



APAARI

Newsletter

Asia-Pacific Association of Agricultural Research Institutions

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Editorial

Women comprise around 43 per cent of the agricultural work force in the developing countries, ranging from 20 per cent in Latin America to almost 50 per cent in Eastern Asia and Sub-Saharan Africa. They have invariably little access to agriculture related assets, inputs and services and their roles in production, processing and marketing are still not well recognized. Often, they are considered as labourers rather than farmers, fishers or livestock producers and have practically no role in decision making on basic resources.

Disadvantaged by gender asymmetries in rights, they face widespread constraints and often have no control over the products of their labour, income or even their own wages. Women's ability is further disadvantaged by their caring responsibilities, physically exhausting labour and drudgery associated with domestic and field-based work. In many parts of the world, agriculture is facing major structural changes including decline in farm size, emergence of a rental land market, contract farming, etc. In addition, the rural-urban migration, mechanization of agriculture, growing pressure on land, water, agrobiodiversity and firewood and increasing natural disasters associated with climate change have had dramatic effects on the lives of women in agriculture.

By failing to close the gender inequalities, the world is paying dearly. According to a recent FAO report (2012), if women had the same access to productive resources as men, they could increase crop yields by 20-30 per cent. This would raise total agricultural yields in developing countries between 2.5- 4.0 per cent and reduce the number of hungry people globally by 100-150 million. Beijing Declaration and Platform for Action (1995) did lay emphasis on removal of key obstacles for advancement of women the world over but the gender inequalities still continue to persist. In agriculture, not much has happened for the empowerment of women as reported by FAO (2010) and World Bank (2012).

Lately, there is a growing realization and commitment of the global community to achieve more sustainable and broad-based agricultural growth by addressing gender related issues in agriculture through national, regional and global initiatives and partnerships. There is also considerable convergence of initiatives undertaken by international organizations such as FAO, GFAR, CGIAR, regional fora and many national agricultural research systems (NARS). The GCARD Road Map too has called for a radical reorientation of the agricultural research agenda to overcome the existing gaps and to face the emerging challenges of sustainable development and livelihood of resource poor small holder farmers, especially the women farmers.

The constraints that women face in agriculture vary across regions and countries, depending on the socio-cultural and agro-ecological contexts. Despite many policy reforms both at the macro and micro level, gender issues have not received the attention they deserve. With changes sweeping agriculture and other sectors, gender issues have now become more important and hence, there is an urgent need to critically examine gender related issues in a holistic manner such as expected impact of existing policies, institutions and programs and also those that are needed to empower farm women for ensuring inclusive growth in agriculture. Accordingly, APAARI feels honoured to have facilitated the process of addressing the concerns relating to women in agriculture both regionally and globally, details of which are provided in this Newsletter.

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Executive Committee

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

Editorial Committee

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

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APAARI Executive Committee Meeting



The Executive Committee Members and other Participants

The APAARI Executive Committee meeting was held at the National Agriculture Science Center (NASC) Complex, Pusa, New Delhi, India on 12 March, 2012 under the chairmanship of Dr. S. Ayyappan, Secretary, DARE & Director General, ICAR and Chairman, APAARI. The meeting was attended by 12 persons including Executive Committee members, special invitees and observers.

At the outset, Dr. Raj Paroda, Executive Secretary, APAARI welcomed the Chairman and other APAARI members, special invitees and observers for their participation. He specifically thanked Dr. Abd. Shukor Abd. Rahman, former Chairman of APAARI, for his help and guidance and Dr. Simon Hearn for continued funding support by ACIAR. Dr. Paroda expressed his appreciation for all Executive Committee members, CG Centers and other stakeholders for their support.

Dr. S. Ayyappan, in his Chairman's address, appreciated the remarkable progress made by APAARI in collaboration with its member organizations and with the support of GFAR, FAO, ACIAR, COA, and CG Centers. He mentioned that APAARI, through regional and inter-regional partnerships with FAO, GFAR, IFPRI, ASTI and SPC, organized several collaborative activities. ICAR was privileged to co-organize with APAARI the Global Conference on Women in Agriculture. He felt confident that APAARI would strive to fulfill its commitment of assisting NARS to reap the benefits of AR4D in the region. On behalf of APAARI, he also appreciated the support of its members and strong partnership of GFAR, FAO and CG Centers in effectively implementing its programs.

Dr. Paroda presented the action taken report based on the recommendations of the previous Executive Committee Meeting and the progress made during the period. He mentioned that four expert consultations/workshops/dialogues on diverse topics of regional importance were organized during the period under report. He further mentioned that several publications were brought out and also posted on APAARI/APCoAB websites. He also emphasized that regional workshops/consultations are planned to be organized on: i) climate-smart agriculture, ii) improving wheat productivity, iii) policy dialogues on need assessment on AR4D in Bangladesh, India and Nepal, and iv) global conference on women in agriculture. He informed that Indian Agricultural Universities Association (IAUA) has upgraded its membership to become an Associate Member.

The total number of APAARI members now stands at 56 (Regular members-20, Associate members-17, Affiliate members-11, Reciprocal members-8).

The Audited Accounts for the period January - December 2011, the statement of Assets and Liabilities and Certificate of Auditor and Bank Statements were scrutinized and approved unanimously. The Executive Committee members appreciated efficient management of accounts. APAARI Budget for 2012 was also reviewed by the Executive Committee and approved.

The Executive Committee decided that the post of Executive Secretary could be announced and circulated widely to invite applications by 31 July, 2012.

During the discussions, the following suggestions and comments emerged:

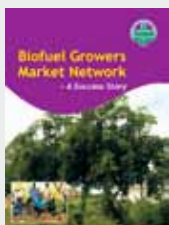
- a) Dr. Simon Hearn emphasized the need for greater emphasis on impact assessment studies. He desired to devise ways and means to ensure high impact from returns on R&D investments and suggested for organizing workshops on impact assessment.
- b) Dr. S. Ayyappan highlighted the need for investing more on research and the policies and also that the technologies should be outscaled. He also emphasized that the activities on animal and fish programs need to be enhanced.
- c) Dr. Abd. Shukor Abd. Rahman mentioned that issues relating to poverty, lack of food, nutrition security and nutritional imbalance, and research on under utilized crops need to be addressed adequately in the research and development agenda.
- d) Dr. Raj Paroda emphasized particularly the need to focus on: (i) characterization, conservation and use of genetic resources, (ii) *in situ* conservation and (iii), underutilized crops
- e) Dr. Mark Holderness suggested that there should be greater flexibility for maintaining the reserve fund, as is done in case of GFAR.
- f) Dr. Raj Paroda clarified that flexibility with GFAR is due to good donor support where as the APAARI funds are mainly based on membership fee which does not vary much. Hence, the reserve of US \$ one million is a self-imposed restriction agreed by the members for future sustainability of APAARI.

- g) Dr. Tashi Samdup asked about the source of funding to undertake the activities proposed in APAARI Work Plan for 2012. Dr. Raj Paroda clarified that GFAR support will be used for this purpose. Also for organizing the GAM, there is a provision that 10 members are supported by the host country. Moreover, efforts will be made to seek co-sponsorship for proposed activities and additional funding is expected from GFAR for the second half of 2012.
- h) Dr. Simon Hearn mentioned that APAARI is closely working with CRPs and enquired whether APAARI's interaction with CG Centers is improving. Dr. Raj Paroda clarified that APAARI's interaction is invariably good with many CRPs, while it is not so with others.

The Chairman in his concluding remarks summarized the decisions taken in the meeting. He reiterated the need to implement the decisions expeditiously by the member organizations and APAARI secretariat. He also suggested to examine the issue of APAARI's legal status in the host country.

He thanked all the members for their active participation and valuable contribution and also appreciated the significant progress made by APAARI. He especially thanked Dr. Paroda for ably spearheading the implementation of planned activities of APAARI and raising the financial status as well as image of APAARI. The meeting ended with a vote of thanks to the Chair.

New Publications of APAARI



• *Biofuels Growers Market Network: A Success Story*

Southeast Asia and Pacific nations like Indonesia, Malaysia, and Singapore concentrate on large plantations of palm oil as a source for biodiesel, while Thailand and Philippines concentrate on coconut oil and Myanmar on *Jatropha*. The policy makers are keen as these fuel species bring multiple benefits to farming communities and to the industry. This publication describes the potential and usefulness of a successful model which can be replicated under similar situations across the states/countries with modifications to suit to the local needs. The publication embodies six important sections: i) introduction giving status and scope alongwith marketing systems, ii) initiatives taken at the University of Agricultural Sciences, Bangalore, iii) launching of biofuel growers association, iv) benefits to farmers, v) success of the model, and vi) future prospects.

• *Expert Consultation on Agricultural Biotechnology, Biosafety and Biosecurity - Proceedings and Recommendations*

This publication details the proceedings and recommendations of the expert consultation held on 27-28 October, 2011 at Taiwan Agricultural Research Institute, Chinese Taipei. It includes chapters: Status of Biosafety and Biosecurity R&D-Country Status; Status of Biosafety and Biosecurity R&D-Regional Status; Advances in Biotechnology for Food Security; Advances in Biosafety and Biosecurity; Group Discussions, Promoting Biotechnology for Food Security; Facilitating Biosafety Adoption and Building Biosecurity Systems; and Discussions and General Recommendations.

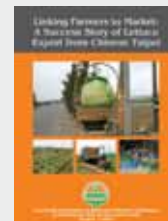


• *Regional Dialogue on Conservation Agriculture in South Asia: Proceedings and Recommendations*

Conservation Agriculture (CA) based crop management technologies being practiced over 116 m ha globally have helped millions of farmers through arresting land degradation, improve input use efficiency, adapt and mitigate climatic extremes, and improve farm profitability in diverse ecologies across the world. A "Regional Dialogue on Conservation Agriculture in South Asia" was organized by APAARI in collaboration with CIMMYT and ICAR at New Delhi on 1-2 November, 2011. The proceedings and recommendations of this dialogue define future strategies that are likely to be of immense uses in promoting CA under diverse production systems in different agro-ecologies in South Asia.

• *Linking Farmers to Market: A Success Story of Lettuce Export from Chinese Taipei*

This publication is a selective case study on linking farmers to markets undertaken in lettuce growing area in Yunlin County in Chinese Taipei which has demonstrated the establishment of successful head lettuce industry through the small farmers organizing themselves in to groups and undertaking lettuce production and marketing. It comprises six sections: (i) background information, (ii) vegetable production, marketing, and post-harvest handling, (iii) head lettuce industry and postharvest handling for export, (iv) major achievements, (v) future prospects, and (vi) conclusion.



• *Regional Workshop on Implementation of Suwon Agrobiodiversity Framework: Proceedings*

The Suwon Agrobiodiversity Framework is a useful mechanism for mainstreaming important regional initiatives that aim to strengthen the conservation and use of agricultural biodiversity. APAARI and Bioversity International, in collaboration with GFAR, FAO and ADB organized a follow-up Regional Workshop on the Implementation of Suwon Agrobiodiversity Framework at Kuala Lumpur on 4-6 November, 2011. The discussions and recommendations from this very important workshop are presented in this publication which will be immensely useful to policy makers, research managers, development agencies, and even the farmers and students.

(Continued on Page 8....)

The Global Conference on Women in Agriculture (GCWA)



Participants at the first Global Conference on Women in Agriculture at New Delhi

The First Global Conference on Women in Agriculture (GCWA) was organized at New Delhi on 13-15 March, 2012 by the Indian Council of Agricultural Research (ICAR), the Asia-Pacific Association of Agricultural Research Institutions (APAARI) with support from the Global Forum on Agricultural Research (GFAR). It was co-sponsored by CGIAR, USAID, ACIAR, ADB, World Bank, IDRC, UK Aid, BMGF, TAAS, and RAGA. This landmark event was built on two years of intensive partnerships among many organizations within GFAR including the CGIAR, several UN agencies, and the Regional Fora. The Conference was attended by 760 participants from 50 countries, including Government Ministers, World Food Prize laureates, representatives of institutions in agricultural research, extension and education, gender experts, non-governmental organizations and farmers' groups.

The overarching goal of the Conference was Empowering Women for Inclusive Growth in Agriculture. The Conference objectives were: i) to discuss and deliberate the prevailing and emerging gender issues in agriculture, ii) to take stock of evidence on experiences in enhancing role of women in agriculture, iii) to understand the mechanisms and approaches adopted by various organizations and countries, and iv) to ensure that policy initiatives are gender sensitive and there is a Framework for Action

The Conference was organized into three main components; a policy forum to identify the gaps between policy reforms aimed at empowering women in agriculture and institutional changes for capacity building and partnership; six parallel sessions focused on the topics related to women in agriculture; and three working groups on extension, education and research priorities to make recommendations for gender sensitive agenda. In addition, poster presentations were made on diverse topics under thematic areas and the results and innovations were displayed by stakeholders particularly the women. The conference also organized an innovation market place event, showcasing agriculture and rural innovations and women entrepreneurship.



A View of the Audience



A Plenary Session in Progress

The opening sessions of the Conference on high-level policy issues highlighted the need for policy reforms, institutional changes and capacity building to empower women in agriculture. Such changes are urgently needed to address gender inequalities in the household, in the ways in which markets (participation and service delivery) and institutions (formal and informal) work for men and women, in social and cultural norms, and the way these forces interact with each other and result in the underperformance of women in agriculture.



Delegates Visiting the Market Place

Linking women, agriculture and nutrition requires multi-sectoral thinking and action to address major nutritional deficiencies that continue to hamper children's development around the world. It requires institutionalization of research and extension through joint decision making that involves women themselves in participatory approaches.

The six thematic sessions were focused on: assessing women's empowerment; agricultural innovations for reducing drudgery; linking women to markets; women's roles in household food security and nutrition; access to productive and household assets, resources and knowledge, policies and services; and climate change - related risks and uncertainties. The presentations and discussion in these sessions helped to identify and set practical contexts and priorities for action for the key areas in which change is required, collectively highlighting the need for a fundamental rethinking of agricultural systems, with the needs of rural women producers and householders at their center.

Three Working Group sessions identified the new roles required for agricultural research, extension, and education to respond to women's needs in agriculture, and to actively involve rural women's representatives in such work.

A number of cross-cutting priorities were identified by the participants across the themes as initial building blocks for developing a framework for action. Given that gender inequalities run right through agricultural systems, action is required at all levels from household and community to national, regional and international scales.

These priorities were put forward as the basis for collective action through the Gender in Agriculture Partnership (GAP) - the first multi-layered global mechanism embracing all the actors involved in addressing gender-related issues in agriculture. Partners included

Priorities Identified

- Collective advocacy to raise awareness of women's needs in agriculture and ensure their visibility in terms of their contributions
- Generating the information and evidence base to show the economic and social impacts and value of addressing women's needs in agriculture
- Encouraging collective action and leadership among women to develop programs that directly meet women's needs and to make the agricultural support systems gender sensitive
- Addressing discrimination through appropriate policies, legislation and enforcement mechanisms and establishing women's rights (e.g. access to markets, ownership of land)
- Ensuring that institutions and support mechanisms promote women's ownership and control of resources (e.g. land, bank accounts, policy changes) and social change enabling participation in household decision making.

For more details and synthesis report, visit the conference website: www.gcwa.in

in this initiative included UN Agencies, the CGIAR, Regional Fora and national public institutions. Also included are women's producer organizations, foundations, universities and NGOs which will drive change in local actions on the ground. The Government of India pledged its commitment to host and facilitate such a global partnership, with the expectation that it will inspire other governments to also collaborate and support.

Participants agreed that there was real value and excitement in this kind of conference which should be organized preferably once in three years so as to determine the progress made. The Forum for Agricultural Research in Africa (FARA) offered to host the next global conference in Africa in 2015.



The President of India, H. E. Pratibha Devi Singh Patil Addressing the Conference.

While formally closing the conference, the President of India, H. E. Pratibha Devi Singh Patil observed that **"There is a deep inter-linkage between women and agriculture, the development of both being essential for the progress of every nation."**

Workshop on Climate-Smart Agriculture in Asia

A Workshop on Climate-Smart Agriculture in Asia: Research and Development Priorities was jointly organized by Asia-Pacific Association of Agricultural Research Institutions (APAARI), CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), World Meteorological Organization (WMO) and the United Nations Development Programme (UNDP) in Bangkok on 11-12 April, 2012.

The workshop was attended by 77 participants, representing-chiefs of agricultural research organizations of south and south-east Asian countries, negotiators from the south and south-east Asian countries responsible for discussion on adaptation and mitigation in agriculture in UNFCCC, chiefs of the meteorology departments of south and south-east Asian countries, regional and global agriculture and climate change experts, CGIAR climate change scientists and representatives of regional and global development organizations.

The workshop was organized with the following objectives: i) review the best practices and technologies being used to make agriculture climate-smart, ii) review the latest knowledge of impacts of climate change on agriculture, iii) identify gaps in solutions available and prioritize research and development needed to fill these gaps, and iv) agree on a plan to address gaps and link knowledge with policy actions at the local/national/regional level to make agriculture climate-smart.

The workshop was structured in different technical sessions: i) climate services to agriculture, adaptation to progressive climate change and mitigation in agriculture, ii) agriculture in UNFCCC, iii) adaptation to climate change, iv) mitigation in agriculture, v) country reports on current state of research and development on climate-smart agriculture, vi) adapting to current weather variability and knowledge to action and policies for climate-smart agriculture, vii) adapting to current weather variability, and viii) knowledge to action and policies for climate-smart agriculture.

Key priorities and recommendations

- Development of adaptation strategies to current weather variability and long-term climate change with co-benefits in mitigation including information and communication technologies, climate models and decision support systems for seasonal forecasts, refining existing technologies for insect-pest and disease management, and breeding multi-stress tolerant varieties of crops, livestock and fish.
- Renewed focus on conservation and management of resources including water, soil, nutrient, energy and germplasm (including microbial diversity).
- Promotion of regional cooperation including regional learning platforms for transfer of technologies and knowledge of climate-resilient agriculture.
- Identification of best practices for mitigation of greenhouse gases from agriculture at local, national and regional scales including alternative wetting and drying in rice, diversification, alternate feeding strategies for livestock, grazing land management, and water land use and crop residue management.



Participants of the Workshop at Bangkok

- Improvement in credibility, accuracy, timeliness, spatial resolution and relevance of weather forecast systems at short- and medium-term time scales. This should be accompanied with improved coordination and knowledge sharing among climate services and agro-meteorological advisory providers including data sharing, and documenting and evaluating case studies of good practices.
- Investment in capacity building of agriculture sector to respond to advanced information about weather events and seasonal climate fluctuations through advisory systems, delivery mechanisms, training, and favourable policies.
- Strengthening extension services including addressing gender issues and opportunities, and building capacity of tomorrow's farmers through climate-smart field schools, participatory videos, social media and community radio featuring local content and demonstrations, roving seminars, training of trainers, field demonstrations, and private sector participation.
- Documenting innovative institutional arrangements that promote climate-smart agriculture such as pricing for environmental services, carbon payments, index-based insurance, and community management of resources and risks.
- Assessment and documentation of existing knowledge of climate-smart agriculture including constraints to adoption, indigenous knowledge, impacts, benefits, costs and productivity gains, and lessons where collaborations (public-public and public-private) are working.
- Assessment of policies in support of climate-smart agriculture including water pricing, fertilizer pricing and subsidies, irrigation, seed, risk transfer (insurance) and disaster relief.

New APAARI Members

The following institutions have become Affiliate Members of APAARI:

- The Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA), a subsidiary body of the Economic and Social Commission for Asia and the Pacific (ESCAP), based in Bogor, Indonesia
- The University of Agricultural Sciences (UAS), Bangalore, India.

We welcome them to the APAARI family.

Regional Consultation on Improving Wheat Productivity in Asia



Participants of the Regional Consultation

A regional consultation on 'improving Wheat Productivity in Asia' was jointly organized by Food and Agriculture Organization (FAO) - Regional Office for Asia and the Pacific (RAP), and Asia-Pacific Association of Agricultural Research Institutions (APAARI), in collaboration with CIMMYT, ICARDA and JIRCAS, at Bangkok, Thailand on 26-27 April, 2012. The regional consultation was attended by 53 participants representing National Agricultural Research Systems (NARS), CGIAR Centers, FAO, APAARI, NGOs, farmers and private sector.

Mr. Hiroyuki Konuma, Assistant Director-General and FAO Regional Representative for Asia and the Pacific inaugurated the regional consultation. Dr. Thomas Lumpkin, Director-General, CIMMYT; Dr. Masa Iwanaga, President, JIRCAS; and Dr. Raj Paroda, Executive Secretary, APAARI were present on the occasion besides senior officials. This consultation provided a platform to all the stakeholders to deliberate and prepare a strategy to accelerate the overall production and productivity of wheat in view of changing climate and shrinking natural resources.

The regional consultation was organized with these objectives: i) to provide a platform for exchange of information, and assessment of the national/regional priorities for enhancing wheat production in the region, ii) to develop a common strategy to address emerging problems in the region, iii) to develop mechanisms to facilitate the exchange of knowledge and products and to learn from each other's successes and failures, and iv) to develop a 'Road Map' for enhancing wheat productivity and production in Asia so as to have improved livelihood of resource poor small holder farmers

The regional consultation was structured in inaugural session, technical sessions, working group discussions and plenary session. The technical sessions included: i) strategy for increasing wheat productivity, ii) national/ regional wheat scenario, iii) managing wheat diseases, iv) stakeholders dialogue on CRP 3.1 (wheat) and

v) addressing emerging challenges. The two working groups on: i) research priorities and need assessment, and ii) development initiatives for inclusive growth, were also organized. The country reports were presented by program leaders from different countries. All the presentations made under technical sessions were followed by detailed discussions.

Key recommendations

The in-depth discussions in the technical sessions and working groups resulted in the following key recommendations:

Research

- There is strong need to enhance wheat productivity through collaborative research at global, regional and country level utilizing conventional approaches and new tools.
- In view of changing climate and new threats of emerging diseases, concerted efforts are required involving institutions like CIMMYT, ICARDA, FAO and APAARI to create awareness and take lead in terms of mobilizing resources to tackle future problems.
- Managing stripe rust in South Asia is a priority issue in view of the potential threats to wheat production. Greater inter-regional cooperation for exchanging technologies and information to mitigate such problems is urgently needed.
- For managing disease and pests, a platform for regional survey and monitoring of new diseases and races should be developed to facilitate information about occurrence of new threats and their timely redressal and management.
- Collaborative research for development of hybrid wheat in a mission mode approach is urgently needed in order to enhance productivity per unit area.

- There is an urgent need for enhancing system based productivity through agronomic, genetic and physiological interventions and also to introduce resource conservation technologies at small farm level.
- Greater thrust is needed for inter-regional /global exchange of germplasm to meet mutual or individual country needs and also for collective testing of advanced lines.

Development

- There is a need for higher investment for strengthening of seed systems in all wheat growing countries to address the issues of quality seed production, storage and supply.
- Greater emphasis is required for infrastructure development for research in different areas particularly for developing phenotyping facilities to match international standards.
- Higher investment is needed for training and capacity building for enhancing the skills of farmers, researchers, NGOs and other stakeholders including women.

Policy

- There is a need for higher investment by public sector and public

sector undertakings (PSUs) on research and development in wheat.

- Efforts are needed to have appropriate policies for linking farmers to market and providing them needed information for market intelligence and vital inputs.
- There is a great need to establish strong research and development agenda on wheat which would require close collaboration and partnership with institutes within and outside country, and also with farmers and other stakeholders.
- In order to provide a common platform for discussing country specific and regional problems, regional meetings/consultations need to be organized on regular basis.
- The institutional structures in some countries are not adequate. There is need to establish /strengthen institutional mechanism to take up research on priority for ensuring food production and its supply to the people.
- The national systems should come together at one platform to share their experiences for mutual benefit and regional coordination and appropriate monitoring mechanism should be established in Asia.

New Publications of APAARI..... (continued from page 3)

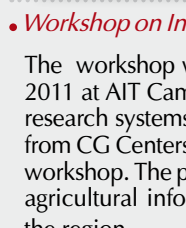
• *Openness in Agricultural Information and Knowledge Sharing*

To promote "openness" in agricultural information and knowledge management, APAARI in collaboration with Global Forum on Agricultural Research (GFAR) and Indian Council of Agricultural Research (ICAR), organized a special session on "Openness in Agricultural Information and Knowledge Sharing" on 10 November, 2011 at NASC Complex, Pusa, New Delhi, India as part of the "International Conference on Innovative Approaches for Agricultural Knowledge Management: Global Extension Experiences" organized by ICAR. More than 400 participants from the fields of agricultural research, extension, information and communication technologies attended the conference. The publication highlights the key themes of "Openness" viz., Technological issues, Institutional issues and Community participation issues presented followed by group discussions and recommendations.



• *Workshop on Coherence in Information for Agricultural Research for Development (CIARD) and Strengthening RAIS in the SAARC Countries: Proceedings*

The workshop was jointly organized by APAARI, SAARC Agriculture Centre (SAC), GFAR, FAO and Bangladesh Agricultural Research Council (BARC) at Dhaka, Bangladesh on 10-12 May, 2011. Thirty two ICM experts from SAARC member states viz., Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka and Iran (observer) attended the workshop to share country experiences. The proceedings include workshop deliberations, outcomes of group works and recommendations for strengthening agricultural information systems in the SAARC member countries and improving their participation in CIARD initiative for effective sharing of information and knowledge at national, regional and global levels.



• *Workshop on Information and Communications Management for Agricultural Innovations in Southeast Asia: Proceedings*

The workshop was jointly organized by APAARI, FAO, GFAR and Asian Institute of Technology (AIT) on 27-29 September, 2011 at AIT Campus, Bangkok, Thailand. Eighteen senior information and communication managers of national agricultural research systems of Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines, Thailand and Vietnam; experts from CG Centers, viz. CIFOR, IRRI and WorldFish and a representative of CACAARI besides 12 resource persons attended the workshop. The proceedings include workshop deliberations, outcome of group works and recommendations for strengthening agricultural information systems in the Southeast Asian countries and improving their participation in CIARD initiative in the region.



• *Workshop on Moving Beyond Strategy to Improve Information and Knowledge Management for Agricultural Development in the Pacific Islands Countries and Territories: Proceedings*

The workshop was organized jointly by APAARI, FAO, GFAR, ACIAR and Secretariat of the Pacific Community (SPC) at Nadi, Fiji Islands on 21-24 November, 2011. Thirty six experts in the fields of agricultural research, extension, information and communication technologies which included 16 senior officers from Cooks Islands, Fiji Islands, FSM, Kiribati, Marshall Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu, and resource persons from APAARI, ACIAR, GFAR, FAO, SPC and CTA attended the workshop. The proceedings include workshop deliberations, outcome of group works and recommendations for strengthening agricultural information systems in the Pacific Islands Countries and Territories (PICTs) and improving their participation in CIARD initiative for effective sharing of information and knowledge at national, regional and global levels.

The publications are available for free download at: www.apaari.org. Contact APAARI Secretariat, Bangkok for hard copies.

APCoAB Steering Committee Meeting

The XIV meeting of the Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB) Steering Committee was held on 12 March, 2012 at National Agriculture Science Center, New Delhi. Dr. S. Ayyappan, Chairman, APAARI chaired the meeting which was attended by 11 other members and special invitees. In his welcome remarks, Dr. Paroda appreciated the support of members in sustaining APCoAB. He congratulated Dr. Peter Kenmore on his new assignment as FAO representative in India. Dr. Ayyappan in his Chairman's address reminded that APCoAB was reaching the tenth year of its existence, during which period it had contributed significantly towards promoting biotechnology for agricultural development in the Asia-Pacific region. APCoAB had been expanding its activities in key areas of policy advocacy, capacity building, and information generation and dissemination.



APCoAB Steering Committee Meeting in progress

Dr. J. L. Karihaloo, Coordinator, APCoAB presented the Action Taken Report on the recommendations of XIII Meeting of APCoAB Steering Committee and progress report for the period 2011-12. The activities carried out included organization of Stakeholders' Interface on GM Food Crops; Expert Consultation on Biotechnology, Biosafety and Biosecurity; International Symposium on Genetic and Reproductive Management for Animal Production; Training Programs on Rapid Bioassay for Pesticide Residues and *In Vitro* and Cryopreservation Techniques for Conservation of Plant Genetic Resources; and publications brought out included; Stakeholders' Interface on GM Food Crops : Recommendations and Expert Consultation on Post-harvest and Value Addition of Horticultural Produce : Proceedings and Recommendations. The following suggestions and comments emerged during the discussion:

- Steering Committee appreciated the activities carried out by APCoAB during the reported period.
- Dr. Peter Kenmore appreciated the proposal to revise the publication on biosafety regulations and agreed to follow up the proposal for funding with FAO-RAP. He further suggested to organize the workshop on biosafety regulations side by side with COP-MOP meeting being held in Hyderabad during October 2012.
- Dr. Abd. Shukor Abd. Rahman highlighted the importance of biosensors in assessing the level of inoculum and forecasting epidemic threats.

- Dr. Rajeev Varshney stressed the need for greater emphasis on capacity building in the area of marker assisted selection, and publication of success stories on adoption of MAS. He emphasized that MAS was non-controversial and a number of improved varieties using this technology had been released in the developing countries. It was suggested that APCoAB and ICRISAT should join hands in organizing a training course on MAS for crop improvement.
- Dr. Mark Holderness highlighted the concern of GFAR regarding CG principles on equitable access to GM technologies. He suggested that GFAR could consider supporting a training course on intellectual assets in biotechnology.
- Dr. Paroda articulated the dilemma of several developing countries which are unable to decide on adoption of GM technologies due to conflicting opinions about their potential benefits and environmental impacts. He desired CGIAR and FAO to articulate a clear position on this issue so that the national organizations could develop a clear road map for R&D in agriculture.
- Elaborating FAO's position, Dr. Kenmore mentioned that FAO favours those GM technologies that benefit small and marginal farmers. If the benefits are not clear, FAO would prefer not to take any position.
- Dr. Simon Hearn endorsed GFAR's concerns regarding CGIAR principles on intellectual assets. Regarding potential benefits of GM technology, he, however, felt that it may not be possible to forecast that a particular technology will not benefit small holder farmers.
- Dr. Ayyappan emphasized that Bt cotton technology had been scale neutral in India with both large and small farmers having benefitted from it.

The Audited Report for 2011 and Budget for 2012 were presented and approved by the Steering Committee. The following workplan for 2012 was also approved:

- Expert Consultation on "Managing Trans-Boundary Diseases of Agricultural Importance in Asia-Pacific" in collaboration with ICAR.
- Policy Dialogue on GM Food Crops in the Philippines.
- Two training programs on biotechnology related topics in collaboration with COA, Chinese Taipei.
- Workshop on Biosafety Regulations in Asia-Pacific Countries.
- Publication of Proceedings of Expert Consultation on Biotechnology, Biosafety and Biosecurity.
- Publication of Status Report on Date Palm Micropropagation.
- Regular update of contents, databases and news/events on agricultural biotechnology developments in AP region on APCoAB website.

Global Workshop on Genetically Engineered Crops to Meet Future Challenges

The workshop was organized by APCoAB as part of the Global Conference on Horticulture for Food, Nutrition and Livelihood Options held on 28-31 May, 2012 in Bhubaneswar, India. The objective of the workshop was to develop a consensus on GM technology, particularly in horticultural crops, in meeting the food and nutrition needs.

The workshop was attended by 34 participants comprising national leaders in policy and research in agricultural biotechnology, representatives of industry, growers and researchers in biotechnology and horticulture. Six papers were presented: GM food crops in India : The road ahead; Experience in commercialization of GM crops Bt brinjal consortium : the largest global public effort to introduce transgenic varieties to resource poor farmers; GM traits for next horticultural revolution; Genomics assisted development of genetically modified foods; Revolution or Hype? and Hawaii transgenic papaya: its development and commercialization. The following main recommendations were made by the workshop.

Recommendations:

- The workshop was unanimous in recognizing the importance

of GM crops, including GM horticultural crops, in meeting the food and nutrition needs of India, and recommended continued research and development efforts to produce such crops.

- In view of the large number of horticultural crops and traits that are potential candidates for genetic improvement, there is a need to prioritize the crops and traits that should be modified through GM technology.
- There is an urgent need for agricultural scientists to participate in public deliberations on GM crops to provide a balanced and science based expert opinion on the potential of GM technology to meet the current and future challenges to agriculture and farmers' well being.
- Concern was expressed about the uncertainties currently prevailing in the biosafety regulatory system. It was recommended that the Biosafety Regulatory Authority be established without delay so that the technology and product developers have a clear road map of operation for biosafety clearance.

Workshop on Agricultural R&D Investments in the Asia-Pacific Region

The Agricultural Science and Technology Indicators (ASTI) initiative, which is facilitated by the International Food Policy Research Institute (IFPRI) and the Asia-Pacific Association of Agricultural Research Institutions (APAARI), organized a Workshop on Agricultural R&D in the Asia-Pacific Region: The Need to Monitor Investments, Capacities and Institutional Changes in Bangkok on 16-17 February, 2012. The workshop was attended by national level collaborators from Bangladesh, Cambodia, Indonesia, Laos PDR, Malaysia, Nepal, Pakistan, Papua New Guinea, the Philippines, Sri Lanka, Thailand and Vietnam as well as experts from ASTI/IFPRI, APAARI, ADB, FAO RAP, JIRCAS and SAARC Agriculture Center (SAC).



Participants of the Workshop at Bangkok

The objectives of the workshop were: i) to present preliminary results of the survey work in the Asia-Pacific region, ii) to elicit feedback from national collaborators on their experiences in implementing ASTI's national survey rounds, and iii) to explore ways as to continuously monitor and benchmark agricultural research and development (R&D) investment and capacity trends in the region.

During discussions, the country representatives shared the constraints they faced while collecting the data. These included weak data management at the institute level; lack or slow response

by agencies surveyed; infrastructural constraints resulting from a geographic dispersion of participating agencies and weak transport/communication means; and difficulties in interpreting and applying ASTI's standards and procedures. Experts from ASTI/IFPRI explained the future strategies of the ASTI initiative and shared the preliminary results of survey round in South and Southeast Asia, the latest trends in agricultural R&D capacities in the region, ASTI methodology, ASTI's experiences in Sub-Saharan Africa and the way forward in decentralizing and institutionalizing the process. Experts from APAARI, JIRCAS, FAO RAP and SAC stressed the need for monitoring agricultural R&D investments and capacities in the region and shared their initiatives and future plans.

Although data collection and synthesis in some countries was still ongoing at the time of the workshop, preliminary results show that overall agricultural R&D investments in the region have grown considerably since the turn of the millennium, largely driven by a boost in spending in China and India. Nonetheless, the region as a whole continues to invest a considerably lower share of its agricultural output on agricultural R&D than other developing regions around the world. Unlike investments, region-wide growth in capacity has stalled since 2000, mostly as a result of dwindling number of researchers in India. However, these region-wide numbers mask a considerable degree of cross-country diversity.

There was widespread consensus among workshop participants that ASTI should be further institutionalized at the country level. This will enhance the "ownership" of the data at the national level, and it will ultimately increase the use of the data for advocacy, priority setting, and policy influencing purposes. Institutionalization of ASTI requires a firm commitment from NARS leaders, and it is, therefore, crucial to sensitize the NARS leaders. More advanced training on data collection procedures, data synthesis, data analysis, and dissemination will also be needed to achieve the institutionalization of ASTI.

Policy Dialogue on Prioritizing Demand-driven Agricultural Research in Bangladesh

A policy dialogue on prioritizing demand-driven agricultural research for development in Bangladesh was jointly organized by Bangladesh Agricultural Research Council (BARC), APAARI and IFPRI on 23 June, 2012 at Dhaka, Bangladesh. Dialogue was attended by 44 participants representing public sector, private sector, corporate sector, civil society organizations, representatives of the educational institutions and farmers' groups in Bangladesh.



Participants of the Policy Dialogue at Dhaka

The aim of the exercise was to focus on: i) reviewing structural concerns in AR4D priority-setting, ii) gathering and including views from the demand side (farmers' groups, civil society, and private sector), iii) assessing the potential impact of selected agricultural technologies on yield improvement, production cost reduction, sustainable natural resource use, health and nutrition, food security, and trade, and iv) developing a strategic plan for enhancing AR4D including recommendations for critical AR4D priorities, expanded investment sources, and innovative delivery mechanisms.

The dialogue started with brief remarks by Chairperson, Dr. M.S. Sattar Mandal, Member (Agriculture), Planning Commission, Bangladesh and welcome and introductory remarks by Dr. Bhag Mal, Consultant, APAARI. Dr. Wais Kabir, Executive Chairman, (BARC) gave the opening address and Dr. David Spielman, Sr. Research Fellow, IFPRI briefed the participants about the policy dialogue. Dr. Wais Kabir, presented the need assessment report and highlighted the current status and future needs of research for development in Bangladesh. This was followed by in-depth discussions. After the presentation of detailed report, further discussions were held in four Working Groups: i) priorities of AR4D, ii) structures and institutions, iii) funding and financial mechanisms, and iv) innovative delivering mechanism.

The recommendations regarding priorities identified by the groups included: i) genetic improvement of crop/livestock, fish/forestry, ii) research on unfavourable ecosystems, iii) input-use efficiency improvement, iv) unified service conditions for NARS scientists, v) BARC to be empowered to decide and approve matters relating to agricultural R&D of NARS, vi) strong monitoring and evaluation, vii) core funding of research to be enhanced with accountability, viii) multidisciplinary research through competitive grants program; ix) encourage private sector partnership in research funding with clear cut cost-sharing mechanism, x) ensure fair prices of all agricultural produce during storage to reduce seasonal loss, xi) strengthening research to mitigate the impact of climate change on fish breeding, xii) incorporation of private sector and progressive farmers in technology transfer, and xiii) direct coordinated research programs through the participation of farmers, extension and research personnel.

The next steps were suggested by Dr. Mruthyunjaya, Sr. Consultant. Dr. David Spielman, IFPRI made concluding remarks and expressed satisfaction on the overall exercise. In his closing remarks, Dr. Sattar Mandal, the Chairperson highlighted that the food safety issues, soil health aspects, agricultural mechanization, value chain and supply chain should find place in AR4D agenda. The meeting ended with vote of thanks by Dr. Bhag Mal, APAARI.

APAARI Participation in other Events

Dr. Raj Paroda, Executive Secretary, APAARI

- Agriculture and Rural Development Day (ARDD), organized by CGIAR at Sul America Convention Center, Rio de Janeiro, Brazil on 18 June, 2012, as a Panelist. He also made a brief presentation in the learning event on Role of Women in Agriculture and highlighted the outcomes of the Global Conference on Women in Agriculture (GCWA) organized earlier in March, 2012 in New Delhi jointly by APAARI and Indian Council of Agricultural Research (ICAR) with the support of GFAR.

Dr. J. Karihaloo, APCoAB Coordinator

- International Conference on "Climate Change, Sustainable Agriculture and Public Leadership", New Delhi, 7-9 February, 2012.
- Program Advisory Committee (Food Biotechnology) Meeting and Foundation Day Celebration of National Agri-Food Biotechnology Institute, Mohali, India, 18-19 February, 2012.
- Brainstorming Session on Prioritizing Development Initiatives for Higher, Inclusive and Sustainable Agricultural Growth. International Food Policy Research Institute (IFPRI), New Delhi, 21 February, 2012.
- Conference on Sustainable Practices to Meet Challenges in Indian Agriculture. The Energy and Resources Institute (TERI), New Delhi, 2 June, 2012.

Dr. S. Attaluri, APARIS Coordinator

- The Stakeholder Workshop on Tracking Investments in Agricultural Research for Development on 20 January, 2012, Berlin organized by the GFAR. He shared experiences on 'Tracking Investment in AR4D in the Asia-Pacific Region' as part of ASTI surveys in the Asia-Pacific region under the GCARD Roadmap program on Assessment of Regional Investments and Capacity Building for AR4D.
- 31st FAO Regional Conference for Asia and the Pacific, Hanoi, Viet Nam, 12-16 March 2012.
- Workshop on Mobile Technologies for Food Security, Agriculture and Rural Development organized by FAO RAP and the National Electronics and Computer Technology Center (NECTEC), Bangkok, Thailand, 3-4 April 2012.

Dr. Bhag Mal, Consultant, APAARI

- Workshop on "Development Opportunity Crops Network for the Promotion of Agrobiodiversity" on 10-11 January, 2012 organized at FAO, Rome, Italy.

Prolinnova International Partners Workshop

APAARI sponsored Ms. Sonali Bisht from the NGO, Institute of Himalayan Environmental Research and Education (INHERE), India to participate in the Prolinnova International Partners Workshop (IPW) held in Bamako, Mali from 11-14 March, 2012. Prolinnova is an international network and multi-stakeholder partnership of communities of practice engaged in promoting local innovation and farmer-led joint research in ecologically oriented agriculture and natural resource management. Once every year, the international Prolinnova partners meet to discuss their work, experience and opportunities and also to share documentation and achievements in a market place. Prolinnova's strategy of work for the period 2011-2015 focuses on Innovation for Sustainable Livelihoods – Farmers Call the Tune.

The host for this year's workshop was ADAF GALLE, Mali - one of the NGOs involved in the joint Program, Promoting Farmer Experimentation and Innovation in the Sahel (PROFEIS). The workshop was attended by 26 participants from Africa, Asia, Europe and the USA.



Participants of the Prolinnova International Partners Workshop at Bamako, Mali

The Prolinnova workshop opened formally with active participation and attendance of dignitaries from the Government of Mali, research institutions, farmers organizations, NGOs and invited farmers who had all contributed to innovation in agriculture which benefitted farming communities. An innovation market place was organized in which Prolinnova international partners displayed their work and the results. A Prolinnova overview video film of farmer innovations in Mali and recognition to Malian farmers and their innovations were the highlights of the opening session of the workshop.

The workshop sessions covered: sharing of lessons from case studies of Prolinnova Country Platforms (CPs) in Kenya, Tanzania and Uganda in the context of strengthening multi-stakeholder partnerships in agricultural research and development; outcomes of the FAIR (Farmer Access to Innovation Resources) meeting on piloting of Local Innovation Support Funds; report of the Prolinnova Oversight Group (which had met on the two days immediately prior to the IPW); presentation on GCARD, GFAR and the role of Prolinnova; Participatory Innovation Development for climate change adaptation; rationale and potential for regional collaboration of CPs; strengthening Prolinnova CPs as well as the Prolinnova international network; and opportunities for fundraising and engagement to promote local innovations. Time and space were provided for regional collaboration

through parallel regional review and planning meetings.

Ms. Sonali Bisht took part in the Asian planning meeting on participatory innovation development for adaptation to climate change. Besides contributing through participation in the sessions, she had the opportunity to brief on the GFAR, GCARD process, the upcoming GCARD2 and the opportunity for Prolinnova partners to contribute through participation in GCARD2 events through engagement and contributions at the regional level through the regional fora. During the World Café session, she was made responsible for the table on GCARD2 to explain the participants on how they would contribute to the GCARD process, which was well received. The proposal for Prolinnova India Country Platform was accepted by the Prolinnova Oversight Group as a full member in the Prolinnova international community of practice.

(Source: Sonali Bisht, INHERE, India; sonalibisht@yahoo.co.in)

New Appointments

ILRI's Head of Asia: Dr. Purvi Mehta Bhatt



Early this year, Dr. Purvi Mehta Bhatt moved from her position as Head of Capacity Strengthening at the International Livestock Research Institute (ILRI) in Nairobi to ILRI's Delhi office to take on her new role as Head of Asia. Dr. Mehta Bhatt brings over 14 years experience working on international developmental projects and will head ILRI's programs in Asia, spanning China, Southeast Asia and South Asia.

APSA Director: Dr. Tom Burns



Dr. Tom Burns joined APSA as Director. Earlier, he was in Syngenta where he was the Global Leader for Genetically Modified Vegetable Seeds and R&D Manager for Southeast Asia. Prior to that he held a number of R&D management positions at Chia Tai Seeds, East-West Seeds, and National Scientific and Technology Development Agency (NSTDA) based at Kasetsart University, Thailand.

Dr. Burns obtained his PhD from the Queensland University of Technology in Brisbane, Australia on the development of virus-mediated resistance strategies to a major virus disease in banana. He continued his research on plant virus resistance strategies in rice at the John Innes Institute in Norwich, UK and worked in research program between Australia, Thailand, Vietnam, Indonesia and Malaysia on development of genetically modified virus resistance strategies in cucurbits and papaya.

APAARI wishes them success in their new assignments.



University of Agricultural Sciences (UAS) Bangalore, India

The University of Agricultural Sciences (UAS) Bangalore, a premier institution of agricultural education and research in the country, began as a small agricultural research farm in 1899. Later, the University of Agricultural Sciences was established on the pattern of Land Grant College system of USA and the University of Agriculture Sciences Act No. 22 was passed in Legislative Assembly in 1963 and came into existence on 1st October 1965 with a jurisdiction over the entire State. Presently, the University has a territorial jurisdiction over 17 Southern districts of Karnataka.



Administrative Block, UAS Bangalore

Vision

The University endeavours to offer outstanding educational opportunities, generate appropriate research outputs to address the contemporary challenges facing agriculture, and arrange for outreach of research outputs, through its constituent institutions to develop excellent globally competitive human resource for sustainable agriculture development.

Mission

The University is to strive ahead to achieve excellence in Teaching, leadership in research and extension education services related to agriculture and allied sciences. The University endeavours to keep pace with new frontiers of science and contemporary developments to be socially and technically relevant. In this context, the University is strongly committed to absorbing newer paradigms and using them to develop excellent human resource, innovative technologies and their dissemination so as to serve the farming community of the state and the country.

Objectives

- Making provision for imparting education towards development of quality human resource in different branches of agriculture and allied sciences;
- Furthering the advancement of learning and conducting of research, particularly in agriculture and other allied sciences;
- Undertaking the extension education of such science and technologies, specially for the rural people of the State; and
- Promoting partnership and linkages with national and international educational institutions, industries, research and other institutions.

Education

The University of Agricultural Sciences, Bangalore has its six teaching campuses, one each at Bangalore, Chintamani, Hassan, Mandya, Ponnampet and Shimoga offering seven undergraduate degree programs in Agriculture, Agricultural Marketing & Cooperation, Agricultural Engineering, Agricultural Biotechnology, Food Science, Forestry and Sericulture. It offers masters degree programs in 20 important disciplines and postgraduate programs. Doctoral programs are offered in 13 disciplines. The University offers two years diploma in Agriculture from the academic year 2011-12 at Mandya and Kathalagere. The main purpose is to fulfill the manpower requirement especially at the grassroots level to steer the agricultural development in the State. It also offers one year diploma courses in Baking Technology, Horticulture Nursery Management, Sericulture, and Agricultural Extension Services for input dealers (DAESI).

The academic programs are well backed-up by excellent infrastructure and learning atmosphere and modern computer networking. University has established Advanced Centre for Plant Biotechnology, Institute of Agri-Business Management and Center for Organic Research. Specialized facilities for imparting teaching like National Facilities for Stable Isotopes in Biological Sciences, Tissue Culture Laboratories (in four departments), Molecular Biology Laboratories, Virology Laboratory, Grading Technology Laboratory, Plant Health Clinic, Bio-control Mass Production Unit and Plant Disease Diagnostic Laboratory have been established.

UAS Bangalore has been among the top three Universities in the country selected for funding under Promotion of University Research and Scientific Excellence (PURSE) program by the Department of Science and Technology, GOI. It has established collaboration with some of the world's best educational institutes and universities, top private firms in agricultural research and a number of NGOs involved in development of agriculture. Partnership with global organizations includes Purdue University, University of Bremen, IFPRI, Ford foundation, McGill University and McKnight Foundation.

Research

The University is striving hard to develop technologies to address problems of farmers as well as the newly emerging problems due to climate change by formulating research programs specific to location through efficient use of critical inputs and judicious management of available land, through studies focused in 20 different Agricultural Research Stations spread over six agro-climatic zones covering 17 Southern districts of the State.

Technology Generated

- More than 175 varieties have been released in different crops which are specific to the area under its jurisdiction.
- A unique combination of Indian and African gene pools leading to development of Indaf series and GPU series of finger millet
- Hybrids in sunflower and rice in the country have provided much needed technical breakthrough in indigenization efforts of agricultural research.
- Several pest and disease resistant varieties in cereals, pulses, oil seeds and tomato have also been developed.
- The model watershed development in dryland agriculture developed by the University has won three national awards and is being adopted all over the country.

Biotechnology

- Development of edible rabies vaccine, application of *in-planta* transformation and use of isotope ratios for identifying genotypes with better water use efficiency are important accomplishments.
- Transgenic plants to improve crop establishment and productivity under stress- finger millet transgenic plants expressing P5CS and groundnut transgenic plants expressing DREB2A and NAC have been developed.
- Genotypes possessing genes for drought resistance have been identified in finger millet and sunflower.
- Crops with better nutrient content, particularly zinc and iron are being developed.
- Tetraploid watermelon with higher fructose and protein content has been developed.
- First aerobic rice variety of the country has been developed by marker assisted selection.



KBSH: A Promising Hybrid of Sunflower

Agro-Processing Centers

Major contribution towards improvement of economic condition of farmers has been the establishment of Agro Processing Centers for value addition to farm produce under a collaborative program between UAS, Bangalore and McGill University, Canada. The model developed and successfully implemented by the University in 17 villages, which is adopted for countrywide implementation by IFFCO. The highlight of the model is the involvement of women's self-help groups in managing these agro-processing centers.

Extension

The extension wing of the University is effectively binding the scientists and the farmers with a range of communication modes developed to suit the diverse socio-economic profile of the State. It serves as two way channel between them by carrying the farmer's problems to labs and taking lab developed solutions to the land. The Directorate of Extension plans and organizes its activities in the State with Krishi Vigyan Kendras, Extension Education Units, Farmers' Training Institute, Staff Training Unit, Bakery Training Unit, Agricultural Technology Information Center, Kissan Call Center, Farm Information Unit, Communication Center and Department of Kannada Studies.

Agricultural Technology Information Center-GKVK

Agricultural Technology Information Center-GKVK was established to provide all services related to agriculture under one roof such as advisory services, sale of inputs, value added products and agriculture literature. The University in association with ISRO has established an 'Expert Center' at GKVK campus which provides direct video-conferencing access to the farmers utilizing the services of experts at Bangalore. The University has also established "Touch Screen Kiosks" as part of Village Knowledge Centers on a pilot basis.

Rural Bio-Resource Complex (RBRC)

The Rural Bio-Resource Complex (RBRC) implemented by the University of Agricultural Sciences (UAS), Bangalore is a pilot project funded by Department of Biotechnology (DBT), Government of India in Tubageri Hobli of Bangalore Rural. The project covered 8,350 farming and non-farming families spread over in 75 villages addressing problems of farmers in a holistic manner. The project has attempted to address needs through integrated technologies, information support system, quality inputs and custom hire services of agricultural machineries, linkage with various institutions, market empowerment, and producers/commodity based associations. Effective execution of these strategies had resulted in significant changes among rural people in the project area in terms of knowledge, skill and competence in agriculture. Consequent to effective implementation of the model in a span of five years, the project was able to achieve 11 per cent growth rate in agriculture, three-fold increase in income of farmers, generation of 2.52 lakhs additional employment, besides holding back farm youth in agriculture. The model developed by the project served as guide to implement in other parts of the country.

Students Academic Accomplishments

Students of the University of Agricultural Sciences, Bangalore have excelled in academics and 24 research scholars have received Jawaharlal Nehru Award instituted by ICAR for best Ph. D. research. The students have also excelled exceptionally well in the ICAR-JRF examination conducted by ICAR, New Delhi. University stood first during 2002-03 and 2005-06 and second during 2001-02 and 2006-07. Fourteen students from this University have been selected for INSPIRE fellowship from Department of Science and Technology for pursuing the Doctoral program.

Awards

- "Choudhary Devlal Award" for outstanding All India Coordinated Research Project for the year 2003 for outstanding contribution in the field of Home Science awarded during 2004.
- "ICAR Best KVK Award" for the Krishi Vigyan Kendra, Kandli, Hassan for the year 2002-03 for its contribution in imparting transfer of technologies and human resource development.
- "Certificate of Merit" by the National Productivity Council, New Delhi to Bakery Training Unit, Hebbal, Bangalore for the year 2005-06 under the category of Food Processing Training Center.

(Source: Dr. K. Narayana Gowda, Vice Chancellor, University of Agricultural Sciences Bangalore, knarayanagowda@yahoo.co.in)

Papua New Guinea

NARI launches corporate plan

The PNG National Agricultural Research Institute (NARI) launched an updated and redesigned corporate plan during the 2012 Agricultural Innovations Show at its Momase Regional Center, Lae, on 4 May, 2012. The development and establishment of the plan, titled 'Strategy and Results Framework (SRF)', which is relevant to present circumstances, was the most recent and important milestone in NARI.

The plan was jointly launched by Morobe Governor Mr. Luther Wenge and Director General of Office of Higher Education, Professor David Kavanamur before a packed crowd comprising of farmers, guests and NARI staff who participated at the annual show.



Governor of Morobe Province Mr. Luther Wenge (left) and Director General of PNG's Office of Higher Education, Professor David Kavanamur jointly launching the NARI Corporate Plan

The SRF provides overall strategic direction to NARI's efforts to enhance the productivity, efficiency, stability and sustainability of the smallholder agriculture sector (NARI Strategic Objective) and thus contributes to an improved welfare of families and communities (NARI Goal).

This is accomplished through four key strategies:

- Improving productivity, efficiency and stability of agricultural production systems,
- Influencing the enabling environment (policy, markets, and institutions) for sustainable agricultural development,
- Using and sharing of information and knowledge in the agricultural sector, and
- Enhancing efficiency and congenial institutional environment for effective agricultural research for development.

Dr. Birte Komolong, NARI Strategic Planner said that the SRF is implemented through programs and projects that collectively generate development outcomes and impacts including improved food security, nutrition and health, increased income for rural communities, sustainable natural resource base and environment and gainful employment, directly contributing towards the three pillars of wealth creation and natural resources, environmental sustainability

and climate change and human capital development and thus helps realizing the government's long-term blueprint - PNG Vision 2050.

(Source: Seniorl Anzu, National Agricultural Research Institute, Papua New Guinea; seniorl.anzu@nari.org.pg)

Philippines

PCAARRD celebrates first milestone

The Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) celebrated its first anniversary on 22 June, 2012. In line with the Philippine Government's rationalization efforts toward improving efficiency in Government service and optimizing use of scarce government resources, the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD) and the Philippine Council for Aquatic and Marine Research and Development (PCAMRD) were consolidated into what is now known as the PCAARRD to strengthen R&D in the agriculture, forestry, aquatic, and natural resources sectors.

As it marks its first anniversary, PCAARRD vows to provide S&T-based solutions to address concerns confronting the four sectors in order to improve the lives of people dependent on said sectors and to contribute to national development.

PCAARRD collaborates with private sector to improve banana production

The PCAARRD collaborated with several private organizations towards ensuring greater productivity in banana production. These collaborations are with the Federation of Free Farmers (FFF), Bioversity International, Lapanday Tissue Culture Laboratory in Davao City, and Banana Asia-Pacific Network (BAPNET).

The collaboration with FFF focused on promoting banana production for intercropping with coconut. The P11million PCAARRD grant under the collaboration led to the establishment of 45 additional banana farms in Laguna, Quezon, and Bohol in the Philippines. This augmented the income of coconut farmers through the community-based farming scheme. Under the scheme, each cluster of growers obtained their tissue-cultured lakatan from community-based nurseries.

The Bioversity International, on the other hand, provided technical assistance; information, education and communication materials; and funding support to the various aspects of research and development (R&D) activities, particularly on Fusarium wilt race identification, virus indexing techniques, nursery management, and germplasm maintenance. The Lapanday Tissue Culture Laboratory in Davao City assisted the various projects on banana by providing disease-free planting materials at fair prices.

PCAARRD's active membership in BAPNET gave local researchers and scientists' access to current technologies being adopted in neighboring Asian countries. It also provided opportunities for Filipino R&D workers to participate in training and workshops on banana-related topics and other relevant areas of cooperation. (Ricardo R. Argana, S&T Media Service)

(Source: Dr. Patricio S. Faylon, Executive Director, PCAARRD; p.faylon@pcarrd.dost.gov.ph)

IFPRI

Prioritizing Demand-driven Agricultural Research for Development in South Asia

The International Food Policy Research Institute (IFPRI) and APAARI are collaborating with national partners on a series of stakeholder policy dialogues in South Asia. This event series, "Prioritizing Demand-driven Agricultural Research for Development in South Asia" aims to facilitate discussion and ultimately to lead to the formulation of national and region-level priorities for agricultural research for development (AR4D) with key stakeholders from the public sector and leaders from the private sector, civil society organizations, and farmers' groups in the region.

The series will address the persistent and looming issue of food and nutritional security in South Asia, particularly the regional stagnation in agricultural productivity growth and the fragmented food supply chains. Participants will think through the immediate and short-term institutional and technological solutions, which must target and support the smallholders who comprise the bulk of food producers in the region.

The workshops are organized in collaboration with APAARI and co-sponsored by the National Agricultural Research Council (NARC) in Nepal; Bangladesh Agricultural Research Council (BARC) in Bangladesh; and Indian Council of Agricultural Research (ICAR) in India during June-July 2012.

The outcomes of these workshops will be used to inform national policy-makers about the region's urgent AR4D needs and priorities. The outputs will also be used as a centerpiece for the dialogue on South Asia at the Global Conference on Agricultural Research for Development (GCARD) slated for October 2012 in Punta del Este, Uruguay.

IFPRI, CGIAR study the link between the private sector, conservation, and smallholder farmers in South Asia

Members of the Consultative Group on International Agricultural Research (CGIAR), working in close partnership with key South Asian players in the field of agricultural research and extension, have spent the last several years exploring how to accelerate private sector investment in the delivery of resource-conserving technologies for resource-poor smallholder farmers in South Asia.

This work, undertaken as part of the Cereal Systems Initiative for South Asia (CSISA) project with support from the U.S. Agency for International Development and the Bill and Melinda Gates Foundation, is extremely challenging. While private investment has grown rapidly around high-value crops, the private sector is far more cautious about investing in food staple crops where production and price risks are higher, and where the basic infrastructure of a competitive market is often poorly developed.

IRRI and CIMMYT have been leading the way on agronomic aspects of CSISA focusing on the delivery of new information about site-specific crop management practices to smallholders, while ILRI has been investigating the complex interplay between these practices and livestock management.

The role of IFPRI has been to study the strategies that can encourage private investors to reach into the smallholder markets in South Asia's major cereal systems.

IFPRI researchers are also trying to identify incentives that might encourage private investors to deliver resource-saving equipments and machinery to smallholder cereal farmers. One such CSISA-sponsored technology is laser land leveling. In India's northeastern states such as eastern Uttar Pradesh, however, laser land levelers are fairly new, and farmers in this region tend to form smaller, more marginal plots of land without the benefits of good market access and state support received in other states such as Punjab and Haryana. The challenge facing IFPRI researchers is to figure out how to use scarce public and private resources to make laser land leveling more attractive to risk-averse farmers, with the ultimate intention of creating a vibrant and sustainable market for leveling services.

"There is an implicit tradeoff between getting lots of land leveled and providing the service to lots of farmers," explained IFPRI senior researcher David Spielman. "The use of targeted public subsidies or private discount incentives needs to strike a difficult balance in this tradeoff."

A nuanced understanding of these tradeoffs can help local governments design public policies that simultaneously encourage farmers to improve their crop management practices, stimulate private sector investment and entrepreneurship, and expand resource-conserving practices for the common good.

(Source: Marcia MacNeil, Communications Specialist, IFPRI ; m.macneil@cgiar.org)

ILRI

Solution Driven R4D: CGIAR Livestock and Fish Research Program in Asia



On 1 January 2012, the CGIAR launched a new Research Program with the motto 'more meat, milk and fish, for and by the poor'. The International Livestock Research Institute (ILRI) leads this program. It aims to increase the productivity of small-scale livestock and fish systems in sustainable ways, making meat, milk and fish more available and affordable to poor consumers across the developing world.

The new program's integrated 'solution-driven research for development approach' combines upstream technology development with downstream transformation of selected high-potential value chains. The selected value chains in South Asia include smallholder pigs in Vietnam and dairying in India.

In May 2012, ILRI held internal planning meetings for both country projects in New Delhi. The participants of these meetings were introduced to the new Program, took stock of proposed plans for each value chain and set plans into motion. Individual roles and responsibilities were assigned to team members and the main 'deliverables' for 2012 refined. This work will be conducted in close collaboration with governments, non-governmental organizations, the private sector and large

development agencies. It will allow ILRI and CGIAR to directly benefit the lives of hundreds of thousands of poor and vulnerable people. (visit: <http://livestockfish.cgiar.org>)

Enhancing livelihoods through livestock

Initiated in 2009, Enhancing Livelihoods through Livestock Knowledge Systems (ELKS) is a five-year partnership program between the Sir Ratan Tata Trust (SRTT) and the International Livestock Research Institute (ILRI). The program aims to put the accumulated knowledge of ILRI's advanced livestock research directly to use for the benefit of disadvantaged livestock rearing communities in rural India. ELKS is implemented in the hilly and tribal areas across four states in India: Uttarakhand, Jharkhand, Nagaland, and Mizoram – each with a different species focus (dairy animals in Uttarakhand, pigs in Nagaland and Mizoram; and pigs and goats in Jharkhand.). The program encompasses technical (breed, feed, health, marketing), institutional and policy components. The key objective is to create a model for improving the whole value chain of livestock commodities.

So far in 2011, ILRI has provided continual support to SRTT's development initiatives: the North East Initiative Development Agency (NEI), Himmatthar Pariyojana (HM) and Central India Initiative (CInI). Recent milestones include development of models for service delivery, nutritional innovations, dual-purpose crops trial, swine fever control program, and breed improvement. Policy facilitation for scaling up successful models is another important component of the program. Results are published and shared with partners so that they learn from and build upon setbacks and achievements.

In the upcoming months, ILRI will continue to provide support to NEI, HM and CInI. ELKS will launch the next leg of the project in August 2012 in nearly 80 villages in Jharkhand, India. (Visit: <http://mahider.ilri.org/handle/10568/3376>)

m-Kisan: Using mobile technologies to strengthen Farmer-Extension- Expert Linkages in India

The International Livestock Research Institute (ILRI) is to become part of the mFarmer Initiative in 2012 in India funded by GSMA. In partnership with Handygo Technologies, a mobile value adding service provider for major network operators, ILRI will provide quality content mainly for small-scale dairy, poultry and goat farming. With CABI and Digital Green, the proposed *m-Kisan* project will run in six Indian states for the next two years. The project purpose is to develop a comprehensive agro-advisory service for smallholders on mobile. Different mobile channels such as voice and text messages and on-demand videos, a Farmer Helpline, including multiparty teleconferences will be used.

This exciting suite of agricultural advisory services on mobile will offer affordable and effective advice on relevant crop and livestock topics to smallholders and provide a platform for service providers, interest groups and experts alike to exchange knowledge and experiences of interest for the majority of farmers in each area. (Visit: www.gsma.com/developmentfund/programmes/magri)

(Source: Kara Brown, ILRI, kara.brown@live.co.uk)

Biodiversity International

Foc TR4 present in 5 Asian countries

Fusarium wilt of banana or Panama wilt, caused by *Fusarium oxysporum* f. sp. *cubense* (*Foc*), has been one of the most devastating diseases plaguing the banana industry worldwide. New disease outbreaks in Asia, caused by the highly virulent *Foc* Tropical Race 4 (TR4), have raised concerns that Panama wilt disease is once again threatening the global banana production.

In an effort to mitigate the disease and prevent its spread in the region, Biodiversity International-Commodity Genetic Resources, Productivity and Value Chains Program, through its regional office in Asia headed by Dr. Agustin B. Molina, carried out a regional survey to identify the actual distribution of occurrences of the various *Foc* strains. The study, conducted in collaboration with the Banana Asia-Pacific Network (BAPNET), particularly focused on *Foc* TR4, a highly virulent pathogen that attacks the Cavendish banana variety.



Yellowing of older leaves, a visible symptom of *Fusarium* wilt.



As infection progresses, more banana plants are eradicated

Samples of diseased bananas were collected from 11 countries in tropical Asia, namely, Bangladesh, Cambodia, China, India, Indonesia, Malaysia, Papua New Guinea (PNG), the Philippines, Sri Lanka, Chinese Taipei and Vietnam between 2006 and 2009. Visible external symptoms like yellowing of older leaves and pseudostem splitting, and internal symptoms showing reddish to dark brown discoloration indicate *Fusarium* wilt infection. The thin pseudostem strands of diseased banana plants were subjected to vegetative compatibility group (VCG) analyses.

The Department of Employment, Economic Development and Innovation (DEEDI) in Australia analyzed the samples from Indonesia and PNG, while the Stellenbosch University in South Africa worked on the samples from the other nine countries. A total of 11 VCGs were identified in the samples including VCG 01213/16, the VCG associated with TR4. Results of the survey has confirmed *Foc* TR4 presence in five countries in Asia, namely, China, Indonesia, Malaysia, Chinese Taipei and the Philippines.

On the other hand, the VCG associated with *Foc* Race 1, the same strain which caused the downfall of the Gros Michel industry in Latin America, was present in samples from India, Cambodia, Vietnam, Bangladesh and Sri Lanka. Indonesia appeared to have the most diverse population of *Foc* with eight VCGs identified. PNG was found not to have disease infection at the time of survey.

The spread of *Fusarium* races in Asia may have been through movements of infected planting materials. This underscores the importance of formulating and implementing appropriate quarantine measures to prevent the spread of *Fusarium* wilt disease to countries

in Asia where it is not yet found, and to the rest of the world where banana is an important crop. The participating countries in the study are members of BAPNET, which is being coordinated by Bioversity International as the network secretariat.

(Source: Dr. Leocadio Sebastian, Regional Director, Bioversity International, Asia Pacific and Oceania Region; Malaysia; l.sebastian@cgiar.org)

AVRDC- The World Vegetable Center SATNET Asia project launched

AVRDC - The World Vegetable Center recently partnered with the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) and the Food Security Center of the University of Hohenheim, Germany in the SATNET Asia Project (Network for Knowledge Transfer on Sustainable Agricultural Technologies and Improved Market Linkages in South and Southeast Asia).

The three-year project funded by the European Union and led by UN-ESCAP's Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA) is headed by Dr Katinka Weinberger, a former AVRDC socio-economist. It focuses on supporting innovation by strengthening South-South dialogue and intraregional learning on sustainable agriculture technologies and trade facilitation to contribute to improved food security and nutrition of the poorest and most vulnerable people in six countries of South Asia (Afghanistan, Bangladesh, Bhutan, Nepal, Pakistan, India) and four countries of Southeast Asia (Cambodia, Indonesia, Lao PDR, Myanmar). The overall budget of this project is 2,748,289 Euro, out of which the European Union will contribute a maximum of 2,560,565 Euro.

From 13-14 March 2012, 26 participants from the 10 target countries along with representatives from UN-ESCAP, the Food Security Center of the University of Hohenheim, the United Nations International Fund for Agricultural Development (IFAD), and the Delegation of the European Union to Indonesia and Brunei Darussalam attended the project's inception workshop in Bogor, Indonesia. Robert Holmer, AVRDC Regional Director for East and Southeast Asia, presented vegetable grafting using improved lines with resistance or tolerance to biotic and abiotic stress as one of the possible technologies to be shared through the project network, among many others.

(Source: Maureen Mecozzi, Head, Communications and Information, AVRDC - The World Vegetable Center; maureen.mecozzi@worldveg.org)

ICARDA Annual Workshop on DAC-ICAR-ICARDA

A two day DAC-ICAR-ICARDA annual workshop was organized at NASC Complex, New Delhi on 23-24 May, 2012. More than sixty participants from Assam, Bihar, Uttar Pradesh, West Bengal, Chhattisgarh, Madhya Pradesh and Maharashtra attended the workshop. Dr. Gurbachan Singh, Chairman, ASRB, Chief Guest on the occasion inaugurated the workshop. Prof. R. B. Singh, President, National Academy of Agricultural Sciences (NAAS) was the chairman of the event.

Dr. N. Nadarajan, Director, IIPR, Kanpur welcomed all the participants. Dr. A. Sarker, Regional Coordinator, SACRP-ICARDA, New Delhi presented an overview of activities being carried out under the three DAC funded projects under National Food Security Mission-Pulses during year 2011-12. Dr. Michael Baum, Director, Biodiversity

and Gene Management (BIGM), ICARDA, Guest of Honour on the occasion, addressed the gathering and enlightened the house with what ICARDA has been doing and he also appreciated the collaboration of ICAR-ICARDA. The workshop was organized under four Technical Sessions: (i) Pre-breeding-Lentil and Chickpea (ii) Lentil Enhancement (iii) Grasspea Enhancement and (iv) Plenary Session

Under lentil enhancement project, ICARDA, the lead Implementing Center and Nodal Agency for implementing the project and the partners presented their activities and achievements during 2011-12. About fifteen hundred farmers have been selected for the project and more than five hundred hectare area has been covered under the improved high yielding varieties of lentil. More than twenty nine hundred quintals of quality seed under different categories of high yielding varieties of lentil is produced by the farmers at their fields. Eight seed hubs have been established by the farmers at different locations.



Participants of the Workshop at New Delhi

In grasspea enhancement project, four low ODAP and high yielding grasspea varieties were introduced to the farmers for carrying out large scale seed multiplication of such varieties for replacement of high toxin and low yielding traditional grasspea varieties in the grasspea growing areas under the project. Nirmal, Ratan, Prateek and Mahateora varieties of grasspea were tested under various agro-ecologies of target states. Ratan followed by Nirmal performed well in Bihar and Uttar Pradesh, whereas Nirmal and Ratan were adjudged superior varieties in West Bengal. In Chhattisgarh, Mahteora was preferred by the farmers. About fifteen hundred quintals of quality seeds was produced. Five village based seed hubs were also established for enabling faster farmer to farmer seed diffusion.

Dr. Shiv Kumar presented activities carried at ICARDA, Syria. The plenary session was chaired by Dr. Raj Paroda, Executive Secretary, APAARI and Chairman, Farmers' Commission, Haryana. Dr. Paroda said that there is an urgent need for nutritional security along with food security in which pulses play a major role. He appreciated ICARDA's initiative and stressed that ICARDA should play active role and support NARS partners for lentil, kabuli chickpea and grasspea enhancement through germplasm exchange and technology dissemination and research development. Dr. Paroda also emphasized on the requirement of bold seeded red lentil and its evaluation in good quality lab. He also suggested the need to monitor the nurseries being sent by ICARDA and feedback to be sent to ICARDA.

(Source: Dr. Ashutosh Sarker, Regional Coordinator, SACRP-ICARDA; a.sarker@cgiar.org)

Workshop on Development Opportunity Crops Network for the Promotion of Agro-biodiversity

A Workshop on Development Opportunity Crops Network for the Promotion of Agrobiodiversity was organized at FAO, Rome on 10-11 January, 2012. The workshop was attended by 23 participants from diverse organizations, viz., GFAR, GlobalHort, FAO, Bioersity International, AVRDC, INBAR, CFF, APAARI, ARRINENA, FARA, PROTA, LI-BIRD, ASNAPP, CaFAN and was indeed very productive and fruitful. The workshop started with the opening remarks by Mark Holderness, Executive Secretary, GFAR. He emphasized on the need for such a network in order to address three major areas, i) health and nutrition, ii) enhanced income and social aspects, and iii) resilience of production systems. This was followed by remarks by Dr. Norman Looney, Board Chair, GlobalHort, Canada and Mario Marino, ITPGRFA. A total of 15 presentations were made on specific aspects including a few case studies.

The Elements of Strategy for DOCNet was presented by Dr. Hanna Jaenicke, Consultant, GlobalHort. The possible collective actions highlighted were: i) research on crops of nutraceutical value, ii) crops important for feed for livestock and fish, iii) collaboration with ecologists and food policy researchers, iv) conservation of genetic resources - inclusion of more crops other than Annex 1 crops, v) local knowledge documentation, vi) multi-location trials demonstrating crop species resilience in different environments, vii) providing a platform for scientific exchange on specific species, viii) develop/contribute to crop modeling and decision support systems, ix) curriculum development and engaging in capacity building, x) demonstrating visibility by joining on-going initiatives, and xi) sharing information on funding opportunities for joint activities.

The presentations were followed by discussions in two working groups, i) added value of DOCNet Initiative over the existing initiatives, ii) preparing the list of concrete activities to enhance synergies with these existing initiatives. The group outputs were discussed in the plenary session. Further discussions were held in two separate working groups, i) policy advocacy and ii) evidence based concrete actions to be taken. The group discussions were followed by discussion in the plenary session.

The following major recommendations/points emerged as a result of these discussions:

- A strategy paper involving case studies needs to be published.
- A brochure highlighting the vision, mission, objectives and strategies, etc. needs to be brought out on priority.
- The case of establishment of DOCNet needs to be presented in major events taking place in 2012 such as GCWA in March, 2012 in India; GCARD II Meeting in Uruguay in October, 2012; and World Food Prize meeting.
- Efforts need to be made to get FAO involved for carrying forward the agenda under "Save and Grow" Strategy.
- Peer reviewed papers and book chapters on specific topics relating to DOCNet species need to be published.
- DOCNet website needs to be in place as soon as possible. The information management systems need to be strengthened and efforts need to be made to get DOCNet database included in FAO database.
- DOCNet should look beyond crops and should focus on crop production systems in diverse agro-ecological regions.

- Concerted efforts need to be made for policy advocacy and public awareness at different levels.
- Country reports on use of underutilized crops should be developed.
- The statements of participating organizations/institutions as well as other organizations for their support and willingness to join the DOCNet/Alliance need to be obtained.

Dr. Raj Paroda receives Prof. Kannaiyan Memorial Award



Dr. Raj Paroda, Executive Secretary, APAARI received the first "Prof. S. Kannaiyan Memorial Award" at a function organized by the National Academy of Biological Sciences (NABS) at Maraimalai Campus, University of Madras, Chennai on 14 May, 2012. Dr. Kirti Singh, Chairperson, World Noni Research Foundation conferred the Award. During the occasion, Dr. Paroda delivered Prof. S. Kannaiyan Memorial Oration on the topic of Meeting the Current Challenges for Food, Nutrition and Environment Security' which was received well.

This award has been instituted in the memory of Prof. S. Kannaiyan, Former Chairman, National Biodiversity Authority, Govt. of India and the Founder President of NABS.

Dr. P.S. Faylon bags UPAA Alumni Award



Dr. Patricio S. Faylon, Executive Director, PCAARRD received the most distinguished University of the Philippines Alumni Association (UPAA) Award for science and technology on 23 June, 2012 at the Ang Bahay ng Alumni, UP Diliman Campus in Quezon City, the Philippines. The award embodies Dr. Faylon's achievements in his leadership of the PCAARRD, which spans more than a decade.

Dr. Faylon led the PCAARRD in obtaining the ISO 9001:2008 certification, as well as the Philippine Quality Award; and contributed immensely in developing international partnerships with ACIAR, ICRISAT, RDA and APAARI; establishing Techno Gabay Program (TGP) as a platform for R&D results utilization and transfer and crafting and approval of Technology Transfer Act in the country.

APAARI Meetings / Workshops

- **Policy Dialogue on Prioritizing Demand-driven Agricultural Research for Development in Nepal** on 26 July, 2012.
- **Regional Policy Forum on Asian Livestock Challenges, Opportunities and the Response**, 16-17 August 2012, by FAO, APHCA, ILRI, IFPRI, European Commission, APAARI and APRACA at Bangkok, Thailand
- **Stakeholders' Interface on GM Food Crops** on 27 September, 2012 in the Philippines in collaboration with PCAARRD, Philippines.
- **Expert consultation on "Managing Trans-Boundary Diseases of Agricultural Importance in Asia-Pacific"** 10-12 October, 2012 by APAARI and ICAR at NASC Complex, Pusa, New Delhi, India.
- **APAARI General Assembly Meeting** will be held on 12 October, 2012 at NASC Complex, Pusa, New Delhi, India.
- **APARIS Steering Committee Meeting** will be held on 13 October, 2012 at NASC Complex, Pusa, New Delhi, India.

International Conferences / Events

First International Conference on Animal Nutrition and Environment (ANI-NUE 2012), 14-15 September, 2012, Khon Kaen, Thailand. The objective of ANI-NUE 2012 is to provide a venue for animal science (academicians, researchers, administrators and livestock producers), particularly from the developing countries, to share their experiences and develop collaborations to enhance development of sustainable animal industries in their respective countries. Contact: Tropical Feed Resources Research and Development Center (TROFREC), Khon Kaen University, Khon Kaen, 40002 Thailand. For more details, visit: <http://www.aninue2012.com/index.php>

VI International Conference on Legume Genetics and Genomics (ICLGG), 3-8 October, 2012, Hyderabad, India. The Conference is a continuous effort of its mission to bring together scientists working on research aspects of legume biology in model species, using genetic and genomic tools, with those working on applied aspects and breeding of crop and pasture species. It will focus on fundamental discoveries that extend our understanding of the unique traits of legumes and review the tools and resources and approaches including technological advances to study legume genome(s). Contact: Rajeev K. Varshney, ICRISAT (R.K.Varshney@cgiar.org) at Center of Excellence in Genomics, Building # 300, ICRISAT, Patancheru-502324, A.P, India. For more details, visit: <http://www.icrisat.org/gt-bt/VI-ICLGG/Homepage.htm>

Agriculture Investment Summit Asia 2012, 16-17 October, 2012, Singapore. The conference is for global investors and agriculture companies to learn about investment and acquisition opportunities in agricultural commodities, agricultural companies and farmland in global regions. Contact: Terrapinn Pte Ltd, 1 Harbourfront Place, #18-01 Harbourfront Tower 1, Singapore 098633, Tel: +65 6222 8550, Fax: +65 6226 3264; enquiry.sg@terrapinn.com

The Second Global Conference on Agricultural Research for Development (GCARD II) will be organized in Punta del Este, Uruguay, 29 October – 1 November 2012. The GCARD II will focus on the ways to implement the tasks identified in the GCARD

Road Map with special attention to "Foresight and partnership for innovation and impact on small-holder livelihoods". With this, the Conference will become an excellent platform to build cooperation around key forward-looking agendas and plan joint actions among all stakeholders. This should in turn, open international partnership opportunities and help the development of concrete research and development programs that can lead through to substantive impacts. GCARD II provides opportunity for all sectors and regions to report their activities since 2010 and to agree collective actions and next steps in implementation of the GCARD Roadmap and the CGIAR Strategy & Results Framework. Pre-registration is open at <http://www.egfar.org/gcard-2012/pre-registration> There will be opportunities for exhibition, marketplace and pre-conference sessions. For more information, please visit GFAR website: <http://www.egfar.org/egfar> or contact the organizers at GCARD2012@fao.org

2012 Asian Seed Congress, 5-9 November, 2012, Bali, Indonesia. For registration and other details visit: <http://www.apsaseed.org> and contact: APSA Secretariat, APSA Secretariat P.O. Box 1030 Kasetsart Post Office, Bangkok 10903, Thailand; Tel: +66-2-940-5464; Fax: +66-2-940-5467; Email: apsa@apsaseed.org

International Maize Conference: "Maize for Food, Feed and Fuel", 22-24 November, 2012, Gorontalo, Sulawesi, Indonesia. The Conference will be jointly hosted by Indonesian Agency for Agriculture Research and Development (IAARD), Ministry of Agriculture and Gorontalo Provincial Government. Scientists, researchers, extension specialists, policy makers, seed, fertilizer and pesticide industries, government and non-government organizations, traders and other participants are invited to participate. For more details, visit: <http://iaard.go.id/imc-2012/>

International Fisheries Symposium, 6-8 December, 2012, Can Tho, Viet Nam. Aquaculture and fisheries sciences and technology are rapidly developing in the Southeast Asian countries to deal with newly emerged issues for sustainable development. Sharing knowledge in aquaculture and fisheries sciences and technology is thus really important and necessary for the region. The theme of this annual symposium is "Sharing knowledge for sustainable aquaculture and fisheries in the Southeast Asia".

Scientists, technicians, businessmen, farmers and managers from the Southeast Asian and other countries will gather to share knowledge and information on Aquaculture and Fisheries Science and Technology. Eight Universities from Indonesia, Malaysia, Thailand and Viet Nam are jointly organizing the symposium. For more details, visit: <http://www.ctu.edu.vn/colleges/aquaculture/ifs2012/>

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