

# fresh

News from AVRDC – The World Vegetable Center



July 29, 2011

[www.avrdc.org](http://www.avrdc.org)

KickStarting vegetable production in Mali with AVRDC seed kits.

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## Upward mobility

Education: the first step to increase yields and improve vegetable varieties in Uzbekistan



*During the training course participants learned how to diagnose plant diseases.*

There's room to move—up—in vegetable production in Central Asia and the Caucasus. But making sure there is a place for vegetables in the agricultural economies of Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan will require skilled personnel with sound backgrounds in disciplines related to vegetable production. In

Uzbekistan, for instance, in 2009 about 242,700 hectares were planted with vegetable and melon crops, producing about 6.7 million tons; the resulting yield of about 28 t/ha is still far below potential.

A few research institutes and universities in Uzbekistan have encouraged their young researchers to participate in AVRDC variety

trials to promote the introduction of new or improved vegetable varieties in the country. To that end, 17 Uzbek-speaking researchers were invited to attend a training course on "The Evaluation of Superior Vegetable Varieties" in Tashkent, Uzbekistan, 19-21 July 2011. The course was hosted by AVRDC – The World Vegetable Center, the Uzbek Research



**The Training Course**  
**«The Evaluation of Superior Vegetable Varieties»**  
 Tashkent, Uzbekistan, 19-21 July, 2011

Institute of Vegetable, Melon Crops and Potato (URIVMC&P), and the Program Facilitation Unit of the CGIAR Program for Central Asia and the Caucasus.

The course aimed to expand knowledge on specific aspects of vegetable production and to train specialists in AVRDC's methodology for regional variety trials. It built on previous evaluation sessions for promising varieties, and was adapted according to the specific needs of the region.

**Ravza Mavlyanova**, AVRDC Regional Coordinator, convened the event. **Botyr Azimov**, Uzbekistan's National Coordinator on Vegetable R&D, and **Rafik Khakimov**, URIVMC&P Director, officially opened the workshop.

Participants reported on activities at their institutes and their own

research work. Ravza and scientists from the Uzbek Research Institute of Genetics & Plants Experimental Biology, Uzbek Research Institute of Vegetables, Melon Crops and Potato, Uzbek Research Institute of Market Reforms, Tashkent State Agrarian University, and the National University guided discussions and answered questions on a range of topics. Integrated pest management in open field and protected agriculture, the economics of maximum yield in vegetable production, pest and disease diagnostics, statistical analysis for experiments, and report preparation were among the topics explored.

Many attendees were intrigued by AVRDC's variety evaluation methodology, and expressed interest in studying new germplasm from the Center in collaborative



*Coming to grips with the numbers: Participants carry out an economic appraisal of vegetable production activities.*

regional trials. Over the past two years, the Center's collaboration and research with Uzbek partners has led to the release of new varieties of vegetable soybean ('Ilkhom,' 'Universal,' and 'Sulton'), hot pepper ('Uchkun' and 'Tillarang') and yard-long bean ('Oltin soch'). All have been included in the State Register of Uzbekistan.

-- Ravza Mavlyanova  
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## Geographers value ecosystem services



*(l to r): Clemens Richert, Katharina Fick, Axel Drescher, Robert Holmer, Rüdiger Glaser, and Stefan Thiemann at Albert-Ludwigs-University, Freiburg, Germany*

During a recent trip to Europe, **Robert Holmer**, AVRDC Regional Director in East and Southeast Asia, had the opportunity to meet with colleagues from the geography departments of Albert-Ludwigs-University (ALU), Freiburg, Germany and FUNDP University of Namur, Belgium.

In Freiburg, Robert joined discussions for a project proposal on “Enhancing Capacities for Sustainable Information and Geo-Communication Technologies for Urban and Peri-Urban Vegetable Systems in Southeast Asia” together with **Rüdiger Glaser**, Director of the Institute for Physical Geography, **Axel Drescher**, Leader of the ALU’s working group “Geography Research for Development” and **Stefan Thiemann**, project consultant. Two graduate students, **Clemens Richert** and **Katharina Fick**, who intend to conduct their theses within this project in Thailand and the Philippines, also participated.

In Namur, Robert met with **Nicolas Dendoncker** and **Françoise Orban** of FUNDP’s Department of Geography, which has an impressive track record in

development research, particularly in participatory geographic information systems (GIS) in Africa and Asia. FUNDP’s present research focus is the development of participatory agent-based models (ABM) of land use and environmental change in the context of several Belgian and European projects with case studies in Belgium, the Philippines, Congo, and Senegal. These models are combined with scenarios to explore the response of individuals and society to different drivers of environmental change. Participatory approaches are implemented and stakeholders are involved from the beginning to the end of the project. The impact of landscape changes on ecosystem services is assessed and sustainable development pathways are proposed. In several projects, ecosystem services are explicitly valued and quantified.

Robert will stay in close contact with the geographers and develop joint concept notes for future research collaboration.



*(l to r): Robert Holmer discussed research on geographic information systems in Africa and Asia with **Nicolas Dendoncker** and **Françoise Orban** at the FUNDP University of Namur, Belgium.*

### ALU, Freiburg:

[http://www.geographie.uni-freiburg.de/ipg/fsp-ipg/fdb-projekte-ef?set\\_language=en](http://www.geographie.uni-freiburg.de/ipg/fsp-ipg/fdb-projekte-ef?set_language=en)

### FUNDP, Namur:

[http://www.fundp.ac.be/en/sci/geography/page\\_view/presentation.html](http://www.fundp.ac.be/en/sci/geography/page_view/presentation.html)

## Conference corner

### 12th SABRAO Congress on Plant Breeding towards 2025: Challenges in a Rapidly Changing World

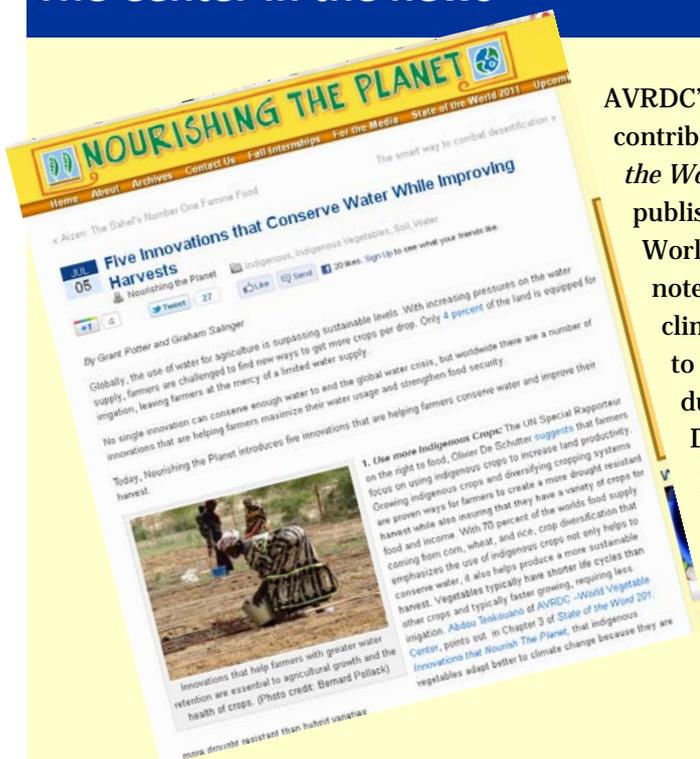
January 13-16, 2012

Chiang Mai, Thailand

Organized by the **Society for the Advancement of Breeding Research in Asia and Oceania (SABRAO)** and the Plant Breeding and Multiplication Association of Thailand (PBMAT). Topics include breeding challenges, current and future trends in plant breeding, prospect of seed business in Asia and Oceania, current status of plant variety protection acts in Asia and Oceania, and development of new plant varieties. Oral/poster sessions will be focused on various aspects of plant breeding: biodiversity, bioinformatics, breeding tools, molecular breeding, new crops, nutritional quality, stresses.

<http://sabrao.org/activities/item/15-sabrao-12th-congress>

## The Center in the news



AVRDC's Regional Director for Africa, **Abdou Tenkouano**, contributed a chapter on indigenous vegetables to *2011 State of the World: Innovations that Nourish the Planet*, a book published by the Worldwatch Institute. **Danielle Niereberg**, Worldwatch blogger and coordinator of the book project, noted the adaptability of indigenous vegetables in changing climates based on Abdou's report. Danielle will be in Taiwan to promote the Chinese version of *State of the World*; during her upcoming stop in Tainan on 15 August 2011, Director General **Dyno Keatinge** will join Danielle for a public talk and discussion on food security.

### PAU to sign pact with Taiwan centre for bitter gourd

Munish Nagar  
munish.nagar@indiatimes.com

**LUDHIANA:** To cure diabetes through the best variety of bitter gourd, the Punjab Agricultural University (PAU), Ludhiana, and The World Vegetable Centre, Taiwan, will soon sign a Memorandum of Understanding.

Dr DK Grover, professor and director, Agro Economic Research Centre, department of economics and sociology, PAU said, "For diabetes, bitter gourd is best suggested by experts. As per the data of diabetic patients, many preventive measures are advised and consumption of bitter gourd is one of them."

Grover further said, "In our project with The World Vegetable Centre, Taiwan, we will produce different variety of bitter gourd with the help of farmers and then, all samples of different variety would be sent to Taiwan. The centre would then recommend the best variety of bitter gourd, which would be more effective for diabetic patients."

Dr Madhusudan Bhattarai, an agricultural economist at The World Vegetable Centre, Taiwan, said, "As per the document of our centre, the diabetic-affected population calculated in 2009 is 28.50 crore (285 million)."

She further said, "In the year

A collaborative project is being initiated to study issues related to production, consumption and marketing pattern of bitter gourd in Punjab

MADHUSUDAN BHATTARAI  
agricultural economist

2000, the diabetic population calculated in India crosses three and a half crore (317 million) and till 2030, it is projected 8 crore (80 million)."

Bhattarai further said, "In this background, a collaborative project is being initiated between both institutions to study various socio-economic issues related to the production, consumption and marketing pattern of bitter gourd in Punjab."

"In Punjab, we are conducting surveys on what type of bitter gourd is being produced by the farmers, attitude of people while buying bitter gourd and how much the farmer and consumer is aware about the vegetable, or they are only buying it for taste."

"When the Taiwan centre finalises the best variety of bitter gourd for diabetes, we will encourage farmers to grow the variety in Punjab, so that it could be sent to different parts of the country," said Dr Grover.

### Nourishing the Planet

<http://blogs.worldwatch.org/nourishingtheplanet/>

### Hindustan Times

<http://www.hindustantimes.com/>

The *Hindustan Times*, published in Ludhiana, Punjab, India reported on the Center's collaboration with Punjab Agricultural University and other partners to research the antidiabetic qualities of bitter gourd. Read more about the

**Bitter Gourd Project** at <http://www.bitter-gourd.org>

## Seminars



(l): **Raymond W. Schnieder** gave a seminar to the Center's staff.



(r, l to r): A discussion on fungi systematics and taxonomy led by **Mary C. Aime**, **Jaw-Fen Wang**, **Raymond W. Schneider**, **Tomas Rush**, **Maureen Meccozi** and the Center's plant pathology staff joined the discussion.

On 25 July 2011 AVRDC staff got a glimpse into the fascinating and strange world of fungi when **Mary C. Aime** and **Raymond W. Schneider** from the Plant Pathology and Crop Physiology Department at Louisiana State University (LSU), Baton Rouge, Louisiana USA presented their work. Dr. Schneider spoke about the mycoparasite *Simplicillium lanosoniveum*, which was as effective as chemical fungicides

when sprayed in field trials to control soybean rust (*Phakopsora pachyrhizi*). He also discussed research on using a simple sugar to control damping-off pathogens (*Pythium* spp.) in rice seedlings. Dr. Aime's special interest is documenting the biodiversity of fungi—a daunting task, as only about 5-10% of the probable 1.5 million fungi species have been described so far, and that's just for temperate regions. She led an

informal discussion about fungi systematics and taxonomy with Jaw-Fen Wang, Global Theme Leader - Production, members of the Center's plant pathology group, and Tomas Rush, an LSU student who recently completed a two-month stay at the Center to search for an alternate host for soybean rust.

## Farewell



**Dennis Knierim**, Postdoctoral Fellow in Virology, concluded his fellowship with the Center on 31 July 2011. Among other areas of research, Dennis carried out molecular identification of *Polerovirus* species infecting cucurbit crops in Taiwan and the Philippines. Dennis will take up a new postdoc position at National Chung Hsing University, Taichung, Taiwan. We wish Dennis all the best in his new job.

Contact Dennis at <[dennis.knierim@gmx.de](mailto:dennis.knierim@gmx.de)>.

*Dennis, his wife, Kuralay and son Eric had a laugh at their going-away party when Dennis received a coveted AVRDC chili tie.*

## Mali's national seed fair



More than 200 participants attended the Sikasso seed fair.

(l): AVRDC participants (l to r) **Moussa Kanouté**, **Ousmane Sanogo**, and **Bakary Traoré**

(r): **Ousmane Sanogo**, AVRDC seed multiplication specialist, presented to **His Excellency Mr. Agathan** of the Ministry of Agriculture the new seed catalog and new seed released in Mali.

Sikasso may be Mali's "second city" in terms of population, but it ranks first in agricultural importance—and thus provided an appropriate backdrop to the **4th National Seed Fair** on 17-18 May 2011. More than 200 representatives from farmers' associations and cooperatives, NGOs, seed companies, and agro-input dealers, and researchers from national and international institutions actively exchanged their experiences in the production of basic and certified seed, legislative policies, control and certification in the field, and

trade and marketing issues—including the need to have high quality seed stocks available throughout the region.

**Ousmane Sanogo**, AVRDC seed multiplication specialist, presented some results from the Center's recently completed Vegetable Breeding and Seed Systems for Poverty Reduction in Africa Project (vBSS) in West Africa. He noted the Center's technical and financial support of Mali's first official catalog of species and varieties of vegetable crops, the release of 23 new improved vegetable varieties in

Mali, the strengthening of partnerships, capacity building through training (students, training of trainers, direct producers), and the advanced results obtained in nutrition. At the colorful AVRDC fair booth, **Ousmane** and research assistant **Moussa Kanouté** provided advice on growing vegetables and producing seed, and answered questions related to the Center's four research themes.

## Seed kits get a KickStart



(l): **Albert Rouamba** (center), AVRDC Acting Coordinator in Mali, handed over the seed packets to **Alassane Maiga** (in beige shirt), Deputy Director of KickStart Mali/Burkina Faso

(r, l to r): **Alassane Maiga**, KickStart; **Albert Rouamba**, AVRDC Acting Coordinator in Mali; **Amara Sidibé**, AVRDC Administrative Assistant and **Ousmane Sanogo**, AVRDC Seed Multiplication Specialist

After the success of the 2008 AVRDC – Taiwan Ministry of Foreign Affairs project on low-cost microirrigation in West Africa, **KickStart International**, which markets the pedal pumps used in the project, requested vegetable seed from AVRDC Mali for distribution in the region. Production of 1000 seed kits consisting of amaranth, African eggplant, peppers, tomatoes, and okra began in July 2010. One variety of each crop was chosen for seed production. **Ousmane Sanogo**, AVRDC seed multiplication specialist, carried out seed production

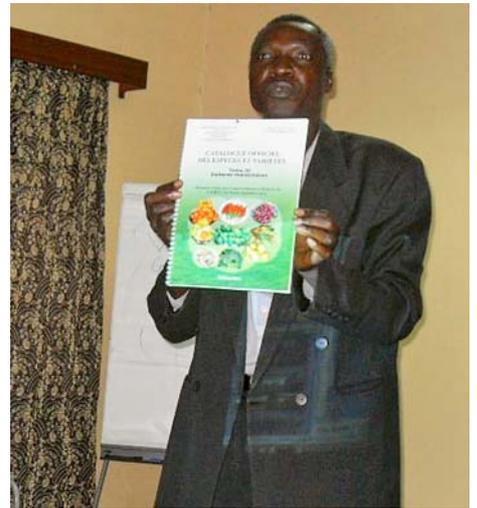
activities; KickStart supplied the seed packets. Seed was packed this spring, and in early July 2011 the seed packets were officially handed over to KickStart. Staff of both organizations met at AVRDC's Mali office, where **Albert Rouamba**, Acting Coordinator, gave the seed to **Alassane Maiga**, Deputy Director of KickStart Mali/Burkina Faso. The seed kits showcase some of the new varieties developed by AVRDC, such as 'Nisondia' pepper and 'Sasilon' okra, and also promote KickStart's 'Nafasoro' pedals pumps.



**Clockwise from left:**

Filling seed packets; examining the packets to ensure they are properly sealed; counting the packets.

## WASA strengthens seed alliances in West Africa



AVRDC – The World Vegetable Center participated in the **West African Seed Alliance (WASA) Seeds Project 2<sup>nd</sup> Regional Coordination and Planning Workshop** from 12-14 July 2011 at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Samanko, Mali. Representatives from ICRISAT Mali and Nigeria, the United States Agency for International Development in Mali (USAID), African Seed Trade Association (AFSTA), AVRDC, WASA, and collaborators from Mali, Burkina Faso, Ghana, Mali, Niger, Nigeria, and Senegal met to review activities carried out by WASA-SP over the past three years. Attendees discussed insights gained and lessons learned that could be applied to other seed system projects. The group also identified strategies for future collaboration to fit into the USAID Feed the Future (FtF) and ICRISAT Innovative Market Oriented Development (IMOD) initiatives.

During the opening session, **Eric Shulter**, Deputy Team Leader of Accelerated Economic Growth



(AEG)-USAID-Mali, **Farid Waliyar**, director of WCA-ICRISAT, and **Ram Shetty**, Chief of Party of WASA-SP spoke on their respective outreach strategies and activities in the WASA program. Team leaders and representatives from other institutions in the regional seed system gave presentations on their contributions to the development of seed systems in their countries. AVRDC noted its achievements through the Vegetable Breeding and Seed Systems for Poverty Reduction in Africa (vBSS)

initiative. The variety catalog jointly produced by AVRDC and Mali's National Agricultural Research Institute (IER) was shown to the workshop participants, and many sought copies and seed to disseminate and test in their own countries.

-- Albert Rouamba, Onion Breeder  
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## 40 years of service to tropical agriculture



*Four decades ago, a research and development institute dedicated to alleviating poverty and malnutrition in Asia by increasing the supply and quality of vegetables was established in Taiwan. Today, AVRDC – The World Vegetable Center operates on a global scale across Asia, Africa, and Oceania. In future issues of Fresh we will track the Center’s long and fruitful history through photos.*



**Michael Chin**

Today’s bustling community of Shanhua owes much to **Michael Chin**, the Center’s first Executive Officer. The roads in the small farming village were in poor condition when AVRDC was under construction in 1972-73; Shanhua had an intermittent electrical power supply, an unreliable communications network, and relied on artesian wells for its water. Mr. Chin’s persistent efforts to upgrade local infrastructure to meet the needs of an international scientific research institute ultimately benefited the community as well as the Center.



*Shanhua at the crossroads: From steam trains to advanced agricultural research on the new campus of the Asian Vegetable Research and Development Center.*



## inside insight

### Food hubs

**There is strength in numbers, as farmers around the world are beginning to discover.**

*“As I talk to farmers across the country, regardless of what they produce or where, they all share one common challenge: how to best move product from the farm to the marketplace. This is especially crucial for small and midsize farmers who may not have enough capital to own their own trucks, their own refrigeration units, or their own warehouse space. They might not have the resources to develop sophisticated distribution routes, build effective marketing campaigns, or network with regional buyers and customers.”*

— Kathleen Merrigan, United States Department of Agriculture Deputy Secretary, April 2011.

A Samridhii pushcart, equipped with cooling bins to keep produce fresh, brings vegetables directly to consumers.



Although Merrigan’s statement referred to farmers in the United States, farmers in developing countries worldwide experience even more profound difficulties in transporting vegetables from the field to the market. Nonexistent or poor market infrastructure can lead to the loss of almost half the harvest, and, lacking access to credit, farmers cannot invest in equipment to safely store and process vegetables.

*(continued next page)*

## inside insight

Food hubs, where produce can be aggregated, distributed, processed, stored, and marketed, can help address many supply chain issues for small-scale producers. Food hubs are based on a time-proven business model of strategic partnerships with farmers, distributors, aggregators, buyers and others all along the supply chain. The models rely on cooperation instead of competition, and ensure that small producers get access to the infrastructure they need.

One successful food hub venture is **Samriddhii**, active in the Patna and Nalanda districts of Bihar, India. More than 3,000 farmers now supply vegetables to the hub, which distributes 8 to 9 tonnes of vegetables each day to markets, supermarkets, hotels—and to special pushcarts equipped with cooling systems. Through Samriddhii, farmers have found markets for traditional vegetables like green brinjal (eggplant) or snake gourd, and opportunities to produce mushrooms, baby corn and greenhouse tomatoes to meet special demand.

Participating farmers work as a group. When 25 to 30 farmers in a village come together, a vegetable collection point is set up in the village or nearby. These points are managed by the farmers. The farmers are informed about the purchase price of all vegetables the previous night; if the price does not suit them, they can defer the sale or take their crop to a traditional market or middleman. Samriddhii



*Samriddhii collection center. Photo courtesy of Samriddhii*

vehicles collect and transport the vegetables to processing centers, where the produce is cleaned, graded and separated before being packed and dispatched for distribution. The neatly packed and graded vegetables carrying the Samriddhii logo are bar-coded, so that the buyer knows the name of the village where they were produced, their price and weight.

Selling to Samriddhii saves farmers the cost of transportation, weighing and packaging charges, and other middlemen-and-market fees. Farmers who have joined Samriddhii's vegetable supply chain have seen their incomes nearly double or triple, and many draw even more income if they become involved in producing speciality vegetables like hot-house tomatoes. The food hub has created employment opportunities for women in the region, who are now

involved in sorting, grading and packaging vegetables at Samriddhii's processing centers, earning from Rs 1,500 to Rs 3,000 per month.

**“India: A New Crop of Consumers,”**  
Time Magazine, 23 May 2011

<http://www.time.com/time/magazine/article/0,9171,2071030-2,00.html>

**Samriddhii**

<http://www.facebook.com/pages/Samriddhii/183534921675872>

**USDA Food Hubs: Research, Blog Posts, Articles**

<http://www.ams.usda.gov>