



# APAARI

## Newsletter

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Agricultural Research Institutions

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### EDITORIAL COMMITTEE

- Dr. Ravi Khetarpal
- Ms. Mellissa Wood
- Ms. Celilu Bitong
- Ms. Martina Spisiakova

### Editorial

#### APAARI continues its march with renewed vigour

Having taken over as the Executive Secretary of APAARI on 1 August 2017, I got an opportunity to serve the Association which was steered by stalwarts of agriculture in the region. I am pleased to share that during the second half of 2017, APAARI has further geared up its activities for marching ahead on its mission of strengthening agri-food research and innovation systems in the Asia-Pacific Region (APR).

Since the last issue of APAARI Newsletter, APAARI has made significant accomplishments for the benefit of its members and partners. The new APAARI website that was launched in July 2017 has been refined based on the feedback of the Executive Committee Members, and the Knowledge Management (KM) and Communication Officers of members and partner organizations.

Three issues of the APAARI Network Highlights were also disseminated. Besides, the stakeholder mapping exercise was completed, which became a guiding source for the membership drive and engagement with new potential partners. A new KM Coordinator was also selected and joins in January 2018.

APAARI's Executive Committee Meetings (ECM) of the year was held on 14 July 2017 and 12 November 2017 in Bangkok, Thailand. The members appreciated the revised work plan for the biennium 2017-2018, updates on APAARI membership and partnership, new initiatives in KM, efforts to strengthen the Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB) by including bioresources in its gamut of activities, financial reform and budget forecast, as well as the refreshed way forward for the Association. It was also decided in the ECM of November that from now onwards, APCoAB will be known as the Asia Pacific Association on Agricultural Biotechnology and Bioresources.

With the joining of a new APCoAB Coordinator – Dr. Rishi Tyagi – APAARI

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hopes to intensify activities under the Consortium for addressing the thematic areas more efficiently. Engagement with the private sector is considered important and CropLife Asia (Singapore) was invited to attend the ECM. The Indian Institute of Technology, Bombay (Mumbai) joined as the new affiliate member of APAARI, increasing the total number of members to 71.

A Regional Expert Consultation on Underutilized Crops for Food and Nutritional Security in Asia and the Pacific was organized on 13-15 November 2017 by APAARI and the Council of Agriculture (COA), Taiwan, in collaboration with AVRDC – The World Vegetable Center, Bioversity International, Crops for the Future, International Center for Agricultural Research in the Dry Areas (ICARDA), and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).

The meeting increased awareness of the role and value of underutilized bioresources that have potential for food diversification to ensure improved food and nutrition in Asia-Pacific. It provided a platform for sharing of experiences and lessons to accelerate the use of underutilized plants as crops for the future. Furthermore, it assessed the R&D status on priority crops and policies that are needed to promote the use of these crops in the region. A report will be shared with all of you soon!

APAARI also organized and moderated the Webinar with Universities on Capacity Development for Agricultural Innovation System- Bringing System-wide Change in Asia-Pacific. It was organized under the Tropical Agriculture Platform (TAP) and supported by the Food and Agriculture Organization of the United Nations (FAO), Global Confederation of Higher Education Associations for Agricultural and Life Sciences (GCHERA) and Global Forum for Agricultural Research (GFAR). Forty-three participants representing the higher education sector actively contributed to the discussion focused on addressing the need to equip agricultural graduates and university staff with soft skills (“functional capacities”). It is envisioned that such skills will enable them to better facilitate innovation processes, thereby, tackle the complex challenges agriculture is facing today and will face in the future.

It is heartening to share that APAARI, in partnership with the International Food Research Institute (IFPRI), launched the project on Agriculture Science Technology Indicators (ASTI), funded by the Australian Center of International Agricultural Research (ACIAR). The project which was conceived by Dr. Raghunath Ghodake, the former Executive Secretary and is managed by APAARI-based Dr. Norah

Omot who has recently been appointed as the ASTI Project Coordinator, aims to guide agricultural research and national investment decisions through policy interventions. An Inception Workshop involving countries from Southeast Asia and the Pacific was organized from 12-14 December 2017 in Bangkok, Thailand. The participants, who are the focal points in each project country, were apprised of the philosophy of ASTI, which aims at institutionalization of ASTI in the member countries through data collection, analysis, policy outreach and capacity building. It is hoped that APAARI will continue to grow faster with new projects being secured and implemented, and management reforms of the Secretariat and its governance, all of which are underway. Plans are also being made to ensure increasing focus of APAARI to strengthen agri-food research and innovation systems in the Pacific island countries. APAARI remains committed to serve its members in APR through renewed force and vigour.

I invite you all to visit our new website and provide further comments for improvements:  
[www.apaari.org](http://www.apaari.org)



Dr. Ravi Khetarpal  
Executive Secretary

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### APAARI 1<sup>st</sup> Executive Committee Meeting for 2017, Bangkok, Thailand



*Participants of the 1<sup>st</sup> APAARI Executive Committee Meeting for 2017, Bangkok, Thailand*

APAARI's first Executive Committee Meeting (ECM) for the year 2017 was held on 14 July 2017 in Bangkok, Thailand.

It is the first meeting under the Chairmanship of Dr. Yusuf Zafar, Chairman, APAARI, and Chairman of the Pakistan Agricultural Research Council (PARC). The meeting was attended by 21 participants, which included the members of the Executive Committee, APAARI staff and special invitees. The meeting was presided by Dr. Bhag Mal,

Ex-Interim Executive Secretary, APAARI. Key agenda items included: APAARI Progress Report November 2016 – June 2017; Biennial Work Plan 2017-2018, Income and Expenditure Plan 2017; and the latest update on ASTI project. The launch of three new APAARI publications was announced by Dr. Yusuf Zafar, namely: APAARI Strategic Plan 2017-2022, Proceedings of the Expert Consultation on Best Practices in Agri-food Innovations in Asia and the Pacific, and Investments in Agricultural Research for Sustainable Development in Asia and the Pacific: Country Status Reports.

Some of the highlights of the meeting were APAARI membership and payment status, Audit Report and Audited Financial Statements January-December 2016, project ideas for APAARI governance and development, the launch of the new APAARI website, membership and representation of non-governmental organizations (NGOs), farmers' organizations (FO's) and the private sector in APAARI, expansion of the APAARI Network to Pacific Island Countries, and the tenure of APAARI Executive Secretary. To download the proceedings, please visit this link: [http://www.apaari.org/web/wp-content/uploads/downloads/2017/Proceedings\\_ECM14\\_July\\_2017\\_Final.pdf](http://www.apaari.org/web/wp-content/uploads/downloads/2017/Proceedings_ECM14_July_2017_Final.pdf)

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## APAARI 2<sup>nd</sup> Executive Committee Meeting for 2017 Bangkok, Thailand



*Participants of the 2<sup>nd</sup> APAARI Executive Committee Meeting for 2017, Bangkok, Thailand*

APAARI organized its 2<sup>nd</sup> ECM under the stewardship of newly appointed Executive Secretary (ES), Dr. Ravi Khetarpal, on 12 November 2017. APAARI Chairman, Dr. Yusuf Zafar, officially launched the ASTI project. He stressed the importance of APAARI-IFPRI collaboration through this ACIAR-funded project. The outcomes would contribute to the development of congenial policies and advocacy tools, and establishment of a resource group to facilitate dialogue on enhanced investments in agri-food innovations in Southeast Asian countries. The meeting highlighted: the action taken report based on the recommendation from

the previous ECM held on 14 July 2017; ES tenure; membership fee status; work plan; as well as the income and expenditure for 2018. It was emphasized that the APAARI Secretariat should have a transparent financial management system to meet international standards. Key conclusions of the stakeholder mapping exercise were presented, in particular, its contribution to understanding, assessing, targeting and prioritizing stakeholders for future engagement, partnerships and joint activities. A new dimension was also given to APCoAB as its presence in Asia-Pacific should increase and activities on biotechnology and bioresources should enhance.

Presentations were also made by the EC members, particularly introducing new areas of interest to APAARI. Critical issues and views were also addressed by Dr. Raj Paroda, former ES of APAARI, for strengthening APAARI programmes. He particularly emphasized the need to strengthen existing partnerships with CG centers, organize expert consultation meetings to scope new niches, and foster public/private partnerships, as well as to pursue aggressive membership drive, and revisit Suwon and Tsukuba declaration to revive the APAARI network and climate change actions.

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## SAARC Regional Consultation on 'Facilitating the Use of Microbial Pesticides in South Asia'



*APAARI participated in SAARC Regional Consultation on Facilitating the use of microbial pesticides in South Asia*

SAARC Agriculture Centre (SAC), Bangladesh, the Centre for Agriculture and Bioscience International (CABI)-South Asia, ICAR-National Bureau of Agricultural Insect Resources, Bengaluru, organized the Regional Consultation on 'Facilitating the use of microbial pesticides in South Asia' from 21-23 August 2017 in Bengaluru, India. APAARI participated in the meeting which stressed the importance of the utilization of microbial pesticides in SAARC countries; challenges with IPR, regulatory hurdles, political interference and duplication of research within and across the countries. A call was also made to develop climate-resilient biocontrol agents and genetic



improvement of biocontrol agents. The need for innovative funding and partnership strategy was emphasized to have well-knit information opportunities for environmentally-friendly biopesticides, which be better utilized by SAARC. Some success stories about the research carried out in India in dealing with microbial pesticides were shared. Constrains, such as difficulty in rearing of host larvae, problems in fermentation, shelf-life and laborious registration requirement, were also discussed. New approaches including the combination of microbials with anthropod bioagents and symbionts were suggested. The Book of Abstract and e-Publication were also released during the Consultation.



### Regional Policy Dialogue on Scaling Conservation Agriculture for Sustainable Intensification (CASI) in South Asia

APAARI participated in the regional dialogue jointly organized by the Trust for Advancement of Agricultural Sciences (TAAS) and the International Maize and Wheat Improvement Center (CIMMYT), and supported by ACIAR from 8-9 September 2017 in Dhaka, Bangladesh. The meeting organizers also collaborated with national agricultural research systems from across South Asia, CG institutes, Australian organizations, government officials, researchers, and policy makers. The meeting focused mainly on sharing country experiences; identification of policy changes; institutions and regulations; recent advances in conservation agriculture in South Asia; current status on scaling CASI; business models and entrepreneurship. For downloading the Proceedings and Policy Brief on CASI, please visit APAARI website links: <http://www.apaari.org/web/conservation-agriculture-proceedings/>; <http://www.apaari.org/web/conservation-agriculture-policy-brief/>



### FAO Regional Meeting on Agricultural Biotechnologies in Sustainable Food Systems and Nutrition in Asia-Pacific

FAO organized a “Regional Meeting on Agricultural Biotechnologies in Sustainable Food Systems and Nutrition in Asia-Pacific”, hosted and co-organized by the Government of Malaysia, from 11-13 September 2017 in Kuala Lumpur, Malaysia. The objective was to create space for clarifying the needs and concerns in relation to biotechnologies, underlining the needs for maintaining a

multi-sectoral approach that covers crop, livestock, forestry and fishery sectors. A wide spectrum of available biotechnologies, including microbial food fermentation, tissue culture in plants, reproductive technologies in livestock, use of molecular markers, genetic modification and other methods were examined by the participants experienced in public sector biotechnology work from across the region, along with those from the private sector and civil society. Representatives from governments, intergovernmental organizations and non-state actors, the civil society and private sector, research/academic institutions and cooperative/producer organizations participated in the meeting.



### Capacity Development for Agricultural Innovation Systems (CDAIS), Marketplace in Bangladesh

FAO in collaboration with the Bangladesh Agricultural Research Council (BARC), Ministry of Agriculture, organized a 'Marketplace' under the Capacity Development for Agricultural Innovation Systems Project (CDAIS) on 13 September 2017 in Dhaka, Bangladesh. CDAIS is a global project funded by the European Union and is implemented by FAO, Agrinatura, and other partners, in eight countries including Bangladesh.

The project objective is to improve the capacity of value chain actors to promote agricultural innovation and thereby enhance rural livelihoods through continuous learning. The Bangladesh Marketplace facilitated the alignment of initiatives on capacity development (CD) for Agricultural Innovation Systems (AIS) between development partners, CD service providers (supply side), and CD needs of niche partners/value chain actors (demand side).

APAARI participated in the event and shared a poster showing its contribution to TAP and alignment with CDAIS activities.



*Participants of the CDAIS, Marketplace, Dhaka, Bangladesh*

Discussions took place on APAARI's possible support to Bangladesh value chains in mango, fish (Tilapia and pangus), poultry, pineapple and tomato, and respective farmer's groups or niches.



### Global Forum for Rural Advisory Services (GFRAS) Steering Committee Meeting

APAARI participated in the 8<sup>th</sup> GFRAS Annual Steering Committee meeting in Townsville, Australia as a representative of GFAR from 14-15 September 2017. The event was co-organized by the Australasia-Pacific Extension Network (APEN). It focused on rural advisory services (RAS) and empowering youth for balanced transformation in rural and urban communities.

The meeting aimed to identify and discuss: roles, challenges and opportunities for youth to become meaningful actors in balanced and inclusive rural and urban transformation; relations between RAS and youth for inclusive and sustainable rural-urban linkages; changes in policies and the capacities of RAS needed for both RAS and youth to fulfil their roles; and the strengthening of capacities of RAS networks through peer exchange and learning.



### Capacity Development for Agricultural Innovation Systems (CDAIS) Project-Global Consultation Meeting 6

APAARI participated in the Global Consultation Meeting 6 in Vientiane, Lao People's Democratic Republic (PDR) from 18-19 September 2017. The meeting shared country progress and lessons learned from the implementation of activities. Discussions focused on the country innovation niches that were created at the beginning of the project.

Project managers, national innovation facilitators (NIFs) and other representatives of these niches travelled to Lao PDR from as far as Angola, Burkina Faso, Ethiopia, Guatemala, Honduras and Rwanda. Bangladesh and Lao PDR represented the Asia-Pacific region.

All country teams made poster presentations on the alignment of their work with national strategies, explained the linkages and roles of collaborating actors, shared early progress in the development of functional capacities of their niches, as well as emerging success stories.

The meeting was also a good opportunity to share some of the issues that country teams are facing in the

implementation of CD for AIS, such as lack of commitment and participation in the niches, physical difficulties to reach the niche locations, and understanding the links between different roles, tools and methods.

The participants also explored how to feed project results and the Common Framework developed under the CDAIS project into policy dialogue. All TAP partners attended the presentations and APAARI presented its role and purpose within TAP.



*Participants of the Global Consultation Meeting 6, Vientiane, Lao-PDR*



### Sustainable Agro Food Business Forum (SABF)

APAARI attended the Sustainable Agro Food Business Forum (SABF) held from 26-27 September 2017 in Bangkok, Thailand. The forum aimed to identify ways to establish a food value chain from producer to the end consumers, and develop a roadmap to establish a Sustainable Agro Food Platform. It also acknowledged the importance of agriculture and the role of food to mobilize micro, small and medium enterprises (MSMEs) food producers, as well as smallholders to achieve the Sustainable Development Goals (SDGs). The dialogue led to the establishment of the Sustainable Agro Food Platform. The multi-stakeholders involved included policymakers, smallholders, SE and MSME business sectors, international agencies, civil society organizations and academics.



### Committee on World Food Security (CFS) and GFAR 44<sup>th</sup> Annual Plenary Meeting

The Committee on World Food Security (CFS) 44<sup>th</sup> Annual Plenary Meeting took place in FAO Rome, Italy, from 9-13 October 2017. This inclusive international and intergovernmental platform mobilizes stakeholders to work together to ensure food security and nutrition for all. The event was supported by GFAR, which also provided a two-day training for social reporters to cover the meeting.

APAARI participated in the Social Reporting Training and reported on side events. This was through creation of blog posts, and promotion of the event on various platforms, such as Facebook, Twitter and LinkedIn. The event, organized several discussions ranging from climate change to the role of youth and women in agri-food research and innovation systems, food security and nutrition, forestry, and food diversity.



*Social Media Reporters of the Committee on World Food Security CFS44*



### The Crawford Fund Master Class in Agricultural Research Leadership and Management

The 2<sup>nd</sup> Master Class in Agricultural Research Leadership and Management" course took place from 29 October to 4 November 2017, in Penang, Malaysia. APAARI nominated ten participants from nine countries, namely, Md. Aziz Zilani Chowdhur, Bangladesh; Dr. M. Kamal Sheikh, Pakistan; Dr. Anand Kumar Gautam, Nepal; Mrs. I Kalubowila, Sri Lanka; Dr. Procy B. Sobrevinas, Philippines; Mr. Tekini Nakidkida, Fiji; Dr. Sujoy Rakshit, India; Dr. Prasanna Kumar Pathak, India; Dr. Michael Theophilus Dom, Papua New Guinea, and Mr. Chalong Kerdsri, Thailand. The organizers met major expenses and APAARI's commitment for this training course for all ten participants was USD 5,000.



*2<sup>nd</sup> Crawford Fund master class participants*

The programme identified new areas of knowledge that are changing the way research is conducted, particularly in developing countries. In addition to courses on cutting edge technical topics such as molecular genetics, biodiversity and biosecurity, the Fund has conducted Master Classes on intellectual property, science communication, the management of technology transfer, and environmentally-oriented areas such as sustainable resources management.

### Individual Development Plans

A feature of the Master Class was the opportunity for participants to create an Individual Development Plan. This process, including post-workshop follow-up was facilitated by the Master Class leader. It is anticipated that a strong alumni network can develop, as participants regularly share their progress as a result of participating in the Master Class.



### WTO/STDF Working Group Meeting held on 30-31 October 2017

The Standards and Trade Development Facility (STDF) is a global partnership that supports developing countries to implement international food safety, animal and plant health standards, guidelines and requirements, and act as a coordination and knowledge platform. It was established by FAO, the World Organization for Animal Health (OIE), World Bank, World Health Organization (WHO) and the World Trade Organization (WTO).

The working group meeting was attended by several representatives from various countries, international organizations and developing country experts. Some of the topics that were raised in the agenda included: operation of the facility, selection of Sanitary and Phytosanitary Measures (SPS) experts from developing countries, SPS capacity building projects in specific areas and presentation of STDF 2016 Annual Report.

On the topic regarding information about new/emerging SPS initiatives and issues, Dr. Ravi Khetarpal, a Developing Country Expert (CDE), highlighted revisiting the STDF Trust Fund *vis-a-vis* the demands from developing countries. He suggested creating KM regional hubs to raise awareness on trade and SPS issues. He also said that a regional engagement could be useful for mobilizing local expertise to feed into the STDF, and APAARI can be a potential partner in the Asia-Pacific region.



The chairperson of the meeting recommended that improved access to information on country needs would help in potential areas facilitating priorities and matchmaking activities.

The meeting also focused on an overview of ongoing and completed projects, potential areas of future STDF good practice work, and evaluation of STDF projects.

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### APAARI hosts Regional Expert Consultation on Underutilized Crops for Food and Nutrition Security in Asia and the Pacific



*Inauguration of the Expert Consultation*

A multi-stakeholder "Regional Expert Consultation on Underutilized Crops for Food and Nutrition Security in Asia and the Pacific" was organized by APAARI and the Council of Agriculture (COA), Taiwan, in collaboration with Bioversity International, Crops for Future (CFF), Department of Agriculture (DOA), Thailand, International Centre for Agricultural Research in the Dry Areas (ICARDA), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and WorldVeg (The World Vegetable Centre), during 13-15 November 2017 in Bangkok, Thailand.

The purpose was to: (i) create awareness on the role and value of underutilized crops, which have potential for diversification of food basket to ensure better food and nutritional security in APR; (ii) share experiences to accelerate the use of underutilized plants as crops for future and (iii) assess R&D status on priority crops, and policies that are needed to promote the use of these potential crops for future use in APR.

A total of 55 participants from 18 countries (Bangladesh, Bhutan, Fiji, Germany, India, Iran, Japan, Lao, Malaysia, Nepal, Pakistan, the Philippines, Papua New Guinea, Samoa, Sri Lanka, Taiwan, Thailand and Vietnam) deliberated

on the above issues. The participants comprised of senior officials, researchers from National Agricultural Research Systems (NARS), CG Centers, experts on underutilized crops, representatives of research institutions, co-organizers, the private sector, NGOs and farmers.

The Consultation was very timely and relevant as chronically undernourished people increased from 777 million to 815 million from 2015 to 2016 respectively. About 613 million women in reproductive age suffer from anaemia.

Every year, 3 million children die of nutrition-related diseases and 2 billion people suffer from micronutrient deficiencies as highlighted by Dr Hiroyuki Konuma in his inaugural address.

The deliberations held during the three-day meeting brought forth many important issues that need immediate attention, and participants gave several suggestions and recommendations.

It was unanimously agreed that working with underutilized plants/crops would mean no poverty (SDG1), zero hunger (SDG2) and climate action (SDG 13). Through developing partnerships, SDG#17 will also be addressed. There was also unanimous agreement for 'functional' definition of underutilized plants/crops at global and national levels.

Some of the future crops that have potential to cure diseases and improve health were also discussed. This includes bitter melon (cancer, diabetes, high blood pressure), nangka (skin infections, gastrointestinal disorders, and fever) utazi (diabetes) and Nigerian pumpkin-ugwu leaf (diabetes, gastro-intestinal disorders and support to lactating women). These future crops have climate resilience and potential to become livelihood crops for APR.

A holistic rather than reductionist approach to mainstream underutilized plants/crops should be adopted. Consensus



*Eri Otsu, a farmer from Japan addressing the participants*



*Participants of the Regional Expert Consultation on Underutilized Crops for Food and Nutrition Security in Asia and the Pacific*

emerged that policy makers should be approached to give due attention, generate political will and mobilize funding and subsidies, and promote greater use of these plants. This would require a comprehensive knowledge-sharing system on crops, experts, as well as centres of excellence for capacity building, networking and multi-stakeholder partnerships. Another requirement would be facilitation of germplasm exchange, along with the collection, characterization and evaluation. For this, a global funding system for scholarships, exchange, and projects need to be emphasized, along with awareness generation programmes.

The participants lauded the role of APAARI, for holding the consultation, and showed their confidence that APAARI can play a more proactive role in promoting underutilized crops. Based on the consultation, APAARI will develop a focused plan for the member countries to address malnutrition through awareness raising. It will also promote the use of these crops for the future through networks, regional databases, success stories, and project-based R&D.

### APAARI attended an orientation at the International Food Policy Research Institute (IFPRI)

Norah Omot, ASTI Coordinator, spent a week (15-22 November 2017) at IFPRI in Washington DC, upon joining APAARI on 11 November 2017. The purpose of the visit was to better understand the new ASTI project funded by ACIAR.

The visit involved discussions on the ASTI methodology for data collection and analysis, discussions and familiarization with the ASTI Data Management Portal, as well as meeting IFPRI colleagues, who are attached to ASTI.

The ASTI project will be implemented over a two-year period from November 2017 to October 2019 in collaboration with ten countries in Southeast Asia and Pacific.



### APAARI hosts a webinar with Universities on Capacity Development for Agricultural Innovation-Bringing System-wide Change in Asia-Pacific

Forty-three university representatives from Bangladesh, Bhutan, India, Pakistan and the Philippines participated in APAARI-hosted Webinar on Capacity Development for Agricultural Innovation-Bringing System-wide Change in Asia-Pacific on 16 November 2017. It was organized in collaboration with FAO-TAP, GCHERA and GFAR. The Webinar aimed to:

1. improve understanding of the Common Framework designed under the CDAIS project;
2. raise interest in integrating the Common Framework principles, approaches and tools in higher education curricula to improve capacity for change and realize the potential of innovation;
3. raise awareness of the importance of developing soft skills ("functional capacities") to unlock the potential for agricultural innovation and the role of higher education in developing the respective capacities; and
4. initiate reflection towards a mindset shift in culture of higher education organizations in APR from: (i) considering knowledge generation as a final objective, to using it as a means to achieve change; (ii) understanding of the system components to systematic understanding of the relationships between the components; (iii) consulting beneficiaries to facilitating engagement for interactive learning between innovation actors; (iv) teaching to learning; and (v) focus on individual merit and competition, to promoting teamwork and collaboration between and within organization.

FAO-TAP presented the Common Framework and key information about the CDAIS project and TAP initiative. TAPipedia – information system on CD for AIS was highlighted as well. FAO Bangladesh explained how the Common Framework is being applied in practice. GCHERA presented the EARTH University model and a pilot project based on this model, that focuses on curricula reform and pedagogy, to better prepare graduates to be leaders in tackling global challenges, such as poverty reduction, food



and nutritional security and environmental sustainability. The project will help participating universities incorporate the following key elements of the EARTH model in their undergraduate programmes: experiential (participatory) learning, entrepreneurship, community engagement and ethical and value-based leadership.

The webinar was the first step to engage higher education institutions in APR in discussions on the importance of functional capacities to speed up agricultural innovation. It was also an opportunity to learn about the concepts of the Common Framework that universities can apply in their work, and finally to learn from the success story in Costa Rica, and reflect what the participating institutions could do to bring about positive change in AIS.

To download the synthesis, please check this link: <http://www.apaari.org/web/webinar-with-universities-cdais/>



### USDA Assignment on Phytosanitary Capacity Evaluation (PCE)

A Phytosanitary Capacity Evaluation (PCE) of Bangladesh was undertaken by Dr. Ravi Khetarpal in Dhaka, Bangladesh, under a United States Department of Agriculture (USDA) project consultancy in two missions.

During the first mission undertaken from 22-28 September 2017, four PCE modules out of thirteen as developed by the International Plant Protection Convention (IPPC) of FAO were discussed with the National Plant Protection Organization (NPPO) at Plant Quarantine Wing in Dhaka. Discussions were based on active involvement of diverse stakeholders, and prescribed forms of the modules filled in online and onward transmitted to IPPC. These four modules were on country profile, national phytosanitary legislation,

environmental forces assessment and NPPO's mission and strategy.

In a subsequent mission carried out from 22-29 November 2017, four more modules on NPPO's structure and process, NPPO's resources, pest diagnostic capacity and pest surveillance and pest reporting capacity were discussed. The forms of the modules were filled in and transmitted to IPPC. After completion of the evaluation studies, the analysis of output of the work will give a clear picture on the areas of investment to be done in Bangladesh for their compliances with the Sanitary and Phytosanitary Agreement of WTO, which will eventually help in trade facilitation of agricultural commodities and increase in revenues for the country.

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### APAARI participated in the Regional Coordination Meeting of ICARDA

The 5th Regional Coordination Meeting of South Asia and China Regional Program (SACRP) of ICARDA was jointly organized with Indian Council for Agricultural Research (ICAR) during 5-8 December 2017 in New Delhi, India, with the theme "Strategic Partnership towards Enhancing Food and Nutritional Security in South Asia and China".

The meeting was graciously inaugurated by His Excellency, Shri Radha Mohan Singh, honorable Minister of Agriculture and Farmers' Welfare, Government of India; Prof. T. Mohapatra, Secretary, Department of Agricultural Research and Education (DARE), and Director General (DG), ICAR; Shri P. K. Patnaik, Secretary, Department of Agriculture and Cooperation; Aly Abousabaa, DG, ICARDA; Additional Secretary (DARE and Secretary ICAR), DDGs, ADGs, directors and scientists of ICAR; ADG-ICC, programme directors and scientists from ICARDA, as well as delegates from Afghanistan, Bangladesh, Bhutan, China, Ethiopia, India, Nepal, and Sudan. APAARI was represented by Dr. Ravi Khetarpal, Executive Secretary of APAARI, who took active part in the event.

The two-day event of deliberations was divided into different technical and plenary sessions. This was extended by a two-day visit to ICARDA's research platform, Amlaha, Madhya Pradesh, and attendance of a Field Day in Amlaha village.

His Excellency Shri Radha Mohan Singh expressed his hope that this regional coordination meeting will benefit all participating countries and help achieving global food security and sustainability.



*Participants of the 5th Regional Coordination Meeting*

He acknowledged the germplasm received from ICARDA on pulses, cereals and fodder cactus, and mentioned that with the establishment of ICARDA's Research Platform in India, R&D deliverables will be enhanced to a new height for the benefit of the region, and also globally. The dignitaries lauded ICARDA's contribution to dryland farming systems through delivering climate-resilient technologies for farmers: on pulses, barley, wheat, and fodder, and small ruminants.

Jointly developed crop varieties are being cultivated by farmers of South Asia and globally, which emerged from Country Papers by partners. ICARDA's new strategy for 2017-2026, will address new areas of research. Through its new structural framework, ICARDA will be able to deliver its research products more effectively and efficiently. Through presentations and discussions the following major recommendations were made.

1. Regional level collaborative programmes amongst the countries need to be materialized in specific priority areas like climate-resilient agriculture, capacity development, transboundary disease management, rice fallow cultivation, establishment of multilocation testing, free movement of desired germplasm for sustainable and resilient production systems, seed production and management amongst the South Asian and targeted African countries.
2. The dimension of extension (India-KVK example) needs to be replicated in African centres/countries to disseminate and adopt technology, and take into account further researchable issues.
3. Emphasis need to be placed on precision/digital agriculture, development of suitable feed-fodder systems, conservation agriculture, small-scale mechanization especially for drylands, and the evolving future cropping systems under climate change conditions.
4. Collaborative research programme amongst the CG

centers, regional fora and respective NARS may be adopted/strengthened.

5. Priority needs to be given to develop female cattle to boost milk production since it is declining while the demand is growing. Site-specific crop-livestock system needs to be developed.
6. ICT technology needs to be incorporated in all activities, including accelerated breeding techniques.
7. Developing biodegradable lighter mulching material needs to be encouraged.

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### ASTI Implementation and Training Workshop for Southeast Asia and the Pacific

APAARI and IFPRI organized an Implementation and Training workshop in Bangkok, Thailand on 12-14 December 2017. Representatives from ten countries in Southeast Asia and the Pacific attended the workshop. The representatives were designated personnel appointed by the CEOs of NARIs as Focal Points, who will lead the ASTI survey in their respective countries. The workshop aimed to: introduce the programme and its work plan for 2018-2019; familiarize country focal points with ASTI methodology, survey tools, and data collection procedures; receive feedback from the focal points on issues related to investments, capacities, and policy developments in agricultural research; discuss strategies to enhance dissemination and uptake of ASTI outputs, and to receive feedback on the long-term institutionalization of ASTI at the country level.

APAARI and IFPRI are grateful to ACIAR for their support to



*ASTI Workshop participants*

reduce the knowledge and information gap on the inputs, performance, and outcomes of agricultural research systems in Southeast Asia and the Pacific, and to build a solid foundation for the long-term monitoring of agricultural research investment and capacity.

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## APAARI strengthens the scope of its consortium APCoAB

In its EC meeting of 12 November 2017, APAARI requested to enlarge the scope and horizon of the Asia Pacific Consortium on Agricultural Biotechnology (APCoAB) which is mainly supported by COA, Taiwan, to also include activities on bioresources. The EC agreed to the proposal and the term APCoAB now stands as the Asia-Pacific Consortium on Biotechnology and Bioresources. It will be carrying out important thematic areas of APAARI for working towards its Strategic Plan with enhanced vigour.

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## National Symposium on Sustainable Disease Management Approaches and Applications



*Dr. Ravi Khetarpal presenting awards to the participants  
of symposium*

Dr. Ravi Khetarpal, ES of APAARI, was the Chief Guest in the Valedictory Function of National Symposium on Sustainable Disease Management: Approaches and Applications, held on 23 December 2017 in the College of Agriculture of G.B. Pant University of Agriculture and Technology, Pantnagar, India. The Symposium jointly organized by the Indian Phytopathological Society and the university deliberated on eco-friendly approaches on managing plant diseases, which are taking a heavy toll of our production due to intensification of agriculture and climate change. Dr. Ravi

Khetarpal highlighted the importance of research and development in the field of plant protection and on the need of achieving the SDGs by an aggressive outreach programme. He also gave away the awards to various scientists and students who excelled in their field of research.

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## PROFILE

### CSK Himachal Pradesh Krishi Vishvavidyalaya (CSK Himachal Pradesh Agriculture University)

**University Introduction:** CSK Himachal Pradesh Krishi Vishvavidyalaya (CSK Himachal Pradesh Agriculture University- CSKHPAU), is a hill and mountainous agricultural university in North Himalayan region of India, established in 1978. It is an ICAR accredited and ISO 9001:2008 certified institution. The university is considered a torch-bearer for all farm universities situated in the region. A massive infrastructure to fulfil the mandate and realize objectives has been created at main campus Palampur with four constituent colleges (College of Agriculture; Dr. G.C. Negi College of Veterinary & Animal Science; the College of Home Science and the College of Basic Sciences), two Directorates and fourteen research stations, as well as eight Farm Science Centres spread all over the state of Himachal Pradesh (H.P.).

The main facilities include: training hall, farmers' hostels, transportation, students' hostels (including an International Students' Hostel), playground and gymnasium, placement cell, and others. At present, 1,523 students (844 girls and 679 boys) are enrolled, and 6,593 students have outgraduated from the university since its inception.

The university has released 155 improved varieties of different crops. Around 100 farm technologies have been recommended to the farmers. Besides strengthening the research on organic farming in hill agriculture, the university has taken up the initiative called 'Zero Budget Natural Farming' to transform H.P. into an organic State of the country. As per the advice of the Hon'ble Prime Minister of India, sincere efforts have been initiated to help farmers double their income in the next five years through twenty farm-based models.

CSKHPAU Foundation Day celebration is an important activity of the university. The 39th foundation day of the university was celebrated on 1 November 2017. In his address to staff and students, Prof. Ashok Kumar Sarial,



Vice-Chancellor, motivated them to make 'excellence' a buzz word. He also appreciated them for adopting the following motto: 'Respect Work, Work Hard and Create Work Culture' in their professional life.

He said that 343 students were conferred degrees during the 14<sup>th</sup> Convocation held in September 2017. The university Chancellor, who is also the Governor of H.P., applauded the congenial academic environment and work culture of the university. The Vice-Chancellor informed that in the last six months, the university attained the first position among all agricultural universities of the country. This is due to the highest number of students (193) that qualified in various national level competitive examinations, and 36 students got admission into prestigious national institutes for higher studies.

Ninety-six students were offered jobs as Agriculture Development Officers and Veterinary Officers from the state government. The university developed eleven crop varieties that have been released besides the poultry breed.

Prof. Ashok Kumar Sarial, Vice-Chancellor, was honoured by the Global Institutes, Amritsar, for developing Pusa Basmati 1121- world's longest grain variety. He was honoured with an award of INR one lakh (about USD 1,559), a citation and a memento. In a rare gesture, he pledged the prize money to the host institute for encouraging farmers to grow PUSA 1121 organically.

Besides research work in the Department of Organic Agriculture (very first department on organic agriculture in the country), demonstration units on 'Zero Budget Natural Farming' have been established in two farm science centres. A two-day UNESCO-sponsored South Asian Workshop on 'Strengthening early warning for disaster risk reduction in Himalayan agriculture' was held on 25-26 October 2017 at the university. Dr. Ram Boojh, UNESCO



*Vice-Chancellor Award*

Programme Chief, Dr. Ajit Tyagi, President, Indian Meteorological Society, Dr. M. Mohapatra, Head, Services Division, Indian Meteorological Department, and other experts spoke on the topic. In his inaugural address, Prof. Sarial said that climate change has opened a number of challenges to scientists and governments, and also provided a basket of opportunities especially in hill agriculture. He underlined the need of making agriculture sustainable and climate-resilient as South Asian region is highly vulnerable to disasters.



*UNESCO Workshop*

Story and Photos: Dr. Hirday Paul Singh, Jt. Director (Info & PR), CSK H.P. Agriculture University

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*VC addressing staff on University Foundation Day*

## NEWS UPDATE FROM NARS

### Thailand

#### Regional Bilateral Partnership between JTEPA-NARO, Japan and DOA Genebank, Thailand

As a result of the regional bilateral partnership between Japan-Thailand Economic Partnership Agreement (JTEPA) and the Department of Agriculture (DOA), Thailand, the project entitled 'Collaboration for Achievement and Development of Genebank Management through Consulting and Scientist Exchange between DOA Genebank



*Participants of DOA Genebank, Thailand*

Thailand and NARO Japan' was approved in 6th JTEPA meeting that took place from 20-26 February 2017. The meeting was attended by Mr. Danai Narkprasert, Director of Biotechnology Research and Development Office (BIRDO), and Mrs. Kunyaporn Pipithsangchan, Director of Genebank Research and Development Group. It aimed to learn from and share experience with the National Agriculture and Food Research Organization (NARO) – the leading organization in genebank technology and innovation in Japan. The meeting led to a scientist exchange between two organizations from February-August 2017.

The current storage facility applied in DOA Genebank was initially designed using NARO's system as a model. As a result, visiting NARO was a good opportunity for DOA Genebank to learn more on how to become a successful centre on Plant Genetic Resources (PGR) conservation.

In addition, Prof. Dr. Hiroshi Nemoto and Asst. Prof. Dr. Daisuke Tanaka visited several places to observe plant biodiversity in Thailand. This included the orchid 'Dendrobium' farm for export, rose apple 'Thapthim Chan' orchard for export, community enterprise for coconut, and the marketing organization for farmers. They also visited 'MOMI', the monument of wild rice created by Mitsuaki Tanabe, at the Pathumthani Rice Research Center, as well as the National Center for Genetic Engineering and Biotechnology (BIOTEC) to observe the facility for plant and microbe cryopreservation system.

The project greatly enhanced the regional bilateral partnership between Japan and Thailand. It also provided the invaluable knowledge of germplasm management system, which was beneficial for the plant genetic resources conservation for sustainable utilization.

Three young researchers from DOA Genebank will attend the training course approved by JTEPA Committee. They

will visit NARO and relevant organizations in Japan in 2018.

*Story and Photos: International Agricultural Affairs Division, Department of Agriculture, Thailand*

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## Taiwan, ROC

### APO International Conference on Biofertilizers and Biopesticides

The 2nd International Conference on Biofertilizers and Biopesticides (B&B) took place on 8 August 2017 in Taichung, ROC.

The conference was jointly organized by the Asian Productivity Organization (APO), Council of Agriculture (COA) of the Executive Yuan, and China Productivity Center (CPC), and implemented by the Agricultural Technology Research Institute (ATRI) of the COA.

More than 200 professionals representing the B&B industry, academia, agricultural extension services, and practitioners from eleven APO member countries along with resource persons from Australia, the ROC, India, Malaysia, and Thailand, attended the conference. The conclusions and next steps are to:

- Constitute a group of experts on biofertilizers and biopesticides, which can design common guidelines for developing regulatory framework for all Asian countries.



*Participants of the 2<sup>nd</sup> International Conference on Biofertilizers and Biopesticides*

- Consolidate the technologies developed by member countries and move forward. For this, there is a need to develop an e-document on R&D in the BB fields, with participation of all APO countries.

Participants endorsed the continuation of organizing such programmes, as they were an important mechanism



to monitor and assess the progress in implementation of recommendations, and analyse the BB case studied based on best practices.

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### A Study on the Competency Standard and Ability Identification of Tea Sensory Evaluation in Taiwan

The Tea Research and Extension Station (TRES), COA, ROC, used competency standard of tea sensory evaluation built in 2015 as a basis for conducting tea taster education and training, as well as the establishment of a license system. Through a platform of the Farmer Academy, TRES held the primary class of tea sensory evaluation in 2016.

Those, who have passed the training and exams of writing and operation subjects, could be awarded the primary professional talent ability identification certificate of tea sensory evaluation.

This ability identification is based on the sensory evaluation of competency standard developed by an expert meeting. The ability is divided into five levels, including primary, intermediate, high-intermediate, advanced, and superior. All levels have different indicators and certification qualifications.

Those, who have passed the ability identification of primary, intermediate and high-intermediate level, could be deemed as the tea sensory tasters. Those, who have passed the advanced and superior levels, will be the masters of tea sensory tasters. By promoting this certification system, the practitioners of tea industry will be encouraged to strengthen their professional knowledge and technology, thereby enhancing the industrial competitiveness.

*Story and Photos: Pao-Yu Yeh, Specialist International Organizations Sections, Department of International Affairs, COA, ROC*

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## Pakistan

### Solar Dates Drying Technologies

Dates are the third most important fruit of Pakistan, being grown in all four provinces of the country over an area of 91,500 hectares and with an annual production of 537,800 tons. Conventionally, open sun drying is adapted to dry dates that results in high product loss and low-quality produce. Due to unavailability of suitable drying techniques

about, 20-30 per cent of date fruits are being wasted every year.

To overcome this problem, the Agricultural Engineering Division, PARC, designed and developed a solar-cum-gas Fired Dates Dryer and Solar Tunnel Dates Dryer. These dryers significantly reduced the drying time and improved the quality of dried dates.

The solar-cum-gas Fired Dates Dryer is comprised of eight flat plate solar collectors, a drying chamber, 250-watt axial flow fan, 500-watt solar PV panels, inverter, two batteries, jet gas burner and LPG cylinder to make the system hybrid. The axial flow fan is placed between solar collectors and drying chamber, which is comprised of two small tunnels. The hot air produced by solar collectors is circulated in the drying chamber with help of axial flow fan.



*Figure 1: Solar-cum-gas fired date dryer*

The air-mixing chamber receives the heated air from the solar collectors and passes it to the first tunnel. After absorbing the moisture from dates in the first tunnel, the air moves to the second tunnel. After absorbing the moisture in the second tunnel, it escapes from the ventilation duct. The drying chamber has 120 trays, and each can hold 4-5 kg of fresh dates. Hence, it can accommodate 600 kg of fresh dates. A typical view of solar-cum-gas fired dates dryer is shown on the photo. The quality of dates has proved to be excellent, and it can be marketed at a higher price. The economic analysis revealed that a farmer can easily earn PKR 445,080 (USD 4,028) per season by using this dryer.

The Solar Tunnel Dates Dryer is comprised of masonry stone walls (0.61m high), G.I pipes of 50mm diameter and polythene sheet. The overall length, width and height of the dryer is 18.3m, 6.1m and 2.1m, respectively. This system works on the principle of natural convection. Fresh air enters from the air ducts at the base. Moisture and moist air exit from the ventilation ducts at the top on the back side. One hundred and twelve trays are placed on the floor



of the dryer, with each tray able to hold 10 kg of fresh dates. Hence, the solar tunnel dryer can accommodate 1,200 kg of fresh dates. A typical dryer is shown on the photo. The temperature difference between the ambient and indoor air is about 12-15oC. Therefore, when the ambient air is 45-50oC, the indoor temperature goes up to 60-65oC. The high indoor temperature expedites the drying process of the dates. The cost analysis revealed that the dryer enables earnings of PKR 726,660 (USD 6,576) by drying 12 tons of fresh dates in one season. The dates growers and processors appreciate these technologies, and want to commercialize them at a large scale.

A SAARC-funded project entitled 'Postharvest management and value addition of fruits in production catchment in SAARC countries' is being implemented in the Khairpur and Sukkur District of Sindh Province.



Figure 2: Solar tunnel date dryer

The project aims to mitigate postharvest losses, and produce good quality dates, which will ultimately alleviate the livelihoods of poor people. Under the project, eight Solar-Cum-Gas Fired Dates Dryers, and 17 Solar Tunnel Dates Dryers were installed at the sites of 21 village organizations.

*Story and Photos: Muhamad Altaf Sher, Director International Cooperation, Pakistan Agricultural Research Council*

## India

### AAU Anand Ranked in Top 100 Institutions of India

The National Institutional Ranking Framework Report 2017 has been declared by the Ministry of Human Resource Development (MHRD), Government of India. The educational institutes/universities have been ranked based on different parameters.



These include professors; qualifications and quality; research carried out; university publications and students quality. At the national level, Anand Agricultural University (AAU) Anand secured 62<sup>nd</sup> position, but in the category 'universities', AAU Anand ranked 40<sup>th</sup>, hence being in the top 100 universities of India. This is a matter of pride for Gujarat State.



### National Technical Festival on Food Processing 'Adroit 17' at AAU, Anand

The College of Food Processing Technology and Bio-Energy, AAU, Anand, India, organized a two-day National Technical Festival on Food Processing 'ADROIT 17' on 26-27 September 2017.

The Association of Food Scientists and Technologists (AFSTI), Vallabh Vidyanagar Chapter, and Food and Drugs Control Administration (FDCA), Gujarat, were the co-organizers.

More than 700 students from 23 food technology institutions participated in the event to showcase their professional competences, having a chance to win prizes.

This year, eight food technology institutions had a chance to play a part in organizing the event by being a 'partner institution' like AKS University, A.D. Patel Institute of Technology, Andhra Loyola College, MIT College of Food Technology, Lady Irwin College, Bhaskaracharya College of Applied Science, University of Delhi, College of Dairy and Food Science Technology, Maharana Pratap University



*Antimicrobial resistance seminar at AAU College*

of Agriculture and Technology, and College of Food Technology, Thane.

The function was inaugurated by Hon'ble Vice-Chancellor, Dr. N. C. Patel, AAU, Anand, in presence of Chief Guest Dr. N. S. Rathore, Deputy Director General (Agricultural Education), ICAR, New Delhi, Guest of Honor Dr. K. B. Kathiria, Director of Research and Dean P. G. Studies, AAU, and Dr. S. H. Akbari, DSW, AAU, Anand. Dr. S. H. Akbari, DSW, AAU, Anand, Deputy Director General (Agricultural Education), ICAR, New Delhi, Guest of Honor Dr. K. B. Kathiria, Director of Research and Dean P. G. Studies, AAU, and Dr. S. H. Akbari, DSW, AAU, Anand.

*Story and Photos: Dr. N.V. Soni, Anand Agricultural University*



## Philippines

### Rubber Nanosensor turnover ceremony held in Zamboanga del Norte

TAMPILISAN, Zamboanga del Norte – The De La Salle University (DLSU) recently discussed and demonstrated the use of the Surface Toughness Analyser for Rubber (STAR) during the turnover ceremony of the said device.

STAR detects the presence of battery solution or sulfuric acid, a coagulant that lowers the quality of rubber cup lumps by absorbing water.

The use of battery solution not only weakens the quality of rubber when processed, but also threatens human health and the environment. This malpractice is commonly used at bagsakan centers in Zamboanga Sibugay.

STAR is a product of the collaborative efforts of DLSU and DOST-PCAARRD. After series of field testing and careful study, DLSU Associate Professor Dr. Jose Isagani B. Janairo and his team were able to produce 20 units of the device.

Eight of these units were distributed to key rubber-related offices during the ceremony.

These included the Philippine Pioneer Rubber Products Corporation, STANDECO, Philippine Rubber Farmer's Association, Department of Trade and Industries-IX, Department of Agriculture Regional Field Office-IX, and Local Government Units of Kalawit, Godod, and Tampilisan, Zamboanga del Norte.



*Rubber Nanosensors developed by DLSU  
(Image credit: Ellyssa Mae Pendergat, WESMAARRDEC)*

The turnover ceremony served as a venue for the DLSU researchers to share the new technology and help rubber stakeholders and LGUs in assessing rubber quality.



*Dr. Jose Isagani Janairo demonstrates the use of the rubber nanosensor (Image credit: Ellyssa Mae Pendergat, WESMAARRDEC)*



Rubber stakeholders, municipal agriculture officers across Zamboanga Peninsula, and rubber farmers attended the event.

Dr. Janairo demonstrated the capability of the nanosensor to detect battery solution. The device turns green if the rubber cup lumps are coagulated with formic acid (recommended solution), and turns red if they are coagulated with battery solution.

Dr. Narvaez gave a brief background of her ongoing project titled, "Policy Analysis and Advocacy on the Use of Various Latex Coagulants and Nano Sensor for Improved quality of Raw Rubber Products." She also provided some insights and learnings from the benchmarking activity she attended in Malaysia to encourage rubber farmers to excel in producing raw rubber products.



*Dr. Teresita Narvaez, WESMAARRDEC Consortium Director, delivers the closing remarks  
(Image credit: Ellyssa Mae Pendergat, WESMAARRDEC)*

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## ASEAN Commits to Strengthen Biosafety Efforts

Biotechnology experts and leaders in the ASEAN region, including the Philippines, gathered 27-29 November 2017 for the ASEAN Conference on Harmonization of Biosafety



*Delegates and participants of the ASEAN Conference on Harmonization of Biosafety Guidelines and Research Protocols for Agricultural Products derived from Modern Biotechnology, held on 27-29 November 2017, in Manila, Philippines. (Photo credit: DA-BPI)*

Guidelines and Research Protocols for Agricultural Products derived from Modern Biotechnology, which was organized by the DOST-PCAARRD.

Resources Research and Development (PCAARRD) and the Department of Agriculture (DA)- Bureau of Plant Industry (BPI). About 100 participants from ASEAN member states (AMS) and bodies, and key government agencies/institutions in the Philippines, the academe, non-government, organizations (NGOs), and the private sector attended the conference.

The conference provided the opportunity for AMS to share, discuss, and assess the current regulatory framework, biosafety guidelines and research protocols, state of biotechnology development, and biotechnology policies among individual member-countries. The international conference was endorsed during the ASEAN COST 72 in Brunei Darussalam, held 22-23 May 2017. Dr. Reynaldo V. Ebor, Acting Executive Director of DOST-PCAARRD, is the Philippine Focal Person of the ASEAN Committee on Science and Technology (COST)- Sub-Committee on Biotechnology (SCB).

Representatives from nine AMS presented their country reports, focusing on current situation of biotechnology in their countries; their existing biosafety guidelines/regulations; current biosafety-related research protocols for the regulation of GM crops; issues, gaps, and challenges relative to the existing biosafety guidelines/regulations and research protocols; strategies employed to address the issues, gaps, and challenges; and their recommendation/s to harmonize/strengthen the existing guidelines/protocols being implemented in each ASEAN country and the general frameworks implemented through ASEAN initiatives. The workshop on the second day focused on four thematic areas:

Session 1-Biosafety protocols on contained and confined





use; Session 2- Biosafety protocols for commercial cultivation; Session 3- Approaches to protocols on import for direct use; and Session 4- Complementary institutional capacity building activities. It was agreed that sub-committees on biotechnology in each AMS will draft harmonized protocols/manuals for safety assessment for commercial cultivation including a harmonized protocol/guidelines for post-commercial monitoring.

The proposed manual/protocols will focus on science-based assessment.

Among the several general points to consider for harmonization of protocols on import for direct use were harmonization of science-based risk assessment protocol based on international standards to enhance data transportability (e.g. Codex, and the FAO] and WHO of the UN; determining when to use acute or sub-chronic data; and harmonizing import protocol, specifically identifying/determining approaches to be adopted within AMS and how to handle unapproved events, and determining tolerance level/limit of detection. In terms of institutional capacity building, the need for advanced trainings on biosafety, including hands-on workshop and effective communication, was highlighted, and AMS with existing initiatives, hence, have committed to help.

All AMS committed to share data and databases, provided it is allowed in their countries. Some of the databases which can be shared were food and feed safety data; protocols on post-release monitoring of GM; and mechanisms of GM crops. All AMS also committed to harmonize their biosafety protocols, while notably considering the values and culture in each country.

The need to strengthen the biosafety secretariat of the AMS was also discussed, and all AMS committed to enable and support such objective. Concept notes on trainings and other capability building initiatives may also be drafted and submitted to ASEAN COST for approval and to seek support. The Philippines committed to consolidate the concept notes from other AMS for endorsement to ASEAN COST.

The AMS delegates and guests visited several key agencies and institutions in Los Baños, Laguna on the last day of the conference such as DA-BPI, DOST-PCAARRD, the Institute of Plant Breeding (IPB) at the University of the Philippines in Los Baños (UPLB), and the International Rice Research Institute (IRRI).

*Story and Photos: Ofelia F. Domingo, D. Sarah Hazel Maranan, DOST-PCAARRD S&T Media Service, Ellyssa Mae Pendergat WESMAARRDEC*

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## Australian Centre for International Agricultural Research (ACIAR)

### A Burning Solution



*The ACIAR innovation, Happy Seeder*

The most popular cropping system in South Asia—practised on about 13.5 million hectares across the Indo-Gangetic alluvial plain—is a monsoonal rice crop quickly followed by wheat. In north-west India, combine harvesting of rice and wheat is common practice but it leaves large amounts of crop residue in the field. While the wheat residue is used for animal feed, the paddy residue—rice straw—has no local economic uses and is agronomically problematic.

The rice stubble is thick, stringy and tough, and clogs up the sowing tines needed to sow the wheat crop. Farmers have just 15 to 20 days to sow the wheat crop or risk substantial reductions in yields. In order to seed on time, farmers in the states of Punjab and Haryana use traditional methods to burn most of the rice straw. As a consequence, as much as an estimated 22 million tonnes of rice stubble is burnt each year.

The resulting air pollution in October and November impacts the entire Indo-Gangetic Plain, travelling thousands of kilometres and enveloping the region with a thick aerosol layer that measured as much as 2.5 km high in 2012.

The dense smoke plumes are a serious risk to human and animal health—they modify atmospheric gas composition, cause traffic accidents through loss of visibility, and contribute to 'Asian pollution outflow'.

For authorities such as Punjab Commissioner of Agriculture Balwinder Singh Sidhu there is a solution to the fires—a small, affordable machine that drills wheat seed through the tough straw, bypassing the need to burn it. The machine—the Happy Seeder—has permitted India to explore the option of enforcing a ban on the burning of

paddy residue.

The Happy Seeder was originally developed through an ACIAR project headed by Australian Professor John Blackwell, an agricultural engineer at the Charles Sturt University Institute for Land, Water and Society.

### The Happy Seeder

Australia has a strong track record in agricultural engineering, including the development of machines that allow farmers to adopt more sustainable farming practices. Not even in Australia, however, had it been possible to sow directly through rice stubble, despite years of attempts by researchers worldwide to engineer a solution.

ACIAR engaged Professor Blackwell to revisit the problem and consider the design of a suitable machine. Professor Blackwell embodies Australia's proud agricultural engineering tradition—particularly in making the most of the limited water resources available to Australian dryland farming. Professor Blackwell experienced his 'Eureka' moment after a conversation with then research program manager Dr Tony Fischer. That night, Professor Blackwell imagined the design of a new kind of seeder—a design he found had never before been tried.

Through ACIAR, Professor Blackwell travelled to India to build the first prototype at the workshop of the Punjab Agricultural University (PAU) with Indian collaborators. Progress improved when PAU's Dr Harminder Singh Sidhu, senior research manager at the Cereal Systems Initiative for South Asia (CSISA) hub, took up the challenge.

"The prototype worked amazingly well," Professor Blackwell says. "We were able to sow with the prototype through 10 tonnes per hectare of rice straw." There was, nonetheless, room for improvement—in a process that has involved public-sector researchers, especially from PAU, and private-sector developers in India. Professor Blackwell particularly credits Dasmesh Mechanical Works, in Punjab, for the innovation that culminated in the development of the Turbo Happy Seeder, which uses a rotor to cut and brush away the rice straw, clearing the way for the machine's sowing time.

Professor Blackwell says the Turbo Happy Seeder can sow any seed into any stubble and pasture. For example, he has used it to sow wheat into 12 t/ha of standing millet. It can also be used as a standard direct drill when little or no stubble is present.

Importantly, the Turbo Happy Seeder is lighter than its predecessor and has reduced power requirements, allowing



*A cricket match in New Delhi was interrupted due to poor air quality*

it to be operated by the 35-horsepower tractors common in India.

Evaluation of impacts associated with this technology found it is more profitable than conventional cultivation or direct drilling after burning. It is financially viable for farmers, while delivering important advantages to the broader community and environment.

The approach amounts to a 'conservation agriculture' practice. It avoids ploughing soil and thereby conserves energy, soil moisture and fertility, delivering significant benefits to farmers.

"To some degree the Happy Seeder technology has given India a tool to avoid burning the rice stubble," Professor Blackwell says.

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### Policy Support for Safe Food

ACIAR's Agricultural Development Policy program is working to support Vietnamese policy makers in navigating the complex policy arena as the country moves into a new economic phase. Food safety is a priority for Vietnam, and one that is identified as a key theme in ACIAR's newly agreed Vietnam strategy. Our new project, on 'Policy analysis of food safety and trade in Vietnam', is therefore very timely.

The project aims to develop capacity in policy analysis and engage with key stakeholders and policy makers to enhance food safety in Vietnam's local and international markets.

Food safety has been a priority in Vietnam since 1990 but the number of food poisoning outbreaks has barely diminished. In 2010 there were 175 outbreaks reported involving over 5,000 people with 51 deaths, similar to levels in 2000. Most (61%) food poisoning episodes occur in the

family home. The melamine milk crisis in China in 2008 raised awareness in Vietnam about the importance of food safety. Vietnam imports food from China, and also exports to China, and having safe food standards will support trade between both countries.

While many types of economic activity can best be left to the market, food safety is one area where government intervention may be required. Producing safe food adds a premium, so that safe food will generally be more expensive. Left to the market, unsafe (low cost) producers will drive out safe (higher cost) producers. In such cases the government can usefully intervene by providing standards and product certification to inform consumers.

### Standards and regulations—a balanced approach

The adoption of science-based international food safety standards can help manage food safety risk and improve the predictability of and access to domestic and global food and feed supply chains. An example is the international food standards developed by the Codex Alimentarius Commission which are set from the perspective of allowable residues and contaminants. However the use of standards should be balanced, as enforcing overly strict standards can reduce access to markets.

Careful and targeted implementation of policies relating to food safety, without overregulating, is likely to increase the safety of food consumed domestically, as well as opening opportunities for international trade which will also lead to food security through poverty alleviation.

Project activities will include:

- identifying the extent and frequency of foodborne illnesses, and estimation of their economic costs;
- identification and analysis of existing policies relating to food safety and trade in Vietnam;
- analysis of value chains for focus commodities, and identification of points of food safety risks along the chain;
- identifying constraints, barriers and opportunities for improving food safety standards in domestic and international markets;
- training on key tools for food safety policy analysis;
- engaging with the public and private sectors to develop recommended policy options; and

- supporting dissemination of food safety and policy information.

While the project is in the early stages, expected impacts are increased international and domestic trade; social impacts through increased trust in the safety of domestic food safety and associated improved public health, income and livelihoods; and environmental impacts through reduced pesticide and other chemical use.

*(Story and photos: Kirsten Davey, Communication Officer, ACIAR)*

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## The World Vegetable Centre (WorldVeg)

### Government officers learn about tomato grafting

By grafting tomato on wild eggplant rootstocks, farmers can avoid bacterial wilt and root knot nematode problems. In India, there are now many commercial vegetable nurseries producing grafted seedlings, but high prices prevent small and marginal farmers from purchasing the seedlings.

Vegetable grafting is a new technique for staff of the Horticulture Department in Telangana state, India. Although many were aware of grafting for fruit crops, they had never tried the method with vegetables.

To ensure horticulture officers could share this useful production method with farmers and nursery owners, Telangana state requested the WorldVeg South Asia to provide a one-day grafting training course for its staff and some local nursery managers.

M. Ravishankar and P. V. L. Bharathi from WorldVeg organized the training session at the Centre of Excellence in Hyderabad on 13 October 2017. “Our commissioner visited farmers’ fields in Chattisgarh and noticed that the yields of eggplant tripled with grafted seedlings,” said one department officer. “Is it possible?”

Another participant was curious to know why a farmer has to transplant grafted seedlings when there are many high yielding hybrid varieties in the market.

These and many other questions were answered by the WorldVeg team. Participants learned when and how to graft; which varieties, rootstocks and scions were available; how to evaluate the compatibility of rootstocks and scions; how to harden-off grafted seedlings; and the special care required for grafted seedlings before and after transplantation.





*A practical discussion on how to take care of grafted seedlings*

After screening a WorldVeg video about grafting, Ravishankar explained the technique to the participants, who then practiced tube and clip techniques to graft tomato and eggplant seedlings onto eggplant rootstocks.

The group learned how to make a simple but effective grafting chamber – a dark, humid shelter in which grafted seedlings are placed to allow the grafts to heal. Although they did not practice on any other crops, they were intrigued by the idea of cucurbit grafting.

When requested to share their feedback on the course, the participants said that tube grafting was easier for beginners to learn than clip grafting. Equipped with new skills and knowledge, the officers were motivated to train farmers and nursery owners to produce grafted seedlings.



*Ravishankar (left) demonstrates how to use a small section of bicycle tubing to join the scion and rootstock*

“Before coming here, I never thought I could do vegetable grafting,” said a nursery owner who attended the programme. “The technique I learned here is so simple, I

am sure of producing successful grafts.”

(Story and photos: PVL Bharathi and M Ravishankar)

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## Center for International Forestry Research (CIFOR)

### New Map helps Track Palm Oil Supply Chains in Borneo

In 2013, a number of major palm-oil buyers, traders and producers promised to stop clearing natural forests. The global multi-billion-dollar business of palm oil is among the world’s most controversial agro-industries. It has been implicated in numerous cases where species- and carbon-rich forests have been cleared, yet it also contributes to the elimination of poverty in producer countries.

Indonesia and Malaysia are the world’s top two producers of palm oil. Their area of industrial plantations more than quadrupled in extent from 1990 to 2015. Over the same period, regional rates of forest loss rose to among the world’s highest. Forest clearance is driven by a number of factors — establishing plantations is one factor. The development of mills and associated infrastructure to extract and transport palm oil also impacts forests.

The latest version of the Atlas of Deforestation and Industrial Plantations in Borneo, or also called the Borneo Atlas, launched recently, allows users to verify the location and ownership of 467 palm-oil mills in Borneo, the island shared by Indonesia, Malaysia and Brunei Darussalam.

It includes a new tool called Analyze Land Use near Mills to provide verified information on the location of palm-oil mills, and the deforested area within a 10-kilometer radius, as detected annually by satellites.

The new tool can be used together with an earlier tool called Analyze Land Use in Concessions, to track the footprint of palm-oil growers on forests. It links the company-driven forest loss (i.e. the forest area converted each year to industrial plantations) detected annually using satellites with publicly available concession maps.

Combined, these two tools are useful for the increasing number of palm-oil buyers, traders and government officials, who have begun tracing supply chains to mills and plantations. Buyers are currently focusing their attention on traceability to mills, because the location of a mill is a good indicator of the approximate location of its supplier.

Understanding where mills and plantations are is also useful

to better understand the overall impact of industrial palm-oil developments on tropical rainforests.

Via the interactive map, users can zoom in on a 10-kilometer radius of each mill — the distance fresh palm fruit can travel without spoiling. The actual distance that fruit has travelled to reach the mill in fact vary depending on commercial agreements, road networks and terrain, and does not fall into a perfect disc around the mill.

However, this simplified added feature does offer a more complete view of the impacts of industry on forests. Users can rank concessions and mills by recent clearing, and access statistics on forest health and land use. They can visualize poorest and best performing mills and concessions by company, soil type (peat and non-peat), by remaining forest area, and by type of certification.

The idea is to offer the opportunity to investigate to what extent plantation companies have cleared forests in Borneo, and to what extent they have avoided forest loss by planting on non-forested lands. Understanding where companies practice sustainable planting is key to engaging and promoting positive actions by companies.



*The latest version of the Atlas of Deforestation and Industrial Plantations in Borneo*

This dataset was developed by reviewing online documentation on company dashboards, NGO websites, certification agencies (RSPO and ISPO), mapping websites and social media.

The source documents for these data are linked in the results of each search so they can be consulted by users. A link to the mills' location on high-resolution imagery from Google Maps and ArcGIS World Imagery is also provided for each search, to prove that the mill exists.

Future developments will include linking mills to supplier plantations, to ports and refineries, and incorporating time-lapses to reveal how industrial oil palm has expanded.

from cosmetics to processed food, and biofuels to drive cars. It requires extensive infrastructure, including processing mills and refineries. Ultimately, huge tankers ship the oil to every corner of the globe.

Oil palm is not the only industrial crop. Today, most of the world's food production and supply is done by industrial means. Industrial agriculture is a system of chemically intensive food production, featuring gigantic single-crop farms and production facilities, controlled by large conglomerates.

Intensive monoculture depletes soil and leaves it vulnerable to erosion. Herbicides and insecticides harm wildlife and people. Biodiversity in and near monoculture fields takes a hit, as populations of birds and beneficial insects decline. In fact, the abundance of flying insects has plunged by three-quarters over the past 25 years in the European countryside because of industrial agriculture, according to a new study.

"From 2005 to 2015, the expansion of industrial oil palm plantations was responsible for 50 percent of all of Borneo's old-growth forest area loss"- David Gaveau and Mohammad Agus Salim, CIFOR researchers.

In the humid tropics, industrial production of palm oil, soy, pulpwood and beef depletes biodiversity by being responsible for between 35 per cent and 68 per cent of all tropical forest loss.

Rates of forest loss and oil-palm developments are particularly marked on Borneo. Forest losses averaged 350,000 hectares annually from 2001 to 2016, while by 2016 the area of industrial oil palm plantations reached 8.3 million hectares (Mha) — about half of the estimated global planted area of 18 Mha.

From 2005 to 2015, the expansion of industrial oil palm plantations was responsible for 50 percent (2.1 Mha) of all of Borneo's old-growth forest area loss (4.2 Mha).

Tools like the Borneo Atlas, and its new feature to assess the impact of mills, aim to equip governments, NGOs and companies with the capacity to see the full impact of industrial agriculture on forests, and to act accordingly to bring the rate of forest loss in their supply chains down to zero.

*Story and Photos: Catriona-Croft Cusworth,  
Editor, Forest News, CIFOR*

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Palm oil is produced by industrial means. It is in everything

## The Asia and Pacific Seed Association (APSA)

### Trade, Business Blooms at the 24th Asian Seed Congress

Millions, if not billions of dollars in business was generated at the 24th Asian Seed Congress, held in November 2017 in Bangkok, Thailand. The Asian Seed Congress is the flagship event of the Asia and Pacific Seed Association (APSA) and is the largest regional seed industry event in the world. It comprises an exhibition, trading tables, private meeting rooms, technical sessions and social networking events.

Presiding over a press conference on 14 November, APSA Vice President, Tahir Saleemi, explained why it is difficult to give an exact figure of how much revenue will result from the annual event.

“Most of our members plan their business for the entire year at the Asian Seed Congress,” said Mr. Saleemi, who is the CEO of Haji Sons PVT Ltd in Lahore, Pakistan.

“We have more than 600 members in APSA, representing more than 50 countries. Most of our members depend on the Asian Seed Congress for their business year round, which ultimately translates to the trade of many hundred thousand tonnes of seed to, from and within the region,” he added.

According to import and export statistics covering a recent one-year period, more than four million tonnes of sowing seed had been traded to and from APSA’s territory, which includes countries in the Far East, South Asia, Central Asia, the Middle-East, Southeast Asia and Oceania.

This seed, of various types of field, forage, vegetable, fruit and flower crop, had a gross value of more than USD 7 billion, deriving from three million tonnes of imports worth USD 2.2 billion in addition to about one million tonnes of exported seed valued at \$4.7 billion.

APSA is the world’s largest regional seed trade association in terms of members and territory, and its member countries account for more than one third of the global seed trade.

Dr. Chairerg Sanguansapayakon, a Past President of APSA, and the current President of the Thai Seed Trade Association, elaborated on the dynamic nature of international seed trade and how the Congress’ unique platform addresses the needs of APSA members.

Dr. Chairerg said that in addition to the exhibition booths, another popular business feature of the Congress is Trading



*From Left; Heidi Gallant, Wichai Laocharoenpornkul, Tahir Saleemi and Chairerg Sagwansupyakorn*

Tables, which provides an ideal platform for members to not only meet with new potential partners, but also maintain and strengthen existing business relationships.

Delegates may have some minor or major issues they need to work out or discuss in detail, and that requires them to be face to face. New products or markets. Supply chain challenges. Quality control requirements. Changing phytosanitary and quarantine standards. The list goes on.

“The Asian Seed Congress is a golden opportunity for us to all come together and meet – at the same place and time,” said Dr. Chairerg, who heads Thai Seed & Agriculture Company Limited.

Also representing APSA at the press conference, Wichai Laocharoenpornkul – General Manager of East-West Seed Thailand – talked about some of the other key features of the event for key seed industry stakeholders.

“Our technical sessions provide the ideal platform for seed industry experts to discuss and exchange knowledge and leads on the latest breakthroughs. For these we invite expert speakers from around the world to speak on various topics of interest to APSA members,” he said.

APSA has four Special Interest Groups – Vegetables & Ornamentals, Hybrid Rice, Cover Crops and Field Crops – as well as three Standing Committees for Trade & Marketing, Seed Technology and Intellectual Property Rights & Biodiversity. This year, some of the key topics of discussions included “Climate Smart” breeding and seed multiplication, plant variety protection, intellectual property rights, seed-specific phytosanitary measures, GM regulation, gene editing and new niche market opportunities.

Asked about demographics of this year’s attendees, Ms.



Heidi Gallant, APSA Executive Director, revealed that China and India were the most represented member countries, followed by Japan, Pakistan and Thailand.

“These five countries are traditionally our top member countries in terms of representation, but we are getting an increasing number of member organizations from our other key countries, including South Korea, the Philippines, Bangladesh, New Zealand, Australia, Indonesia and Turkey.”

Among the nearly 2,000 stakeholders attending were more than 1,200 registered delegates, several hundred day-pass registrants, dozens of experts and VIP guests, including executives, scientists and government officers.



*Most APSA members depend on the Asian Seed Congress for their business year-round*

*Story and Photos: Steven Layne, Communication Officers, APSA*

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## World Agroforestry Center (ICRAF)

### Nepal to have its own National Agroforestry Policy

South Asia Regional Program of ICRAF through a Climate Technology Centre and Network (CTCN) technical assistance is working with Government of Nepal to develop its National Agroforestry Policy (NAP). The initiative goes back to 2014 when ICRAF's Regional Coordinator, Javed Rizvi first met with the Minister of Agriculture Development (MoAD) of Nepal.

A meeting followed with senior policy makers representing MoAD, as well as the Ministry of Forest and Soil Conservation (MFSC), and Nepal Agriculture Research Council (NARC). This initiated a discussion on the need and potential of NAP for Nepal.

The discussions led to the organization of the first National Consultation Workshop in March 2015 where more than 150 stakeholders represented government ministries and

departments; NGOs; civil society and community-based organizations (CBOs); UN, and other international agencies. Summarizing the recommendations of this consultation, the 'Kathmandu Declaration on Agroforestry' was jointly issued by MoAD and MFSC. The declaration recommended the development of NAP, capitalizing on ICRAF's experience in developing a similar policy for India.

During 2016, the Government of Nepal constituted an Inter-Ministerial Coordination Committee (IMCC) to oversee the policy development. ICRAF is one of the members of IMCC, and provides overall technical support on policy development.

IMCC and ICRAF, with support from CTCN, organized three consultation workshops in Nepal between 2-5 November 2017. They focused on how the proposed policy would tackle the barriers that agroforestry practitioners are facing in the country. The participants represented stakeholders from the Government ministries and departments, research institutes and universities, farmers' associations and cooperatives, NGOs, and service providers.

The development of NAP is in line with the Nationally Determined Contributions (2016) and the Climate Change Policy (2011) of Nepal that identify forests and trees as extremely important to promote both the adaptation and mitigation to climate change, including agroforestry.

The following are the barriers that the new policy is envisioned to address:

- absence of an institutional mechanism for coordination and convergence among existing schemes and ministries to pursue agroforestry in a systematic manner;
- lack of integrated farming systems approach;
- restrictive regulatory regime;
- liberalization of existing restrictive regulations;
- research, extension and capacity building at institutional individual level
- problem of quality planting material;
- lack of finance and insurance; and
- considering agroforestry income as agricultural income

During the inauguration of the first workshop Dr. Bishwa Nath Oli, Secretary, MoPE, said: "Agroforestry is very important for Nepal to improve livelihoods of smallholders, and enhance their resilience to climate change."

Nepal is facing the challenge of the internal and external migration of youth, leaving behind elderly, women and children in villages. The absence of workforce in rural communities leads to underutilization of agricultural land,

leading to reduced family income. “Agroforestry can offer a sustainable solution to such problems”, said Dr. Oli.



*Participants of the consultation workshop*

The second workshop was inaugurated by Dr. Yubak Dhoj, G. C., Secretary, MFSC, who stressed that: “Agroforestry policy is expected to remove the existing hurdles faced by farmers in harvesting, transporting, and selling their agroforestry products.” He further pointed out that “an integrated and converged approach is required by the relevant Ministries to achieve this much required and long-pending goal”.

The third workshop was inaugurated by Mr. Uday Chandra Thakur, Ex-Secretary, MFSC & now Member of the National Farmer’s Commission of Nepal. Welcoming the initiative Mr. Thakur said: “Agroforestry has great potential to provide food, nutrition and environment security.”

Dr. Javed Rizvi initiated discussions at the three workshops through sharing ICRAF’s experience with the Government of India on policy development. He explained how in a very short period, the approved policy has successfully enhanced economic, health and environmental benefits in India.

The National Agroforestry Policy is expected to produce the following outcomes:

- Promote resilient farming systems to minimize risks during extreme climatic events: drought, flood, and large-scale pest and disease incidences.
- Support, encourage and expand tree plantation to integrate and compliment crop and livestock production aiming at increasing the total productivity, employment, and income.
- Support the efforts to maintain and increase forest/tree cover to ensure ecological stability, and availability of products such as: fuel wood, fodder, timber and non-timber forest products, to reduce pressure on natural forests.

- Facilitate investment and funding in agroforestry through the Government, international agencies, and local and regional private sector.

- Promote linkages between agroforestry farmers and markets, industries, banks and insurance providers.

The policy will provide an effective way to comprehensively use agroforestry and enable communities to adapt to and mitigate climate change, as well as to strengthen the capacity of policymakers, researchers, extension workers, first and end users, to implement and sustain the policy.

*Story and Photos: Dr. Javed Rizvi, South Asia Regional Program, ICRAF*

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## International Centre for Integrated Mountain Development (ICIMOD)

### Pro-Poor Value Chain Development for *Apis Cerana* Honey

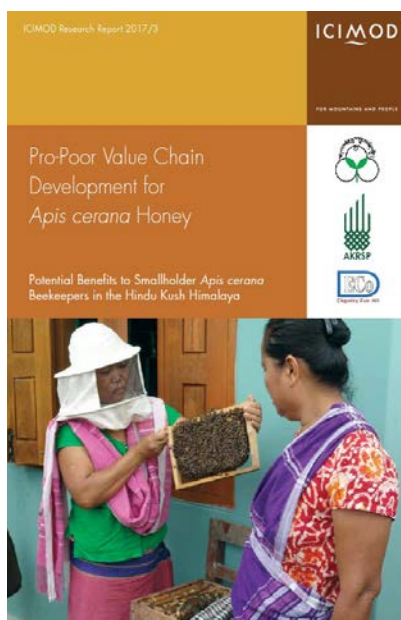
Mountain communities of the Hindu Kush Himalaya (HKH) region have a rich tradition of beekeeping and honey hunting with indigenous honeybee *Apis cerana* (Asiatic honeybee).

The honey harvested from these bees is an important source of cash income for households in the mountain areas. The region is rich in floral resources and offers great potential for the production of high quality *Apis cerana* honey.

The honey collected from a variety of plant sources in the mountain/hill areas is in great demand, and good quality *Apis cerana* honey fetches a much higher price than *Apis mellifera* (European honeybee) honey.

The International Centre for Integrated Mountain Development (ICIMOD), in collaboration with its national partner organizations in the member countries, including government and NGOs, has been working for the development of *Apis cerana* beekeeping to improve the livelihoods of mountain people.

These interventions have helped people enhance their cash income in pilot areas. However, present constraints faced by beekeepers, and future scope for producing natural and pure honey for expanding markets within and outside HKH countries are yet to be understood.



*This document presents the findings of the studies conducted on value chain analyses of Apis cerana honey in CHT, southern Bhutan, and the Kalash valley, Chitral.*

Hence, ICIMOD coordinated a series of studies to gain a better understanding of the entire structure of honey value chain, especially *Apis cerana* honey, in all potential *Apis cerana* beekeeping districts of Chittagong Hill Tracts (CHT) of Bangladesh, southern Bhutan, and the Kalash valley of Chitral district in Pakistan.

Primary data was collected by interviewing the households engaged in *Apis cerana* beekeeping and honey traders in each country, using pre-tested structured questionnaires and focused group discussions. This was supplemented with secondary data gathered from different published and unpublished sources.

*Story and Photos: Udayan Mishra, Knowledge Management and Networking Officer, ICIMOD*

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## Centre for Agricultural Bioscience International (CABI)

### Africa faces Permanent \$2bn+ Maize Deficit if Fall Armyworm Poorly Managed

CABI has confirmed 7 September 2017 that Fall Armyworm (FAW) has been reported in 28 African countries, following the pest's arrival in Africa in 2016, presenting a now permanent agricultural challenge for the continent. FAW feeds on more than 80 crops, but prefers maize and can cut yields by up to 60 per cent. In research funded by the UK's Department for International Development (DFID), CABI now estimates the pest will cost just ten of the continent's major maize producing economies in Africa a total of \$2.2bn to \$5.5bn a year in lost maize harvests- if the pest is not properly managed.

"Enabling our agricultural communities with quick and coordinated responses is now essential, to ensure the continent stays ahead of the plague," said Dr Joseph DeVries, Vice President – Program Development and Innovation at AGRA.

As countries turn to pesticides to reduce the damage, farmers face the risk of the pest developing resistance to treatment, which has become a widespread problem in the Americas.

Biopesticides are a lower risk control option, but few of the biopesticides used in the Americas are yet approved for use in Africa, raising the need for urgent local trials, registration and the development of local production. "Maize can recover from some damage to the leaves. So when farmers see damaged leaves, it doesn't necessarily mean they need to control.

Research is urgently needed, and a huge awareness and education effort is required so that farmers monitor their fields, and can make decisions on whether and how to control," said Dr Roger Day, CABI's Sanitary and Phytosanitary (SPS) Coordinator.

"There are natural ways farmers can reduce impact, including squashing the eggs or caterpillars when they see them, and maintaining crop diversity in the farm, which encourages natural predators."



### Fall Army Worm

CABI has also warned of the need to address the human health issues raised by any far more extensive use of chemical pesticides.

"Resource poor farmers are often unwilling or unable to buy the appropriate safety equipment and in some cases they use pesticides without appropriate application equipment. Farmers may also be disinclined to use safety equipment when hot weather makes it extremely uncomfortable. Recognising that farmers will still want to use pesticides, specific measures are needed to make lower risk



biopesticides more accessible,” said Dr. Day.

Agricultural researchers are also now working to identify a natural biological control agent, such as a parasitic wasp that lays its eggs inside the FAW eggs. In time, this may provide the most sustainable solution to Africa’s newest pest infestation, said Dr. Day.

*Story and Photos: Rachel Winks, PR and Social Media Manager, CABI*



## International Food Policy Research Centre

### Shenggen Fan wins "2017 Fudan Management Excellence Award"

IFPRI congratulates Director General Shenggen Fan on being awarded the 2017 Fudan Management Excellence Award. Established by Li Lanqing, former Vice Premier of China’s State Council, the award is referred to in China as the “Nobel Prize for Management.”

This highly prestigious award recognizes individuals who have made outstanding contributions to the field of



management. Dr. Fan received the award in recognition of his more than 30 years of pioneering work in agricultural economics and public policy research, as well as his leadership in the challenge to end hunger and malnutrition worldwide as Director General of IFPRI.

Some of his recognized academic works include several long-term studies he conducted on the deep roots of inequality in the western region of China and an econometric model which disentangled the roles of specific public investments in promoting growth and reducing poverty and inequality.

*Story and Photos: Drew Sample, Senior Media Relations Specialist, IFPRI*



### Director General, COA, R.O.C.

In October 2017, Dr. Chung-Hsiu Hung took office as the Director General of the International Affairs Department, Council of Agriculture (COA), ROC. Prior to this, he held several important positions, including Director General of the Farmers’ Service Department, COA, and the Director of the Planning Division, Agriculture and Food Agency, COA. Dr. Hung earned his Ph.D. in Applied Economics Department from National Chung Hsing University, Taiwan, ROC.



He has been an adjunct assistant professor in the Business Assistant Department of National Open University for 20 years, serving as an advisor to doctoral and master’s students and teaching economics and finance. Dr. Hung has published over 90 papers in domestic and foreign seminars and journals.

### Executive Director, NARC, Nepal

Dr. Baidya Nath Mahto is an Executive Director of the Nepal Agricultural Research Council (NARC), Kathmandu, Nepal. He received his Ph.D. from the Indian Agricultural Research Institute (IARI), New Delhi, India in 2000 and Post Doc. from the North Dakota State University (NDSU), ND, Fargo,



USA as a Senior Fulbright Post Doc. Visiting Research Scholar in 2010. Likewise, he received various honours and awards, such as ‘University Gold Medal’ and ‘Vice-Chancellor’s Gold Model’ for obtaining first class first with distinction in Bachelors and Master degrees in India.

He also received ‘Mahendra Vidya Bhusan Medal’ from the Government of Nepal in 1990 for M.Sc. Agriculture. In 2002 he received another award for Ph.D., “SUPABAL JANSEWASRI” Bibhushan on Auspicious Republic Day 2073 by Rt. Honorable President of Nepal. On 29 May 2016 he received his third award for his outstanding contribution to agricultural research and food security in Nepal.

During his 31-year work experience in agricultural research, Dr. Mahto had been involved in plant pathological and crop improvement research focused on resistance breeding and management strategies of various crop diseases.

He started his career as a Scientist, Plant Pathology in NARC at the National Wheat Research Programme, Bhairahawa in 1989 and worked as a Senior Scientist from March 1996 to June 2011.

He had been working as a Principal Scientist in NARC since June 2012 until he was appointed as NARC's Executive Director in August 2017.

Dr. Mahto published more than 100 research articles in national and international journals and proceedings, and became a life member of ten professional societies in the world.

His major responsibility is overall supervision of agricultural research for enhancing production and productivity in Nepal and assisting the government in formulation of agricultural policies and strategies for the upliftment of livelihoods and sustainable nutrition and food security in Nepal.

### Director General, MARDI, Malaysia

Dr. Mohamad Roff Mohd Noor is currently the Director General of the Malaysian Agricultural Research and Development Institute (MARDI). He holds a Ph.D. in Plant Virology from University of Reading, United Kingdom. He began his career with MARDI in 1987 as a Research Officer. In 1996, he was appointed as a Senior Research Officer and six years later, he was promoted to assume the role of Principal Research Officer (PRO). In 2008, he became the Senior PRO. In addition to this core research role, Dr. Roff was also assigned to take on leadership roles. He was the Deputy Director of the Pest and Disease Management Programme in the Horticulture Research Centre in 2008. During 2013-2015 he served as the Director of the Strategic Planning and Innovation Management Centre and assumed the Director's position at the Crop and Soil Science Research Centre during 2015-2016. His dedication and commitment led him to be appointed as a Deputy Director General of MARDI for approximately two years (2016-2017) before taking on his new role as the Director General.

Dr. Mohamad Roff believes in sharing his technical know-how, and thus, has offered his professional services to various platforms, be it at the international, national, ministerial or institutional levels. Currently, he sits in the Malaysian Science Fund Committee as the technical and financial panel member. He is a member of the Pesticide



Board and Animal Feed Board. Recognizing his dedication and leadership qualities, Dr. Roff was appointed as a member of the International Integrated Pest Management Committee based in Niigata University, Japan. Despite his busy schedule, he continues to offer a helping hand in organizing committees for conferences, symposia and seminars. In the academic field, Dr. Roff has co-supervised post-graduate students (7 Ms) and (6 PhD). He has also served as an external examiner for Masters and PhD thesis at several universities.

In the technical arena, he continues to engage in research in numerous conferences and symposia, abroad and locally. His technical knowledge and skills earned him the appointment of Editorial Board member of the Journal of Asia-Pacific Entomology and the Journal of Tropical Agriculture and Food.

Living up to the notion of a true leader, Dr. Roff gives back to societies and communities. He was the 36th President of the Malaysian Plant Protection Society, life member of the Malaysian Microbiology Society and the Exco member of the Malaysian Society of Statutory Bodies. He was awarded the Excellent Service Award by MARDI in 2000, 2004 and 2013 respectively, for showing exemplary values and principles.



### NEW APAARI STAFF

#### Dr. Ravi Khetarpal joins as Executive Secretary, APAARI

Dr. Ravi Khetarpal has been appointed as the new Executive Secretary, and he joined APAARI on 1 August 2017. Dr. Khetarpal has served for CABI – South Asia (India) as Regional Director and also as its Regional Advisor on Strategic Science Partnerships for more than seven years.

Prior to this he worked for NARS in India for three decades. He holds a Ph.D. in Life Sciences (Virology) from University of Paris and was a Visiting Scientist in an EU Collaborative Project at INRA, Versailles, France for three years. His areas of interest include research, development, policy issues and capacity building in areas of biosecurity, biosafety, seed certification and biodiversity. He has worked as a consultant of twelve FAO/ World Bank Projects notably in Indonesia (as Team Leader), as well as India, Nepal, Mauritius and Cambodia. He represented Asia as a Developing Country



SPS Expert in STDF Working Group in WTO during 2016 and 2017. Dr. Khetarpal has published 110 research papers, 19 books, 56 book chapters, 12 review articles and 3 policy papers.

### Dr. Rishi Kumar Tyagi joins as APCoAB Coordinator, APAARI

Dr. Rishi Kumar Tyagi has been appointed as APCoAB Coordinator, and joined APAARI on 11 August 2017. Dr Rishi Kumar Tyagi holds a Ph.D. in Botany from University of Delhi, India and Post-Graduate Diploma in Intellectual Property Rights laws from Indian Law Institute (Deemed University), New Delhi, India. Dr. Tyagi worked as Post-Doctoral Research Associate in University of Illinois, USA, for wide hybridization of soybean employing biotechnological methods. He has more than 31 years of experience in managing plant genetic resources (PGR) in terms of collecting, characterization (morphological and molecular), evaluation, conservation and use, in accordance with national and international conventions/treaties and related phytosanitary and biosafety regulations.



Prior to joining APAARI, he held the position of Head, Division of Germplasm Conservation at the ICAR-National Bureau of Plant Genetic Resources, New Delhi, India.

### Dr. Norah Omot joins as ASTI Coordinator/Economist, APAARI

Dr. Norah Omot joined APAARI as the Agricultural Science and Technology Indicators (ASTI) Coordinator/Economist on 11 November 2017. Prior to this appointment, she held the position of Director, Enabling Environment Programme with the National Agricultural Research Institute (NARI) in Papua New Guinea. Dr. Omot holds a Ph.D degree in Economics from University of Canberra, Australia. She has experience and interest in socio-economic research, innovation systems processes, strategic planning and impact pathway processes, as well as community participatory approaches. She has authored and contributed to more than 20 research papers and policy reports.



### Tarathip Sanboonkrong joins as Intern, APAARI

Ms. Tarathip Sanboonkrong joined APAARI on 1 September 2017 as Intern. She is assisting the Secretariat in administrative, financial and other operational activities. Ms. Sanboonkrong completed a Bachelor's degree in Technology Aviation Programme from Suranaree University of Technology in Nakhon Ratchasima, Thailand. She is also extending support in APAARI's existing and new projects, and organizing meetings and workshops.



### External Events Attended

- Dr. Ravi Khetarpal gave a key note address and talked about biosecurity engagements and use of biopesticides for meeting the SDGs during the Regional Consultation on 'Facilitating the use of microbial pesticides in South Asia' organized by SAARC, ICAR and CABI in Bangalore India, 21-23 August 2017.
- Dr. Rishi Tyagi represented APAARI and acted as a Facilitator of 'Policy Dialogue on Scaling Conservation Agriculture' in the Regional Policy Dialogue on Scaling Conservation Agriculture for Sustainable Intensification (CASI) in South Asia, organized by ACIAR and TAAS, and held in Dhaka, Bangladesh, 8-9 September 2017.
- Dr. Rishi Tyagi represented APAARI in an FAO Regional Meeting on Agricultural Biotechnologies in Sustainable Food Systems and Nutrition in Asia-Pacific, organized by FAO-RAP, and held in Kuala Lumpur, Malaysia, 11-13 September 2017.
- Ms. Celilu Bitong participated in the Capacity Development for Agricultural Innovation Systems (CDAIS), Marketplace, Dhaka, Bangladesh, 13 September 2017.
- Dr. Ravi Khetarpal participated in the 8th GFRAS Annual Steering Committee meeting in Townsville, Australia as a representative of GFAR, 14-15 September 2017.
- Ms. Celilu Bitong and Ms. Martina Spisiakova participated in the Capacity Development for Agricultural Innovation Systems (CDAIS) Project's Global Consultation Meeting 6, and TAP Partners' Assembly, which took place in Vientiane, Lao-PDR, 18-22 September 2017.



- Dr. Rishi Tyagi represented APAARI in the Sustainable Agro Food Business Forum (SABF), organized by ESCAP, AFMA, and EBAC, Bangkok, 26-27 September 2017.
- Ms. Celilu Bitong participated in the Social Media Bootcamp of the Committee on World Food Security's (CFS) 44rd Annual Plenary Meeting, Rome, Italy, 7 – 13 October 2017.
- Dr. Ravi Khetarpal attended the Working Group meeting of the World Trade Organization (WTO) Standard and Trade Development Facility (STDF), Geneva, Switzerland, 30-31 October 2017.
- Dr. Norah Ohmot attended a meeting at IFPRI, Washington DC, 15-22 November 2017.
- Dr. Ravi Khetarpal participated in USDA's work on Phytosanitary Capacity evaluation, Dhaka, Bangladesh, 22 – 28 November 2017.
- Dr. Ravi Khetarpal attended a Regional Coordination Meeting of ICARDA South Asia and China on 'Strategic partnership towards enhancing food and nutrition security in South Asia and China', New Delhi, India, 5-8 December 2017.
- Dr. Ravi Khetarpal participated in the Research Advisory Committee Meeting of the Indian Agricultural Research Institute of ICAR, New Delhi, India, 22-23 December 2017.
- Dr. Ravi Khetarpal participated in the National Symposium on Sustainable Disease Management Approaches and Applications, Pantnagar, India, 23 December 2017.

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## Forthcoming Events

- ICAR training on recent developments in conservation and characterization of horticulture plant genetic resources, Navsari Agricultural University (NAU), India, 4-24 January 2018.
- XXXI Annual Convention of the Indian Association of Veterinary Microbiologists, Immunologists and Specialists in Infectious Diseases, India, Kamdhenu University (KU), 29-31 January 2018.
- International Conference on Biocontrol and Sustainable Insect Pest Management, India, Tamil Nadu Agricultural University (TNAU), 29-31 January 2018.

- Recent Advances and Accomplishments in Heterosis Breeding of Crops, India, TNAU, 21 January- 20 February 2018.
- ANSICON-2018 Nutritional Challenges for Raising Animal Productivity to Improve Farm Economy, India, 1-3 February 2018, Junagath Agricultural University (JAU).
- National Seminar on Technologies and Sustainability of Protected Cultivation for Hi-Valued Vegetable Crops, 1-3 February 2018, NAU.
- 46th Dairy Industry Conference: Sufficiency to Efficiency, India, KU, 8-10 February 2018. 3rd Partnership Level 1 Certified Training, Nepal, Partnership Brokers Association (PBA), ICIMOD, 12-15 February 2018.
- National Conference on Smallholders Livestock Producers in India: Opportunities and Challenges, 25th Annual Convention of ISAPM, India, Sardarkrushinagar Dantiwada Agricultural University (SDAU), 11-13 April 2018.
- National Conference on Agricultural and Food Mechanization (NCAFM) 2018, Malaysia, MARDI, 17-19 April 2018.
- 3rd ASEAN Microbial Biotechnology Conference (AMBC) 2018, Malaysia, MARDI, 24-26 April 2018.
- 10th World Potato Congress, Biodiversity, Food Security, and Business, Peru, International Potato Center (CIP), 27-31 May 2018.

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## NEW APAARI MEMBER

### Affiliate Member:

- Indian Institute of Technology (IITB, Mumbai ), India

## Executive Committee

### Chairman

**Dr. Yusuf Zafar**  
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