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Editorial Committee

- Dr Raghunath Ghodake
- Mr David Shearer
- Dr Trinh Khac Quang
- Dr Vilasini Pillai
- Dr Bhag Mal

Editorial

Enhancing Investment in AR4D in the Asia-Pacific Region

The Asia-Pacific region is agriculturally most vibrant in the world covering nearly 70 per cent of global food and vegetables market, and 80 per cent of total agriculture market. The region also produces non-food agricultural commodities like cotton and jute, which are of significant commercial value. The region is also home to almost two third (642 million) of world's hungry and poor. Burgeoning human and livestock population is mounting increasing pressure on land, water and the environment in general posing increasing challenges to agriculture, human health and ecosystems. Hence, it is necessary to perpetually engage in agricultural research for development (AR4D) to overcome the increasing challenges in the agriculture sector. This essentially requires higher, assured and improved investment to conduct quality research and innovation, and efficiently transfer new technologies to farmers and other stakeholders. Several

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APAARI Executive Committee Meeting

The first meeting of the new APAARI Executive Committee (EC) was held at the Rama Gardens Hotel, Bangkok, Thailand on 12 May, 2015 under the Chairmanship of Dr Suwit Chaikiattiyos, Deputy Director General, Department of Agriculture (DOA), Thailand who officiated in place of Mr Anan Suwannarat, Chairman, APAARI and Director General, DOA, Thailand. The meeting was

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Participants at the APAARI Executive Committee Meeting, Bangkok, Thailand

A Tribute to Dr Raj Paroda, Former Executive Secretary, APAARI

On 31 December 2014, Dr Raj Paroda relinquished his responsibility as Executive Secretary, APAARI after his invaluable services for more than two decades. He took over the responsibility of APAARI as its Executive Secretary in 1993, bringing with him the vast experience in agricultural research, education and extension. Over the years, Dr Paroda built APAARI practically single handed to make it a leading regional association of diverse stakeholders devoted to agricultural development in the Asia-Pacific. It was through his visionary leadership and deep understanding of agriculture in the region that APAARI saw remarkable growth in its membership, programs and scientific collaborations. By the end of 2014, APAARI membership stood at 55 comprising National Agricultural Research Systems (NARS) from the Asia-Pacific region, Consultative Group on International Agricultural Research (CGIAR) Centers, international agricultural research centers, universities and regional and sub-regional associations and networks spread around the globe. Through membership alone, APAARI being a self-sustaining organization, could built a reserve fund of US \$ 1 million. This achievement had largely been due to professional motivation and foresightedness of Dr Paroda.

Dr Raj Paroda was also instrumental in creating a transparent functioning and management system. APAARI's Office was established at the FAO Regional Office in Bangkok, its logo, website and newsletter were initiated and the constitution adopted in 1990-91 which was further revised in 1994, 2003, 2009 and 2015, based on the advice of members and the emerging needs of APAARI being an evolving organization. The APAARI Executive Committees were reconstituted every two years as per the constitution and the General Assembly and Executive Committee meetings were held at regular intervals.

Realizing the need to address agricultural R&D issues specific to the region, Dr Paroda initiated a number of activities aimed at identifying the emerging priorities and embedded them in APAARI programs and addressed them through suitable stakeholder/expert consultations. The instrumental mid-term plan (1995-2000) and Vision 2025 documents were developed after wide ranging consultations with APAARI members, partners and other stakeholders. During 2004-2010, a series of sub-regional and regional consultations on research needs assessment and prioritization of agricultural research for development (AR4D) were undertaken and reports presented at the international fora, including the Global Conference on Agricultural Research for Development (GCARD 1). Policy resolutions on a number of AR4D issues relevant to the region were adopted including Tsukuba Declaration on Adapting Agriculture to Climate Change (2008), Bangkok Declaration on AR4D (2009) and Suwon Agrobiodiversity Framework (2010). APAARI also published a large number of proceedings and reports, including more than 40 success stories from the region.

In order to address the emerging challenges in AR4D in the region, Dr Paroda initiated concerted efforts in a number of APAARI's focus areas: i) Policy advocacy, ii) Building research

partnerships, iii) Regional research networking, iv) Human resource development, v) Information dissemination and vi) Technology transfer.

In this context, two major APAARI programs were launched, namely, the Asia-Pacific Agricultural Research Information System (APARIS) in 2000, and the Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB) in 2006. Under Dr Paroda's dynamic leadership, foresight, and guidance, significant contributions have been made by both the programs addressing policy advocacy, human resources development and information dissemination.

Dr Paroda has always accorded high importance to Agricultural Research and Development (ARD) networks being the effective instruments of knowledge sharing among NARS and other stakeholders of the region. Under his leadership, APAARI initiated and participated in several such networks, including those on plant genetic resources and agrobiodiversity, crop improvement, fisheries, agricultural growth and development, information and communication management, and capacity building. He vigorously followed-up and encouraged the concerned policy/research leaders of different R&D organizations to implement the recommendations emerging out of these networks/programs.

The vast international connections of Dr Paroda have helped APPARI to forge linkages with several global and regional organizations involved in AR4D. Every year, a number of APAARI activities are organized in collaboration with and support from Food and Agriculture Organization of the United Nations (FAO), Global Forum on Agricultural Research (GFAR), CGIAR Centers, Australian Centre for International Agricultural Research (ACIAR) and the Council of Agriculture (COA), Chinese Taipei. Activities are also organized in collaboration with World Vegetable Center (AVRDC), Commonwealth Agricultural Bureaux International (CABI) and Japan International Research Center for Agricultural Sciences (JIRCAS). Close linkages were also established with several other organizations like Global Consortium for Higher Education and Research in Agriculture (GCHERA), Promoting Local Innovation (PROLINNOVA), SAARC Agriculture Centre (SAC), Asian Institute of Technology (AIT), Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA), Regional Forum on Strengthening Rural Advisory Services in Asia-Pacific Islands (APIRAS), and the European Forum for Agricultural Research for Development (EFARD). APAARI also collaborated and participated in the programs of European Research Area-Agricultural Research for Development (ERA-ARD), Tropical Agriculture Platform (TAP), and the Asia-Pacific Agricultural Extension and Outreach Network (APAEON). Linkages were also established by Dr Paroda with other regional AR4D organizations like Forum



for Agricultural Research in Africa (FARA), Central Asia and Caucasus Association of Agricultural Research Institutions (CACAARI), Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA), Foro Regional de Investigación Desarrollo Tecnológico Agropecuario (FORAGRO) and the Civil Society Organizations (CSOs) like International Federation of Agricultural Producers (IFAP), Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC), Asian Farmers' Association (AFA) and Bangladesh Rural Advancement Committee (BRAC), with some of them being the member on the Executive Committee of APAARI.

It is a great honor to recall the wide recognition received by Dr Raj Paroda, including during his tenure as APAARI Executive Secretary. Dr Paroda had spearheaded the modernization and strengthening of the national agricultural research system in India (Indian Council of Agricultural Research), as Deputy Director General (Crop Sciences), and later as Director General, ICAR and Secretary, Department of Agricultural Research and Education (DARE), Government of India during the period 1994-2001. He has the unique distinction of being the main architect of one of the largest National Gene Banks of the world. He was also instrumental in the modernization and strengthening of national agricultural research systems in Central Asia and the Caucasus. The National Gene Bank in Kazakhstan and the Gene Bank of ICRISAT, Hyderabad have been named after Dr Paroda in recognition of his notable contributions in the field of plant genetic resource management.

Dr Raj Paroda is the recipient of PADMA BHUSHAN (1998), one of the most prestigious Indian national civil awards. Other prestigious awards conferred on him include Asia-Pacific Seed Association Special Award (1995), CGIAR Award for outstanding partnership (2000), Life Time Award by Association of Agricultural Scientists in America (2001), Borlaug Award (2006), Gold Medals from Ministry of Agriculture of

Armenia (2006) and Vietnam (2012), Fellowship of National Science and Agricultural Academies of India, Russia, Georgia, Armenia, Tajikistan and the Third World Academy of Sciences. The American Society of Agronomy and the Crop Science Society of America awarded Honorary Membership to Dr Paroda. He has also been conferred with an Honorary D.Sc. by 15 academic institutions including Ohio State University, Indian Agricultural Research Institute and the Scientific Council of Agricultural Academy, Republic of Azerbaijan.

Dr Paroda had served as founder Chairman of GFAR (1988-2001) and was instrumental in getting its Secretariat established at FAO, Rome. He was Chairman as well as Vice-Chairman of International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) Board, Member of Board of Trustees of International Rice Research Institute (IRRI), Member of World Meteorological Organization (WMO) High Level Task Force on Climate Services, Member of the Policy Advisory Council of ACIAR, Member of Finance Committee and later of Fund Council of CGIAR and a Member of the Governing Board of CABI.

APAARI is highly privileged to have been led by a leader of such outstanding qualities and high recognition as Dr Raj Paroda. Putting on record its appreciation, the APAARI General Assembly in its meeting on 1 November, 2014 adopted a resolution expressing sincere thanks and high appreciation to Dr Raj Paroda for his utmost commitment and outstanding contributions to APAARI, Dr Simon Hearn, the then Chairman, APAARI praised the excellent and dynamic leadership provided by Dr Raj Paroda and acknowledged his enormous contributions and efforts that have brought together various stakeholders from all over the Asia-Pacific region under the umbrella of APAARI and has taken APAARI to a high pedestal.

APAARI is highly grateful to Dr Raj Paroda for his leadership, dedicated services and outstanding contributions to APAARI and wishes him and his family all the very best.



Tropical Agriculture Platform - CD (AIS) Expert Group Workshop

APAARI is one of the partners of Tropical Agriculture Platform (TAP) and a member of its Global Task Force (GTF). Based on the recommendations of TAP Steering Committee and TAP Global Task Force, an Expert Group was created to develop the Common Framework on Capacity Development (CD) for Agricultural Innovation System (AIS).

Dr Bhag Mal, Senior Consultant, APAARI, attended the CD Expert Group Workshop held at Montpellier, France on 19-20 March, 2015. The workshop provided a platform to TAP partners to share their on-going and planned activities and provide inputs on how this can inform and be linked to the Framework.

The discussion was organized around three main themes: (i) Elements of the Framework, (ii) Needs Assessment, and (iii) Monitoring and Evaluation. The Framework needs to deliver operational and practical guidance on CD for AIS at system and



Participants of workshop, Montpellier

project levels and at the same time it should remain adaptable and flexible. The draft of the Framework is likely to be available by 25 June which will be circulated to the wider expert group, Tap Global Task Force and TAP Steering Committee for feedback and endorsement. The validation of the Framework in pilot countries (Bangladesh and Laos in Asia region) is planned to begin in September, 2015 in the context of CD (AIS) Project.

Recognizing the Contributions of Dr Simon Hearn, Former Chairman, APAARI

Dr Simon Hearn represented ACIAR in APAARI from 2007 until 2014. He was on the APAARI Executive Committee from 2011 to 2014, including as the Chairman during the 2013-2014 biennium. He also chaired the APARIS Steering Committee from 2008 to 2014, and the APCoAB Steering Committee for 2013-2014. Dr Hearn, during his long association with APAARI in various capacities, spearheaded its activities and contributed significantly for a faster growth of the Association through his able guidance, advice and leadership.

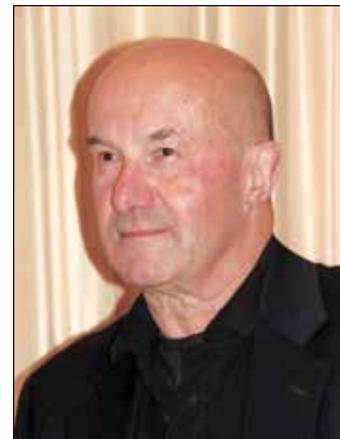
Dr Hearn is an Agricultural Consultant and Company Director in Canberra, Australia. Until 2014, he worked for several years as the Principal Adviser in the Australian Centre for International Agricultural Research (ACIAR). He has worked extensively in agricultural and commodity policy development and economic analysis both nationally and internationally. Dr Hearn has held a number of senior research and executive positions in the Australian Government. He also worked as First Assistant Secretary in the Department of Agriculture, Chief of Staff for the former Minister for Employment, Education and Training, and Managing Director of the Rural Industries Research and Development Corporation. Earlier in his career, he was employed as a Senior Research Economist with the Australian Bureau of Agricultural and Resource Economics, and before joining government service was engaged in family farming

activities. He also spent three years in Brussels as the Australian minister/counsellor in the Australian Mission to the European Union.

Dr Hearn has served on a range of public and private commodity and research boards and councils including the Energy Research and Development Corporation, the BHP Coal Research Council, the Australian Coal Industry Research Advisory Committee, the Australian Meat and Livestock Corporation, Wool International, the Wool Research and Promotion Corporation, the International Wool Secretariat and the Australian Rural Leadership Foundation.

Dr Hearn has a B.Sc. (Hons) in Agriculture and Economics from Reading University (UK), and a Ph.D. in Agricultural Economics from London University (UK).

APAARI is highly grateful to Dr Simon Hearn for his continued support and outstanding contributions and wishes him a great success in his future endeavours.



Dryland Cereals Scholarship Program

APAARI has signed an MoU with ICRISAT to be a partner in its CRP Dryland Cereals Scholarship Program for which funding support of USD 150,000 has been provided by ICRISAT. Under this program, full or partial support will be provided to candidates from the countries in South Asia and Central and Western Asia to pursue their Ph.D. and Post-Doctoral research related to dryland cereal crops, namely, barley, finger millet, pearl millet and sorghum. The disciplines of study include Agricultural Economics, Food Science, Nutrition, Molecular Genetics, Plant Breeding, Integrated Crop Management, Crop Physiology, Entomology, and Gender.

The objectives of the program are to: i) develop a new cadre of scientists with core competencies, knowledge and experience in advanced science and technologies that address productivity and quality enhancements, post-harvest value and policy interventions for the dryland cereals; ii) encourage and develop excellence in fundamental and practical research capabilities in women and early-career scientists in developing countries to address global challenges in agriculture, with a focus on dryland cereals, and iii) strengthen and enhance human resource capacities of national agricultural research institutions in the developing countries in Asia.

A total of nine applications for Ph.D. Scholarship and two applications for Post-Doctoral Fellowship were received from India, China and Sri Lanka. Based on the criteria: i)

contribution to improvement of dryland cereal crops, ii) motivation, iii) integration of project/thesis in the work plan, iv) nominating scientist's reference, and v) specified crops and disciplines, the applications were evaluated by APAARI Expect Committee and based on scoring, eight candidates for Ph.D. Scholarship and one for Post-Doctoral Fellowship were selected and the list was sent to ICRISAT Oversight Committee for their comments and approval.

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Editorial

studies have shown that increase in agricultural R&D spending have greatly contributed to economic growth, agricultural development and poverty reduction in developing countries.

Analysis carried by the Agricultural Science and Technology Indicators (ASTI) program of IFPRI, in partnership with APAARI, showed increase in annual agricultural R&D spending in the region (3.48% during 1996-2002 and 4.06% during 2002-2008), which has greatly contributed to economic growth, agricultural development, and poverty reduction in some of the developing countries. However, there were high disparities in annual growth during 1996-2008 among the countries (the annual growth rates being 8.17% in middle income countries, 4.95% in low income countries, and 0.57% in high income countries). Except for China with significantly high investment (USD 4.05 billion in 2008), India with fairly good investment

(USD 2.12 billion in 2008), and Bangladesh (USD 131 million in 2008) and Vietnam (USD 88 million in 2008), showing modest increasing trends, other developing countries in the Asia-Pacific region recorded either stagnated (Indonesia, Pakistan, the Philippines, PNG and Sri Lanka) or declining (Myanmar, Nepal) public spending in agricultural research.

Considering that investment in national and international research programs/platforms in the Asia-Pacific region needs to be enhanced, APAARI in collaboration with ACIAR, FAO RAP, GFAR and IFPRI, will organize a 'High Level Policy Dialogue on Investment in Agricultural Research for Sustainable Development in the Asia-Pacific Region'. The purpose of the Dialogue is to catalyze policy/decision makers, re-sensitize NARS, and create an environment for increased resource allocation for AR4D in the region with the goal to promote investment in agricultural research for sustainable development. More specifically, the expected outcomes of the Policy Dialogue are:

- Current capacities, disparities and levels of investments in AR4D assessed
- Engagement in skills and capacity for attracting investments mobilized

- Consensus built on appropriate decision-making tools and joint agreement(s) for public-private co-investments
- Perceptions of donors and policy makers for short, medium and long-term funding in AR4D and linking research with extension documented
- The inputs to and outputs from the High Level Policy Dialogue, being directly relevant to the GCARD3 process, will feature on the GCARD website.

The Policy Dialogue will be held at the Rama Gardens Hotel, Bangkok, Thailand on 8-9 December, 2015. About 120 participants are expected to attend which include researchers, policy makers, ministers, innovative farmers and representatives of various organizations including NARS institutions, the private sector, CSOs (NGOs, FOs), women and youth representatives, CGIAR Centers and other international agricultural research centers and advanced research institutions, foundations and funding/donor agencies.

It is expected that the Policy Dialogue will lead to important subsequent actions on the way forward to enhance investment in agricultural research and innovations for development.

Editors



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APAARI Executive Committee Meeting

attended by 24 participants including APAARI members and special invitees. At the outset, the participants expressed special concern on the tremendous loss to life and property in Nepal, a member country of APAARI, due to an earthquake on 26 April, 2015. On the Chair's request, the participants observed one minute silence in memory of the people who lost their lives. It also decided to include a special agenda item to deliberate on exploring with Nepal authorities how APAARI could contribute to the recovery and rehabilitation of agriculture in Nepal.

Dr Raghunath Ghodake, Executive Secretary, APAARI welcomed Dr Suwit Chaikiattiyos for chairing the Executive Committee meeting. He extended a special welcome to Dr Simon Hearn, former Chairman, APAARI and Dr Raj Paroda, former Executive Secretary, APAARI and thanked them for their outstanding contributions to APAARI. He also welcomed all the members and special invitees for their participation in the meeting.

Dr Suwit Chaikiattiyos in his opening remarks highlighted the importance of this pace-setting meeting and emphasized that the eradication of poverty is the greatest global challenge facing the world today. Climate change is another major challenge and APAARI, through its strategic partnerships and alliances, can play an important role in addressing this challenge. He stressed on the need for exploiting the marine biodiversity for agricultural development and reiterated the importance of science, research, technologies and innovations in the improvement of agriculture. He further highlighted on the need for APAARI to be creative and innovative in facing the challenges in the years ahead, especially in mobilizing financial resources, partnership and program activities.

The following are the highlights of the decisions and outcomes of the meeting:

- APAARI Progress Report for November 2014 - April 2015 was endorsed and its relevant aspects would be included in the Progress Report: January - July 2015.
- Audit Report and Audited Financial Statements as audited by APAARI External Auditor for financial year 2014 were endorsed.
- The GAAP Professional Audit Co. Ltd. was approved as External Auditor for APAARI for the biennium 2015-16.
- The Executive Committee approved APAARI Work Plan 2015 for implementation. The major activities included are: i) Revisiting APAARI Vision 2025, ii) High Level Policy Dialogue on Investment in AR4D in Asia-Pacific Region, iii) M&E towards Outcome and Impact Assessment, iv) Policy Dialogue on Transforming Towards Knowledge Based Agriculture in Southeast Asia, v) Dialogue on Performance of Bt. Brinjal in Bangladesh and Prospects of its Wider Adoption, vi) Development of Communication Strategies for Adoption of Agri-biotechnology in Asia-Pacific, and vii) CRP on Dryland Cereals Scholarship Program.
- Major highlights of Revisiting APAARI Vision 2025 are: i) development of vision document containing vision, mission and goal statements with outline of broad system level outcomes, strategic thrusts and strategic interventions, ii) vision document to be developed in close consultation with EC members and other eminent persons who participated in the EC meeting, iii) draft vision document thus developed will go through wider consultation with APAARI members, partners and stakeholders, iv) the Executive Secretary of APAARI is tasked to oversee the development, and v) the second stage of strategic planning on mid-term program implementation plan will be undertaken after the acceptance of the revised vision document.

- APAARI Income-Expenditure Plan for 2015-16 was approved for implementation. The highlights are: i) estimated income (USD 825,881) and predicted expenditure (USD 805,547) during 2015, ii) estimated income (USD 724,074) and predicted expenditure (USD 795, 838), with a provision of using USD 71,764 from the reserve funds during 2016.
- The Asia-Pacific Seed Association (APSA) has been nominated and endorsed as a representative of the private sector on the APAARI Executive Committee for the biennium 2015-16.
- Proposal for an additional seat to jointly represent the Association of International Research Centers for Agriculture (AIRCA) and Universities (Higher Education Sector) on the APAARI Executive Committee was approved, subject to the approval of the appropriate amendment to the APAARI Constitution by the APAARI General Assembly.
- The Executive Committee approved the following composition of APCoAB Steering Committee for the Biennium 2015-16.

Position	Designation
Chairman	Director General, Department of Agriculture (DOA), Thailand (Chair, APAARI, EC)
Vice-Chairman	Director General, International Cooperation, Council of Agriculture (COA), Chinese Taipei
Member	Executive Director, PCAARRD, the Philippines
Member	Executive Chairman, BARC, Bangladesh, (Vice-Chair, APAARI, EC)
Member	Representative, ACIAR, Australia
Member	Representative, World Fish Center, Malaysia
Member	Executive Secretary, APAARI, Thailand
Participant*	Biotech Professional, ICRISAT, India
Secretary	Coordinator, APCoAB, Thailand

*Special invitee

- The Executive Committee approved the following composition of APARIS Steering Committee for the Biennium 2015-16.

Position	Designation
Chairman	Director General, Department of Agriculture (DOA), Thailand (Chair, APAARI, EC)
Vice-Chairman	Representative, ACIAR, Australia (Member, APAARI, EC)
Member	Representative, GFAR, Italy (Member, APAARI, EC)
Member	Representative, ICRAF, Kenya (Member, APAARI, EC)
Member	Representative, FAO-RAP, Thailand
Member	Executive Secretary, APAARI, Thailand
Secretary	APARIS Coordinator, APAARI, Thailand

- It was resolved that APAARI would explore the possibilities of supporting the recovery and assisting in rehabilitation

of agriculture that has been adversely affected in Nepal because of the recent earthquakes in the country.

- FAO RAP has established the Asia-Pacific Extension and Outreach Network (APAEON). FAO will be the Chair and APAARI will be the Vice-Chair of the Steering Committee of APAEON.
- The EC took note of the three major decisions made by the CG Fund Council in its meeting held in Bogor, Indonesia on 27-30, April 2015: i) agreement to submit revised sustainable results framework (SRF) to funders, ii) establishment of CGIAR systems organization, and iii) plan on resource mobilization and innovative financing.
- Dr Suwit Chaikiattiyos, Chair and Mr David Shearer, Co-Chair in their concluding remarks expressed happiness over the success and outcomes of the EC meeting and stressed on the need for implementing the agreed work plan and also thanked the participants for their participation and contribution to the meeting.
- Dr Raghunath Ghodake, while extending vote of thanks, mentioned that the meeting was fruitful and several important decisions were taken. He profusely thanked the Chair, Vice-Chair, members, special invitees and APAARI Secretariat staff for their participation and significant contributions for the success of the meeting.



International Training Course on Smart Use of Fertilizers to Improve Crop Production and Soil Conservation

The Food and Fertilizer Training Center (FFTC), Asia-Pacific Association of Agricultural Research Institutions (APAARI), Council of Agriculture (COA), Chinese Taipei, and Taichung District Agricultural Research and Extension Station (TDARES)



Participants of the training course

jointly organized the “International Training Course on Smart Use of Fertilizers to Improve Crop Production and Soil Conservation” at Changhua County, Taichung, Taiwan on 11-15 May, 2015. This five-day training course aimed to introduce and teach the participants from developing countries in the Asia-Pacific region the concept, theory, and application of judicious use of fertilizers through the smart ways. The training program included keynote presentations, laboratory practices and on-site field studies. Ten participants from Bangladesh, Bhutan, Fiji, India, Iran, Nepal, Pakistan, and Papua New Guinea and Vanuatu nominated by APAARI attended the course.



The International Center for Biosaline Agriculture (ICBA)

The International Center for Biosaline Agriculture (ICBA) is an international, non-profit agricultural applied research center established in 1999 in Dubai, United Arab Emirates (UAE). Originally established as a research and development institute by the Islamic Development Bank (IDB) and the Government of UAE, represented by the Ministry of Agriculture and Fisheries, the Center focused on the problems of salinity and

innovative technologies related to cleaning saline and/or contaminated water; improving controlled irrigation systems; and testing different types of amendments to improve soil properties in marginal environments are all among the Center's priorities.

Climate change is having detrimental consequences on agricultural production throughout the globe, but with more dire impacts in marginal lands, ICBA launched a special initiative that focuses on climate change adaptation. Under this initiative, ICBA examines the impacts of climate change in marginal and saline environments, specifically from an early drought monitoring perspective, and adapts agricultural systems accordingly. High end technology is used to downscale data through remote sensing and a geographic information system (GIS). Modeling simulations are employed for both climate change and crop production. Different perspectives of land and water assessments and the management of cropping systems adapted to marginal environments and policy formulation through modeling studies are assessed.

As for crop productivity and diversification, ICBA focuses on the plant genetic resources and crop diversification of salt and drought-tolerant plants that are environmentally suitable and economically viable for marginal areas, particularly introducing new genotypes of nutritious and stress-tolerant crops. ICBA has been instrumental in conserving genetic resources from around the world, and enriches its gene bank with plant



ICBA's treated waste water reuse field trials in South Sinai

using saline water for irrigated agriculture. Since then, ICBA has evolved and broadened its initial mandate and currently works on applied research and development programs focused on improving agricultural productivity and sustainability in marginal and saline environments.

ICBA's research innovations include the assessment of natural resources, climate change adaptation, crop productivity and diversification, aquaculture and bioenergy and policy analysis. The Center is also actively working on exploring the use of non-conventional water sources for agricultural production such as the use of saline and brackish water, treated waste water, industrial water and sea water.

ICBA employs modeling as well as analytical tools to assess land and water resources for different types of agricultural production systems and makes land resource management and reclamation recommendations while pursuing best management practices. This enables strategic planning in agricultural production systems, which requires sufficient knowledge of the availability of existing qualitative and quantitative resources. Similarly, ICBA carries out soil and water surveys, hydrological modeling, and exploration of sea water intrusions and impact on groundwater quality. Testing



A field trial on quinoa (*Chenopodium quinova*)

species from marginal environments, comprising 12,600 accessions of 230 proven to be or potentially salt-tolerant species originating from 134 countries. The research combines genetics and genomics approaches to develop new crops through biotechnology methods to create crop varieties that are productive and resilient in marginal and saline conditions. In addition, ICBA is looking at developing seed production programs in partner countries with special emphasis on salt tolerant crops.

In relation to aquaculture and bioenergy, ICBA, in partnership with other stakeholders, is working on pilot-scale mariculture projects by growing crops with seawater as an economic model study.

Integrated aquaculture, based on marine and terrestrial agricultural systems, has great potential to boost income under marginalized conditions. ICBA's program on biofuel crops includes undertaking pilot programs and assisting with scaling up seawater-based agricultural systems and integrating marine and terrestrial culture systems for optimizing farm livelihoods. ICBA also analyzes policies and undertakes socioeconomic studies on food and nutrition security, and water and land management at various scales in marginal environments, to provide recommendations to national, regional and global



Field experiments on freshwater and brine-fed integrated aqua-agricultural system

level partners. Its work is directed at assisting in assessing and managing agriculture, water, land, and climate change. It also provides in-depth assessment opportunities for value adding to market chains. ICBA's approach is governed by fostering stakeholder engagement and creating partnerships. Another key area under this theme has been preparing strategic documents for organizations and countries in the fields of water, agriculture and food securities for Gulf Cooperation Council (GCC) and other regions. Some of this support includes advising governments on soil and water salinity strategies and on climate-smart agriculture policies.

Generating, maintaining and sharing knowledge across regions and research areas in agriculture is a multi-pronged means for ICBA to reach out to local farmers by providing them with the necessary skills, educational material and resources for application. Within the period of its ongoing 2013-2023 Strategy, ICBA is looking forward to utilizing the latest digital technologies to launch much needed knowledge hubs that facilitate exchange of information on relevant topics in agriculture related to marginal and saline environments via virtual meetings, workshops, conferences, webinars and e-forums. These channels will ensure the continuous flow of and accessibility to the latest information across a wide spectrum of recipients.

ICBA's ultimate objective is to improve the livelihood of some of the world's most poor and impoverished people living under marginal conditions. ICBA's work reaches many countries around the world, including the Gulf Cooperation Council

countries, the Middle East and North Africa, Central Asia and the Caucasus, South and South East Asia, and Sub-Saharan Africa.

(Source: Mrs Setta Tutundjian, Director, Partnerships and Knowledge Management, ICBA; s.tutundjian@biosaline.org.ae)



Revisiting APAARI Vision 2025

The Concept Note on APAARI Vision 2025 prepared under the guidance of an advisory group headed by Dr Raj Paroda was presented by Dr Mruthyunjaya, Lead Resource Person to the Executive Committee in its meeting held on 12 May, 2015 at Bangkok. During the discussion, suggestions were made to actively involve private sector, emphasize the role of youth, stress on collaboration with major NARS-China and India and focus of vision on support to NARS. It was decided to prepare the vision in 2 stages: Stage 1 on development of Vision, Mission and Goal statements with outline of broad system level outcomes, strategic thrusts and strategic interventions; and Stage 2 on strategic planning on development of medium-term operational plan during 2016 subsequent to the approved Vision document during 2015. The first stage process will be overseen by the Executive Secretary, APAARI and involves the following steps:

- Receiving intensive comments from the lead group members by 30 June, 2015
- Revision and development of the first draft by 31 July, 2015
- Face-to-face brainstorming with lead group members at Kuala Lumpur, Malaysia on 4-5 August, 2015
- Refinement of the draft by middle of August, 2015
- Circulation of the refined draft with wider group including APAARI members and other stakeholders to get structured responses during mid-August to mid-September, 2015
- Final refinement on the basis of approved sustainable development goals (SDGs) by the last week of September, 2015
- Sharing the final draft with APAARI members by 1st week of October, 2015
- Presentation of the final draft to the Executive Committee of APAARI on 10 December, 2015 coinciding with High Level Policy Dialogue in Bangkok
- Final editing, printing and uploading, and circulation by 31 December, 2015.

For more information, please contact, Dr Raghunath Ghodake; raghunath.ghodake760@gmail.com

Australia

A Policy Dialogue on Rice Futures

According to a recent report (Robins, 2014), technical solutions alone are insufficient for improving the productivity and profitability of rice-based farming systems: unless there are supportive policy settings, improvements in these systems will not occur.

The Australian Centre for International Agricultural Research (ACIAR) recently produced a proceeding focussed on the outcomes of a policy dialogue on rice futures in the Mekong region. ACIAR's CEO, Dr Nick Austin outlined that the “the



A policy dialogue on rice futures

impetus for convening a policy dialogue on rice futures in the Mekong region was the conclusion of the 5-year research-for-development initiative, “Rice-based Systems Research (RSR) Program: Food Security in Lao PDR, Cambodia and Bangladesh”. The RSR program was one of the four developed by ACIAR under the Australian Government’s ‘Food Security through Rural Development’ initiative.

The RSR program invested \$14.8 million from 2009 to 2014 to explore opportunities for alleviating poverty through improving the productivity and profitability of rice-based farming systems. These systems involved both rainfed and irrigated agriculture in Laos, Cambodia and Bangladesh, and are often associated with livestock production. The program comprised five large-scale farm-productivity projects and a suite of smaller policy-focused projects. Collectively, the projects spanned crop and livestock development, improved rice germplasm, technological advances in establishment, productivity and irrigation, new cropping niches, targeted marketing and extension, and alternative evidence-based policy options.

The policy dialogue comprised five half-day forums bringing together researchers to present and discuss their work with senior policymakers in the Mekong region. The scene was set with a focus broadly on ‘rice futures’ in the Mekong region and then an examination of intensification and mechanisation, diversification, climate change and natural resource management, and policy and knowledge. The lively dialogue around the policy-oriented forums, along with networking among delegates, stimulated fresh thinking about how to optimise outcomes from this important research.

(Source: Mr David Shearer, General Manager, ACIAR; david.shearer@aciarc.gov.au)

India

Brainstorming Workshop on Upscaling Quality Protein Maize for Nutritional Security

Maize has emerged as one of the most important crops as source of food, feed and industrial applications. Together with rice and wheat, it provides at least 30 per cent of the food calories to more than 4.5 billion people in 94 developing countries. The challenge is, therefore, to deliver nutritious, safe and affordable food to an ever increasing global population in the coming decades to eliminate food and nutritional insecurity.

Quality protein maize (QPM) by virtue of higher lysine and tryptophan holds immense promise for providing enhanced protein quality. In India, the area under QPM cultivation is negligible when compared to area under normal maize. Thus, development of a comprehensive package for upscaling QPM production towards alleviation of malnutrition in the country holds promise.

In view of the above, a two-day brainstorming workshop on “Upscaling Quality Protein Maize for Nutrition Security” was jointly organized by the Indian Council of Agricultural Research (ICAR), Trust for Advancement of Agricultural Sciences (TAAS), National Academy of Agricultural Sciences (NAAS),



Participants of brainstorming workshop, New Delhi

Indian Institute of Maize Research (IIMR), International Maize and Wheat Improvement Center (CIMMYT), Borlaug institute for South Asia (BISA) and Indian Society of Genetics and Plant Breeding (ISGPB) at NASC Complex, New Delhi on 20-21 May, 2015.

Dr S. Ayyappan, Secretary DARE & Director General, ICAR inaugurated the workshop, while Dr R.S. Paroda, Chairman, TAAS and former Executive Secretary, APAARI chaired the Inaugural Session. Dr S.K. Vasal, World Food Prize laureate and former Senior Maize Breeder, CIMMYT was the Guest of Honour.

During the workshop, eight technical sessions were organized in which all aspects to promote and further improve QPM were discussed. More than 100 participants from public as well as private sector, government agencies, progressive farmers, and seed producing agencies etc. attended the workshop.

Salient recommendations

- Farmers should be able to provide quality QPM grains to the industry continuously throughout the year. Awareness among the consumers should be created by including QPM in public distribution system (PDS), mid-day meal, and Integrated Child Development Scheme (ICDS).
- The potential of QPM, especially yellow QPM, needs to be effectively exploited. Studies need to be conducted on nutritional benefits of QPM on meat and eggs, for creating specialized markets for more nutritious meat and eggs.
- The best conventional hybrids need to be converted to QPM through marker-assisted selection (MAS) and doubled haploid (DH) technology. QPM breeding program in India needs to be further strengthened. QPM cultivars also need to be evaluated for other value-added traits, especially high oil, provitamin A, Fe, Zn, methionine, and low phytate.
- Awareness among consumers should be created regarding nutritional benefits of value-added products of QPM, through trade fairs, live demonstrations, agri-expo and trainings. QPM should be included in PDS, mid-day meal, and ICDS. Media should play vital role in popularization of QPM products.
- Government should support awareness campaigns on the nutritional value of QPM for increasing its demand and consumption, and promoting household nutritional security. QPM should be included in all the nutrition intervention programs for children, students and women. For this, industry should be incentivized to use QPM in various food and feed formulations. QPM can also be an integral part of agricultural development programs like National Food Security Mission (NFSM) and Rashtriya Krishi Vikas Yagna (RKVY).
- An enabling environment for inclusion of private sector in QPM R&D in India needs to be created. This is vital for scaling-up and scaling-out QPM for nutritional security.

(Source: Dr O.P. Yadav, Director, IIMR, New Delhi; pdmaize@gmail.com)



Pakistan

Training Workshop on Irrigation Scheduling Optimization through Soil Moisture Monitoring

Excessive irrigation application is the normal practice at the farms in Pakistan, which reduces crop water productivity and exacerbates waterlogging and salinity, thus challenging food security in the country. Suboptimal irrigation scheduling is considered to be one of the main reasons of excessive irrigation water losses on farms. In order to address these issues, a Training Workshop on Irrigation Scheduling Optimization through Soil Moisture Monitoring was organized by Climate



Participants of training workshop

Change, Alternate Energy and Water Resources Institute (CAEWRI), with support of Pak-China Project, at CAEWRI Field Station, NARC, Islamabad to share the knowledge and to demonstrate the technology of soil moisture monitoring for improving the understanding of optimized irrigation scheduling.

While inaugurating the training workshop, the Chief Guest, Dr Abdul Ghafoor, Project Director, Pak-China Project, highlighted the importance of water resources management in Pakistan. Dr Muhammad Munir Ahmad, Director, CAEWRI overviewed the current status of water resources and stressed the need for efficient water management to save water and energy. Dr Ghani Akbar, Training Coordinator elaborated the importance of irrigation scheduling and stressed the need for adopting optimised irrigation management strategies on farms using ICT tools and techniques for improving water productivity and enhancing food security in the country. The resource persons, delivered lectures and conducted field practicals during the training sessions.

A diverse group of scientists/researchers, research fellows and scientific assistants from different research institutes attended the training workshop, which comprised presentations on crop water requirement, soil moisture measurement methods and irrigation scheduling. The participants also got hands-on training on various sophisticated soil moisture measurement equipments including Diviner 2000, TDR, Tensiometers and Porous Blocks.

(Source: Muhammad Altaf Sher, Director (International Cooperation), PARC; icparc@yahoo.com)



The Philippines

Training Course on Quantitative Methods for Impact Evaluation

The Socioeconomics Research Division (SERD) of the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD), with the assistance of the newly established Philippine Statistical Research and Training Institute (PSRTI), conducted training on “Quantitative Methods for Impact Evaluation of Research



Participants of training course, PSRTI, Diliman Ruezon City

and Development Projects” recently at PSRTI in two batches of five day each. The training aimed to enhance the capacities and equipping the Council’s Network of implementers in conducting quantitative analysis.

The training was attended by 50 professors, researchers, deans and chairpersons from 12 state universities and colleges from the National Agriculture and Aquatic Resources Research and Development Network (NAARRDN). Also, in attendance were SERD Director, Dr Albert P. Aquino and selected staff. The resource persons apprised the participants with different quantitative methods for impact evaluation studies and also taught them basic techniques in using statistical tools to aid in data analysis.

Propensity score matching (PSM), the difference-in-differences method (DID), and instrumental variables method (IVM) were among the quantitative methods discussed in the training. The training series is part of the long-term plan of SERD to establish and strengthen impact assessment teams from the Council’s Network of implementers. On the other hand, the PSRTI, as part of its mandate, provides assistance in conducting research especially statistical studies and trainings. The impact evaluation training is one of the “customized and specialized” trainings that the agency provides apart from the regular trainings that they conduct.

(Source: Dr Reynaldo V. Ebor, Executive Director, PCAARRD; rvebor@gmail.com)



Papua New Guinea (PNG)

Rural Youth Entrepreneurship in a Papua New Guinea Village

The Agriculture Department of PNG University of Technology through its extension arm known as South Pacific Institute for Sustainable Agriculture and Rural Development (SPISARD) has developed a package to train the youth of small and marginal farm families in remote locations.

SPISARD has trained more than 1,000 farmers including women, youth entrepreneurs, and marginalized farmers during the last 6 years. The story below comes from Markham valley of the project village of SPISARD. This is an example of how

a youth developed her interest in entrepreneurship and thus increased her household income.

Background: Ms Gissi Fare is a young female from Singtogora village from the Arobak clan in the Nawaeb district, Morobe Province. In 2002, the family migrated from Singtogora to Munix village for better opportunities. The main mode of transport is the public motor vehicle (PMV) and cattle ranging is their main source of income.



Ms Gissi Fare, a youth entrepreneur

Education: Ms Gissi Fare completed her primary school education in 2007 at Erap Primary School and continued to Busu Secondary School in 2008 to 2011 doing grades 9-12. While in school, she learnt simple horticultural skills in peanut and vegetable farming and simple crop management practices. Since leaving school after year 12, she has been engaged in peanut and vegetable farming on a small-scale.

Key people: The key people in her journey towards entrepreneurship were her parents, the ward councillor, her two elder brothers and the church pastor. Her two elder brothers assisted her mainly in clearing of land to establish new farming areas, general land preparations and transportation of produce to storage area and the market. Her parents helped in selecting suitable sites and providing technical know-how of growing crops, and in budgeting and managing the incomes. The councillor facilitated access to roads and markets and establishment of a village training center. The church pastor provided advice on biblical principles developing moral values amongst the youths.

Her contributions to the community: She contributed ideas in decision making within the family, church, and the community as a whole and became a role model for female youths in the village. From experiences acquired through entrepreneurial activities, she advises her friends to have faith in themselves and do what they can do using the available resources to come up with something beneficial to them, their family, and the community. Gissi’s two younger siblings help her on her farm and at the same time are learning basic gardening practices.

Her motivations: As a young female, Gissi had a high devotion for contributing towards development in her community. Another factor that motivated her as a farmer was that, none of her immediate family members have well-paid jobs to meet her family’s financial needs and therefore, she decided to take on the initiative to assist her family in times of financial need. Finally with a large acreage of family land lying idle, Gissi decided to put it into good use for crop farming and cattle grazing.



Aibika (*Abelmoschus manihot*) Spring onion (*Allium fistulosum*)

Marketing accessories and processes: Marketing accessories played an important role in the production and transportation. She uses a wheel-barrow to transport the harvested produce from the garden to the central location before transportation to the food market. The produce is kept overnight at the central location, and is covered with plastic canvas, shrubs and dried banana leaves to protect from rain and insects. The next morning, the produce is packed into the plastic bags or baskets and picked up by the PMV and transported to Lae urban food market. Water is sprinkled on the produce to keep the vegetable fresh.

Marketing and average income: On an average, she earns about 50-80 PNG Kina (USD 15-24) per sale. She makes more money on vegetables particularly aibika (*Abelmoschus manihot*) and spring onion (*Allium fistulosum*) because of their demand. In one week, she could make up to a maximum of three sales with an average income of K 150 (USD 46.56). However, the average earnings are variable depending on weather conditions.

Expenses: Gissi usually spends her income to meet the household needs such as stored food, cooking utensils, kerosene and clothes. She spends on transportation around K 3-5 (USD 0.93-1.55) per basket of vegetables and almost half of her earnings are spent on basic store food and groceries. She also contributes to community activities, supports her parents, buys agricultural inputs such as vegetable seeds, insecticides and small gardening tools and pays wages of hired labour.

Production constraints: Some of the constraints encountered by Gissi during her entrepreneurial activity include: transportation, technical know-how, geographical conditions, village storage facilities, soil fertility and day-to-day weather conditions.

In summary, there are several other innovative young entrepreneurs, both male and female in rural PNG villages. SPISARD has been working with them by providing trainings and creating opportunities as per felt needs and availability of resources. SPISARD has been providing knowledge-based and hands-on trainings to most of the marginalized rural farmers. These farmers have shown positive attitude towards

the trainings because they can now generate more income and improve their livelihood.

(Source: Dr Abdul Halim, Professor and Head, University of Technology; halim@ag.unitech.ac.pg)



Sri Lanka

Training Program on Meeting the Challenges on Ecosystems Resilience in Changing Climate

Ecosystems identification, protection and restoration will be looked upon as one of the major challenges in the 21st century to transform economies from industrial to green environmental economies, and to build resilient communities to withstand the challenges of global warming. In this endeavor, capacity building of communities, professionals and institutions has to be given high prominence.



Participants of training course, Colombo, Sri Lanka

Asian Disaster Preparedness Center (ADPC) is currently providing support for building and strengthening the capacities of the communities, institutions and officials in disaster and climate risk assessment as well as management for decision making at different levels to meet the emerging challenges of climate change. It particularly supports integration based disaster risk reduction (DRR) and climate change adaptation (CCA) measures in coastal and river basin development strategies, plans, regulations and programs.

In view of this, the Sri Lanka Council for Agricultural Research Policy (SLCARP), the University of Ruhuna and the ADPC, with funding support from AusAID conducted a “Training Course on Meeting the Challenges on Ecosystems Resilience in Changing Climate” at Colombo, Sri Lanka from 6-9 April 2015. The training aimed at acquainting the participants with the knowledge and understanding of natural ecosystems, their role in environment protection, threats incurred on the ecosystems survival due to natural hazards and man-made activities, and methods and techniques applicable for their restoration and resilience building.

A total of 40 participants attended this four day training program. Participants included those working in the field of environment, agriculture, irrigation disaster management sectors, policy making and legal bodies, economical agencies, banks, insurance bodies etc. The program was designed to understand the existing ecosystems, threats incurred on

Delegation from Bhutan Visits APAARI Headquarters

On 17 February, 2015, Mr Namgay Wangchuk, Director General of Council for RNR Research of Bhutan (CoRRB) along with his team visited APAARI Headquarters, Bangkok to meet Dr Raghunath Ghodake, the new Executive Secretary, APAARI and to discuss about strengthening collaboration between the two organizations. Dr Ghodake updated the CoRRB Director General on various activities of APAARI and also briefed about the forthcoming events. Mr Wangchuk appreciated the progress made by APAARI in promoting agricultural research for development (AR4D) in the region. At the end of the meeting, Mr Wangchuk presented a souvenir to Dr Ghodake and wished him great success in his new assignment.



Delegates from Bhutan visit APAARI headquarters

them and adopt appropriate strategies and technologies to conserve and protect them to deal with the challenges of climate change.

Participants were exposed to the issues on climate and weather, and interpretation of data to optimize agricultural operations to meet the climate change associated phenomena (floods, dry and wet spells, heat waves, etc.) and to improve the economical and ecological returns of the ecosystems.

The training course equipped the participants with the necessary skills to improve ecosystem health through climate data application, technological interventions, and community mobilization and also enriched their knowledge and skills to assess the ecosystems and find the means and ways to improve the ecosystems health, through climate data application, technology interventions and community mobilization.

(Source: Dr Shanika Jayasekera, Senior Scientist, SLCARP; nsjnsj2002@yahoo.com)



CABI Delegation Visits APAARI Headquarters

A delegation from the Commonwealth Agricultural Bureaux International (CABI), headed by Dr Dennis Rangi, Executive Director, International Development together with Dr Wai-Hong Loke, Regional Director, South East Asia, Mr Sharbendu Banerjee, Global Director, Mobile, Dr Ravi Khetarpal, Regional Director for South Asia and Dr Babar E. Bajwa, Regional Director for Central and West Asia visited the APAARI Headquarters, Bangkok on 21 May, 2015 and met Dr Raghunath Ghodake, Executive Secretary, APAARI and Dr Vilasini Pillai, APCoAB Coordinator, APAARI. CABI is an international non-profit organization that improves lives through knowledge sharing and plant services to solve agriculture and environmental related problems, which are very much in line with APAARI's vision and mission.



CABI delegation visits APAARI headquarters

Dr Ghodake gave a brief overview of the current and planned activities of APAARI, while Dr Rangi and the team expressed great interest and enthusiasm in working closely with APAARI in common areas of interest as well as playing an active role as an Associate Member of APAARI. CABI in 2015 looks forward to participating in the High Level Policy Dialogue on Investment in AR4D and in the Dialogue on Transforming Towards Knowledge Based Agriculture Development and in turn APAARI will be participating in the CABI organized Regional Workshop.

CAPSA

Third SATNET Policy Dialogue on the Role of Technology Transfer in Agriculture for Sustainable Development Outcomes

At the Rio+20 Conference in June, 2012, the global community renewed its commitment to freeing humanity from hunger and poverty as an indispensable requirement towards achieving sustainable development. At the same time, it underscored the importance of ensuring sustainable production patterns and protecting the planet's natural resource base. Realizing this commitment will be an uphill task, given the increasing demand for food due to a rising global population, as well as the challenges of land degradation, environmental contamination and climate change which pose a threat to maintaining even existing levels of crop yields.



Participants of policy dialogue, Bogor, Indonesia

Technology transfer in agriculture – a sector which is an important source of food as well as employment and livelihood for the poor - is critical to addressing these challenges and for sustainably enhancing incomes of the farming community. The identification, dissemination, adaptation and adoption of appropriate technologies can help farmers bridge the yield gap and/or increase cropping intensity to achieve production growth. In the Asia-Pacific region which is the home to 771 million of the world's poor, agriculture provides 38 per cent of total employment but accounts for only 7 per cent of the GDP (ESCAP, 2014). This indicates significant scope for enhancing productivity in this sector relative to other sectors for which technology transfer is a vital requirement. Smallholder farmers comprise a large chunk of the farming community in developing countries of the region who often lack the resources to use modern technologies, making technology transfer for them especially important.

To bring into renewed focus the importance of technology transfer within the overall post-2015 sustainable development agenda, the Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA) of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), together with partners, organized the Third SATNET Policy Dialogue on 'The Role of Technology Transfer

in Agriculture for Sustainable Development Outcomes' at Bogor, Indonesia from 10-11 February, 2015. The event was organized as part of the 'Network for Knowledge Transfer on Sustainable Agricultural Technologies and Improved Market Linkages in South and Southeast Asia' (SATNET Asia) Project with financial support from the European Union.

The Policy Dialogue focused on showcasing the efforts by different stakeholders, reviewing gaps in the evidence base to assess impact, and discussing national and regional policy options. The meeting brought together 85 participants from across the Asia-Pacific region, including national leaders and policy makers in agricultural research and extension, representatives of civil society, academia, the private sector and international organizations, as well as farming community representatives.

During the meeting, participants shared and discussed good practices in promoting agricultural innovation and technology transfer for climate-resilient food production, agricultural trade facilitation as well as participatory and community-based approaches. The need for adapting new agricultural technologies to local circumstances, and promoting systematic approaches to strike the right balance between competitiveness, environmental preservation and social impact, was emphasized. Drawing on the lessons learned since the Green Revolution, it was stressed that for technology transfer to promote sustainable development, policies need to be pro-poor and incorporate sustainability dimensions.

The meeting also recognized that there is an urgent need to address information and data gaps in policy implementation to promote technology transfer. In particular, the evaluation of technology transfer is crucial to generate evidence for informed policymaking to bring about positive change, and this needs to be made participatory, holistic, people-centred and evidence-based. It was noted that while social capital and networks play an important role in promoting sustainable development by expediting the transfer of knowledge amongst stakeholders, cumbersome data collection and analytical limitations make it difficult to quantify the impact of such networks.

Overall, the Policy Dialogue provided an important opportunity to accelerate collaborative efforts to promote sustainable development outcomes. As a key outcome, the meeting agreed upon a Regional Framework providing institutional mechanisms, policy priorities and commitments to support development outcomes. It is expected that the Framework will provide a valuable resource to help guide future agricultural innovation and technology transfer efforts in the region.

(Anshuman Varma, Knowledge Management Coordinator, SATNET Asia, CAPSA-UNESCAP; a.varma@uncapsa.org)



GFAR

The Voice of Civil Society in Climate Smart Agriculture

Agriculture is a sector that is highly vulnerable to climate change. We need to think in terms of how this impacts livelihoods and what this means to our global food systems. Evidence suggests that in the next 40 years, meeting our demands for food will change drastically.

In finding solutions, the Global Forum on Agricultural Research (GFAR) has worked to ensure that civil society is actively engaged in dialogues on climate change and agriculture. Starting at the First Global Conference on Agricultural Research for Development (GCARD1) in France in 2010, GFAR has facilitated the voices of civil society in the development of plans and actions on Climate Smart Agriculture (CSA). This process



Women farmers harvesting fruits and vegetables in Caucasus and Central Asia

has seen civil society actors joining experts from all sectors at CSA meetings held in Johannesburg, Hanoi, The Hague, New York and most recently to the third Global Science Conference on Climate Smart Agriculture in Montpellier, France on 18-20 March, 2015.

More than 600 researchers and 150 stakeholders and policy makers from 75 countries and 5 continents convened at the meeting in Montpellier to hammer out a declaration that gives us a mode for action. All agreed that Climate Smart Agriculture must be the framework for pulling synergies together – leading to innovative and comprehensive actions, which will result in greater efficiency at local, regional and global levels.

We need to be thinking of the small-scale farmers, those who fill the breadbaskets and the rice bowls. We need to focus on the contribution of family farming and empower them. The key role of National Agricultural Research and Innovation Systems from low-income countries to generate knowledge and partnerships for CSA solutions needs to be emphasized - as demonstrated by the recently published scoping study on climate change policies in fifteen countries in sub-Saharan

Africa commissioned by Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN).

Our future and the future of Climate Smart Agriculture rely on policy, institutional and financing decisions. It is essential that there is an active and organized contribution from the entire community of researchers, policy makers, CSOs and farmer organizations. GFAR has been a founding partner in the Global Alliance on Climate Smart Agriculture (GACSA). Through bringing together an active and organized research community along with civil society members, GFAR has been instrumental in forming an Enabling Environment Action Group of the Global Alliance on Climate Smart Agriculture.

If agricultural innovation systems are to achieve what is required of them we must build more effective collective actions towards large-scale development impacts. Partnership together with collective action will get the job done better and faster.

For this, we need a revolution in agricultural research for development, to mobilize, reorient, strengthen and bring coherence to systems generating and sharing new knowledge around the world, to overcome systematic failings and efficiently lead to development outcomes for the poor. This revolution needs to be farmer-centered and farmer-led. The most vulnerable smallholder producers need to be the central focus of attention.

Collective action must draw on already established agricultural research for development networks that share the vision of the Global Alliance on Climate Smart Agriculture such as the Global Research Alliance on Greenhouse Gases (GRA), and the CGIAR. The work of this research for development network, adding value to national institutions and systems, will help tremendously in meeting the challenges of Climate Smart Agriculture.

GFAR triggers multi-partner actions and solutions to the challenges of our time. It is a catalyst for change that builds, supports and encourages collective actions and synergies among all those involved in agriculture research, extension, education and enterprise.

(Source: F.J.C. Chandler, Program Delivery Manager, GFAR; fiona.chandler@fao.org)



AVRDC

Training Workshop on Tomato Variety Evaluation

Improved varieties drive the growth of the vegetable industry, but who knows which varieties are the best? For a farmer, a variety has to yield well and get a good price. But the value chain doesn't end at the farm gate, and characteristics like good shelf life and nutritional quality are also critically important. The World Vegetable Center (AVRDC) United States Agency for International Development (USAID) training workshop on "Tomato variety evaluation for quality traits and postharvest research techniques, experimental design and data analysis" sought to address this problem. The week-long workshop from 9-12 February, 2015 involved 25 participants from Bangladesh,



Participants of training workshop in Cambodia

Nepal, Cambodia, Pakistan, Thailand and India and was held at the Royal University of Agriculture in Phnom Penh, Cambodia.

Organized by Jun Acedo, leader of the Asian component of the USAID Postharvest project, the course aimed to give the Center's national partners the skills to conduct more comprehensive variety evaluations for tomato, an important crop across Asia. The national project teams from Bangladesh, Nepal and Cambodia made presentations on their national postharvest situations. They were joined by a team from the USAID-funded Agricultural Innovations Program in Pakistan.

AVRDC tomato breeder Peter Hanson provided training on varietal trials and how to rank performance, while nutritionist Ray-yu Yang discussed quality evaluation of varieties. Biometrician Didit Ledesma helped participants understand the complexities of effective trial design and data analysis. Lectures were followed by field work at the Kbal Koh Vegetable Research Station, where participants got to do hands-on varietal evaluation work.



AVRDC tomato breeder Peter Hanson (left) provides training on rating variety trials

Other resource persons provided information on improved postharvest technologies. For instance, Jate Sathornkich from the Horticulture Innovation Lab at Kasetsart University in Thailand introduced coolbot technology and its application to reducing postharvest losses. Warwick said that “Postharvest losses are a critical problem worldwide” and “Together, the participants in this course explored common approaches and solutions they can apply in their home countries”.

(Source: Maureen Mecozzi, Head, Communications and Information, AVRDC, maureen.mecozzi@worldveg.org)



ICRAF

Consultation Workshop on Present Status and Future Prospects of Agroforestry in Nepal

A consultation workshop on “National Agricultural Policy for Nepal” was jointly organized by the Ministry of Agricultural Development (MOAD), Ministry of Forests and Soil Conservation (MFSC) of the Government of Nepal, World Agroforestry Centre (ICRAF) and the Asia Network for Sustainable Agriculture and Bio-resources (ANSAB) at Hotel



Participants with Hon'able Minister of Forests and Soil Conservation, Mr Mahesh Acharya

Himalaya, Kathmandu, Nepal on 26-28 March, 2015. The Hon'ble Minister of Forests and Soil Conservation, Mr Mahesh Acharya inaugurated the workshop.

Dr Javed Rizvi, Director, South Asia, ICRAF facilitated the session to identify specific themes requiring immediate attention and that need to be included as priorities in the national policy. These include helping Nepalese farmers develop incomes from commercial agroforestry; strengthening the country's food security through the use of multi-purpose trees; improving the quality of planting material and germplasm; developing sources of bio-energy; fighting land degradation and improving soil health; and developing agroforestry models suited for Nepal's different ecological zones.

Participants realized that Nepal needs strengthening agroforestry research and development (R&D) and its application in the areas of classification and documentation of agroforestry practices for various agro-ecological zones, developing new and fine

tuning of existing good practices and scaling-up of promising agroforestry technologies for enhancing trees, shrubs, crops, livestock and fisheries production and productivity. These areas together with capacity strengthening would contribute to the socioeconomic development and food, nutritional, energy and environmental security of the country.

Participants recognized the importance of indigenous practices and traditional knowledge, existing policies and initiatives on agroforestry from various government, non-government, farmers' organizations and private sector. In order to have a more focused and coordinated strategy and approach to promote agroforestry among various actors and stakeholders, participants agreed to develop a National Agroforestry Policy for Nepal. It is expected that the policy will encourage the easing of regulatory constraints and will facilitate the development of feed and fodder resources, income generation, food, nutritional and energy security, germplasm conservation and production of quality planting material, arresting land degradation and restoration of soil health, and the development of appropriate agroforestry models for different agro-ecological zones. Furthermore, the policy will contribute to the environmental security. Appreciating the development of the National Agroforestry Policy of India and ICRAF's contributions to it, securing assistance from the international agencies, such as ICRAF, and the Indian experience could be useful to this initiative.

The "Kathmandu Declaration on Agroforestry" was released on 28 March, 2015 at Kathmandu, Nepal by Hon'ble Hari Prasad Parajuli, Minister of Agricultural Development, Government of Nepal, in the closing session of the Workshop.

(Source: Dr Javed Rizvi, Regional Director, South Asia, ICRAF, New Delhi; j.rizvi@cgiar.org)

New APAARI Publications

- 12th Asian Maize Conference and Expert Consultation on Maize for Food, Feed, Nutrition and Environment Security: Proceedings, 2015
- Expert Consultation on Assuring Food Safety in Asia-Pacific: Proceedings and Recommendations, 2015
- APAARI Constitution, Fifth Edition, January, 2015
- APAARI Flyer (Revised), 2015
- 13th APAARI General Assembly Meeting (GAM): Proceedings, 2014



Meeting with Director, APSA

Dr Raghunath Ghodake, Executive Secretary, APAARI met with Dr Tom Burns, Director, APSA at APSA office in Bangkok on 19 January, 2015 to introduce himself as the new Executive Secretary of APAARI.

In the meeting, Dr Ghodake discussed with Dr Burns regarding private sector representation on the APAARI Executive Committee as per the decision of the APAARI General Assembly in 2014 to foster closer collaboration with the private sector. It was proposed at the General Assembly meeting that APSA will take a seat on the APAARI Executive Committee in 2015 initially as an observer.

Since both these associations are reciprocal members of each other for many years, Dr Ghodake also took this opportunity to discuss possible collaboration on issues of relevance to both the organizations.



Dr Raghunath Ghodake meets Dr Tom Burns, Director, APSA

Director General, CIMMYT

Dr Martin Kropff has joined as the new Director General of CIMMYT w.e.f. 1 June 2015. Before joining CIMMYT, Martin Kropff was Rector Magnificus and Vice-Chairman of the Executive Board of Wageningen University and Research Center (Wageningen UR) in the Netherlands. He obtained his Bachelor's and Master's degrees in biology at Utrecht University and a Ph.D.



in agricultural and environmental sciences at Wageningen University. In 1984, he was appointed Assistant Professor at Wageningen University. From 1990 to 1995, Dr Kropff was the Systems Agronomist at the International Rice Research Institute (IRRI) in the Philippines. In 1995, he returned to the Netherlands and served successively as Full Professor of Crop and Weed Ecology, Scientific Director of the University's C.T. de Wit Graduate School for Production Ecology and Resource Conservation and Director General of the Plant Sciences Group. In 2005, he joined the Executive Board of Wageningen UR. Dr Kropff played a key role in raising Wageningen UR's profile worldwide. In 2013, he joined the CGIAR Consortium Board, where he has worked to improve cohesion and develop a new CGIAR strategy.

Executive Chairman, BARC

Dr Abul Kalam Azad, a renowned agricultural scientist joined Bangladesh Agricultural Research Council (BARC) as Executive Chairman on 25 January, 2015. Prior to this, he served in different capacities at Bangladesh Agricultural Research Institute (BARI), Gazipur and BARC, Dhaka. He began his career as Scientific Officer (SO) at BARI in 1983 and joined as the Principal Scientific Officer at BARC in 2005. He also served as the Director of the SAARC Agriculture Centre (SAC) in Dhaka. Dr Abul Kalam Azad visited several countries in his professional capacity.



Born in 1961 in Gazipur District, Dr Azad obtained B.Sc. (Ag) in 1981 from the Bangladesh Agricultural University, Mymensingh and M.Sc. (Ag) in Horticulture in 1985 from the same University. He obtained Ph.D. on 'Genetics and Propagation of Horticultural Crops' from the University of Southampton, United Kingdom in 1999. He has more than 50 publications in national and international journals and books to his credit.

Vice Chancellor, CAU

Dr M. Premjit Singh joined recently as the Vice-Chancellor, Central Agricultural University, Imphal. He obtained M.Sc. (Life Sciences) in 1981 from Jawaharlal Nehru University, New Delhi, M.Phil. and Ph.D. Degree in Zoology from Himachal Pradesh University, Shimla. He Started his career as Assistant Professor (Entomology) in 1986 in erstwhile Manipur Agricultural College, Imphal and became Associate Professor in 1990, Professor in 1998 and Director of Extension Education in 2009 in Central Agricultural University (CAU), Imphal. He also served as Registrar, Deputy Registrar (Academic), Assistant Registrar (Academic) and Research Coordinator (Oilseed Crops) in CAU, Imphal. He is the recipient of Young Scientist Award conferred in 1992 by the Department of Science and Technology (DST), New Delhi. He supervised 5 Ph.D. and 10 M.Sc. (Ag.) students and attended 8 international conferences, 77 national conferences and 5 training courses. He has published 99 research papers, 55 research communications, 7 books, 11 technical bulletins and many popular articles. He is the Chief Editor of CAU Farm Magazine and CAU Kisan Diary published in 7 languages. Dr Singh has developed/identified 14 novel technologies/concepts/methodologies in the area of plant protection.



Executive Director, NARC

Dr Y.R. Pandey recently joined as Executive Director of Nepal Agricultural Research Council (NARC), Nepal. Dr Pandey has been working as Senior Scientist (Horticulture) in this organization since 2006. Prior to his appointment as executive director, he served as Director Planning and Coordination, Regional Director, Chief of Horticulture Research Division in NARC, and Horticultural Development Officer under the Department of Agriculture, Nepal. He served as principal investigator of various national and international agriculture research and development projects in the past. He has published more than 30 research papers in national and international refereed journals and contributed to more than 10 books and book chapters related to horticulture research and development.



He obtained his B.Sc. Ag. (Hons.) from Haryana Agricultural University, Hisar, India in 1983, M.Sc. (Ag.) Horticulture from Kasetsart University, Bangkok, Thailand in 1997 and Ph.D. from Tribhuvan University, Nepal in 2014.

Director, SAC

Dr S.M. Bokhtiar has joined as Director of SAARC Agriculture Centre (SAC), Dhaka, Bangladesh on 14 May, 2015. Dr Bokhtiar served at Bangladesh Sugarcane Research Institute (BSRI) in different capacities as Scientific Officer, Senior Scientific Officer, Head of the Division, Soils & Nutrition and later, as Principal Scientific Officer at Natural Resources Management Division and Chief Scientific Officer at BARC.



He obtained B.Sc. Ag. (Hons.) degree from Bangladesh Agricultural University in 1985, M.Sc. in Soil Science from Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Bangladesh in 1999 and Ph.D. degree in 2006 from the United Graduate School of Agricultural Science, Ehime University, Japan. He worked for two years as Post-Doctoral Research Fellow at Guangxi Academy of Agricultural Sciences, Guangxi, China.

Dr Bokhtiar published 59 research papers in national and international journals, a book "Abstract of Twenty Five Years Sugarcane Research" and a booklet "Integrated Nutrient Management for Sugarcane Ratooning". He attended several international seminars/workshops/training programs and visited several countries.

Acting Executive Director, PCAARD

Dr Reynaldo V. Eborá is the Acting Executive Director of the Philippine Council for Agriculture Aquatic and Natural Resources Research and Development (PCAARD) a planning council of the Department of Science and Technology (PCAARRD-DOST). He is responsible for leading the Philippine National Agriculture, Aquatic, and Resources Research System in the formulation of framework, thrusts and programs for the development of the agriculture, aquatic and natural resources sectors, as well as generation and allocation of funds for this purpose.



Prior to joining PCAARRD, Dr Eborá was a Research Associate Professor and Director of the National Institute of Molecular Biology and Biotechnology – University of the Philippines Los Baños (BIOTECH – UPLB). He was part of the team that has developed several technologies which were protected either by patents or trademarks. He has presented and co-authored over 100 scientific and technical papers related to biotechnology, biosafety and intellectual property management.

Dr Eborá obtained his B.S. Agriculture degree and M.S. in Entomology at the University of the Philippines Los Baños (UPLB). He pursued his Ph.D. in Entomology at Michigan State University, Michigan, USA. He also completed an

International Post-Graduate University Course in Microbiology at Osaka University in Osaka, Japan, and his post-graduate studies as Visiting Fellow on Intellectual Property Management/Technology Transfer at ISAAA AmeriCenter/Dept. of Plant Breeding, Cornell University, Ithaca, New York, USA.

Director, SLCARP

Prof Arachchi Rollage Ariyaratne has joined as the Director/Secretary, Sri Lanka Council of Agricultural Research Policy (SLCARP), Sri Lanka on 4 March, 2015. He has been Associate Professor, Teaching and Research, Department of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka since 1987. He obtained his B.Sc. (Ag.) from the University of Sri Lanka, Peradeniya in 1978, and M.Sc. (Agricultural Engineering) in 1985 and Ph.D. (Agricultural Engineering) in 1987 from Texas A&M University, College Station, Texas, USA.



New APAARI Staff

Dr Vilasini Pillai joined as APCoAB Coordinator at Bangkok on 30 March, 2015. She has 20 years of experience in agriculture biotechnology at the Malaysian Agricultural Research and Development Institute (MARDI) in the area of genetic engineering in crop plants. She obtained her Ph.D. from the University of Nottingham, the UK. She also served in the Ministry of Natural Resources and Environment, Malaysia in the area of biosafety and in the Ministry of Science, Technology and Innovation assisting in developing policies and guidelines relevant to the development of science, technology and innovation in Malaysia.



APAARI New Members (2015)

New Associate Members:

- International Potato Center (CIP), Lima, Peru
- International Center for Biosaline Agriculture (ICBA), Dubai, United Arab Emirates
- International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal
- Crops for the Future (CFF), Jalan Broga, Malaysia
- Center for International Forestry Research (CIFOR), Bogor, Indonesia
- Junagadh Agricultural University (JAU), Junagadh, India

Upgraded Associate Member:

- Central Agricultural University (CAU), Imphal, India

New Affiliate Member:

- University of Agricultural Sciences (UAS), Dharwad, India

Forthcoming APAARI Meetings/Workshops

- Dialogue on “Adoption and Promotion of Bt Brinjal in the Asia-Pacific” will be organized by APCoAB/APAARI in collaboration with BARC, BARI, ISAAA and ABSPII in Dhaka, Bangladesh in November, 2015.
- APCoAB/APAARI will be co-organizing a Workshop on “Development of Communication Strategies for Adoption of Agri-biotechnology in Asia” in partnership with ISAAA and MABIC in Dusit Island Resort, Chiang Rai, Thailand on 28-29 September, 2015.
- The High Level Policy Dialogue on “Investment in Agricultural Research for Development (AR4D) in the Asia-Pacific Region” will be jointly organized by APAARI, ACIAR, FAO RAP, GFAR and IFPRI at the Rama Gardens Hotel, Bangkok, Thailand on 8-9 December, 2015.
- The Training Workshop on “Planning, Monitoring and Evaluation Towards Measuring Outcomes and Impacts” will be organized jointly by APAARI, ACIAR and GFAR in Malaysia during 3-7 August, 2015.
- GFAR Assembly for Shaping the Future of Agricultural Research and Innovation will be held at Bangkok, Thailand on 24-26 August, 2015.
- Regional Consultation on “Agroforestry: The Way Forward” will be organized jointly by ICAR, TAAS, ICRAF and APAARI at New Delhi on 8-10 October, 2015.

Forthcoming International Conferences/Events

- 23rd International Grassland Congress (IGC 2015), 20-24 November, 2015, New Delhi.
- ICAB 2015: 3rd International Conference on Agriculture and Biotechnology, 9-10 November, 2015, Jinju, South Korea.
- Fourth International Conference on Climate Change Adaptation, 22-23 November, 2015, Colombo, Sri Lanka.
- Second International Conference on Agriculture, Animal Sciences and Aquaculture, 28-29 December, 2015, Colombo, Sri Lanka.
- The 10th International Symposium AgroEnviron (AgroEnviron 2016), 23-27 May, 2016, West Lafayette, Indiana, USA.

APAARI Participation in Other Fora/Meetings

Dr Raj Paroda, Senior Adviser, APAARI

- ICRISAT CRP Grain Legumes Consultation Meeting (as Chair of Independent Advisory Committee) at Addis Ababa; 27-29 March, 2015.
- Cereal System Initiative South Asia (CSISA) Phase III Planning Workshop (as a Senior Resource Person) at Singapore; 1-2 May, 2015.
- Brainstorming Workshop on “Upscaling Quality Protein Maize for Nutritional Security” (as Co-Chair of the Organizing Committee) at NASC, New Delhi; 20-21 May, 2015.

Dr Raghunath Ghodake, Executive Secretary, APAARI

- Third SATNET Policy Dialogue on “The Role of Technology Transfer in Agriculture for Sustainable Development Outcomes” at Bogor, Indonesia; 10-11 February 2015.
- CRP DC Phase II Planning Meeting at Addis Ababa, Ethiopia; 18-19 March, 2015.
- 13th CG Fund Council Meeting at Bogor, Indonesia; 28-29 April, 2015.
- Asia-Pacific Workshop on “Climate Smart Agriculture: A Call for Action” at Bangkok, Thailand; 18-20 June, 2015
- EU-PACIFIC Bi-regional Policy Dialogue on “Moving Further Towards a Policy Dialogue in Science, Technology and Innovations (ST&I) – Science Diplomacy to Serve Policy Demands” at Brussels, Belgium; 23-24 June, 2015

Dr Bhag Mal, Senior Consultant, APAARI

- Workshop of TAP Capacity Development (AIS) Expert Group Workshop, CIRAD, Montpellier, France; 19-20 March 2015.
- Brainstorming Workshop on “Upscaling Quality Protein Maize for Nutritional Security” at NASC Complex, New Delhi; 20-21 May, 2015.
- Workshop on Bioversity – ICAR Collaborative Activities, NASC Complex, New Delhi; 12 March 2015.

Executive Committee

<i>Chairman</i>	:	Mr Anan Suwannarat
<i>Vice-Chairman</i>	:	Dr Abul Kalam Azad
<i>Members</i>	:	Mr David Shearer Dr Reynaldo Eborá Prof Arachchi Ariyaratne Mr Uraia Waibuta Dr Mark Holderness Mr Tony Simons Dr Muhammad Musa Ms Esther Penunia
<i>Executive Secretary</i>	:	Dr Raghunath Ghodake

All queries relating to APAARI Newsletter be addressed to:

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