and by engaging them for CAPSA's publications, by facilitating staff secondment and more effectively utilizing the focal points in each member states.

CAPSA endeavours to provide science-based policy advice on sustainable agriculture, poverty reduction and food security. A Regional Adviser on Poverty Reduction and Food Security has been based at CAPSA since September 2010. The Regional Adviser is available to carry out short-term advisory missions upon request of and at no cost to ESCAP member governments to identify and formulate effective national and regional strategies, policies and programs, and to assist relevant ministries or institutes in their capacity building efforts to improve policy analyses, which address issues related to food security, poverty reduction and sustainable agriculture.

In order to more effectively contribute to knowledge sharing, CAPSA has developed new products and is using more user-friendly formats. These can be viewed in the revamped webpage, a new format of Palawija Newsletter, and new E-Products: E-Flash, E-Digest and E-News. Fact Sheets are also being produced. Scientists from across the region are invited to contribute to South-South collaboration and dialogue by submitting research papers, short articles, book reviews and stories documenting impact of their work for publication in Palawija News.



Participants of Governing Council Meeting

In March 2011, CAPSA successfully organized the Seventh Session of the Governing Council on 18 March 2011 in Bangkok, Thailand. It was the first Governing Council meeting of CAPSA after approval of its new name. The Governing Council commended CAPSA on its achievements during 2010 and endorsed the new Strategic Plan 2011-2020 presented by the Centre. The session was attended by representatives of the Governing Council members from Bangladesh, Cambodia, France, Indonesia, Iran, Republic of Korea, Malaysia, Pakistan and Thailand. Representatives from China, Japan, Myanmar, the Philippines and Sri Lanka attended the session as observers, as well as a number of regional and international organizations, including APAARI.

In line with the recommendations by the Governing Council, CAPSA will continue to focus its new programs on sharing best practices, knowledge management and policy advice.

(Source: Dr. Katinka Weinberger, Director, CAPSA, Bogor, Indonesia; k.weinberger@uncapsa.org)

The Status of Bt Cotton Variety 'Silver Sixth' in Myanmar

Cotton is a traditional crop grown in Myanmar and is the principal fiber crop of the country. It occupies about 350,000 hectares, primarily in the central zone which receives 600-1000 mm rainfall. Approximately half a million farmers (an estimated 503,566, farming 368,000 hectares in 2007) cultivate an average 0.7 hectares of cotton per farm in the regions of Western Bago, Mandalay, Magwe and Sagaing. Traditionally, cotton farmers grew indigenously developed varieties of *Gossypium arboreum* until the large scale commercial adoption of upland cotton varieties of *Gossypium hirsutum* in the 1960s.

Adoption of Bt Cotton

In 2010, for the first time, it was reported that Bt cotton was being widely grown in Myanmar. The long staple variety named 'Silver Sixth' popularly known as 'Ngwe chi 6' was developed in Myanmar in 2001 and released in 2006-07. In the interim, cotton farmers have quickly switched to Bt cotton variety 'Ngwe chi 6' with adoption increasing significantly from 8,300 hectares in 2007-08 to 140,000 ha in 2008-09. In 2009-10, the adoption of 'Ngwe chi 6' doubled with an estimated 270,000 hectares cultivated by 375,000 farmers or 75% of the cotton area planted in all major cotton growing regions including Western Bago, Mandalay, Magwe and Sagaing in Myanmar. In 2010, 'Ngwe chi 6' was estimated to be grown by 375,000 farmers on approximately the same area of 270,000 hectares. Bt cotton now occupies the entire long staple hectareage in the country (Table 1).

Table 1. Adoption of Bt Cotton in Myanmar (2006-2010)

Year	Adoption of Bt Cotton (ha)	Total area (ha)	% Adoption
2006-07	< 500	300000	< 1%
2007-08	8300	368000	2%
2008-09	140000	360000	39%
2009-10	270000	360000	75%
2010-11	270000	360000	75%

(Source: ISAAA, 2010)

R&D in Cotton Research

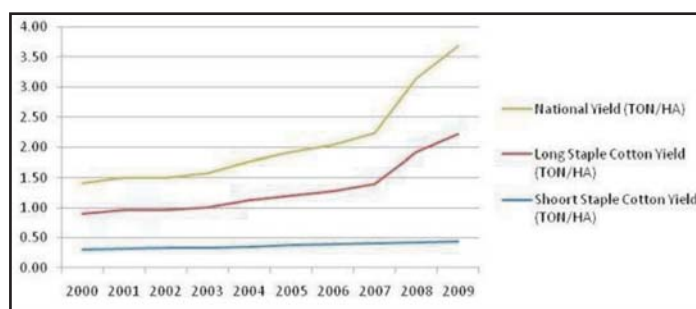
The Cotton and Sericulture Department of the Ministry of Agriculture and Irrigation focuses exclusively on R&D programs to develop long staple cotton varieties and hybrids especially for better fiber quality and improved ginning percentage. In addition to the five commercially grown varieties (Ngwe chi 1, Ngwe chi 2, Ngwe chi 3, Ngwe chi 4 and Ngwe chi 5), four promising new cotton varieties, namely, SDG 1, SDG 4, SDG 6, and SDG 8, which posses greater ginning percentage, have been developed through conventional breeding. The introduction of Ngwe chi 6 the long staple insect resistant Bt cotton variety developed using genetic modification technology was a landmark achievement of the Cotton and Sericulture Department (CSD) of the Ministry of Agriculture and Irrigation in 2006. In 2010, Myanmar became the 13th cotton growing country in the world to commercially deploy biotech cotton and joined the group of 29 biotech crop growing countries in the world.

It is noteworthy that as long ago as 2005, Myanmar had already completed four years (2001-2005) of field trials of Bt cotton in the Mandalay Division. These field trials demonstrated that the Bt cotton was well adapted to Myanmar's soil and climate. At the

same time, efforts were made to strengthen the human resources and trained manpower in biotechnology areas including agriculture, pharmaceuticals, fermentation and industrial biotechnology in the country. The Department of Biotechnology which was newly established in Yangon Technological University (YTU) under the Ministry of Science & Technology (MoST) has been conducting some programs in biotechnology since 1998. In 2001, a national Biotechnology Development Center was established at Patheingyi University, Irrawaddy Division in collaboration with the National Institute of Technology and Evaluation of Japan.

Benefits of Bt Cotton

It is estimated that more than 90% of long staple cotton producers in Myanmar have adopted Bt cotton. Compared to conventional long staple cotton, the best Bt cotton growers are estimated to have doubled or tripled the yield using Ngwe chi 6 which requires one third less insecticides, resulting in a net significant increase in income. The increase in income can be up to three times the income of competing crops such as beans, pulses and sesame, and can even be higher than the income from rice. Yield of long staple cotton has risen steeply from 2007 (coincides with introduction of Bt cotton Ngwe chi 6) to 2009 whilst the yield of the short staple cotton has remained stagnant (Fig. 1).



(Source: Adapted from GAIN, USDA FAS, 2010)

Fig 1. Comparative yields of long staple Bt cotton, short staple cotton and national average (2000-2009)

Conclusion

A long staple insect resistant Bt cotton variety named "Silver Sixth" or "Ngwe chi 6" was estimated to have been planted by 375,000 farmers on about 270,000 hectares (0.7 hectare per farm), equivalent to 75% of all the cotton grown in Myanmar in 2010. With this, Myanmar became the fifth country in South and Southeast Asia and 29th country in the world to commercialize biotech crops. The popularity of biotech Bt cotton variety has become evident from the fact that Bt cotton variety Ngwe chi 6 replaced other popular non-Bt long staple cotton varieties in the first year of its official introduction and the country reaped a bountiful yield and production of long staple Bt cotton as compared to short staple non-Bt cotton varieties. It is expected that the large scale adoption of Bt cotton and next generation biotech cotton traits including stacked insect resistant and herbicide tolerant traits will turn the "Silver Sixth" Bt cotton fields into the silver or gold fields in Myanmar.

(Source: Dr. Bhagirath Choudhary and Kadambini Gaur, The International Service for the Acquisition of Agri-biotech Applications; email: b.choudhary@cgiar.org)

Sri Lanka

National Symposium on Floriculture Research

A National Symposium on Floriculture Research was organized by Sri Lanka Council for Agricultural Research Policy (CARP) at the Royal Botanic Gardens, Peradeniya, Sri Lanka on 25 January, 2011. The participants comprised of scientists, exporters, representatives of small and medium scale growers and policy makers. Dr. J.D. Samarasinghe, Chairman of the Sri Lanka Council for Agricultural Research Policy inaugurated the symposium and highlighted its objectives as well as stressed on the need for formulation of national priorities in floriculture.



National Symposium on Floriculture Research in Session

Three technical sessions were held under the chairmanship of Prof. H.P.M. Gunasena, Chairman Coconut Research Institute, Dr. Kumudu Fernando, Former Director, Biotechnology Centre, University of Peradeniya and Prof. Palitha Weerakkody, University of Peradeniya, respectively. Fifteen market oriented research papers were presented in the symposium. As a result of the deliberations, the research priorities were identified according to the current needs of the sector and "Sri Lanka the Emerging Wonder of Asia Mahinda Chinthana Vision for the Future". The research priorities identified were: i) identification /improvement/ production of novel ornamental plants and cut flowers, ii) mass propagation of quality planting materials, iii) developing new crop management and production techniques, iv) post-harvest technologies to improve vase life of the products, v) pest and disease control methods, vi) development of sustainable cost effective cultivation methods for different agro-ecological zones, vii) development of cut flower and foliage industry as micro-enterprises to upgrade the income of the housewives.

Summing up the symposium, Dr. D.S.A. Wijesundara, Director General of Department of National Botanic Gardens, explained the importance of these research findings and their applicability to the floriculture sector. He also informed about the present situation of the floriculture sector in the country and different avenues that can be used to develop this important sector. Dr. Siril thanked all the participants and the CARP for their remarkable contribution to make this event a success.

Weligama Coconut Leaf Wilt Disease (WCLWD) of Sri Lanka

Coconut (*Cocos nucifera* L.) is considered the most useful tree in the Asia-Pacific region as it provides sustainable income to millions who are directly or indirectly dependent on it. In Sri Lanka, the coconut palm not only provides income, but it supplies most of the caloric intake of the diet and possesses a high cultural value.

Phytoplasma-borne diseases of coconut such as lethal-yellowing and root wilt have been reported in many countries of the world. However, no curative methods have so far been identified. Therefore, development of effective and sustainable methods to manage and prevent the spread of the disease is extremely important.

From late 2006, a yellowing syndrome of leaves was reported from the Weligama area and has been spreading in the Southern Province of Sri Lanka. Later, the Coconut Research Institute (CRI), confirmed that it is caused by a phytoplasma and the disease was named as Weligama Coconut Leaf Wilt Disease (WCLWD). WCLWD is considered as a new disease and very little is known about the nature and insect vectors of the disease in Sri Lanka. In India also, there is a similar situation and the disease is referred to as Kerala wilt (root wilt) and is persistent for about 100 years.

Developing research strategies to manage an incurable disease that can affect not only the coconut palms, but also arecanut, ornamental plants and possibly other *Palmae* trees is considered as a high priority in Sri Lanka. The most important aspect is that the insect vector transmitting this disease is found all over Sri Lanka and has a wide host range and, therefore, eradicating this disease is a daunting task. The Government of Sri Lanka is assisting the Coconut Research



Yellowing syndrome of coconut leaves

Institute (CRI) to manage this disease through the programs undertaken by the Institute and the universities under the project management of CARP in order to address this national issue of great concern.

(Source: Sri Lanka Council for Agricultural Research Policy)

New Affiliate Members of APAARI

- CSK Himachal Pradesh Krishi Vishwavidyalaya, Himachal Pradesh, India
- University of Nottingham, Malaysia Campus, Malaysia

Membership Upgraded

- Indian Agricultural Universities Association (IAUA), India has upgraded its membership to become an Associate Member.

Philippines

Introducing the Philippine Rice Combine Harvester

A machine that combines harvesting, threshing, cleaning, and bagging in one operation was found suitable in major rice-producing provinces in the Philippines where manpower for harvesting is insufficient. The Philippine Rice Research Institute (PhilRice) research team in cooperation with the Briggs and Stratton (B&S), a private company supplying farm engines in the Philippines, modified the original design of rice combine harvester from China to fit local farm conditions.

Technical evaluation on its performance, which was conducted by the Agricultural Machinery Testing and Evaluation Center of the University of the Philippines, Los Banos (AMTEC-UPLB), indicated that the machine performed well with 0.194 hectare per hour field capacity, 86.6 per cent field efficiency, 90.3 per cent purity of threshed grains, total grain loss of only 1.68 per cent, and fuel consumption of 3.68 liters per hour. AMTEC-UPLB test results are comparable with the data gathered from the endurance tests conducted in Nueva Ecija, Bataan, Tarlac, Pangasinan, and Cagayan, involving farmer-cooperators.

Economic analysis on the use of machine for custom hiring to service farms of organized farmer groups showed that at harvesting cost of



Philippine rice combine harvester

P5,442 per hectare, the capital investment of P350,000 can be recovered in 1.7 years or from a harvesting area of 87.3 hectares to break-even. For individual farmer's use and ownership, economic viability was observed to be high at benefit-cost ratio of 1.36 with a break-even land area of 48 hectares and a payback period of less than one year. Additional income can be realized from the recovered harvesting losses of 5 per cent, which is better compared with unrecovered manual harvesting losses of more than 6 per cent.

(Source : www.pcarrd.dost.gov.ph)

News Update from International Centers

Bioversity International

Training Workshop on the Management of Field Genebanks and *In Vitro* Collections

A training workshop on the management of field genebanks (FGB) and *in vitro* collections was jointly organized by the Food and Fertilizer Training Center (FFTC), the Taiwan Agricultural Research Institute (TARI), the Council of Agriculture (COA) and Bioversity



Participants of training workshop

International in Fengshan, Chinese Taipei from 16-21 May, 2011. Sixteen participants from Cambodia, India, Indonesia, Japan, Korea, Malaysia, the Philippines, Chinese Taipei, Thailand and Vietnam were trained on various facets of FGB management and *in vitro* collections. The experts from leading institutes in the host country (Universities, COA-TARI, and FFTC), Japan, The resource persons were from the World Vegetable Center and Bioversity International.

The training workshop was comprised of lectures, discussions, practical exercises and field visits and the participants learned

about complementary conservation strategies, genetic diversity related aspects, legal and germplasm health issues, documentation requirements, and use of germplasm conserved in field genebanks and *in vitro* collections. The training workshop provided a sound scientific basis and imparted the latest knowledge and skills on the good practices in managing field genebanks and *in vitro* collections through hands-on experience and practical exercises on the management of field genebanks and *in vitro* collections.

The knowledge gained by the participants would contribute towards more efficient and effective management of field genebanks and *in vitro* collections in the Asia-Pacific region.

(Source : Dr. V. Ramanatha Rao, Honorary Fellow, Bioversity International, email: vramanatharao@gmail.com)

IFPRI

Leveraging Agriculture for Improving Nutrition and Health

The links between agriculture, nutrition, and health have important consequences for the lives of poor people around the world, including the millions living in poverty in Asia. A global policy consultation on "Leveraging Agriculture for Improving Nutrition and Health," was organized by the International Food Policy Research Institute (IFPRI) in New Delhi, India, on 10-12 February, 2011 in order to bring these sectors together and unleash the potential of agriculture as a supplier of food, as a source of income, and as an engine of growth - to sustainably reduce malnutrition and ill health for the world's most vulnerable people.

The event was attended by approximately 1,000 key stakeholders from agriculture, nutrition, health, and other development sectors, as well as government, civil society, farmer groups, private sector,



Dr. Manmohan Singh, the Prime Minister of India delivering Inaugural address

donor agencies, and research and academia from over 65 countries. The Prime Minister of India, Dr. Manmohan Singh delivered the inaugural address. Other notable speakers included Mr. Mohammad Abdur Razzaque, Minister of Food and Disaster Management, Bangladesh, Dr. M.S. Swaminathan, Chairman, M.S. Swaminathan Research

Foundation, Chennai, India. Mr. Mahinda Yapa Abeywardena, Minister of Agriculture, Sri Lanka, Mr. Tahlim Sudaryanto, Assistant Minister for International Cooperation for Indonesia's Ministry of Agriculture, Mr. Vo-Tong Xuan, Rector of Tan Tao University in Vietnam, and Mr. Esther Penunia, Director General of the Asian Farmers' Association for Sustainable Rural Development.

Among the many plenary and parallel sessions, the conference program featured a panel that focused on how science and technology levers can be used to strengthen the connection between agriculture and better health and nutrition. An important science tool discussed that links agriculture and nutrition is biofortification, the breeding of staple crops to have a higher content of micronutrients. Panelists also noted that greater investment in research on breeding vegetables that are nutrient-dense and resilient to climate volatility, pests, weeds, and diseases is essential. They also focused on the importance of collecting more information on people's usual food consumption patterns and nutrient intakes for effective program design and creating affordable methods to measure nutritional status, especially for several micronutrients simultaneously.

Other noteworthy sessions focused on the unique challenges and priorities facing various regions around the world. In the South Asia panel, speakers discussed ways to reduce disturbingly high malnutrition rates in the region, through improving the public distribution system, maintaining national food self-sufficiency, and raising the production and consumption of nutritious foods by creating a favourable policy environment for research and development. Speakers also noted that investments in agricultural extension and technologies are needed. Although East Asian countries have benefited from recent gains in the productivity of rice farmers, session participants nonetheless noted that poverty and undernutrition in their region are still rampant. Addressing this problem will require solutions such as promoting research innovations, providing nutrition and agriculture education at the community level and ensuring farmers' access to land, credit, and post harvest technologies.

At the conclusion of the conference, IFPRI presented a "Way Forward" statement that identified four key steps: (i) fill the knowledge gaps through, for instance, investing in research, evaluation, and education; (ii) do no harm through, for instance, mitigating the health risks posed by agriculture along the value chain and by designing health and nutrition interventions that contribute to the productivity of agricultural labour; (iii) seek out and scale up innovative solutions that use all available levers for change; and (iv) create an environment in which cooperation can thrive by

focusing on partnerships among agriculture, nutrition, and health and that use communication and advocacy to bring about change.

A number of gaps in research and action remain to be filled. Researchers can collect more evidence on the links among agriculture, nutrition, and health and on how they can be effectively exploited to improve human well-being. Policy makers can change agricultural policies to encourage farmers to produce more nutritious foods. Looking at the whole bioeconomy - including agriculture's role in production of food, feed, energy, and new industrial materials - offers perspectives on how to make the entire agricultural system work more effectively to improve nutrition and health.

The 2020 conference website (<http://2020conference.ifpri.info/>) features the conference highlights, video footage for each session and speaker, papers and briefs, the Way Forward statement, speaker powerpoints and summary notes, and a wealth of other resources from the accompanying Knowledge Fair and side sessions.

(Source: Pandya-Lorch Rajul, IFPRI, email: r.pandya-lorch@cgiar.org)

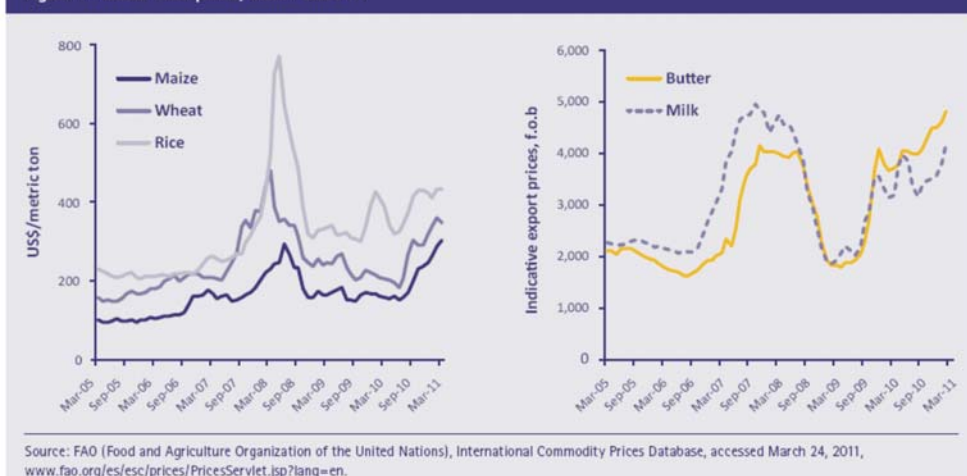
Prevent Recurring Food Crises

Three years after the 2007-08 food crisis, the prices of basic food items are again rising rapidly, fueling new concerns about the food security of poor people. The international prices of maize and wheat have almost doubled between June 2010 and mid-March 2011, and the global prices of dairy products have also risen (Fig. 1). High food inflation is affecting many developing countries, including those home to large numbers of poor people. For example, food inflation rose to 10 per cent in China and 18 per cent in India between December 2009 and December 2010, mostly driven by higher prices of meat, fish, eggs, dairy, vegetables, and fruits.

A New Food Crisis on the Horizon?

Elements of the 2007-08 global food crisis can be seen in the current global food price situation. In particular, expanding biofuel production, rising oil prices, US dollar depreciation, export restrictions, and panic purchases are again pushing food prices higher, although not yet to the same extent as three years ago. Assigning each cause a specific magnitude is difficult, partly because the effects differ by food products and markets; yet, studies suggest that the diversion of crops from food or feed to biofuel production applies a significant amount of demand induced pressure. If the current biofuel policies remain in place and oil prices stay high, prices of agricultural commodities used for biofuels could remain substantially higher in the coming decades. The recent weakening of the US dollar has also put pressure on a range of commodity prices, since crude oil and most of the major grains are traded in US dollars. Weather events have also driven the recent food price spikes, both in 2007-08 and now. These events resulted in production shortfalls in major producing countries, while also inducing trade diversion and panic purchases in other markets. Climate change will likely increase the frequency of extreme weather events and put upward pressure on food prices. Although many parallels exist, certain aspects of today's world food situation differ from the situation in 2007-08. Overall grain production and stock levels, particularly in developing countries, are higher compared with the levels of three years ago. The international price of rice, the main staple in Asia, has not increased as much as it did three years ago-although considerable price increases have affected some domestic markets,

Figure 1—Global food prices, March 2005–11



including South Asia. In contrast to these more positive signs, the economies of China and India are now overheated and experiencing high overall inflation caused by factors such as excess liquidity, whereas three years ago domestic food markets in these countries were much calmer. Rising oil prices in recent months, the expansion of biofuel production, particularly maize ethanol, and other factors mentioned above suggest the significant risk of even higher global food prices.

The Hardest Hit

Sharp increases in the prices of staple foods such as cereals, as well as excessive price volatility, are particularly harmful for the world's poorest consumers, who spend a large proportion about 50-70 per cent of their income on food and have limited capacity to adjust quickly to rapid price increases. Poor agricultural producers can benefit from higher food prices through higher incomes only if they are net sellers of food and if input costs do not rise in parallel. In recent years, however, input costs, such as fertilizer and transport costs, have also been high and volatile. Increasing costs, as well as the uncertainty that comes with excessive price volatility in both input and output markets, can reduce farmers' profit margins, distort long-term planning, and dampen the incentives to invest more in productivity enhancement. The food security of many poor people and vulnerable groups, particularly women and children, is again at risk due to the steep international food price increases in recent months. Although the impacts of the current food price spikes are not yet known, the impacts in 2010-11 will likely differ from those observed in 2007-08. Some of the price increases observed in developing countries this time around are for high-value food products, such as vegetables, fruits, and meat, of which the poor generally consume little. Moreover, although international maize prices have increased rapidly in recent months to levels equivalent to those observed in the 2008 crisis, evidence from 2008 suggests that the transmission of inter-national maize prices to domestic maize prices in Africa was relatively low in 2007-08. So far, at least, the same appears true in 2010-11 as there are few signs of maize price increases in Africa. However, 2010-11 differs significantly from the earlier crisis because food prices are rising rapidly in countries with large numbers of poor people—such as India, China, and Indonesia which was not the case in 2007-08.

Urgent Actions Needed

The recent trends in food prices—higher levels and higher volatility confirm trends predicted by a number of experts. Given the complex

web of factors influencing global food security, governments of developed and developing countries, as well as international organizations, must use a comprehensive approach to prevent a food crisis recurrence. This comprehensive approach should comprise a number of initiatives and reforms; while some of these have been proposed before, their merits are even more relevant today and justify reprioritization of and reallocation within national and international budgets. There are following seven main initiatives that governments and institutions should promptly implement:

- Effective policies and technology investments to minimize food-fuel competition
- Social protection, especially social safety nets, for the most vulnerable groups, including women and young children, in developing countries
- Transparent, fair and open global trade to enhance the efficiency of global agricultural markets
- A global emergency physical grain reserve to address the effects of the food price crises for the most vulnerable
- Policies and investments to promote agricultural growth in the particular smallholder productivity, in the face of climate change
- Investments by national Govt. in climate change adaptation and mitigation using the full potential that agriculture offers
- An international working group to regularly monitor the world's food situation

(Source: IFPRI, Policy Brief 16)

ICRISAT

Genetic Diversification Increased Pearl Millet Productivity in India

A significant impact on the food and nutritional security and livelihood of the rural poor is being brought about by the 47.9% improvement of pearl millet productivity in India. Years of strategic research on genetic diversification by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the Indian Council of Agricultural Research (ICAR) have boosted pearl millet yield in three conspicuous phases of hybrid development. From an average of 620 kg/ha in 1990-1993, pearl millet yield went up to 714 kg/ha in 1994-1997 and escalated further to 917 kg/ha in 2006-2009, for a 47.9% improved yield. This was achieved with much lesser investment in research and development (R&D) compared to other crops and given the greater environmental challenges in pearl millet production.

Genetically diverse hybrids are currently grown in over 60% of approximately 10 m ha in India. Total grain production has increased from 3.5 million tons in 1965 to 9.5 million tons in 2010, owing to the development of high-yielding single cross hybrids and their adoption by Indian farmers.

Pearl millet is a highly nutritious crop. Recently, genetic improvement for higher levels of grain iron and zinc content was added as another dimension in ICRISAT's research program to further enhance the nutritive value of this crop. Grown in arid and



High yielding pear millet hybrid

semi-arid areas most vulnerable to climate change, pearl millet has several natural evolutionary advantages for global warming. Some pearl millet varieties and hybrids developed from ICRISAT's germplasm have high levels of salinity tolerance and are able to flower and set seeds at temperatures more than 42°C, in areas such as Western Rajasthan and Gujarat in India.

"The current research strategy at the Institute is to develop crop varieties that will overcome the adversities of climate change, and thereby reinforce the food and income security of the poor, particularly in the dryland tropics," said ICRISAT Director General, Dr. William D. Dar. Research on the diversification of the genetic base of seed parents of hybrids by ICRISAT and ICAR also led to overcoming the recurring problem of downy mildew epidemics in pearl millet hybrids.

The ICRISAT-ICAR breeding program has been fully backed by strong seed production and marketing of pearl millet cultivars by both public and private sectors. As a result, pearl millet has recorded the highest per cent increase in grain yield among all food crops in India during the last 15 years.

(Source: ICRISAT Happenings No. 1468, 27 May 2011)

AVRDC

Management of Diamondback Moth

AVRDC - The World Vegetable Center organized the 'Sixth International Workshop on Management of the Diamondback Moth and Other Crucifer Insect Pests' in collaboration with Cornell University (USA) and Kasetsart University (Thailand). The workshop was held at Kasetsart University's Kamphaeng Saen Campus, Nakhon Pathom, Thailand from 21-25 March, 2011. A total of 120 participants from 22 countries attended the workshop. Robert J Holmer, Regional Director, AVRDC East and Southeast Asia welcomed the delegates. In his inaugural address, Sombat Chinawong, Vice-President, Kamphaeng Saen Campus, Kasetsart University noted the overuse of agrochemicals in Thailand's vegetable production systems and emphasized the need for integrated pest management approaches to protect the health of farmers, consumers, and the environment. Jackie Hughes, Deputy Director General for Research, AVRDC delivered the keynote address in which she detailed integrated pest management programs promoted by the Center in South Asia and Southeast Asia to manage

the diamondback moth and other brassica pests. Participants gave 48 oral presentations and 19 poster presentations in seven scientific sessions during the workshop. Participants also visited Kasetsart University's Insect Park and the National Biological Control Research Center. For more details, please visit www.avrdc.org.

Scientific Collaboration

Dr. J.D.H. Keatinge, Director General, Dr. M.L. Chadha, South Asia Regional Director, Dr. Warwick Easdown, Principal Scientist - AVRDC-The World Vegetable Center, visited the Indian Institute of Vegetable Research at Varanasi and the Indian Institute of Pulse Research at Kanpur in February 2011. Both these institutes have national research responsibilities for the whole of India. With excellent facilities and highly trained and experienced staff, they are valuable scientific partners for the Center's work in South Asia, and have previously worked with AVRDC in tomato, chili and mungbean breeding and selection programs. The visits helped to strengthen the Center's relationships with these major scientific partners, and will enhance opportunities for project collaboration in the future.

Training Trainers in Integrated Pest Management

AVRDC-The World Vegetable Center in South Asia and Sir Ratan Tata Trust Project partners Nav Bharat Jagriti Kendra (NBJK) and Professional Assistance for Development Action (PRADAN) hosted a training session and workshop on "Insect pests and diseases: identification and IPM" at Ranchi, Jharkhand, India on 8-9 February, 2011. Twenty-five trainers from partner NGOs, reviewed methods to identify insect pests and diseases of tomato, eggplant, okra, cowpea,



Participants of international workshop at Kasetsart University, Bangkok, Thailand

bottle gourd, and garden pea. AVRDC entomologist R. Srinivasan, project coordinator Satish K. Sain, site coordinator M. Ravishankar, and scientific officer Bharat Bhushan led the training program, emphasizing integrated pest management strategies and safer use of pesticides. Participants were keen to learn from and interact with the Center's resource team.

Open Source Software for Breeding

International collaborative plant breeding efforts got a boost during a five-day workshop organized by AVRDC, ICRISAT and the Generation Challenge Program at the ICRISAT campus, Patancheru, India in the first week of April 2011. The workshop brought together more than 60 plant breeders, researchers, and programmers from around the world who are working on the International Crop Information System (ICIS). This open source suite of software tools can manage data on genetic resources and

breeding for any crop. Warwick Easdown, Ramakrishnan Nair from AVRDC South Asia and Roland Schafleitner from AVRDC headquarters attended the workshop. During the opening address, Warwick Easdown emphasized the value of software tools for enhancing plant breeding and the need to work more collaboratively across institutions. The ICIS suite of programs is particularly suited to building collaborative breeding projects over the web. It can complement commercial breeding programs and its community of practice helps all participating institutions improve their management of breeding data to produce better varieties more quickly. The workshop, hosted with support from the Australian Center for International Agricultural Research (ACIAR), included detailed discussions on software development, the management of molecular and pedigree data for breeding decisions, and the use of controlled vocabularies for consistent naming of data between institutions. The activity is the first in a project between AVRDC and ICRISAT to improve the management of breeding data for selected crops. AVRDC will focus on legume data this year, with the aim of developing a broader project with ICRISAT.

(Source: Maureen Mecozzi, Head, Communication Information, AVRDC)

WorldFish Center

Harnessing the Development Potential of Aquatic Agricultural Systems for the Poor and Vulnerable

Aquatic agricultural systems (AAS) are widely distributed along the world's rivers and coasts. These are generally highly productive systems but multiple constraints limit the ability of poor smallholder families to harness this productivity in the form of improved food, nutrition and income. To help overcome these constraints and harness the full development potential of aquatic agricultural systems, a new action research program has been developed by the CGIAR. This research program brief highlights the key messages of this new initiative.

http://www.worldfishcenter.org/resource_centre/WF_2796.pdf

An Ecosystem based Approach to Biodiversity Conservation and Development in the Philippines

The WorldFish Center leads with The World Agroforestry Center (ICRAF) and SEARCA as partners in a USAID-funded project titled, "From Ridge to Reef: An Ecosystem Based Approach to Biodiversity Conservation and Development in the Philippines". The project aims to address key issues affecting biodiversity conservation around the Mt. Malindang area in Mindanao, Philippines.

<http://beta.searca.org/searca/index.php/news/406-from-ridge-to-reef-an-ecosystem-based-approach-to-biodiversity-conservation-and-development-in-the-philippines>

Financing Smallholder Aquaculture Enterprises

Aquaculture is the world's fastest growing food production sector. Developing countries produce the bulk of aquaculture production, and smallholders dominate the rural landscape throughout the developing world, making up a large proportion of people involved in aquaculture production in many countries. Smallholders participate across the spectrum of aquaculture, from subsistence fish farming where aquaculture is part of a diverse household livelihood, to specialization in more commercially oriented aquaculture, involvement in micro enterprises across value chains, and even through employment in the growing number of larger commercial aquaculture enterprises. This policy brief provides guidance on investing in the improvement of establishment of smallholder aquaculture enterprises. It builds upon experiences of working with smallholder commercial farmers in Asia, and particularly from facilitating improvements with small scale shrimp and fish farmers in Aceh, Indonesia, analyses of the Vietnamese catfish industry, a review of aquaculture producer organizations as well as cross-commodity and country comparisons. It is intended to guide both public and private actors in approaches to financing improvements in business oriented smallholder aquaculture, and to be an entry point for the private sector on more inclusive ways to engage smallholders in value chains.

http://www.worldfishcenter.org/resource_centre/WF_2798.pdf

Territorialization Re-examined: Transborder Marine Resources Exploitation in Southeast Asia and Australia

This chapter in a book entitled "Transborder Governance of Forests, River and Seas" re-examines the concept of territorialization to provide a framework for the anthropological analysis of the new phenomenon of transborder access to and appropriation of marine resources. The authors expanded the subject of territorialization from land-based forestry to the control of people and their relations to marine resources, and re-examine the concept by addressing the everyday dynamics of the social, economic and political interactions taking place at multiple individual and institutional scales between central, provincial and district government agencies, trade networks, and resource appropriators. They also discussed two case studies involving transborder fisheries in Southeast Asia (Malaysia-Indonesia) and Australia (Indonesia-Australia), and compared them with transborder appropriation and exploitation of fisheries and other marine resources elsewhere.

<http://blds.ids.ac.uk/cf/opaccf/detailed.cfm?RN=322087>

(Source: Ms. Florine Lim, Communications and Donor Relations Division, The WorldFish Center, Penang, Malaysia)

Other News

Funding Support to International Network for Edible Aroids (INEA) by European Union

The European Union (EU) has contributed €3 million over five years to the newly formed International Network for Edible Aroids (INEA). INEA is a consortium of scientists and growers from all over the world. The aim of the Network is to implement a project entitled: Adapting Clonally Propagated Crops to Climatic and Commercial

Change. Clonally propagated crops are important to the world's poor, but because they rarely flower or set seed they are slow to respond to changing environments. Edible aroids - taro, tannia, swamp taro, giant taro, elephant foot yam, and more are the focus of the project. The inaugural meeting of INEA was held in Kuala Lumpur, Malaysia, on 13-14 April, 2011. The meeting heard from participants on their achievements to date in the area of edible aroids and their expectations of INEA.

"We are very pleased for participating countries that INEA has come to fruition", said Dr Vincent Lebot, technical coordinator of the project from CIRAD, Centre de Coopération Internationale en Recherche Agronomique pour le Développement. "We can now develop a global network of scientists and farmers, freely exchanging plants and seeds, information and technologies to improve these crops everywhere they are grown", he added.

Dr Lebot was speaking at the opening of INEA's inaugural meeting. SPC, Fiji, together with CIRAD, France and Vanuatu, are implementing agencies of the project, in charge of financial and scientific matters, respectively. The participating countries in INEA are: Burkina Faso, Costa Rica, Cuba, Germany, Ghana, India, Indonesia, Kenya, Madagascar, Nicaragua, Nigeria, Philippines, Papua New Guinea, Portugal, Samoa, Slovenia, South Africa, and Vanuatu. There are two regional organizations: SPC and CARDI, the Caribbean Agricultural Research and Development Institute, Trinidad; and two international agricultural research organizations: CIRAD and Bioversity International, Italy.

Further information on INEA and details of the inaugural meeting are available on the INEA website <http://www.ediblearoids.com/>

The Global Framework for Climate Services

Dr. Raj Paroda, Executive Secretary, APAARI served as the member of High Level Task Force for the Global Framework for Climate Services (GFCS). The report of Committee was presented in WMO Conference and was very well received. The report highlighted that climate services do not get the last mile to those who need them the most and this needs to be addressed urgently. The Taskforce felt the need for the meteorological community to make a global contribution in this direction since climate services are vital for improved decision making for the most valuable individuals to the largest of governments. The Taskforce stressed that the WMO congress should assert leadership, guidance and assistance to move forward. The Taskforce concluded that

the report is a Road Map to construct, without delay, a Global Framework for Climate Services. The major recommendations of the Taskforce included:

- Invest US\$ 75 million/year to create and sustain a Global Framework
- Implement the Framework using eight guiding principles, viz., priority for the most vulnerable; maximize use of climate services; implementation at global, regional and national level; framework to be operational; climate services to be a public good; maximize data exchange; strengthen partnerships; and no duplication
- Establish ad hoc technical group for developing detailed implementation plan within next six months
- Governments and development agencies give high priority to national capacity building in developing countries and rapidly strengthen or create the new regional elements of the Framework.

(Source: Jan England and Mahmoud Abu-Zeid, Co-chairs of High Level Taskforce)

APAARI Participation in other Fora

- Dr. Raj Paroda attended the Management Team Meeting of GFAR on 28 March, 2011 in Rome as Chairman of the Program Committee.
- Dr. J.L. Karihaloo, attended "Brainstorming Session on Biosafety Assurance for GM Foods in India" organized by National Academy of Agricultural Sciences, at New Delhi on 22 June, 2011 and "International Roundtable Conference on Biotech Crops" organized by The Energy and Research Institute, New Delhi on 4-5 July, 2011.
- Dr. Bhag Mal and Dr. S. Attaluri participated in regional consultation workshop on "Supporting Southern-European Alliances/Platforms on ARD" organized at Asian Institute of Technology, Bangkok on 16-17 March, 2011.

Interaction with former President Bill Clinton

Dr. Raj Paroda, Executive Secretary, APAARI who was on a personal visit to the United States, had an opportunity to meet the former President of the United States, Mr. Bill Clinton during the Memorial Day celebrations on 29 May, 2011 in Chappaqua, a suburb of New York. During the brief discussion, Mr. Clinton evinced keen interest in the present agricultural scenario and admired the way India has made great strides in the field of agriculture, which he felt was a shining example the world over. He also expressed his concern for not achieving a similar success in Africa despite all out efforts of various organizations, including his own Foundation. He did emphasize that Africa can gain a lot through south-south cooperation, where role of India could be substantial. He fully agreed with Dr. Paroda that three cradles of Green Revolution i.e. political will, scientific collaboration at international level and the capable human resource (scientists, extension workers and farmers) are a must to achieve similar successes in Africa and elsewhere.

Mr. Clinton's initiatives through agriculture and related developments throughout the world have resulted in salvaging of the down-trodden. He said "We should go back to a policy of maximum agricultural self-sufficiency. While there would always be a global market for crops like rice, wheat and corn, it is crazy for us to think we can develop these countries without increasing their capacity to feed themselves."

Indeed, the meeting was a memorable event both for Dr. Paroda and Mrs. Shashi Paroda. At the end, Mr. Clinton desired to strengthen further the global research partnership in the field of agriculture for benefitting more than one billion people who still need both food and nutrition security.



Former President Bill Clinton with Dr. Raj Paroda

ILRI : Director General

Dr. Jimmy Smith has been appointed as the Director General designate of the International Livestock Research Institute (ILRI).

Born in Guyana, in the Caribbean, where he was raised on a small mixed crop and livestock farm, Smith holds dual nationalities with Canada. He is a graduate of the University of Illinois, at Urban-Champaign, USA, where he completed his Ph.D. in animal sciences. Now based at the headquarters of the World Bank in Washington DC, he currently leads the World Bank's Global Livestock Portfolio.

Earlier in his career, Dr. Smith served for ten years at ILRI and its predecessor, the International Livestock Center for Africa (ILCA) (1991-2001). At ILCA and then ILRI, he was the institute's regional representative for West Africa, where he led development of integrated research promoting smallholder livelihoods through animal agriculture and built effective partnerships among stakeholders in the region. At ILRI, he spent three years leading the ILRI-led Systemwide Livestock Programme of the Consultative Group on International Agricultural Research (CGIAR), an association of 10 CGIAR centers working on issues at the crop-livestock interface. Since leaving his decade of work at ILCA/ILRI and the CGIAR, Dr. Smith has continued playing a major role in supporting international livestock for development in terms of both funding and strategizing. Before joining the World Bank, where he has served for five years, Dr. Smith held senior positions at the Canadian International Development Agency (CIDA) from 2001-2006 and the Caribbean Agricultural Research and Development Institute (CARDI) from 1986-1991. He will take over from Carlos Seré, ILRI's current Director General on 1 October, 2011.



AVRDC : Regional Director for South Asia

Dr. Warwick Easdown has been appointed as the new Regional Director for South Asia, AVRDC-The World Vegetable Center South Asia at Patancheru, Andhra Pradesh, India. As Regional Director, Dr. Easdown will collaborate with donors and partners, develop new projects, and extend the research, development, and capacity-building work of AVRDC through networks to benefit farmers and consumers all along the region's vegetable value chain. His areas of expertise include agronomy, communications, and rural internet applications. He joined the Center in 2006 as Head of Communications, and previously held a similar position at the World Agroforestry Center in Kenya. A native of Australia, Dr. Easdown managed extension training and research at the University of Queensland and worked in extension agronomy in subtropical Australia. He holds a Ph.D. from the University of Illinois, USA.



PARC-Chairman

Dr. Muhammad Afzal, a renowned scientist at national and international level, joined as the Chairman of the Pakistan Agricultural Research Council (PARC), Pakistan on 4 January, 2011. He is the recipient of Tamgha-i-Imtiaz for his excellent achievements and services in the field of agricultural research. Dr. Afzal did his Ph.D from the Colorado State University, USA and started his career from University of Agriculture, Faisalabad in 1976.



Later he joined PARC and worked at different higher positions. He served PARC as Principal Scientific Officer, Chief Scientific Officer and in a short period of time was promoted as Director General National Agricultural Research Center (NARC). He also served as Animal Husbandry Commissioner in the Ministry of Food and Agriculture. He was awarded with Silver Jubilee Award and a cash prize by the President of Pakistan in 1999 in recognition of his excellent achievements and contributions in the field of agricultural research.

Dr. Afzal was consultant on restructuring, review and performance evaluation of several organizations, and attended more than 100 conferences/symposia/seminars. He has a large number of publications to his credit including books, book chapters, policy documents, research papers in international and national journals, proceedings of international and national conferences and extension articles for farmers and general public.

BARI : Director General

Dr. Md. Rafiqul Islam Mondal joined as Director General (Current Charge) of Bangladesh Agricultural Research Institute (BARI) on 28 November 2010. Before joining as DG of BARI, Dr. Mondal served as Director, SAARC Agriculture Center and Member Director (Fishery) at Bangladesh Agricultural Research Council (BARC). He is a renowned Agronomist and obtained his Ph.D. from Dhaka University and M.Sc. (Ag.) from Bangladesh Agricultural University, Mymensingh and MS from Cornell University, USA. Dr. Mondal has a very long experience and expertise in crop production especially in oilseed and pulse improvement programs. Dr. Mondal started his career as Scientific Officer in 1980 at BARI and served the institute as Senior Scientific Officer and Principal Scientific Officer until 2007. Then he joined Bangladesh Agricultural Research Council (BARC) as Chief Scientific Officer (Crops). He has published more than one hundred scientific articles in different journals at home and abroad. He participated in many international seminars, conferences and workshops in USA, Canada, China, India, Pakistan, Nepal, etc. and is associated with many national and international scientific and professional societies. Dr. Mondal was born in 1954 in the village Bashpukuria of Pirganj Upazila of Rangpur district.



APAARI family wishes them all a great success in their new assignments

Forthcoming Events

5th WCCA and 3rd FSD Conference, Brisbane, Australia, 26-29 September, 2011

The Grains Research and Development Corporation (GRDC) and the Australian Centre for International Agricultural Research (ACIAR) will be jointly organizing the 5th World Congress on Conservation Agriculture and 3rd Farming System Design Conference at Brisbane, Australia from 26-29 September, 2011. This will provide a unique opportunity to discuss the application of conservation agriculture principles from a farming systems perspective. At this meeting, discussions will be centered around conservation agriculture principles in both large-scale, high-tech commercial farms, and small-scale low-cost smallholder farms in developing regions in the world in the context of food security concerns, increasing food demand and climate change. The Congress expects to attract over 700 scientists, students, farm managers, policy makers, conservationists and others interested in sustainability, conservation and farming systems.

Further details : <http://www.wcca2011.org/>

Intensive Course in Vegetable Production, 12 September - 2 December 2011, Bangkok

AVRDC - The World Vegetable Center's 30th International Vegetable Training Course will be held on 12 September - 2 December, 2011 at Bangkok. The course aims to enhance technical, scientific and managerial skills of the participants to contribute to sustainable development of their countries through increased production and consumption of health-promoting vegetables. Three course modules will emphasize on advanced and sustainable vegetable production and post-harvest technologies, farmer education, marketing and human health and nutrition. In addition, the training will enhance awareness and understanding of emerging global development issues and technologies. For a course brochure and registration forms, visit <http://www.avrdc.org/index.php?id=743>. For more information, email: info-eastasia@worldveg.org

The 7th Asian Crop Science Association (ACSA), 27-30 September, 2011, Bogor Agricultural University, Jl. Kamper, Gd. PAU, Campus, IPB Dramaga Bogor 16680, Indonesia

The Research Center for Bioresources and Biotechnology, Bogor Agricultural University, Indonesia will be organizing the 7th Conference of Asian Crop Science Association (ACSA) on 27-30 September, 2011. The scope of conference will include farming system, plant production, biotechnology, genetics and breeding, molecular biology, physiology, ecology, and other related aspects. The commodities are food crops, estate, medicinal, and forage crops. The conference will have plenary sessions and concurrent session, poster presentation, field visit to R&D Center Area for Agriculture Cimanggu, Bogor Botanical Garden and President Palace.

Contact: Secretariat ACSAC 2011, Research Centre for Bioresources and Biotechnology, Bogor Agricultural University, Jl. Kamper, Gd. PAU, Campus, IPB Dramaga Bogor 16680, Indonesia, Tel: +62 251 8621257; Fax: +62 251 8621724; Email: acsac2011@gmail.com

Workshop on 'New Dimensions in Information and Communication Management for Agricultural Research for Development' in Asia and the Pacific including Coherence in Information for Agricultural Research for Development (CIARD) and Strengthening RAIS in the South East Asia, 27-29 September, 2011 at Asian Institute of Technology (AIT), Bangkok jointly by APAARI-FAO-GFAR-AIT.

The Tenth Meeting of the Steering Committee of APARIS will be held on 29 September, 2011 at Asian Institute of Technology (AIT), Bangkok.

APAARI Executive Committee Meeting will be held on 26 October, 2011, Taiwan Agricultural Research Institute (TARI), Taichung, Chinese Taipei.

Expert Consultation on Biotechnology, Biosafety and Biosecurity, 27-28 October, 2011, Taiwan Agricultural Research Institute (TARI), Taichung, Chinese Taipei

The 5th APEAEN International Conference on Enriching Agricultural Learning Process towards Sustainable Food Security, 7-10 November, 2011, National Agricultural Extension and Training Center Khamphaengsaen, Kasetsart University Khamphaengsaen campus located in Nakhon Pathom province, Thailand

Contact: The Conference Secretariat, APEAEN 2011 Biennial Convention, Dr. Chatcharee Naritoom (eatchn@ku.ac.th); Dr. Avorn Opatpatanakit (avornopatpatanakit@yahoo.com); International Affairs, National Agricultural Extension and Training Center (naetckps@hotmail.com)

Training Program on "Livestock Genetic Improvement" will be held on 20-25 November, 2011 in Chinese Taipei in collaboration with Council of Agriculture (COA).

AgriFood 2011: Sustainable, Justice and Agriculture in the Asia-Pacific Region, 6-8 December, 2011, Australian National University, Canberra

Agri-Food XVIII annual meeting of the Australasian Agri-Food Research Network established in 1992 will be organized from 6-8 December, 2011 to provide a forum for researchers engaged in the critical analysis of contemporary agri-food systems. Potential participants are invited to submit abstracts on any aspect of the social and political life of food. Submissions that directly address the conference theme, however, are particularly welcome.

Contact: Professor Stewart Lockie, School of Sociology, Australian National University (ANU); Associate Professor Jane Dixon, National Centre for Epidemiology and Population Health ANU. For further details: The School of Sociology at the ANU via email at sociology@anu.edu.au

New APAARI Staff



Mr. R.N. Yadav, Graduate with Diploma in Computer Applications has joined APAARI office at New Delhi as Office Secretary, effective 1 April, 2011. Prior to this, he worked for 7 years as Personal Secretary to Chairman & IT Support Executive with a leading multinational biofuel producer "D1-BP Fuel Crops".

APAARI family wishes him all the success.

All queries relating to APAARI Newsletter be addressed to:

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