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## Top Innovations and Achievements in Global Agricultural Research Honored

*Awards Highlight Innovations Ranging from Rice Production in Africa to Preservation of Maize and Wheat Diversity Critical for Human Survival to Social Networking*

Maputo, Mozambique (2 December 2008)—Applying social networking concepts to address water conflicts in rural Ghana, ensuring crop genes that could combat climate change don't end up as casualties of reproduction, and safeguarding world food security by creating a global melting pot for rice varieties are among the highlights of projects singled out for scientific awards at the 2008 Annual General Meeting of the Consultative Group on International Agricultural Research (CGIAR).

The awards were presented this week in Maputo, Mozambique at the annual gathering of agricultural scientists.

Today, Africa imports more than one-third of the rice traded in the world. In 2006, when prices were much lower, the region's rice imports cost US\$2 billion. To deal with rising food prices, Africa must produce more rice to meet growing demand and shelter urban consumers from skyrocketing prices.

Improving rice productivity in one of the most complex and fragile ecosystems in the world—sub-Saharan Africa—is the ambition of unique research and development network in West and Central Africa that goes by its French acronym, ROCARIZ. ROCARIZ, the recipient of the **Outstanding Partnership Award**, links rice stakeholders in the region to generate improved and relevant rice technologies and facilitate their rapid transfer to farmers.

Breaking away from the conventional, top-down approach that proved unsuccessful in the past, ROCARIZ, hosted by the Africa Rice Center (WARDA), has structured itself around decentralized, multi-country, issue-driven task forces that ensured efficient delivery of rice-based technologies. ROCARIZ also has played a central role in the development and distribution of the lowland New Rice for Africa (NERICA), new rice varieties adapted to African conditions which helped achieve a 6 percent increase in African rice production.

### **Boosting Nutrition among Mozambican Children with Sweet Potato**

A ground-breaking two year project that used sweet potato to boost nutrition in Mozambican children showed that food-based approaches can be used to curb nutrition deficiencies. The orange-fleshed sweet potato contains high quantities of vitamin A. Vitamin A deficiency – an estimated 71 percent of Mozambique's children under the age of five have it – can stunt growth, weaken immunity, increase mortality, and cause a condition that leads to blindness. Encouraging people to grow and eat a nutritional food and developing markets to promote its cultivation can replace the difficult and expensive

process of providing vitamin pills to supplement people's diets in developing countries. Dr. Jan Low, the lead author of the paper, is the recipient of the **Outstanding Scientific Article Award**.

### **Saving Genetic Traits from the Reproductive Scrap Heap**

Dr. Jose Crossa, head of the Biometrics and Statistics Unit at the International Maize and Wheat Improvement Center (CIMMYT), has received the **2008 CGIAR Outstanding Scientist Award** for developing a way to keep rare crop genes from disappearing when seeds in crop gene banks are regenerated.

Crossa has focused on the fact that crop gene banks routinely ensure their stocks are in top condition by planting seeds before they lose their viability, growing a crop and then harvesting a new generation of seeds. But in crops like maize, where the pollen flows freely, a seed collection can contain a jumbled-up mixture of crop genes. And when those seeds are combined to produce a fresh sample, important genes can be lost.

The statistical and genetic models Crossa has developed for tracking important traits has helped crop conservators understand the specific qualities their collections may possess. For example, Crossa's work has shown how breeders might be able to locate genes in wheat responsible for increased yield and disease resistance. His approach is now being used to pursue new crop varieties that could, among other things, allow farmers to keep harvests steady even as growing conditions are altered by climate change.

"The brilliance of Dr. Crossa's work is that it helps crop genebanks ensure their collections stay fresh without sacrificing the genetic diversity that is so central to their mission," said Tom Lumpkin, director general of CIMMYT. "His contribution to crop science is vital to conserving the plant genetic resources which we will literally depend upon for our survival."

### **Net-Map: MySpace Concepts go Low-Tech to Address Natural Resource Quandaries**

Dr. Eva Schiffer, a post-doctoral fellow at the International Food Policy Research Institute (IFPRI), won the **2008 CGIAR Promising Young Scientist Award** for creating "Net-Map," a new approach to understanding complicated social situations, such as those that involve conflicts over natural resources.

Net-Map essentially takes all the elements of a particular situation and renders them as a map illustrating how the communities involved are linked. Though it sounds high-tech, all that's needed are simple items, like paper and colored pens, and small discs (such as one would use in a board game). These are stacked to create "influence towers" of various heights that correspond to each person's influence on the situation.

The goal is to clearly map out different networks, show who wields the most influence in particular situations, and illustrate where individual goals are complementary and where they are contradictory.

Schiffer first developed Net-Map when she was working with CGIAR's Challenge Program on Water and Food in Ghana. The innovative tool was used by the White Volta River Basin Board in rural Ghana, which has ambitious environmental goals for the region but little decision-making and enforcement capacity. The group employed Net-

Map to more clearly visualize the interactions between individuals and networks that revolve around its 17 members, which include district officials, NGOs, and representatives from the research sector.

“This is such a simple way for us understand and anticipate what can be very confusing and complicated interactions in the agriculture sector,” said Joachim von Braun, director general of IFPRI. “It’s so effective that we are now seeing it adopted far beyond our area of work. Net-Map is being used as a way to improve communications related to the risks of avian influenza in Asia and Africa and to understand political pressures on the legislative process in Chile.”

More information on Net-Map can be found at <http://netmap.ifpriblog.org>.

### **Rice without Borders**

The International Network for the Genetic Evaluation of Rice (INGER) at the International Rice Research Institute (IRRI) received the **2008 CGIAR Outstanding Scientific Support Team Award** for their systematic efforts to collect rice varieties from all over the world and use them to create “elite breeding lines” that have improved rice production in more than 50 countries.

Working with a global consortium of national agriculture research systems, INGER established a vibrant system that responded to a quandary surrounding what is one of the world’s most important food crops: how to get the best varieties of rice from one country to grow in another country, where conditions may be very different. INGER collects seeds from participating institutions, sends them to IRRI to be organized into different breeding sets and then forwards them to the various national research systems for testing under an assortment of conditions.

As a result of its efforts, breeding lines and cultivars from 68 countries have been used as parents for 18,000 cross-breeds that have improved the performance of existing varieties in 51 countries. Overall, INGER’s work is credited with the release of 673 new varieties that have generated an estimated US \$1.4 to 1.6 billion in economic benefits.

“In the face of a global food crisis, this type of rice exchange facility is exactly what is needed to expedite rice development in a way that has a direct impact on productivity in countries large and small, rich and poor,” said Dr. Robert Zeigler, director general of IRRI.

### **A Tribute to Post-Harvest Innovation**

Dr. Lateef Sanni Oladimeji of the University of Agriculture in Abeokuta, Nigeria received the award for **Outstanding Agricultural Technology in the sub-Saharan Africa Region**. His expertise on drying technologies has contributed to considerable income and employment gains for numerous small and medium scale enterprises in Nigeria and several other West African countries. For example, Sanni initially designed a rotary dryer that increased production of cassava flour to 300 kilograms (kg) every 8 hours. It was then disseminated to cassava processing facilities in southwest and southeast Nigeria. More recently, as Post Harvest Specialist in the Integrated Cassava Project of the International Institute of Tropical Agriculture (IITA), he assembled a team of engineers that has designed a “flash” dryer capable of drying 250 kg of cassava flour per hour. His work has helped to increase the use of locally manufactured flash dryers in Nigeria from two units before 2003, to over 60 units today.

**A YouTube Moment for Sustainable Cocoa Production**

Dr. Sonii David and her team at the Sustainable Tree Crops Program of the International Institute of Tropical Agriculture (IITA) received **Outstanding Communications Award** for training farmers in West African countries to use digital video cameras as a way to share knowledge of sustainable cocoa production. By setting up Video Viewing Clubs (VVC), the team got together groups of farmers to watch and learn from the videos. To date, 450 farmers in Ghana have participated in VVCs. Farmers who adopted the crop and pest management practices promoted by the YouTube videos are likely to increase yields by 20-40 percent and decrease pesticide use by 10-20 percent.

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The CGIAR is a strategic agricultural research alliance dedicated to generating and applying the best available knowledge to stimulate agricultural growth, raise farmers' incomes, and protect the environment. It supports 15 research centres worldwide conducting groundbreaking work to nourish the future. For more information, please visit [www.cgiar.org](http://www.cgiar.org).