

## AVRDC – The World Vegetable Center’s Achievements 2011



The Center established a trial site **with five indigenous vegetables**—kangkong or water convolvulus (*Ipomoea aquatica*), amaranth (*Amaranthus tricolor*), edible rape (*Brassica rapa*), Chinese kale (*Brassica oleracea* var. *alboglabra*), and basil (*Ocimum basilicum*)—for a Field Day and taste test at the Taiwan Agricultural Research Institute’s Fongshan Tropical Horticultural Experiment Branch.



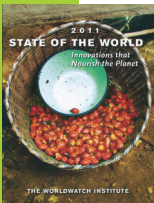
The Center’s dedication and knowledge in developing improved vegetable lines and production methods for small-scale farmers was recognized when AVRDC received the **Team Award of Distinction** from the International Association for the Plant Protection Sciences. The award was presented to all AVRDC plant protection specialists and breeders—past and present—and to the partners that have contributed to the Center’s integrated pest management strategies for tomato, pepper, and eggplant.



As of December 2011, approximately 19% of the **AVRDC genebank** holdings were duplicated and placed in long-term storage conditions in the Svalbard Global Seed Vault (SGSV) Norway, and the National Agrobiodiversity Center of Korea’s Rural Development Administration. Both now hold more than 11,000 AVRDC accessions each—part of the Center’s strategy to conserve its diverse collection of vegetable germplasm for the benefit of all humankind.



The Center’s long-term efforts with public and private sector partners to breed **tomato** resistant to *Tomato leaf curl virus* in India have produced a rate of return to research at 764:1 and counting, benefiting farmers across the country. The successful decade-long research collaboration was featured in a video, *Malle Roga: From Research to Impact* produced by the Natural Resources Institute, University of Greenwich, UK.



*State of the World 2011: Innovations that Nourish the Planet* published by the **Worldwatch Institute**, an influential research and environmental advocacy organization, devoted a full chapter to AVRDC’s work to increase the production and consumption of nutritious vegetables in sub-Saharan Africa. The Center’s participatory research activities, promotion of indigenous vegetables for nutrition and market potential, and support for policymakers and partners to develop and strengthen the seed supply chain were noted as positive examples for expansion of the continent’s vegetable sector.



After several years of development and testing, **31 new high-yielding vegetable varieties** with improved pest, disease and heat tolerance were introduced into Africa by AVRDC and its partners. Nine varieties, including seven indigenous vegetables, were released in **Tanzania**: tomato with resistance to early and late blight (‘Duluti’ and ‘Tengeru 2010’); nutritious leafy greens including amaranth (‘Madiira 1’ and ‘Madiira 2’), African nightshade (‘Nduruma’ and ‘Olevolosi’), and Ethiopian mustard (‘Rungwe’ and ‘Arumeru’); and local favorite African eggplant (‘DB3’). **Mali’s** National Variety Release Office placed 33 improved varieties into its *Catalogue Officiel Des Espèces et Variétés*, including AVRDC’s amaranth (2), African eggplant (2), okra (3), onion (2), roselle (1), hot pepper (5), sweet pepper (3) and tomato (4). The new varieties, products of the Vegetable Breeding and Seed Systems in Africa project, expanded market options for farmers in both countries.



Staff from the Regional Center for Africa (RCA) promoted sustainable vegetable production for food security, health, and income at **Cameroon’s National Agricultural Fair**, an event held once every five years. More than 300 people visited the Center’s demonstration plot, where they evaluated improved varieties and picked up literature on crop production and safe pest management. RCA also hosted a special **Vegetable Day** for seed companies and farmers in Cameroon.



More than 500 Solomon Islanders received seed and easy-to-follow advice on all aspects of cultivation for tomato, eggplant, pepper and yard-long bean in the **Sup Sup Gaden in a Pack** prepared by AVRDC and partners. The kit was promoted with a song, drama, and video entitled 'Grow and Eat Vegetables.'



The Center and partners Cornell University and Kasetsart University organized the **Sixth International Workshop on Management of the Diamondback Moth and other Crucifer Insect Pests** in Thailand, drawing about 120 researchers from 22 countries who presented papers on the ecology of the pest, insect-plant interactions, integrated pest management, insecticide resistance, and genomic approaches to crucifer pest management. Full proceedings were published.



The Center hosted 34 members of the **Asia & Pacific Seed Association** at headquarters for a workshop to discuss recent AVRDC research in marker-assisted selection, germplasm evaluation for bioactive compounds, virus resistant peppers, and other topics. The field tour included a preliminary yield trial of multiple *Ty* gene tomato lines and advanced generation selection of cucumber.



**AVRDC seed kits for disaster relief** helped more than 10,000 people in Thailand and 2700 families in the Indian state of Orissa recover from devastating floods. The kits contained seed of nutritious, fast-growing vegetables (such as kangkong and mungbean) suited to local conditions, and planting instructions in local languages.



A Memorandum of Understanding (MoU) was signed with the **Abu Dhabi Food Control Authority** to promote collaboration in protected agriculture, including grafting techniques, and water management. A MoU signed with the **Leibniz Institute for Vegetable and Ornamental Crops**, Germany provided for joint efforts in sustainable vegetable production.



AVRDC staff contributed to "Research Principles for Developing Country Food Value Chains," an article published in the prestigious journal, **Science**.



More than 5000 farmers participated in demonstrations and field days hosted by AVRDC and partners in **Jharkhand** and **Punjab**, India, where they learned about seedling production, integrated pest management practices, safe production practices, net house cultivation, and home garden vegetable production.



AVRDC contributed hundreds of plants and fruit of improved lines of summer squash, pumpkin, cucumber, chili and sweet pepper, and fresh market and cherry tomatoes for informative and colorful vegetable displays at the **Taipei International Flora Expo**, which attracted nearly 9 million visitors during its six-month run.



An independent donor-initiated socioeconomic study of 18 villages and 116 beneficiaries conducted by Sir Ratan Tata Trust in February in Jharkhand and Punjab, India found **positive socioeconomic and nutritional impact of home gardens** on the livelihoods of program beneficiaries. Per capita weekly vegetable expenditures were reduced by 50% and per capita weekly consumption increased by 200%.



**Eight youth groups** involving a total of 174 youths in Tanzania were trained in utilization of nutrient-rich vegetables, market information systems and direct product marketing skills under a market-oriented vegetable production program.