Training tackles the tough issues

Partners pool their knowledge on topics from postharvest losses to plant breeders’ rights

Hands-on activities on procedures and use of postharvest instruments for quality evaluation at the Horticulture Research Station, Dr YSR Horticultural University, Sangareddy, Telangana, India.

Regional cooperation to cut food losses

A recent training course organized by the World Vegetable Center (AVRDC) revealed the staggering scale of annual postharvest losses in vegetables and fruits across South Asia—estimated at 60% in Afghanistan, 42.5% in Bangladesh, 50% in Bhutan, and 35% in Nepal. India’s 30% losses are valued at USD 32.7 billion.

The SATNET Asia Regional Training Programme on Postharvest Management and Market Linking for Vegetables and Fruit in South Asia was conducted on 26-28 November 2014 at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) Campus, Hyderabad, India. It brought together 17 leading...

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Managers and scientists of agricultural development agencies, universities and the horticulture sector from Afghanistan, Bangladesh, Bhutan, India and Nepal to learn from invited experts and each other.

The course was organized by AVRDC South Asia in partnership with the Asian and Pacific Center for Transfer of Technology (APCTT). It was held under the umbrella SATNET project of the UN Center for the Alleviation of Poverty through Sustainable Agriculture (UNCAPSA) funded by the European Union.

Jun Acedo, AVRDC Postharvest Specialist, spoke on value chains and best practices in reducing postharvest losses, managing physiological changes in fresh produce, vegetable quality measurement and postharvest technologies. Other speakers included Kavya Dashora from CABI South Asia who covered minimum wastage strategy, quality assurance and disease management, Adapa Kiran Kumar of Dr YSR Horticultural University who spoke on ICT applications, quality measurement and best practices, and Doreyappa Gowda from the Indian Institute of Horticultural Research, who spoke on best practices for processed produce. Dr. Raghavan from APCTT spoke on linking small farmers with markets.

I thank you from the bottom of my heart for giving me this valuable opportunity to participate in this training program. I learned a lot and I am glad to gain knowledge on postharvest management as it was the first time I have undergone such kind of training. I will ensure that this knowledge will be shared with the poor farmers in the rural areas of Gujarat.

— Sunita Patel, Project Coordinator, Self Employed Women’s Association
Participants were extremely positive about the course. “It greatly improved my knowledge and my practical experience regarding postharvest management and market linking,” said Qudratullah Soofizada from the Ministry of Agriculture, Irrigation and Livestock, Afghanistan. Md. Atiqur Rahman from the Bangladesh Agricultural Research Institute said “It was my first time to experience such a great training, very short but compact.” And Sonam Dorji, with the National Postharvest Center, Bhutan, noted “I learned a lot that can be applied to my work.”

It was a wonderful and productive training program. A large part of the training was new to me, and I got new ideas and views towards how in real life it can be used productively. It was a real happy learning experience.

— Murali Mahalingam, Farmer, Coimbatore, Tamil Nadu, India

The course concluded with a field trip to the Horticultural Research Station of Dr YSR University where mango cold chain developments were discussed. Presentations were made on fresh produce exports and the electronic solutions in horticulture (eSHORT) program. Participants also received practical experience in quality evaluation using postharvest instruments.

From 24 November-3 December 2014, several plant breeders convened at AVRDC Eastern and Southern Africa to participate in a training course about plant variety protection. The course introduced Plant Breeders’ Rights in Tanzania under the umbrella of UPOV, the International Union for the Protection of New Varieties of Plants, to which all members of the World Trade Organization adhere, and explored practical aspects of implementing the rights. The development of new plant varieties can be a long-term investment of up to 15 years, and with Plant Breeders’ Rights, intellectual property rights are safeguarded.

The training was organized by Wim Sangster and Laura Piñán González from Naktuinbouw, an organization carrying out official inspection and certification tasks for horticultural seeds and plants under the auspices of the Dutch government.

Patrick Ngwediagi, Tanzania’s Registrar of Plant Breeders’ Rights, explained the importance of the course for his country, and hoped that through the course, agricultural investment would be spurred by the private sector.

Tanzania holds first course on Plant Breeders’ Rights

Participants take technical specifications of the crops. Breeders need accurate descriptions of new varieties to protect intellectual property rights.

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The course covered legal aspects such as the UPOV system, but also technical aspects such as the all-important DUS principle: distinctness, uniformity and stability testing. **Kees van Ettekoven**, Head of Variety Testing of Naktuinbouw and **Clarisse Maton** from the French Group for the Study and Inspection of Varieties and Seeds (GEVES) provided case studies during the training. DUS testing of new species took center stage, and staff at AVRDC prepared maize, tomato, African eggplant and pepper crops so that participants were taught using practical examples. The participants also took a field trip to Afrisem, a large privately owned vegetable breeding facility.

### Plant Breeders’ Rights

This course is organized annually in Wageningen for professionals from all over the world. For residents of certain countries a limited number of scholarships are available. For more information contact: trainingservices@naktuinbouw.

The Dutch Government sponsored the course. **Jaap Satter** from the Ministry of Economic Affairs of the Netherlands opened the event, and certificates were handed out to participants upon completion of the course by **Bert Rikken**, Agricultural Counsellor for Kenya, Tanzania and the UN from the Embassy of the Netherlands in Kenya.

### New projects

Staff from the World Vegetable Center will participate in the following projects funded by various donors. We appreciate the support and look forward to fruitful collaborations with our donors and partners to work for the benefit of small-scale farmers, their families and communities throughout the world.

- **“Enhancing partnership among Africa RISING, NAFAKA and TUBORESHE CHAKULA Programs for fast-tracking delivery and scaling of agricultural technologies in Tanzania”** funded by the **United States Agency for International Development (USAID) Tanzania Mission**. Lead Partner: International Institute for Tropical Agriculture (IITA).

- **Syngenta Crop Protection AG (Syngenta)** is funding a research program entitled “Evaluation and Screening of Syngenta Maize and Vegetable Hybrids for Adaptation in Nigeria” and a training program entitled “Skills Development Program for Syngenta Staff”. Lead Partner: International Institute for Tropical Agriculture (IITA).

- “Cambodian Horticulture Advancing Income and Nutrition (CHAIN)” funded by the **Swiss Agency for Development and Cooperation (SDC)**. Lead partner: Netherlands Development Organization (SNV).
Recent research from AVRDC authors


Job opportunity

The University of Reading UK School of Agriculture, Policy and Development seeks an **Associate Professor in Crop Science**: [http://www.reading.ac.uk/about/jobs/about-job-details.aspx?vacancy_id=6581468EMM](http://www.reading.ac.uk/about/jobs/about-job-details.aspx?vacancy_id=6581468EMM)
Cooking the island way

The Island Food Community of Pohnpei promotes traditional crops and farming systems for the islands in the Federated States of Micronesia. The organization recently published an 80-page book with more than 90 recipes highlighting traditional and modern local foods that focus on healthy eating, [http://www.islandfood.org](http://www.islandfood.org)

Kadiring Chili Sauce
Created by Wanpen Ordonez

**Ingredients**

- 1 ½ packed kadiring (holy basil, *Ocimum tenuiflorum*) leaves
- ½ cup chilis (fresh local hot and mild)
- 1 cup onion, chopped
- 1 tablespoon salt
- 2 tablespoons soy sauce
- 2 tablespoons brown sugar
- 3 tablespoons vinegar
- ¼ cup vegetable oil

**Method**

Blend together finely chopped kadiring leaves, chilis, and onion in food processor or chop with a knife. Add the rest of the ingredients. Cook the mixture in a pan over medium low heat 30 minutes, stirring occasionally until the sauce is thick. Remove from heat and store in a sterilized or clean jar. Use the sauce as a side dish or add in a stir fry of vegetables, fish, chicken, and meat. Keep the sauce in refrigerator. Yield about 1 cup.

CATALOG for CENTRAL ASIA: The cornucopia of vegetables available to farmers in Uzbekistan keeps expanding thanks to the tireless effort of World Vegetable Center Regional Coordinator Ravza Mavlyanova. Together with country partners R.A. Khakimov and B.D. Azimov, Ravza prepared an attractive catalog of the vegetable and melon varieties released in the country—37 of which originated directly from AVRDC genebank accessions during the period 2007-2013. Notable introductions include vegetable soybean, a new crop for the region, and yard-long bean.
A training course on the “Diagnosis of major pests and diseases of yard-long bean and vegetable brassicas” was held for the month of October 2014 at AVRDC headquarters in Taiwan as part of the German Federal Ministry for Economic Cooperation and Development (BMZ) / Gesellschaft für Internationale Zusammenarbeit (GIZ) funded Attraction in Action project. The seven trainees came from the three project countries (three from Vietnam, and two each from Cambodia and Lao PDR). Training was offered through lectures, practical classes in the laboratory and glasshouse, and field visits. 

**Srinivasan Ramasamy** (Entomologist and Project Manager), **Jaw-Fen Wang** (Plant Pathologist) and **Lawrence Kenyon** (Plant Virologist) served as the major resource persons. Staff from Entomology (Mei-ying Lin, Fu-cheng Su, Huang Chun-chu), Bacteriology (Fang-I Ho), Mycology (Wallace Chen, Zong-ming Sheu, Jaw-rong Chen) and Virology (Su-Ling Shih, Li-mei Lee, Jin-teh Wang, Hsui-mei Liu, Jennifer Lii) also participated in the training course. The trainees will go on to assist in the Attraction in Action project by conducting pest and disease surveys on the target crops in the project countries. They also will serve as trainers for future in-country training courses for selected national agricultural research and extension staff.

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**AWARD FOR MYANMAR:** Nilar Maung received the Innovation for Inclusive Development Fellow Award for Myanmar for her work on insect pest control strategies from the Universities and Councils Network on Innovation for Inclusive Development in Southeast Asia (UNIID-SEA) on 5 November 2014 at the Aryaduta Hotel, Jakarta, Indonesia. Congratulations, Nilar!
MoU WITH TURKEY: Six members of the Plant Breeders’ Union of Turkey (BISAB), led by President Yalcin Kaya, visited AVRDC HQ on 12-13 January 2015 to learn about the Center’s breeding programs, genebank management, biotic and abiotic test facilities, and training opportunities. The breeders were introduced to AVRDC’s work by Director General Dyno Keatinge, and after discussions with management, signed a Memorandum of Understanding with the Center. The delegation also met with senior researchers in genetic resources, breeding, technology dissemination and training, molecular genetics, crop protection, and nutrition. The BISAB representatives, in addition to President Kaya: Davit Keles, Director, Alata Horticultural Research Station, Ministry of Food, Agriculture and Livestock; BISAB Board Members M. Mete Solen, Busra Yapici, and Mehmet Husemoglu; and Mustafa Akin, BISBAB Secretary General.

CATIE COMES TO TAIWAN: William Solano Sánchez, Senior Researcher in Plant Genetic Resources, and Indira Sibelle Ortiz Alcántara, Master Student in Agroforestry and Sustainable Agriculture from Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), Costa Rica, visited World Vegetable Center headquarters from 9-21 January 2015 to learn about the Center’s germplasm management practices and global breeding activities. The visitors met with researchers in Genetic Resources and Seed; Tomato, Cucurbit, and Pepper Breeding; and Phytopathology, and also toured Taiwan’s Si-Lo wholesale market, vegetable production sites, and the research farm of Known-You Seed Company. The visit was funded by the Taiwan Ministry of Foreign Affairs.

(l to r): Yin-Fu Chang, AVRDC Deputy Director General-Administrative and Services; Indira Sibelle Ortiz Alcántara, Master Student in Agroforestry and Sustainable Agriculture; William Solano Sánchez, Senior Researcher in Plant Genetic Resources from Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), Costa Rica; Dyno Keatinge, AVRDC Director General and Andreas Ebert, AVRDC Genebank Manager.
As a project closes, impact begins

On 25-27 November 2014 Indonesian farmers, scientists and extension agents from the national agricultural research and extension system, non-governmental organization representatives, universities, World Vegetable Center (AVRDC) staff and a donor representative interacted in a lively and productive Closing Workshop for the United States Agency for International Development (USAID)-funded *Vegetables for Indonesia* project. AVRDC and its partners implemented the project in East Java and Bali over the past four years, focusing on chili and tomato production and variety trials, capacity building of the national agricultural research and extension system and farmers, and postharvest management.

The workshop was held in Pancasari, Bali with representatives from Udayana University, the Indonesian Vegetable Research Institute (IVEGRI), FIELD Foundation Indonesia, East Java and Bali Assessment Institutes of Agricultural Technology (AIAT), the provincial Extension Services, farmer groups, the Center for Economic and Development Studies of Padjadjaran University, USAID and AVRDC. Participants presented and discussed results of their activities and a preliminary project outcome assessment.

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The workshop reflected and strengthened collaboration among all partners and demonstrated the importance of productive partnerships. The strong linkages forged during the project will continue to mobilize vegetable genetic resources and technologies, helping to ensure the sustainability of the project’s positive impacts. Grafting and other technologies introduced during this project are beginning to be adopted by farmers and other stakeholders.

The project was co-led by Greg Luther as Principal Investigator and Kartini Luther as Project Manager. Joko Mariyono ran and coordinated the project implementation as Site Coordinator.

1. Workers at Wayan Sadia’s collection center coat tomatoes with sesame and lemon grass oil mixture developed during the project to extend shelf life.
2. A student at Al-Hidayah High School at Pancasari, Bali proudly explains her school garden to Widyastama Cahyana, Director of FIELD Foundation Indonesia.
3. Nursery at Community Seed Bank Bali.
4. Grafted tomato planted at a farmer’s field in Baturiti, Bali. The tomato has been harvested seven times and four to five more harvests are expected. Non-grafted tomato planted the previous year died with black stem without any yield.
5. Grafting technology practice.
Ann Tutwiler, Director General, and Stephan Weise, Deputy Director General for Research, Bioversity International, gave a joint presentation on “Bioversity’s New Strategy and Initiatives/Update on CGIAR Strategic Results Framework and CRP Phase 2” to AVRDC headquarters staff on 19 January 2015. The institute aims to deliver scientific evidence, management practices and policy options to use and safeguard agricultural biodiversity to attain sustainable global food and nutrition security. It takes a four-point approach: consume a more diverse nutritious diet; produce on sustainable, resilient and productive farms and landscapes; plant a diversity of quality seeds and other planting materials; and safeguard priority agricultural biodiversity for current and future needs. After the seminar the visitors met with AVRDC management and researchers to discuss potential areas for collaboration.

On 24 December 2014, Researcher Chen Li-Fang, from the Department of Plant Pathology, University of California Davis, discussed “Curly top: a disease of tomato in California caused by a complex of leafhopper-transmitted geminiviruses” with AVRDC staff.

Tony McDonald, Adviser to the Australian Minister of Agriculture on dryland farming issues in Afghanistan on behalf of AusAID, spoke on “The current difficulties of addressing food security in Afghanistan” on 29 January 2015. Mr. McDonald is based in Kabul. Although the country has seen improvements in health, schools, roads, power, and other infrastructure over the past 12 years, simple agricultural technical assistance remains difficult to deliver. Subsistence agriculture is the main livelihood for 80% of the population. The greatest opportunities for improvement are in rain-fed areas, where perennial crops could be established for income generation.
Visitors

(visitors) A group of 15 visitors from Yunnan Agriculture University, People’s Republic of China, together with Prof. Chen Yueh-her from Taiwan’s Dayeh University, were briefed on AVRDC’s activities by Visitor Coordinator Shiu-luan Lu on 25 December 2014 at headquarters.

(left) Nine visitors led by Run-ting Fu, General Secretary, Tianjin Academy of Agricultural Science, Hebei Province, People’s Republic of China, accompanied by Paul Sun, former AVRDC Board Chair, toured the Demonstration Garden and Genebank on 20 January 2015. (right) Representative Catherine Raper and Nancy Yang, Deputy Director of the Economic and Policy Section, Australian Office, Taipei met with the World Vegetable Center management team on 19 January 2015 to discuss Center activities funded by the Australian government and other topics. The visitors also sunk roots in Taiwan by planting a tree in the Center’s Green Drive.

(left) Five professors and researchers from Jeju National University, Korea, toured headquarters campus on 16 December 2014 accompanied by Yoonpyo Hong, seconded scientist from Korea’s Rural Development Administration. (right) Thirty students and seven teachers from National Tainan First Senior High School (TNFSH) science program visited AVRDC on 16 December 2014. In addition to stops at the Genebank and Demonstration Garden, the students were guided through indigenous vegetable field #33 by researcher Ruby Hsiao. TNFSH students are famous throughout Taiwan for the publication of an attractive book highlighting the art, history, architecture and food of Tainan.

A group of 15 visitors from Yunnan Agriculture University, People’s Republic of China, together with Prof. Chen Yueh-her from Taiwan’s Dayeh University, were briefed on AVRDC’s activities by Visitor Coordinator Shiu-luan Lu on 25 December 2014 at headquarters.
Through the United States Agency for International Development (USAID)-funded Agriculture Innovation Program (AIP), the World Vegetable Center (AVRDC) assists farmers, extension and research workers in Pakistan in the use of improved production practices, including protected cultivation of vegetables. Presently, protected agriculture is confined to the Punjab and some parts of Khyber Pakhtunkhwa (KPK), where the area under vegetable cultivation was 14,000 hectares in 2012-13, down from 22,000 hectares in 2009-10.

To promote the benefits of protected cultivation in the region’s harsh winters, staff from AVRDC and the Directorate of Vegetable Seed Production, Agricultural Research Institute (ARI), Quetta introduced eight farmers and two young scientists from Balochistan (Pishin, Bolan-Kachhi, Mastung and Quetta districts) to improved cultivation practices including nursery raising, efficient drip irrigation systems, and production and postharvest management of vegetables under plasti-culture during field visits from 15-19 December 2014. The participants were briefed about vegetable production and management and toured the Vegetable Research Institute, Ayub Agricultural Research Institute, Faisalabad (Punjab). They visited a small onion processing operation, where the bulbs are dried, bagged in 5- and 10-kilogram sacks, and marketed. Later, they were taken to

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Top Bhutanese school gardeners visit India

Chewanda-Gojra (Punjab) where off-season cucurbit production was in practice. The group toured sites where tomato, cucumber and sweet pepper are grown in protected structures in Bhikhi-Sheikhupura (Punjab), and met prominent tunnel growers in this area and also in Haripur who shared their experiences with the growing method. In Islamabad, the group learned about vegetable research—especially tomato grown under protected cultivation and onion seed produced in the field—at the National Agricultural Research Center, and met with the Chairman of the Pakistan Agricultural Research Council, with whom they discussed specific production problems in Balochistan. The group received shields from representatives of USAID, the International Maize and Wheat Improvement Center (CIMMYT), AVRDC and ARI to commemorate their visit and cooperation.

B.B. Rai (center) visiting farmers in Gouraram Village, Telangana, India.

Winners of the 2014 national school garden program in Bhutan visited the World Vegetable Center (AVRDC) South Asia office in Hyderabad during the week of 12-19 December 2015. Nine principals and agriculture teachers led by B.B. Rai, Coordinator of the School Agriculture Program from the Ministry of Agriculture & Forests, Royal Government of Bhutan, sought new ideas from India to apply to their agricultural activities. Following presentations on the Center’s work by Legume Breeder Ramakrishnan Nair and Regional Director Warwick Easdown, the group visited the International School of Hyderabad to interact with teachers and students, and toured the campus of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). At local farms the visitors learned about agricultural issues in the region. The group also visited schools in Hyderabad that are taking innovative approaches to gardening and improving sanitation and health. With their new knowledge, the Bhutan visitors are well-positioned to expand their school programs and create new opportunities for their students.
Seed minikits help thousands of flood victims rebuild lives in Puri, Odisha

For Sushma Shetty, a 50-year-old farmer, the cataclysmic events of August 2014 evoke tearful memories. Heavy downpour and raging torrents wreaked disaster in her village, B C Patna, Nimapada, in the Indian state of Odisha. "The water-logged fields presented us little hope," she said. "Everything we saved and stored was washed away."

In November 2014, Ms. Shetty became one of 19,000 beneficiaries to receive disaster response minikits of vegetable seed from the World Vegetable Center. The activity was the Center's largest single distribution of disaster response seed kits to date, and was coordinated by Technical Officer Swagatika Pradhan.

"These to me are the seeds of change," Ms. Shetty added. "We have had a continuous supply of food ever since." The minikits included seed of amaranth, spinach, bitter gourd, French beans, eggplant and kang kong, chosen in collaboration with the villagers. All of them are now under cultivation in the home gardens of Ms. Shetty and her neighbors.

Bilas Panda, who shares a fence with Ms. Shetty, is a mother of two and a beneficiary of the seed program. Her concern focused on the health of her children following the floods. "The harvest helped me keep up the nutrition levels in our family meals at the time of troubles," she said. Leafy vegetables are part of daily meals and the prime ingredients for the staple dal. The floods adversely affected Ms. Panda’s purchasing power, which means the vegetables she grows at home remain critical for the family’s food supply.

Farmers from the 112 villages in Puri district, Odisha targeted by the minikit program have similar experiences to share. Puri district is a flood-prone area and every alternate year floods damage agricultural fields, home gardens and homes. Kanas and Nimapada are the most affected communities in the district. Kanas is in a low elevation area and water remains in the fields for at least 60 days after

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floods, while Nimapada is affected by flash flooding and water remains in the fields for 30-45 days afterwards.

Under the project “Strengthening the capacity of vulnerable communities to prepare for the recovery from floods in India,” the Center’s scaling up activities are focused on improving nutrition and flood resilience through short duration vegetable production. **Catholic Relief Services (CRS)** is the lead organization on this project.

Women farmers in the region receive continuous training support from the Center and the **Society for Women Action and Development (SWAD)**, a local non-government organization, to acquire improved knowledge and skills on home vegetable garden management.

“We were equipped with information and when disaster was upon us we had the right tools to rebuild our lives,” Anjali Kumari, a farmer from Jamalgoda village in Kanas, said of the minikit she received.

Following the floods she raised the 40 m² land she had by 60 cm, and it is now fit for cultivation. Using the seeds from the minikit, Ms. Kumari managed to feed her family of five with healthy meals. “Much of the village is still water-logged, but we had to make do with whatever was left,” she said. “Both my husband and me put our backs into it and despite excess salinity in the soil we managed a good crop. Along with the seed packs, the lessons on line sowing and pest management came to our rescue.”

AVRDC commissioned a local private firm, **Mahalaxmi Seeds**, to repackage the recovery seeds in the minikits at Rs 49 each (approximately US$ 0.80). Germination percentage and other critical elements were evaluated by AVRDC before the seed was distributed. Farmers appreciated the packaging suited to their needs, and the timely availability of the seed packs meant that farmers could make a quick recovery from the financial and crop losses incurred due to the flash floods.

**Warwick Easdown**, Regional Director, AVRDC South Asia, said this seed distribution activity built on experiences with a smaller distribution of seed to other flood victims in Odisha in 2011. “By working with farmers over time, we knew which crops they really needed,” he said. “We were able to supply quality seed economically from a local vendor and connect that vendor to women’s groups to ensure future seed supplies. Women’s groups in isolated villages tend to have poor connections to reliable seed suppliers, and this has a critical impact on food supplies after disasters.”

AVRDC field staff recently visited farmer beneficiaries in the target villages to discuss their use of the seed kits and solutions for managing their crops.
Humidtropics Innovation Platforms meet in Cameroon

The World Vegetable Center (AVRDC) organized a workshop in Cameroon on “Vegetable Farms in Integrated Farming Systems in the Humid Regions of Cameroon” on 18 December 2014 at the Institute for Agricultural Research and Development (IRAD), a national agricultural research institution and a key AVRDC partner in the country. The workshop was organized to follow-up on Innovation Platforms (IPs) set up earlier in Mbalmayo (Central Region), Kumba (Southwest Region) and Batibo (Northwest Region) as part of the Humidtropics Cameroon Action Site.

Humidtropics is a CGIAR Research Program that seeks to transform the lives of rural poor in tropical Americas, Asia and Africa. It uses integrated systems research and unique partnership platforms to have a better impact on poverty and ecosystem integrity. Core program partners are AVRDC, Biodiversity International, International Center for Tropical Agriculture (CIAT), International Potato Center (CIP), Forum for Agricultural Research in Africa (FARA), African Insect Science for Food and Health (icipe), World Agroforestry Center (ICRAF), International Institute of Tropical Agriculture (IITA), International Livestock Research Institute (ILRI), International Water Management Institute (IWMI), and Wageningen University and Research Center (WUR).

The workshop brought together 24 participants from AVRDC, IRAD, IITA and farmers’ associations, women organizations, and the private sectors from the three IPs to encourage exchange between the IPs and researchers, and offer all the opportunity to reflect on the challenges, opportunities, potential solutions, partnership interventions and policies and technical support needed to integrate vegetables into Cameroon’s farming system. Topics covered included AVRDC’s mission, strategic advantages, its activities in Cameroon and potential areas of collaboration and partnership with the IPs. Sustainable vegetable practices in integrated farming systems in Cameroon, the typology of smallholder vegetable farmers in Cameroon, and nutritional and health value addition from vegetable consumption in Cameroon were presented.

In group sessions the participants identified major challenges, opportunities, potential solutions, interventions, policies and technical support needed to integrate vegetables into existing farming systems for each IP. Common challenges for all IPs were the unavailability of improved seeds, poor soil fertility, insufficient access and knowledge to improved technologies, and difficulties with marketing. Potential solutions included improving access to quality seeds, seed production, training, access to credit, government support (e.g. subsidies on production inputs, marketing infrastructure) and postharvest and conservation techniques. The workshop stimulated mutual sharing and reflection on policies and technical support needed for the IPs to succeed.
The First Annual Review and Planning Workshop of the *Traditional African Vegetables* project funded by *Conseil ouest et centre africain pour la recherche et le développement agricoles / West and Central African Council for Agricultural Research and Development* (CORAF/WECARD) was organized by the Council for Scientific and Industrial Research - Savanna Agricultural Research Institute (CSIR-SARI) in collaboration with the World Vegetable Center (AVRDC) in Tamale, Ghana from 2 - 5 December 2014. More than 30 participants including all project partners or their representatives, some independent observers, and representatives of farmers’ associations attended the workshop.

**A.B.A. Fuseini**, Deputy Regional Minister, opened the workshop. Welcome addresses were given by **S.K. Nutsugah**, Director of CSIR-SARI, and **Abdou Tenkouano**, AVRDC West and Central Africa Regional Director, who summarized the project in one word: **WIN (Women, Income, Nutrition)**.

The workshop had four objectives: 1) review the pertinence, relevance, magnitude, scope and scalability program achievements; 2) examine the scientific rigor of interventions; 3) examine cross-cutting effects (gender equity, environmental footprint, partnership arrangements, and performance against targets and accountabilities); and 4) look ahead for synergies, and plan an exit strategy and legacy.

The wide-ranging discussions covered specifics of project management, including intra-country coordination; incentives for farmers to participate, from monetary compensation for time, to provision of participation certificates, to accreditation into best practice groups; training opportunities; and the need to sign letters of intent with partners and other participating groups.

A review of technical outputs revealed demand for seed should be the driver; there should be no prescriptive approach to the plant materials farmers use. Each partner was encouraged to release selected lines received from AVRDC. The seasonality of land tenure for women was discussed; land women use to produce traditional African vegetables often is reclaimed by male family members for cash crop production or other income-generating activities. In Burkina Faso, partner Helen Keller International establishes land cession certificates, which possibly could be used to overcome this issue in other countries. The pertinence and relevance of various indicators were critically reviewed and assessed.

Crop production manual and guides are at various stages of completion. The existing central database could be improved and access rights negotiated to protect the scientific property of those generating data. A documentation manual developed by UDS will be circulated to partners in the coming weeks to capture information.

The workshop discussions clarified and refined the Project Monitoring Performance (PMP) plan. Participants made progress in developing the detailed plans necessary for the project to succeed through interactive, informative discussions and opportunities to share their experiences with one another.

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NEWS FROM THE REGIONS

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Paul Mballa from Cameroon, 33 years old, holds a BSc. in sociology. He has been unemployed for the past eight years, and was looking for a way to generate income. “I attended a farmer’s day organized by Cameroon Agenda for Sustainable Development (CASP), a project partner in AVRDC’s Traditional African Vegetable initiative, on June 25, 2014 in Ebolowa and got interested in traditional African vegetable production,” he said.

Paul began growing amaranth, African nightshade and jute mallow on a 1000 m² farm and soon found buyers for his produce. “With the new source of income, I expanded my farm to 3000 m², and I registered to write the entrance examination into the Technical School of Agriculture, which I passed.” The income he receives from selling traditional vegetables will enable Paul to continue his studies and take care of his family.
Welcome

**Jiu-Kai Li (Taiwan)** joined the World Vegetable Center on 5 January 2015 as a Program Officer in the Office of the Deputy Director General – Research. Jui-Kai has extensive experience in portfolio management and international development. Prior to joining AVRDC, he worked for World Vision Taiwan as Finance Manager for international programs, where he supported resource allocation strategy planning, and as Program Officer - Malawi, where he provided support to ensure the sustainability of local programs through the project cycle. He also has international experience in program design, monitoring and evaluation.

**Carla Amonger Noriega** (Spain), a scholar in the ARTS Postgraduate Program - University of Bonn, Germany arrived at Center headquarters on 15 January 2015 for a six-month internship with Genetic Resources and Seed to study the effect of different rootstock/scion combinations on yield and organoleptical aspects of fruit of two tomato varieties under the guidance of Willie Chen. Her studies are sponsored by GIZ-BEAF / University of Bonn.

Transitions

**Caroline Makamto Sobgui** (Cameroon) has been appointed as Project Manager for the “Deploying Vegetable Seed Kits to Tackle Malnutrition in Liberia” initiative, part of the USAID-funded Home Garden Scaling Project. Caroline previously served as a food and nutrition specialist on the USAID Mali Nutrition Project managed by AVRDC’s West and Central Africa office in Bamako, Mali.

**Albert Rouamba** is the new Outreach and Capacity Building Coordinator at AVRDC West and Central Africa. For the past eight years Albert has been an onion breeder, focusing on developing allium crops for sub-Saharan Africa.