

# cg iar News

Nourishing the future through scientific excellence

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## Bangladeshi farmers take on role of scientists and banish insecticides



LITE farmer from Bangladesh, Joinal Ahmad, is pioneering new approaches that reduce insecticide use in paddy farms.

Imagine 2,000 poor rice farmers in Dhaka, whose average farm income is around US\$100 per year, suddenly taking on the role of agricultural scientists. Over the course of 2 years—or 4 cropping seasons—they prove that insecticides are a complete waste of time and money, and that they can significantly reduce the amount of nitrogen fertilizer they use. They save, on average, \$17 per year. It might not sound like much, but it's a 17% pay rise for people who struggle to provide sufficient food for themselves and their families, and enough to help put children through school or buy grain to tide over to the next harvest.

Over the last 2 years, the IRRI-led Livelihood Improvement Through Ecology (LITE) project has trained 2,000 farmers to perform experiments in their own fields which demonstrate that insecticide can be eliminated and applications of nitrogen fertilizer (urea) reduced without lowering yields. And 4,000 more farmers are currently receiving training. What's more, if LITE continues on this positive trend, in less than a decade, most of Bangladesh's 11.8 million rice farmers—almost 1/12th of the country's population of 141 million, according to the Bangladesh Rice Research Institute, a key project partner—will have eliminated insecticides and optimized their fertilizer use.

*Continued on page 14*

## AGM'04 – Mark your Calendars!

The 2004 Annual General Meeting (AGM'04) will be hosted by the Government of Mexico and held at the Hotel Sheraton Centro Historico. The AGM and associated meetings will take place October 25–29, 2004.

For registration and more information, visit: [www.cgiar.org](http://www.cgiar.org)



CGIAR ANNUAL GENERAL MEETING 04



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Ian Johnson

**CGIAR Director**

Francisco Reifschneider

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# Message from the Chairman and Director

Dear Colleague:

We are pleased to present the September edition of "CGIAR News." An e-version is available at [www.cgiar.org](http://www.cgiar.org)

Since our last communication, the CGIAR's family of scientists have continued their progress in delivering the benefits of modern science to poor farmers. The stories reported offer a partial snapshot of those achievements, demonstrating the effectiveness of the CGIAR alliance.

It has been a busy summer. CGIAR featured prominently at the World Bank's Environmentally and Socially Sustainable Development European Forum 2004, including a breakfast briefing where IFPRI staff briefed participants about the CGIAR Global Open Agriculture and Food University initiative. Subsequently, we held a dialogue with new members of the European Union, hosted by the Government of France and held at the French Ministry of Research. In London, a CGIAR briefing was held for the Science and Technology Committee of British Parliament in the House of Commons. In July, the highlights were a launch of a new Japan-CGIAR Fellowship Program and the Japan Forum on International Agricultural Research for Sustainable Development (J-FARD). Taken together, these events have helped to strengthen our partnership with member countries.

The next meeting of the CGIAR Executive Council (ExCo) will be held during September 13-14, 2004, and our co-sponsor, the International Fund for Agricultural Development (IFAD) has graciously agreed to host the meeting at their headquarters in Rome.

Planning for the Annual General Meeting 2004 is advancing well, and we are working closely with our hosts in the Mexican Ministry of Agriculture (known by its Spanish acronym, SAGARPA) and with CIMMYT. A rich and substantive program is developing, including field visits to CIMMYT and partner institutions.

We hope to see you in Mexico and that you enjoy this issue of CGIAR News. As always, we welcome comments which can be sent to [cgiar@cgiar.org](mailto:cgiar@cgiar.org).

Cordially,

**Ian Johnson**  
CGIAR Chairman

**Francisco Reifschneider**  
CGIAR Director



## CGIAR Dialogue with New Member States of European Union

"Agriculture in Change" was the theme of a dialogue held with representatives of ten new member states of the European Union (EU) in Paris in June. Hosted by the Government of France, the dialogue provided a forum for new EU members to discuss their perspectives on agricultural research and hear from the CGIAR the Group's agenda, priorities, and modus operandi.

Denis Despréaux, Secretary General of CRAI, and Adviser, Ministry of National Education and Research; Alain Derevier, Adviser, Directorate General of International Cooperation in the French Ministry of Foreign Affairs, and Christian Hoste, French Agricultural Research Centre for International Development (CIRAD) welcomed the participants from Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovenia. In addition, representatives of the Eastern and Central European states who are candidates for the second phase of enlargement in 2007+ also attended the briefing.

Of particular interest were presentations by delegates of Hungary, Poland, and Slovenia summarizing the ARD situation in the new EU member states. CGIAR representatives included Kanayo Nwanze (on behalf of Center Directors Committee), Jozef Turok (IPGRI), and Francisco Reifschneider (CGIAR), and their presentations focused on European partnerships, impacts of CGIAR Center research, and State of CGIAR.

The meeting was instrumental in generating interest in the research activities of the CGIAR Centers and strengthening the EU-CGIAR partnership. Follow-up activities are being planned for the next international conference "European Responses to Changing Global Needs," scheduled for April 27–29, 2005 in Zurich, Switzerland. 🌱

**For more information on next year's conference, click**  
<http://www.efard2005.org/>

Representatives of new member states of the EU at the dialogue "Agriculture in Change" hosted by the Government of France.

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## Announcements

**Alex McCalla**, Chairman, CIMMYT Board of Trustees was recognized as a distinguished scholar of the Western Agricultural Economics Association during their Annual Meeting, July 1, 2004, in Honolulu, Hawaii.

**G. Edward Schuh**, of CIP's Board of Trustees and Regents Professor at the University of Minnesota was honored by the Brazilian Society of Agricultural Economics and named "Legendary Member of the Society" in recognition of lifetime contributions to the profession. He was the first person to receive this honor at a ceremony held in Cuiaba city, Mato Grosso, Brazil.

## Upcoming events

**African Celebrations**, International Year of Rice 2004, hosted by Forum for Agricultural Research in Africa (FARA), Accra, Ghana, September 28, 2004 ([www.fara-africa.org](http://www.fara-africa.org))

**2004 World Food Prize Foundation International Symposium**, "Rice, Biofortification and Enhanced Nutrition," October 14–15, 2004, Des Moines, Iowa ([www.worldfoodprize.org](http://www.worldfoodprize.org))

## Future Harvest Alliance Innovations: Working Together Better

The Center Directors Committee (CDC), along with representatives from the Center Board Chairs (CBC) and the CDC/Center Deputy Directors Committee (CDDC) Working Group for Sub-Saharan Africa met in Addis Ababa July 8–9, 2004 to review existing mechanisms and create, enhance and enforce a dynamic collaboration, both among Centers, and with the larger CGIAR stakeholder community. The agenda focused on identifying deficiencies in existing arrangements and developing the collective means for addressing them proactively.

To capitalize on opportunities, key actions and recommendations agreed at the retreat include:

- Formally establishing a Future Harvest Alliance, building on the platform of existing collaboration in managerial, administrative and policy work
- Transforming the existing Center Directors Committee into a new Alliance Executive to strengthen strategic management
- Constituting the Committee of Board Chairs (CBC) into an Alliance Board with responsibility for exercising oversight on Center contributions to System-wide issues and ensuring Center compliance
- Adopting alliance mechanisms and processes to create fair and independent means of mediation and arbitration to resolve conflicts among peers
- Adding capacity to the CGIAR System Office through a strengthened Centers' Secretariat that will be tasked with supporting more frequent and coordinated interactions with the CGIAR Chairman and Director
- Tasking the Center Deputy Directors Committee to map existing standards and practices involved in Centers work, and under the direction of the Alliance Executive (ex-CDC) working to set priorities and creating new system-wide working methods
- Encouraging greater use of contract mechanisms to add clarity, transparency and enforceability to existing and future collaborative arrangements.

We believe these changes will benefit the whole CGIAR System, allowing the Centers to deploy resources more strategically and efficiently so as to better meet the articulated demands of our partners. In addition, the Centers will be able to make a stronger and more strategic contribution to the CGIAR Executive Council and CGIAR System Office. Collective actions by the Centers will lead to stronger common policy positions, and impact.

Programmatically, the urgency is in Sub-Saharan Africa (SSA). New collective actions will begin immediately with pilot consolidated sub-regional efforts in Eastern Africa, in partnership with ASARECA, followed by other sub-regions. The pilots will align Centers representation, partnerships, programs and operational support at the sub-regional level. It will be a collaboration with Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), Forum for Agricultural Research in Africa (FARA), national research systems, civil society, regional, sub-regional bodies and international bodies and investors as appropriate. A strategy process will be launched in 2005 for developing a coordinated SSA capacity-building plan for national agricultural research and extension system partners, largely implemented at sub-regional organization level in SSA. We are working closely with the two CGIAR System Task Forces to develop solutions to ease current managerial burdens at the national program level.

The new Alliance Executive plans to implement these changes in a consultative, professional and well-resourced manner that does not shy away from the complexity of the reforms that are necessary. The next stage is to establish a common platform for moving forward, which we hope will be solidified during the CGIAR Annual General Meeting in October 2004. 

### **Kanayo F. Nwanze**

Chair, Center Directors Committee

### **Meryl J. Williams**

Executive Officer, Future Harvest Alliance Office

## New Japan Forum to Strengthen Japan-CGIAR Links



Mr. Hisao Azuma, President of J-FARD addressed the more than 110 participants at the launch ceremony

In a major development, a new "Japan Forum on International Agricultural Research for Sustainable Development (J-FARD)" was launched in July 2004.

Designed to boost the Japan-CGIAR partnership, the Forum will serve as a common platform for coordinating and fostering new partnerships among scientific organizations, promote the creation and dissemination of knowledge, and improve domestic and international information exchange.

Mr. Kazuo Kodama, Deputy Director General, Economic Cooperation Bureau, Japanese Ministry of Foreign Affairs, spoke about the long-standing ties between Japan and the CGIAR, and the importance Japan assigns to agricultural research as a way of achieving sustainable agriculture and rural development. Mr. Koichi Nishikawa, Director General, Ministry of Agriculture, Forestry and Fisheries Research Council Secretariat; Mr. Shinichi Kawarada of the Ministry of Education; Mr. Tomoki Takamura of Japanese Tropical Agriculture Academic Society, and Mr. Kenzo Hemmi, Professor Emeritus, University of Tokyo, addressed the gathering.

The Forum brings together more than 20 leading Japanese universities and centers of scientific excellence (Universities of Kochi, Kyushu, Nagoya, Tokyo, Tottori, Tsukuba and others); the private sector and multilateral institutions such as FAO, World Bank, and civil society organizations (e.g. Sasakawa Africa Association). Mr. Hisao Azuma is President of J-FARD.

"We see an urgent need to mobilize resources and recognize that these can be scientific, technical, intellectual property, and financial," said Francisco Reifschneider, CGIAR Director. "The CGIAR family of scientists is committed to achieve the Millennium Development Goals, and the Forum represents an important, collective step forward in that direction." 🌱

**For more information (in Japanese and English abstracts) on the Forum, click <http://www.infonavi.co.jp/~databox/j-fard/index.html> <http://www.jircas.affrc.go.jp/index.html>**



In a related event, Francisco Reifschneider, CGIAR Director presented a scroll to Dr. Mutsuo Iwamoto, President, JIRCAS, acknowledging JIRCAS' long-standing support to international agricultural research and the CGIAR system, and identifying JIRCAS as a "key partner of the CGIAR and a CGIAR focal point institution in Japan."

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## New Japan-CGIAR Fellowship Program Launched

The Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF) has launched a Japan-CGIAR Fellowship Program designed to support Japanese scientists to expand their expertise in international agricultural research for development.

"This program will support some of our brightest and best scientists in their efforts to expand their experience of cutting edge science," said Ichirou Ishihara, Director General of the Agriculture, Forestry and Fisheries Research Council Secretariat. "As well, it will further strengthen Japan's ties with CGIAR."

Ten Japanese scientists will receive fellowships for approximately two months to continue their research work overseas at CGIAR

Centers. Fellowships are open to Japanese nationals, under age 35, who hold a master's degree or equivalent, and have excellent academic records in agricultural development.

"This new Japan-CGIAR Fellowship Program is one more example of the innovative ways in which the Japanese government and the Japanese people support science and poverty alleviation," said Ian Johnson, CGIAR Chairman and World Bank Vice President for Sustainable Development. 🌱

**For more information, click <http://www.jircas.affrc.go.jp/index.html>**

# China's Timber Imports Raise Concerns

*The project will strengthen regional networks, identify leverage points where advocates can effect change and develop policy frameworks.*

Following the death in 1998 of more than 4,000 people due to floods blamed on excessive deforestation, China implemented a widespread ban on logging. The ban may be good news for China's forests but may be bad news for other forests in the region. It is now feared the ban will lead to an increase in China's timber imports, exerting enormous pressure on the forests of South East Asia and eastern Russia, often in the form of illegal logging.

In response to this international concern, CIFOR and Washington-based NGO, Forest Trends, have launched a multi-partner project that will increase the level of information available about timber demand and trade in China and the impacts this will have on conservation and livelihoods.

In 2002, China imported 16 million cubic meters of round wood, some 16 times more than the figure for 1997. It is estimated this fig-

ure will reach 100 million cubic meters by 2010, accounting for half of the total annual demand in the country. Such high demand has serious implications for global forestry conservation.

"You have a country that is growing at eight to nine percent, where its own domestic supply of forest products is decreasing, so it has created a huge demand for forest products from the region. (This) will have a strong impact on livelihoods, jobs and people transforming forest products. We will also see considerable impact on local and neighboring economies, and on the environment," says David Kaimowitz, CIFOR's Director General.

Andy White, a Senior Director with Forest Trends, says there is no mechanism for monitoring how China's import of timber affects markets and the environment. "China's booming imports

fuel illegal logging, unsustainable trade and poverty. Currently there is little knowledge of how to influence policy in China. We are missing the basic building blocks to launch effective development initiatives," says White.

White says the project will strengthen regional networks, identify leverage points where advocates can effect change and develop policy frameworks. Key partners in the project include: the Chinese Center for Agricultural Policy, the Chinese Academy of Forestry, the International Tropical Timber Organization, World Agroforestry Centre, Papua New Guinea's Foundation for People and Community Development, Bogor Agricultural University, Indonesia's Ministry of Forestry, University of British Columbia, and Russia's Economic Research Institute. 🌿



A wood chips processing plant, Guangdong, China

(Photo by: Christian Cossalter)

# Meet Ruben G. Echeverría

**Position:** Executive Director, CGIAR Science Council, based at FAO Headquarters, Rome

**Career highlights:** Chief, Rural Development, Sustainable Development Department, Inter-American Development Bank, responsible for preparation and implementation of the Bank's agriculture and rural development strategies and national investment programs; Research Officer, International Service for National Agricultural Research (ISNAR); Research Fellow, International Maize and Wheat Improvement Center (CIMMYT), including doctoral thesis research on public-private sector maize research and seed production systems in Guatemala and Mexico; Director, Technical Assistance Division, National Colonization Institute, Ministry of Livestock, Agriculture and Fisheries, Uruguay.

**Education:** Bachelor of Science (BSc) in Agriculture, University of Uruguay (1981); Master of Science (MSc), 1985, and PhD in Agricultural and Applied Economics, 1988, both from University of Minnesota.

**Personal:** Married to Maria Eugenia Soldevila, two children, ages 25 and 22

**Career pathways—thoughts on getting from there to here:** I'm delighted to be getting 'back' in the CGIAR family. My association with the CGIAR goes back to my pre-doctoral research, trudging maize fields in Mexico and Guatemala. My relations with CGIAR have been varied, as a student researcher, scientist, and donor representative. Lately I have been involved with the CGIAR's Special Panel on Impact Assessment, and with the Working Group on Performance Measurement.

In the 13 years that I have been 'outside' the CGIAR system, much has changed in the agriculture and rural development landscape. The CGIAR has changed too. I am pleased that current development thinking is back into agriculture and rural development. More importantly, agricultural science and technology is being given its rightful place as a key factor in achieving a broad economic, environmental and social development agenda.

In my new position, I hope to contribute to the new CGIAR Science Council's mandate, forging links to partners outside the CGIAR system, with the Food and Agriculture Organization (FAO), and particularly with developing country research organizations as well as working better with the diverse components of the CGIAR system. Focusing on complementarities and capturing synergies will be important words in my lexicon. I see the Science Council Secretariat as a small but strong unit that



helps the Science Council to fulfill its mandate of ensuring the relevance and quality of CGIAR science.

Coming from Uruguay—a small nation where agriculture is very important and with a population of little more than 3 million people—has its advantages. I'm naturally inclined to work with others and to look at the big picture!

The CGIAR has a track record of success, producing international public goods that have benefited lots of people and complemented the work of many others. The national programs in developing countries focus on the production of national public goods. It is the regional issues, the regional spillovers where the CGIAR and national partners can do much more to foster regional cooperation in promoting science and technology for development. Boosting cooperative agricultural research consortia will be key to capturing regional synergies.

It is easy to dream. We should strive to connect CGIAR research more directly to the activities of other development agencies (particularly those that provide financial assistance), so that national systems can benefit. Ultimately, science is a collaborative activity, and there is little doubt that achieving impact will depend on our ability to forge strong partnerships.

The CGIAR Science Council has an impressive set of challenges and also a huge workload in the near future. I look forward to contribute to this cause by hitting the ground running in Rome. 🌱

For more information, [www.sciencecouncil.cgiar.org](http://www.sciencecouncil.cgiar.org)

# Local Stewardship: Best Bet for Saving Java's Remaining Forest Reserves

Survival of one of Java's last remaining biologically-rich natural forests will depend as much on incentives for community stewardship as it does on traditional government conservation programs, say CGIAR scientists working in the Indonesian archipelago.

Java's largest remaining block of primary forest, a 700-square kilometer reserve in the Gunung Halimun National Park, is considered crucial to safeguarding drinking water supplies in nearby Jakarta. The area is under intense pressure from population growth and efforts to use the land for farming and government tree plantations.

"The well-being of the Park's biodiversity and watershed functions depend on the ability of local farmers to make effective use of state-managed production forests that surround the reserve," says Meine van Noordwijk, regional coordinator of the World Agroforestry Centre's Southeast Asia office.

Research has shown that supporting local people to plant fruit and other productive tree species in areas designated as production forests can provide the incentives villagers lost when access to the land was taken by the government in the 1970.



Children grafting.

"Before the Suharto era, the Park's production forests were managed reasonably well by local people. If you look carefully, you can see where they once planted tea, coffee and fruit trees," he says.

Van Noordwijk fears, however, that unless steps are taken soon to help farmers increase productivity within the Park's production forest, and provide legal access to the land so local people have incentives to plant fruit and timber trees, it's unlikely that the natural forest reserve can be maintained.

Incentives that lead to good stewardship, Van Noordwijk adds, are most likely to result from systematic negotiations between local communities, park managers, and local government. World Agroforestry Centre is working with a variety of partners to identify the social and biophysical causes of conflicts arising over the Park's land tenure policies.

"Our objective is to use research results to help facilitate constructive dialogue based upon a scientific understanding of the problem," Van Noordwijk says. "For example, by understanding both why and how farmers plant their trees and manage the soil, we've been able to calculate the positive impacts that agroforestry has on the Park's watershed functions."

## Non-Native Pine Forests

The situation in the Park is extremely fluid say officials from the Indonesian Institute for Forest and Environment, and the NGO Forest Watch International—both of whom collaborate closely with World Agroforestry Centre.

Pine tree plantations planted during the Suharto era and recently transferred to the Park's jurisdiction have not only displaced native species, but have no value

to local people and are being cut down illegally by villagers, often in collusion with forest company guards.

Without an agreement between local communities and the Park's managers that allows villagers to grow both food and tree crops, it is only a matter of time before people start moving from the pine plantations into the forest reserve.

"There are a number of things that can be done to reverse the situation," says Tree Domestication Specialist James Roshetko. "The first is to develop extension methods and technologies that help farmers improve the productivity of naturalized and indigenous tree species. The second is to demonstrate how better management of trees translates into cash."

Roshetko, who holds a joint appointment with the World Agroforestry Centre and Winrock International, is testing extension methods in a project with farmers in Nangung, a sub-district of some 15,000 households that sits directly on the park's southern border.

"We look at the commodity chain all the way from production to the consumer," Roshetko says. "The objective is to help farmers understand the demands of the markets, avoid its pitfalls, and capitalize on its strengths."

Farmers in Nangung say they don't manage their trees intensively because they lack markets, Roshetko notes, a notion strongly seconded by local farm leaders. The project, which is financed by the United States Agency for International Development, includes training for farm leaders and NGO staff, identification of priority tree species, development of profit-boosting management practices, as well rapid market appraisals.



Gunung Halimun National Park

## Deal Halts Evictions

Questions remain, however, as to who actually has the right to develop the Park's production areas. Farmers claim, for example, that they are the traditional stewards of the land and had access before the Suharto regime, but were never given official title.

Government foresters, however, are skeptical of the claims and are unsure if local communities can adequately care for the land.

"What we've learned through research is that the interests of local people and the government's need to maintain the integrity of the watershed frequently coincide," says Chip Fay, ICRAF Forest Policy Analyst.

Fay is an expert in "negotiation support." He helps equip local communities with the information to find common ground with powerful government agencies. "One of the principals of negotiation support is to use science-based research results to eliminate preconceptions and help the negotiating parties deal with the social and biological reality on the ground," Fay says.

Studies conducted by World Agroforestry Centre in Lampung demonstrated that the government's argument that coffee production leads to sedimentation and silting of nearby rivers were often without basis. As it turned out, farmers are willing to grow tree species acceptable to the government, but would only do so if they had assurances that they

would not be evicted. Fay's research is supported by the UK's Department for International Development (DfID). Fay adds that 15 similar efforts are now underway and that he and his colleagues are working to reduce the time required to broker an agreement from the 18 months required in the Lampung settlement, to just 2 or 3 months.

"Right now we're collaborating with the Indonesian Institute for Forest and Environment to document the history of the land in the Halimun Park reserve and reassure Park officials that tree farming is not going to have an adverse affect on the watershed.

Systematic support for the negotiation process, Fay adds, begins at the local level to correct misconceptions and solve problems as close to the source as possible. Central government should only be encour-

aged to enter the process when all other options have been exhausted. World Agroforestry Centre enriches the dialogue, he says, by providing research result that target the social and biological questions being addressed by the negotiators.

## Indonesian Forests in Decline

"The need to deepen the science of negotiation support and to scale-up its application is extremely urgent, adds Dennis Garrity, Director General, World Agroforestry Centre.

Garrity, who spent more than a decade working in Indonesia, notes that Indonesian and World Bank officials recently reported that the health of the country's forests was far worse than previously thought and that if deforestation continues at current rates, Indonesia will soon cease to be a major supplier of wood products. 🌿



Simple grafting techniques that increase productivity and profits are needed to sustain family tree gardens.

## Sticking together

IITA scientists are not generally in the business of breaking up partnerships, but they make an exception when the partnership is between two insects that combine to destroy essential food crops.

The African root and tuber scale is a small subterranean insect indigenous to Central Africa. It causes substantial crop yield losses by attacking the roots of host plants. Over the last 30 years, this insect has evolved into a major pest threat in the Congo Basin for crops such as yam, cocoyam, and particularly cassava. IITA initiated a research program to investigate the situation and the work has shed light on what turns out to be a sticky problem.

IITA researchers uncovered several reasons for the rise in scale infestations. These included changes in land use such as the shift to short fallow periods and the way farmers handled crop residues after harvest.

But the main culprit is an ant. The nests of this so-called “brown crazy ant” are regularly found alongside the scale. An extremely close partnership has evolved between two, and this is the basis of the problem.

Their interaction is simple but wondrous. The scale produces large amounts of a sweet substance called honeydew in order

to rid itself of waste fluids, so much it risks drowning in its own secretions. Ants come to the rescue. The ants consume the honeydew as food, thus sustaining the life of both insects. But, there is more! The ants actually move young scale insects from plant to plant—to increase supplies and make sure they have enough to eat. This leads to rapid infestations of crop fields.



The brown ant is a catalyst for cassava production.

“Ultimately, the scale needs the ant to survive,” says Rachid Hanna, an IITA scientist. “Understanding the intricacies of this partnership helps us to develop sustainable tactics for reducing scale infestations and protecting farmers’ harvests.”

Now that the enemies are better known, researchers are working in Cameroon and the Democratic Republic of the Congo to develop management strategies to control the scale. They want to develop a greater understanding of the behavior of both insects, while searching for natural enemies of the scale and possibly the ant, and identifying and developing resistant crop varieties and better cultural practices for farmers. 🌱

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## Challenge Programs and Intellectual Property Rights

Managing intellectual property rights (IPRs) will be a critical factor in the success of the new CGIAR Challenge Programs (CPs),

ensuring that poor people have unfettered access to the benefits of modern science.



In June, the three pilot CPs (HarvestPlus, Generation, and Water and Food) sponsored a workshop at IPGRI to (a) develop effective management and dissemination of Challenge Program products, (b) ensure compliance with agreements and laws pertaining to IPRs, and (c) implement forward-looking intellectual property management and technology transfer planning in CPs. The workshop was organized by CGIAR Central Advisory Service on Intellectual Property (CAS) and attracted 15 CP managers, 11 practitioners specializing in intellectual property rights and technology transfer and four observers from CP partner institutions. Overall, the workshop succeeded in broadening and enhancing the understanding of IPRs and technology transfer practices. 🌱

# From Per Pinstrup-Andersen, Science Council Chair

One of the most important goals of the Science Council is to help assure that the funds allocated to the CGIAR are well spent. Given the funds available, we must seek the greatest reduction in poverty while improving food security, nutrition and natural resource management. We will never have enough money to do everything we want to do, so we must prioritize and allocate funds to those Centers and programs we believe will have the greatest impact. But how do we identify these Centers and programs? One way would be to evaluate past performance. In fact, during the last couple of years, increasing attention has been paid to performance measurement and performance indicators. Such measurements and indicators may be a useful input into judgments about future allocations of funds but only if they relate closely to what we in the CGIAR are trying to accomplish. In other words, which Centers, programs and projects achieved satisfactory progress towards meeting the goals of the particular research and what would be the impact of achieving each of these goals? But to answer these questions, Centers, programs and projects must have well defined goals, timelines, and annual milestones. If the goal is not appropriately defined, we will not know if or when it is achieved and if we do not have clearly defined timelines and periodic milestones, we will not know whether we are moving towards achieving the goal at an acceptable speed. This is the logic behind the logframes now used by all Centers.

So, what's the problem? The problem is that it is very difficult to measure progress towards achieving research goals. Unlike other production processes, one cannot simply count the research contributions and compare them across programs. The performance of a factory producing toothpaste may be counted as the number of tubes produced, the net profits

obtained, or some other easily measured result. This can then be compared to results from other toothpaste factories. Not so for research. Attempts to focus performance measurements on what can be counted and compared across programs or Centers tend to give misleading results, because those things that can be counted may not be good indicators of progress towards achieving impact on poverty. For example, should a Center that produces twice the number of refereed journal articles produced by another Center be allocated twice as much money?

If the final goal of the CGIAR is to produce the largest number of refereed journal articles, the answer might be yes, but it is not. Refereed journal articles are at best a means to an end, not an end in themselves. It gets even more misleading when we try to aggregate quantifiable indicators such as number of visitors coming to a particular Center, number of improved lines released, number of people trained, number of publications, etc. The program or Center with the largest total gets the most money! We can obviously do better than that. A focus on what can easily be counted and compared across Centers and programs may also reduce the incentive to take risks in breaking new ground and seeking new solutions, using a learning and feedback mode, which is so important in innovative applied research.

So what am I proposing? I am proposing that we measure progress towards agreed upon goals by integrating performance measurement into the logframes. For this to work, we must strengthen the logframe presentations to include clearly defined goals, timelines, annual milestones, and the extent to which the milestones were achieved. The comparisons across Centers, programs, and projects would then be based on the

progress achieved towards a clearly defined set of milestones for each Center, on the relevancy and quality of the science, and on the congruence of Center goals with system priorities instead of the sum of a set of quantifiable indicators that may be more or less irrelevant to the achievement of the goals. Those donors who wish to allocate funds on the basis of relative performance in moving towards agreed upon goals, would be on much firmer ground. Furthermore, everybody would benefit if donors would agree to a common performance measurement framework and share a common set of indicators.

Performance should be measured on the basis of achievement of outputs, outcomes and, what we are ultimately interested in, impact. However, we should recognize that Centers and research programs have less control over impact and outcome than they have on output. The Science Council and other CGIAR stakeholders should work together to strengthen the pathways from research output to impact on poverty. Judging the performance of individual Centers and research programs solely on impact might be misleading because of so many other factors influencing impact that the individual Center or program has little or no control over.

The Science Council is fully involved with the Centers, the Working Group on Performance Management and other stakeholders in moving towards the integration of performance measurement in the logframes of Centers and across Center programs. Hopefully we will have the approach in place in time for the Centers to strengthen next year's medium-term plans and logframes so they can serve as the basis for future performance measurement. 

**Per Pinstrup-Andersen**

## For Journalists, 'Seeing is Believing'

On a rainy afternoon earlier this year, 25 journalists gathered under makeshift tents on a banana farm near Masaka, a town about 80 miles southwest of Kampala, to listen to farmers describe how agricultural science increased their prosperity.

Here in the Masaka area, researchers from IITA and Uganda's National Agricultural Research Organization (NARO) have been collaborating with local farmers to increase harvests through integrated pest management techniques.

The visit was part of media tour, organized by IFPRI to highlight the benefits of CGIAR research in the region. The journalists represented media outlets such as the Wall Street Journal, major wire services in Africa and Europe, and leading daily

newspapers in numerous African countries, including Botswana, Ethiopia, Ghana, Kenya, Senegal, Tanzania, and Uganda.

During the tour, journalists had the opportunity to meet sweet potato farmers who are working with CIP. They also met community leaders and researchers in Mbarara, in southwestern Uganda, to learn how IWMI and ILRI researchers are working to curb the spread of malaria through the Systemwide Initiative on Malaria and Agriculture (SIMA).

"The SIMA initiative is very innovative," said Mildred Mulenga, Southern Africa Bureau Chief for the Pan African News Agency. She saw SIMA's efforts in improving irrigation management to prevent still bodies of water from forming where

mosquitoes breed. "I was impressed with the truly holistic approach of the project, which involves communities, civic leaders, and extension workers."

In addition to farms, the group visited a clinic to see the connections between HIV/AIDS and nutrition, and a grain warehouse to understand how improved markets can increase the incomes of small-scale farmers. After the tour, journalists participated in a 3-day IFPRI-organized conference on food and nutrition security in Africa.

"Field trips are very valuable to journalists," Mulenga noted. "These opportunities help us understand the reality on the ground and depth of issues on which we report. As the saying goes, 'seeing is believing'." 

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## Philippines develops miracle peanut

Using ICRISAT parental lines, Mariano Marcos State University (MMSU) in the Philippines, has developed its first high yielding peanut variety which can be grown in any of the country's seven regions any time of the year.

The National Seed Industry Council of the Philippines recently approved the new variety for commercial planting. The variety matures in 95 to 100 days and is drought tolerant. It is also resistant to leaf diseases like cercospora leaf spot, rust, mosaic, bacterial wilt, and common cutworms.

The new variety is a selection from a number of advance segregating lines from ICRISAT, and was evaluated at the MMSU research farm for six consecutive years and in national cooperative tests during 2000 and 2001. It was a consistent top yielder during the evaluation, with an average of 1.5 tons per hectare in both seasons. 

## Good News from the Field

The Government of Côte d'Ivoire approved the return of the Africa Rice Center (WARDA) staff to Bouaké, and has established an Inter-Ministerial Commission to provide the conducive environment for scientists and staff to resume their research-for-development activities in Bouaké and M'bé.

"We are delighted with this development," said Kanayo Nwanze, Director General, WARDA. "It bodes well for WARDA's ability to continue delivering the benefits of modern science for improving agriculture in Sub-Saharan Africa."

The Ivorian crisis has exacted a heavy toll on WARDA staff and their families. In September 2002, WARDA temporarily relocated its Headquarters to Abidjan with a sub-station in Bamako, Mali. Now, with strong signals that the peace process in Côte d'Ivoire is taking a positive turn toward final resolution, WARDA management and Board of Trustees have developed a progressive return plan to be implemented in phases. It is noteworthy that over 60 senior locally-recruited technical staff continued to maintain operations during 2003/04. Over 10 hectares of experimental plots and trials are being conducted this year. The WARDA homecoming is well on its way.

# Informal milk and dairy markets in Syria: ICARDA explores pathways out of poverty

Milk and dairy products, particularly cheese, are an integral component of diets in the Levant. High demand for these products, particularly in village markets, represents an important source of livelihoods for poor people.

To gain a better understanding of how the informal, small-scale dairy industry works and the constraints poor dairy producers face, ICARDA economists took a closer look at milk and dairy production in the Khanasser valley, near Aleppo, Syria. The objective was to identify entry points for technology transfer, while encouraging small-scale entrepreneurs to produce value-added foodstuffs that help to increase rural incomes and reduce poverty.

They studied 44 villages in Khanasser valley, and documented local institutional arrangements and mechanisms relating to sheep milk production and processing. Using qualitative and quantitative measures, they analyzed the terms of arrangements between traders and dairy sheep producers covering the entire spectrum of milk collection, delivery, processing and marketing.

The results were instructive.



Woman selling cheese in Khanasser Valley, Syria.

Small producers collectively process their milk through external cheese makers—or jabbans—composed of women and men of a single family. Jabbans are mobile entrepreneurs, settling down in villages where milk production is important, or where sheep are temporarily raised in significant numbers, or where flocks from the steppe settle for grazing during the spring season. The survey showed that these local cheese making institutions provide important services to the poor, such as loans and handling small volumes of milk, which cannot be marketed otherwise, especially in the absence of a formal infrastructure and lack of access to markets.

The study also found that milk and dairy production activities are gender specific. Dairy production and processing is mainly done by women, with men handling marketing and loan provisions. This shows the need for gender-specific technological improvements in the dairy sheep sector in order to have a positive impact on women's well-being.

## Combining indigenous knowledge with modern technology

To obtain farmers' perceptions and benefit from their knowledge, ICARDA organized a visit of the Khanasser valley farmers, both men and women, to its dairy processing laboratories. Farmers saw that using a milking ramp could ease their workload, and witnessed the operation of a homestead milk processing plant that ensures hygienic and safe production of cheese and yogurt. Scientists demonstrated the use of commercial starters to improve the quality of yogurt and cheese products to meet consumer demand. The application of new feeding methods has the potential to increase productivity per ewe and per flock, and farmers were very interested in the low-cost feeding trials involving optimum feed composition and urea-treated straw for fattening of Awassi lambs.

Thanks to the study, potential entry points have been identified by ICARDA researchers for technological and development options to improve the dairy production and processing system in the valley and in similar marginal dry areas. The collaboration between ICARDA researchers, farmers and small-scale entrepreneurs to combine indigenous knowledge with modern technology will help improve the income of the village communities and reduce poverty in the region. 🌱

# HarvestPlus Challenge Program: Weaving Nutrition into Agriculture



Sometimes little things make all the difference. Micronutrient malnutrition is now firmly on the agricultural research agenda as HarvestPlus weaves together agriculture and nutrition sciences as part of its mission to biofortify staple foods. It is a new way of doing business in the CGIAR.

## Screening germplasm for nutrient-dense bioavailable varieties

Nutritionists and plant breeders are working to determine the composition of micronutrients in the germplasm of target staple foods. Natural variability in micronutrient concentrations as well as those of nutrient absorption inhibitors and promoters are being identified in targeted staple crops to select the most promising varieties. Global standards for micronutrient screening are being adapted and established for HarvestPlus crops in laboratories around the world. Moreover, because nutrient density must be retained beyond the laboratory and the field, the effects of storage, processing, and cooking on promising germplasm is also being tested.

## Bioavailability

Having nutrients present in the edible portion of crops does not necessarily mean the human body can absorb and use them. Sometimes micronutrients are simply not “bioavailable.” HarvestPlus is working to screen and rank germplasm for bioavailability using in vitro methods. The best lines will be validated in animal models, and finally tested in humans.

## Efficacy and acceptability

HarvestPlus nutrition scientists are also working to develop indicators that measure nutritional benefit through less invasive techniques such as breath tests. Efficacy measures the biological effect of consuming a biofortified crop under controlled conditions. It is a complex and lengthy process. Biofortified crops must be grown, harvested, milled, and prepared without micronutrient contamination. The crop must be fed in measured quantities to a minimal number of people under controlled conditions for a specified period of time. Blood samples must be taken to measure impact and the data must be analyzed.

## Effectiveness

Once efficacy has been demonstrated and impact and policy analyses show new varieties have the potential to improve nutritional status, effectiveness will be measured in real-life settings. Prior to doing this, studies will be carried out to determine what attributes in food affect consumption behavior and whether biofortification changes the sensory characteristics of food—the look or consistency. Will attitudes have to change to make biofortified food acceptable at the individual, community, and institutional level?

## Forging Partnerships

Nutrition and agriculture research are being woven together in the lab, field, and in the institutions that support HarvestPlus research efforts around the world. This new way of doing business has required CGIAR scientists to address new priorities, build new partnerships, and attract new donors. With the increased focus on nutrition, HarvestPlus has attracted over \$30 million from public health and nutrition donors. Moreover, 25 nutrition research institutions around the world are members of the HarvestPlus alliance. 🌱

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## Bangladeshi farmers take on role of scientists (continued)

The LITE project, funded by UK’s Department for International Development, set out to discover the exact cause of an assumed drop in rice yield when farmers stop spraying insecticide. The ultimate aim, explains LITE principal investigator and IRRI senior entomologist Gary C. Jahn, was to identify safe alternatives to insecticides.

“To my surprise,” reported Dr. Jahn,

“when people stopped spraying, yields didn’t drop—and this was across 600 fields in two different districts over 4 seasons. I’m convinced that the vast majority of insecticides that rice farmers use are a complete waste of time and money.

“We quickly realized the most important thing to focus on was scaling up the successes of the LITE project,” he explained.

“We’ve already trained 2,000 farmers. We’ve reduced insecticide use among participating farmers by 99%, and by 90% among nonparticipating farmers in the same villages. Even in the control villages, where no farmers conducted the experiments, insecticide use dropped from 80% to 55%, and much of this beneficial drop is attributable to farmer-to-farmer interactions.” 🌱

## Kenya Prepares to Grow Insect-Resistant Maize

Every year, stem borers voraciously consume 400,000 tons of maize, causing an estimated \$72 million in losses for Kenya. That sum represents over 12 percent of the farmers' annual harvest. The Insect Resistant Maize for Africa (IRMA) project is working to identify conventional and novel sources of stem borer resistance and incorporating them into maize varieties that are well suited to Kenyan growing conditions and to farmer and consumer preferences. The project is jointly implemented by the Kenya Agricultural Research Institute (KARI) and CIMMYT, with support from the Syngenta Foundation for Sustainable Agriculture.

If trials are successful, seed of Bt maize inbred lines and of crosses to locally adapted maize will eventually be made available to develop new, insect resistant varieties for farmers. To support this effort, IRMA has mounted a major effort to inform and consult Kenyan researchers, academics, farmers, and the general public about the project. As one result, IRMA varieties are being improved for additional traits that farmers value such as drought tolerance and resistance to storage pests.

"We in Kenya have resolved to apply biotechnology in line with the existing biosafety frameworks, national statutes, and international obligations," said H.E. Mwai Kibaki, President of Kenya, while inaugurating the first biosafety greenhouse complex in eastern Africa on June 23, 2004. "The newly constructed biosafety greenhouse complex symbolizes that effort." The President referred to agricultural biotechnology as a tool to

improve economic performance, reduce poverty, and enhance food security. The Hon. Kipruto arap Kirwa, Kenyan Minister of Agriculture, attended the ceremony.

A biosafety greenhouse has special features to prevent the transfer of pollen, seed, or other plant material from genetically modified plants to the outside environment. Located at the KARI National Agricultural Research Laboratory (NARL) in Nairobi, the new greenhouse will be used among other things to determine the level of resistance to insect pests in maize developed by IRMA. The resistance is based partly on genes from the soil bacterium, *Bacillus thuringiensis* (Bt).

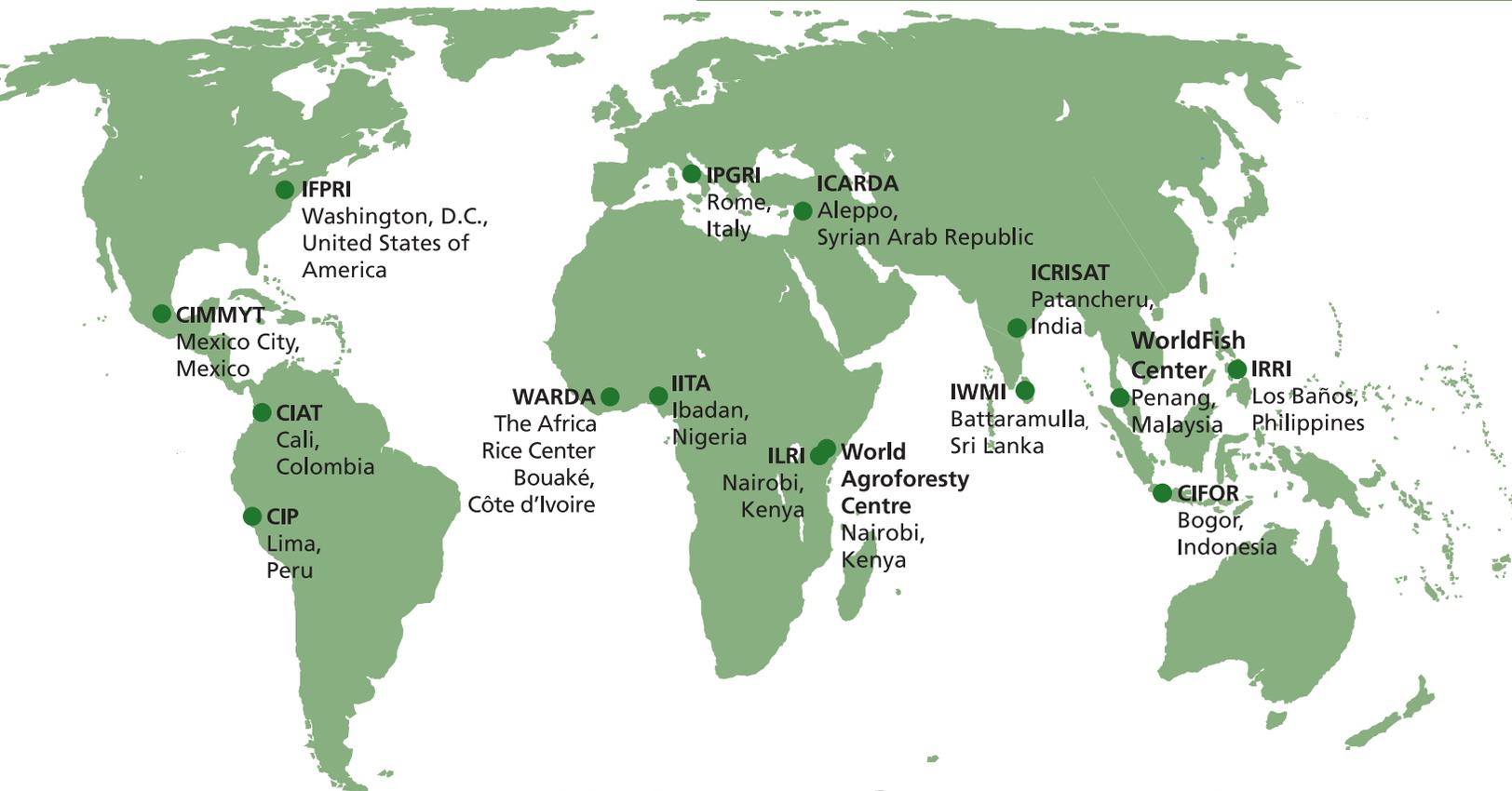
The Nairobi facility is the first biosafety greenhouse complex in sub-Saharan Africa, and the only other facility is in South Africa.

"An important output of the project and the greenhouse will be the generation of knowledge and experience," said Masa Iwanaga, Director General, CIMMYT, in remarks made at the inauguration of the facility. Partners have already received extensive training on biosafety greenhouse operation, and are conducting studies on practices that enable farmers to use Bt maize productively and on how the varieties will fit into the environment. 🌱



His Excellency Mwai Kibaki, President of Kenya (second from left) and Masa Iwanaga, CIMMYT Director General (far right) view Kenya's new biosafety greenhouse complex. Looking on is Romano Kiome (center) Director General, Kenya Agricultural Research Institute (KARI). The inauguration of the facility highlighted Kenya's interest in taking a lead role in biotechnology to benefit farmers in sub-Saharan Africa.

*"We in Kenya have resolved to apply biotechnology in line with the existing biosafety frameworks, national statutes, and international obligations," H.E. Mwai Kibaki, President of Kenya.*



## CGIAR-supported Future Harvest Centers

International Center for Tropical Agriculture (CIAT)  
[www.ciat.cgiar.org](http://www.ciat.cgiar.org)

Center for International Forestry Research (CIFOR)  
[www.cifor.org](http://www.cifor.org)

International Maize and Wheat Improvement Center (CIMMYT)  
[www.cimmyt.org](http://www.cimmyt.org)

International Potato Center (CIP)  
[www.cipotato.org](http://www.cipotato.org)

International Center for Agricultural Research in the Dry Areas (ICARDA)  
[www.icarda.org](http://www.icarda.org)

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)  
[www.icrisat.org](http://www.icrisat.org)

International Food Policy Research Institute (IFPRI)  
[www.ifpri.org](http://www.ifpri.org)

International Institute of Tropical Agriculture (IITA)  
[www.iita.org](http://www.iita.org)

International Livestock Research Institute (ILRI)  
[www.ilri.org](http://www.ilri.org)

International Plant Genetic Resources Institute (IPGRI)  
[www.ipgri.org](http://www.ipgri.org)

International Rice Research Institute (IRRI)  
[www.irri.org](http://www.irri.org)

International Water Management Institute (IWMI)  
[www.iwmi.cgiar.org](http://www.iwmi.cgiar.org)

West Africa Rice Development Association–The Africa Rice Center (WARDA)  
[www.warda.org](http://www.warda.org)

World Agroforestry Centre (ICRAF)  
[www.worldagroforestrycentre.org](http://www.worldagroforestrycentre.org)

WorldFish Center  
[www.worldfishcenter.org](http://www.worldfishcenter.org)