

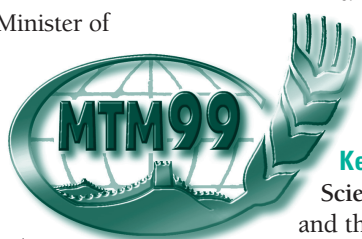
# CGIAR NEWS

CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH ■ JUNE 1999

## BREAKTHROUGHS IN BEIJING: MTM99

The CGIAR's Mid-Term Meeting (called MTM99) in Beijing, China from May 24 – 28 brought consideration of the third System Review to closure and launched action proposals emanating from the review, as amended and adapted by CGIAR members. Chairman Ismail Serageldin called MTM99 a “landmark” gathering, one that began by highlighting the strong collaboration between the CGIAR and China, and ended with emphasis on the renewed strength and direction of the CGIAR following the third System Review.

Chen Yaobeng, China's Minister of Agriculture, welcomed the CGIAR to Beijing. During “China Day” at the Academy of Agricultural Science, the Vice Minister of Agriculture told of the importance of the CGIAR partnership to the success of China's agricultural research. On the opening day of the business meeting, Chairman Serageldin provided the keynote on the challenge to agricultural research in China and around the world. Featured speakers at China Day and the business meeting included Lu Feijie, President of the Chinese Academy of Agricultural Sciences, Tang Zhengping, Director General of the Agriculture Ministry's Department of International Cooperation, Ma Shiqing, Director General of the Agriculture Ministry's Department of Science, Technology, and Education, Donald Winkelmann, Chairman of the Technical Advisory Committee (TAC), and Hubert Zandstra, Director General of CIP.



The theme of MTM99 was “The Third System Review: From Proposals to Practice.” The Review Panel had presented its recommendations at International Centers Week (ICW98), challenging the CGIAR to rethink its role and re-design its strategy for the new millennium. A Consultative Council (CC) was created at ICW98 to address the key issues arising from these recommendations. The Council met in January and members refined System Review recommendations. CGIAR committees then further developed proposals for consideration by members and the resulting set of action proposals was considered during MTM99.

### Key MTM Decisions

Science. Both the Review Panel and the Council emphasized the CGIAR's scientific excellence, partnerships, and credibility. The Center Directors Committee (CDC) and TAC presented action proposals and progress reports on science-related recommendations for the strategic orientation of research priorities.

The twin thrusts of integrated gene management and integrated natural resource management (NRM) were reaffirmed. Members endorsed an action plan in integrated NRM and endorsed the terms of reference for the systemwide review of plant breeding.

The CGIAR welcomed the consultations between Centers and African leaders. The Forum for Agricultural Research in Africa and the Program for

*Continued on page 2*

## REGIONAL CONSORTIA: NEW MODEL FOR CROP RESEARCH

Five Latin American countries have banded together in an innovative partnership that will finance and guide agricultural research. In March, representatives from private and public institutions in Bolivia, Colombia, Cuba, Ecuador, and Venezuela entered into a new, self-financing consortium that will boost research for cassava development throughout the region. It's the second such crop consortium created for Latin America in recent years.

Colombia and Ecuador were represented by their agriculture ministers in the consortium's inaugural workshop, which took place at CIAT headquarters in Colombia. CIAT and France's Center for International Cooperation in Agricultural Research for Development (CIRAD) are also founding members of the Latin American and Caribbean Consortium to Support Cassava Research and Development (CLAYUCA).

The first such consortium was the Fund for Latin American Irrigated Rice (FLAR), created in 1995. Its membership now includes 13 national organizations plus three international centers – CIAT, IIRI, and CIRAD.

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A new, state-of-the-art website is promoting international agriculture research and the work of the CGIAR Centers to a global audience. The site ([www.futureharvest.org](http://www.futureharvest.org)) is sponsored by Future Harvest – a CGIAR Centers' public awareness campaign that is building understanding about the role of agriculture and agricultural research in critical international issues.

Visitors will find the website packed with news and information on the links between agriculture and political stability, economic growth, environmental renewal, public health, and population. A section on each issue provides in-depth background and shorter Quick Facts, as well as listings of CGIAR studies and other sources of information.

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News and Backgrounder sections highlight research conducted by CGIAR scientists, as well as studies commissioned by Future Harvest. A current Backgrounder features the role of the International Institute of Tropical Agriculture (IITA) and other NGOs involved with revitalizing the agricultural economy of war-torn Angola. Another




article highlights a study commissioned by Future Harvest on the role of agricultural development in promoting stability and preventing conflict.

An Ambassadors page introduces high-profile supporters of international agricultural research, ranging from former U.S. President Jimmy Carter to Dr. Norman Borlaug and even the U.S. rock band Hootie and the Blowfish. These Ambassadors are reaching new audiences with the message that international agri-

cultural research plays an important role in people's lives in developing as well as industrialized nations.

Currently under construction is a For Journalists page, which will provide news media around the world with the latest research news and access to CGIAR scientists available for interviews. A comprehensive Glossary is being designed to educate the public about CGIAR science and the wide variety of issues addressed by agricultural research.

State-of-the-art technology allows website visitors to sign up for regular updates via an electronic mailing list, locate information through an easy-to-use search engine, download an attractive screen saver, and link directly to websites maintained by the 16 Centers of the CGIAR.

The Future Harvest website provides an important new tool to engage policy-makers, scientists, students, news media, donors, and the general public in the debate about how to feed the world while protecting the environment in the 21st century. 

## BEIJING: MTM99

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African Agricultural Research shared their "Vision of African Agricultural Research," and will work with the Centers to develop specifics to improve system programs in Africa.

**Partnerships.** Members endorsed the Chairman's proposal to establish a Science Partnership Committee. The Chairman is also taking the lead in meeting with private sector CEOs of concerned companies.


**Governance.** Members agreed to maintain the CGIAR's informal style of decision-making by consensus and turned down the System Review's recommendation to have the CGIAR reconstituted as a legal entity.

Members also:

- empowered the Chairman to call a Consultative Council into session as required, on the understanding that

the Council will be reduced in size.

- endorsed the composition, working arrangements, and present mandate of TAC, and the integration of TAC and the Impact Assessment and Evaluation Group.
- reaffirmed the importance of the Global Forum for Agricultural Research (GFAR) and agreed that the CGIAR should continue to support it.
- endorsed special efforts to seek out a new generation of talent, with greater gender and national diversity in all key positions of the system, without compromising quality and standards.

The Finance Committee's efforts to develop a long-term strategy for both traditional and new funding sources and a mechanism for public awareness and constituency building in support of CGIAR were endorsed. Members also endorsed proposed guidelines to improve the predictability and stability of fund flows to the Centers. 

## TIME RECOGNIZES BORLAUG

Nobel Laureate Norman Borlaug, the agronomist credited with launching the “Green Revolution” that spared Asia from widespread famine, was featured in a special edition of *Time* magazine, which recognized the greatest scientists and thinkers of the 20th Century.

Borlaug, still very active at 85, serves as a Distinguished Consultant with the International Maize and Wheat Improvement Center (CIMMYT) in Mexico. He is the President of the Sasakawa Africa Association, which works with President Jimmy Carter toward alleviating poverty and hunger in sub-Saharan Africa. He also finds time to teach a semester of advanced coursework at Texas A&M University.

*Time* wrote:

“Two hundred years ago, the English economist Thomas Malthus calculated that the world’s population would soon outstrip its food-growing capacity. What he didn’t anticipate was Norman Borlaug. Working in Mexico from 1944 to 1960 – long before the advent of modern technology – the U.S. biologist developed a

hybrid strain of wheat that was enormously more prolific than its natural cousins. Borlaug’s ‘miracle wheat’ allowed Mexico to triple its grain production in a matter of years, and when his hybrid was




Dr. Norman Borlaug

CIMMYT Photo

introduced in south Asia in the mid-1960s, wheat yields there jumped 60 percent. Miracle strains of rice and other grains followed in short order, triggering a global Green Revolution that put the lie to Malthus’ gloomy calculation. For his role in helping stave off world starvation, Borlaug was awarded the Nobel Prize for Peace in 1970.”

Dr. Borlaug continues to push for more agricultural research, warning that potential famines loom in sub-Saharan Africa and throughout the developing world.

“To avoid future tragedies, worldwide wheat production will need to increase by at least 40 percent, and maize production by 45 percent – and most of that will have to take place in the developing world,” warns Borlaug. “The world’s population is increasing by 200 people per minute – mostly in developing countries; that’s the equivalent of a city the size of Paris being added to the world’s population each week.”

The *Time* recognition is the most recent in a long line of honors for Borlaug. Besides holding numerous honorary degrees, he was recently presented the U.S. State Department’s highest honor for a civilian. Secretary of State Madeleine Albright told Borlaug that he has “left an indelible mark on the world in your overwhelmingly successful fight to feed the world’s hungry and eliminate the many ills associated with hunger.” 

## NEW HEADQUARTERS FOR ICLARM


Following a carefully considered process over more than six years, the ICLARM Board of Trustees has decided to pursue the offer from Malaysia to relocate its global headquarters from Manila, Philippines to Penang. A recent CGIAR External Program and Management Review of ICLARM recommended urgent action on the headquarters decision and commended the Board on the objective and thorough approach taken to select an appropriate site.

The selection process had been based on many considerations, including operational costs, communications, transport links, and the facilities available on the site. Penang is considered to offer signifi-

cant advantages on all fronts. The Center had especially been seeking a site where it could have a modern office, along with state-of-the-art laboratory facilities.

While relocating its global headquarters, ICLARM will be forming a Philippine program to continue the country-specific projects and activities, and to develop new research and training activities in partnership with its many Philippine collaborators. The Philippine Department of Agriculture and the Center see many opportunities to combine in a new spirit of partnership, including in the policy field as implementation of the new Fisheries Code and the Agricultural and Fisheries

Modernization Act begins.

In addition, a small number of ICLARM’s projects will remain in the Philippines so as not to disrupt their final stages. The Center will also remain involved with the GIFT Foundation International, located at the Central Luzon State University (CLSU) and jointly established by CLSU, the Bureau of Fisheries and Aquatic Resources and ICLARM. The Foundation is now the home of the GIFT strain of improved tilapia. The Board’s decision also includes measures to offer a number of Philippine recruits regional staff positions at the new Penang site and to assist all affected staff. 

# HARVESTING WHEAT, NOT WILD OATS

*In 1992, Egyptian scientists, working with ICARDA, pledged to tackle the problem of wild oat infestation in their wheat fields. Six years on, Egyptian farmers are saving US\$10.6 million a year just from reduced use of pesticides. The European Union donated over US\$600,000 to help them do it.*

Wheat became a profitable crop in Egypt in the 1980s after the government freed agriculture from heavy regulations to make it more rewarding for farmers. The result was a dramatic upsurge in wheat production and productivity – a process assisted by ICARDA's Nile Valley Regional Program, working with Egypt's national scientists.

But many farmers grew wheat year after year on the same piece of land. The result was increased infestation with a weed called wild oats (*Avena sterilis* and *A. fatua*, and, to a lesser extent, *A. sativa*). New dwarf-wheat varieties adopted in Upper Egypt were particularly infested. By the early 1990s, the Egyptian authorities estimated that wheat losses surpassed 100,000 tons.

Finding a control strategy proved difficult. Wild oats are hard to distinguish from wheat, particularly in the early growth stages, so hand-weeding is difficult. Herbicide had become very expensive in the recent years with the deregulation of agriculture. Besides, the Government discourages more than one application of herbicide for environmental reasons, and a single application was not enough. The answer had to be found in a package of different control strategies, including cultural practices, suitable for the various regions of Egypt.

To find a solution, the Weed Control Section at Giza, part of Egypt's Agricultural Research Center (ARC), joined forces with the ICARDA's Nile Valley Program. ICARDA provided technical support and backstopping, and administrative assistance. It also helped

ARC negotiate a grant of US\$617,000 from the European Union to undertake research for controlling wild oat infestation – and used part of it to train 30 researchers in weed control.

Beginning in 1992, demonstrations took place in farmers' fields of the technology that was available. Second, on-farm experiments were conducted with farmers' participation, to try to develop more suitable technology. During the first year alone, about 30 such experiments took place, testing each measure by itself. Finally, back-up research experiments were carried out to find suitable packages.

Part of the technical solution appeared to lie in rotation with berseem (Egyptian clover), a forage legume. Four years' trials with berseem rotation showed that it was a better option for cutting wild-oat infestation than hand-weeding or herbicide application.

The researchers also tried the Herrati sowing method: farmers irrigate to raise the weeds and then plow them under before they sow the wheat. This met with 60–70 percent success – good, but not enough. Even 10 wild-oat plants per square meter are enough to damage the wheat crop.

There were also seed rate trials. Raising the seed rate, from 120 to 150 kg/ha, helped the wheat fight the oats. This proved about 25 percent effective. And hand-weeding was also carefully analyzed. Researchers found that in areas where the labor was available, and where workers had been taught to identify the wild oats, up to 80 percent success was possible.

Then, there were herbicide trials. Researchers came up with a number of herbicide recommendations that were very effective. But the cost – around US\$80 per hectare – was high, and even if 90 percent of the wild oats were destroyed by one application, the

remaining 10 percent were still enough to cause damage.

None of these strategies was adequate on its own, but all were potential weapons. From 1993 to 1996, work took place on defining suitable packages at 66 on-farm sites in five Governorates. Using all the components together, certainly, was effective, but so was a combination of three; and, in some circumstances, just two.

The next step was to transfer this information to farmers. The techniques were used in 100 demonstration plots every year, spread over 11 Governorates; in the course of five years, about 500 demonstration plots were run in collaboration between farmers, researchers and extension agents. About 600 extension agents were trained in identification and control of wild oats. Publicity tools were used: posters, leaflets and booklets, plus popular media. Researchers were pleased that 61 percent of farmers adopted the complete package of recommendations for their area; if one includes those who did so partially, the figure would be 68 percent.

What has been the impact of the control package? Researchers managed a yield increase in previously infested plots of 2.01 t/ha. Farmers could not quite achieve this, but there has been a yield increase of 0.5 t/ha in infested plots nationwide, and, in 1997 alone, extra wheat production was calculated at 54,132 tons. Savings to farmers from reduced use of herbicides are calculated at US\$10.6 million. The project is also offering environmental benefits, besides increasing food security, and putting more money into farmers' pockets. 🌱



## MORE RICE WITH LESS WATER

New, water-saving techniques are being developed that could save up to 25 percent of the water now used to grow rice, according to scientists at two CGIAR Centers – the International Rice Research Institute (IRRI) in the Philippines, and the International Water Management Institute (IWMI) in Sri Lanka. Such techniques are especially important for Asia, where demand for water will increase sharply over the next 25 years – more than 50 percent in Southeast Asia and India alone, and 40 percent in China – and where about half of irrigated land is planted in rice. The new rice techniques

the next generation to meet the food needs of Asia's poor.”

Rice is among the most important grains in the world, but it is number one in Asia, the most populous continent. Many of the major rice-producing countries are developing nations categorized by the World Bank as “low income economies.” In most of Asia, rice is not only the staple food, but also constitutes the principal economic activity and a key source of employment and income for the rural population.

Asia includes 17 of the world's 25 major rice-producing nations, and they

are aimed at reducing dependence on the traditional method of growing rice, in which farmers raise young rice plants in seedbeds and then transplant them to paddies that are kept flooded throughout the growing season. Water consumption for irrigated rice in most Asian countries is therefore very high.

More than half of the world's population will depend on rice as their principal food source in 30 years. Rice production must increase by more than 40 percent from the present production to avoid a shortage. But available land for cultivation is expected to decrease.




World Bank. Curt Carmemark

include wet seeding, intermittent rice irrigation, land leveling, improved weed management, and management of cracked soils.

“It takes twice as much water to produce rice than any other cereal crop – more than 2,000 tons of water is used to grow one ton of rice,” says Ismail Serageldin, Chairman of CGIAR and World Bank Vice President for Special Programs. “With the projected growth of Asian cities and industries and their increased need for fresh water, rice farming must become more water efficient.” Mr. Serageldin adds that “despite the constraints of water scarcity, rice production must rise dramatically over

extend in a rice arc from Pakistan to Japan. Asian farmers till about 90 percent of the world's harvested area and account for 90 percent of global production. In the majority of these countries, rice occupies one-third or more of total planted area.

The link between water and rice is crucial. Currently, 31 countries are facing water shortages, a number that is expected to increase to 48 countries by 2025, peaking at 55 countries by mid-century, 2050. The growing water shortage means there is a pressing need to devise methods of growing rice with less water, without any penalty to production. Many of the new techniques

“With the accelerating loss of land available for rice cultivation due to urbanization, soil degradation and salinization, the problem becomes one of increasing yields under increasingly severe circumstances,” says Ronald Cantrell, Director General of IRRI. “Saving water in rice-based irrigation systems needs particular attention because of the importance of rice to Asia. Therefore, CGIAR scientists are collaborating with farmers and national scientists to find ways to continue producing ‘more rice with less water.’” 

## Water-Saving Techniques for Cultivating Asian Rice

**Wet-seeding** – “Pre-germinated seeds” (soaked for 24 hours) are sown directly onto muddied fields, rather than the traditional transplanting of young plants into fields covered with water. Wet-seeding of rice uses about 20-25 percent less water and significantly reduces necessary labor. When properly managed, rice yields through wet-seeding may be equal to those achieved by transplanting. Wet-seeding is becoming popular in the irrigated areas of Thailand, Vietnam, and the Philippines.

**Intermittent irrigation of rice** – Instead of flooding fields continuously, soil is irrigated, allowed to nearly dry out, then irrigated again, with the process repeated through harvest. In China, water users associations have pioneered saving techniques that reduce seepage and percolation from fields. The need for water-saving rice techniques is urgent in China, because per capita fresh water availability in China is among the lowest in Asia and still declining. IRRI and IWMI scientists are investigating how such farming techniques can be transferred to the water basin level and to other countries.

**Land leveling** – Land leveling offers potential for significant increases in the efficiency of water use in rain-fed rice produc-

tion. Many rice paddies are in fields of different levels, so that much more water is needed to cover the highest part. When fields are leveled, they require far less water and produce higher yields. More than 90 percent of Cambodia’s rice fields in rainfed, lowland areas are uneven and would benefit from leveling.

**Weed management in wet-seeded rice** – Farmers flood rice paddies to suppress weeds that cut yield, especially at the beginning of the growing season. If other weed control techniques, either by cultural, mechanical or chemical means, are used, the fields do not have to be flooded continuously.

**Management of cracked soils** – High water loss from rice fields during land preparation for rice production results from bypass flow through cracks. Losses can be reduced by measures that minimize crack development during the soil drying period, and by impeding the flow of water through these cracks. The effect of straw mulching and shallow surface tillage on crack formation during the fallow period, and reduced water needs during land preparation have shown promising results at test sites.

## REGIONAL CONSORTIA

*Continued from page 1*

The rice fund has an annual budget of about US\$500,000, which pays for a targeted program of crop improvement, information exchange, and training.

FLAR and CLAYUCA demonstrate the powerful national commitment in the face of declining public-sector support for research on food crops. “By uniting the private and public sectors, CLAYUCA will enable us to strengthen research and development capacity, despite the economic crisis,” said Carlos Murgas, Colombia’s Minister of Agriculture.

As with FLAR, each member of the new cassava consortium will contribute a yearly quota, based on the country’s annual production of the crop. Member organizations (which include industry associations using cassava as well as

research institutes) will define a common agenda for the regional research and development activities they jointly finance.

CLAYUCA is the result of several dramatic developments in tropical America’s cassava sector. First is the transformation of this crop from a staple of subsistence



CIAT Photo



agriculture into a raw material for the manufacture of balanced animal feeds and starch. This has given the private sector a direct stake in cassava research and development. There is growing interest, for example, in using dried cassava chips as a partial substitute for imported cereals. For that to happen, cassava production must become more competitive through higher productivity, lower production costs, and more efficient processing.

Recent technological advances have brought those goals within reach. Molecular mapping and marker techniques are helping speed genetic improvement and broaden the genetic base of cassava. In addition, processing technologies have been improved, and integrated management techniques have been developed to reduce disease and pest damage.

Participatory approaches have proven effective for incorporating growers' perspectives into technology development, leading to more rapid adoption of new practices. "This new alliance of the private and public sectors will allow research results and new technologies to reach us producers more quickly," commented Jesus Mejía, a cassava grower from Venezuela.

Cassava continues to be grown primarily on a small scale and on poor soils in marginal environments of tropical America. For that reason new public and private investment in the crop through CLAYUCA represents a much-needed opportunity for economic development in these less-favored areas.

Cassava is a major subsistence and animal feed crop all across the developing world. Africa produces almost half of global output (48 percent), and cassava remains a principal staple in tropical zones. Asia, which accounts for about one third of the total (32 percent), now produces the crop primarily for cattle feed. Brazil is by far the biggest producer in Latin America (20 percent), where the transformation from subsistence crop to animal feed is well underway. Cassava yields are highest in Asia and lowest in Africa. 🌿

## NIGERIAN LEADERS PLEDGE SUPPORT TO RESEARCH

In an unique event held in April at the International Institute of Tropical Agriculture (IITA), the out-going Nigerian Head of State, General Abdulsalami Abubakar and the incoming President, General Olusegun Obasanjo, spoke about the importance of agriculture for the economic development of Nigeria and sub-Saharan Africa.

The two leaders addressed a seminar on the Development of Sustainable Agriculture in sub-Saharan Africa organized by IITA to sensitize African governments and the donor community to their roles in ensuring food security in sub-Saharan Africa.

In his opening address, General Abubakar commended the immense contributions of IITA to the improvement of staple food crops in sub-Saharan Africa. He thanked donors for their support to the Institute since its inception 32 years ago and he promised to write to his fellow African Heads of State to pool resources to support the Institute in its efforts to contribute to food security on the continent.

In his paper, General Obasanjo urged that sub-Saharan Africa create the enabling environment for effective development and use of improved technologies. "Delaying action on this can only further increase the gaps that exist in various domains between this continent and the rest of the world," he said.

General Obasanjo, who has been a farmer since he voluntarily handed over power to a civilian president after ruling Nigeria for three years, challenged scientists and other participants to focus on increasing production of food crops as an essential part of breaking the cycle of poverty that keeps many Africans food-insecure. "Food must not only be available, it must also be affordable by the people," he said.

"Unfortunately, over the years sub-

Saharan Africa has remained a net importer of food. Production has declined for a variety of reasons, ranging from wrong government policies, to an inclement economic environment (local and international), to inadequate investment and inappropriate technologies."

With the increasing population growth in Africa, the slash and burn agriculture of the past was no longer a sustainable practice. "We need to use better approaches such as higher-yielding, pest resistant crop varieties and improved farming systems to really achieve positive changes," he said.



World Bank. Curt Carnemark

Obasanjo also noted that recent policy reforms that have liberalized the agricultural sector in some countries only encouraged a boom in the production of horticultural crops, while food security remained elusive because of the low level of productivity of staple food crops.

He called on the sub-Saharan Africa leadership to make every effort to use its national and international agricultural research and development capacity much more effectively. "The region should take strong leadership in the introduction, adaptation and development of appropriate new technologies. If we do so, then we are in a better position to draw the full benefits of institutes like IITA." 🌿



# LATE BLIGHT UPDATE: PRIORITY MOVES TO INTEGRATED CONTROL

Late blight, currently the world's worst agricultural disease, destroys up to 15 percent of global potato production each year. The annual cost of this fungal disease (*Phytophthora infestans*) to developing countries alone is estimated at about US\$3.25 billion by the Centro Internacional de la Papa (CIP) in Lima, Peru.

For almost a hundred years, farmers have suppressed late blight mainly with fungicide sprays. But the emergence of more aggressive forms of the disease has made the chemicals less effective. And such costly chemicals are often beyond the reach of the hardest hit – the poor farmers of developing countries.

Clearly, the diffusion of better cultural controls that can be used alongside resistant materials will benefit these farmers. Accordingly, research priorities for late blight have been shifting toward



CIP Photo

March meeting of the Global Initiative on Late Blight (GILB) held in Quito Ecuador.

“Resistance breeding will continue to receive a high priority,” says GILB Coordinator Wanda Collins. “CIP’s new breeding lines are significantly more resistant than their predecessors. Given the severity of the current late blight epidemic, however, even the best potatoes will benefit from being planted in fields where farmers practice integrated management.”

Late blight project leader Rebecca Nelson affirms: “This is a big change in our thinking. It doesn’t mean that we are going to de-emphasize plant breeding, but it will mean working harder to create better management tools and put them in the hands of farmers.”

## How Bad is Late Blight?

“Late blight is bad and getting worse,” says William Fry, a leading expert on late blight epidemiology and member of the GILB Steering Committee. “Exotic forms of the pathogen have displaced traditional strains in many locations. It is now pretty well established that sexual reproduction of the different mating types is contributing to greater diversity of the pathogen. Our fear is that new forms of late blight are beginning to emerge.”

Indeed, CIP scientists reported that new late blight populations with broad-spectrum virulence had been identified in 1998 in Bolivia and Peru, close to the crop’s center of diversity. Similar reports were received from GILB co-operators in Asia and Africa.

Scientists now agree that gaining a better understanding of disease dynamics is important. Accordingly, GILB has assigned a higher priority to studies on late blight epidemiology.

Tracking changes in the disease may be more difficult in the future, however. Delegates were surprised to learn that plant pathogens are now subject to an



CIP Photo

greater emphasis on integrated disease management (IDM). The shift represents an acknowledgement by scientists that more aggressive forms of the disease cannot be controlled solely with fungicides or resistant varieties. Scientists from 35 potato-producing nations confirmed the new priorities at the



## Scientific Highlights

- New details on using Decision Support Systems that tell farmers when to apply fungicides. Such systems can help control the disease more efficiently and reduce chemical sprays.
- Evidence that access to even limited rainfall data can improve the accuracy and timing of fungicide sprays. This should contribute immediately to work on integrated disease management.
- Replicated trials using a set of resistant clones were successfully concluded in 10 countries. They proved that host plant resistance developed in one part of the world can be equally effective in another; this bodes well for the next generation of advanced clones.
- Plant breeders were optimistic about improvements in conventionally-bred materials and the prospect of major advances using molecular techniques. The prospects for engineering novel sources of resistance into potato appear increasingly likely.
- CIP scientists reported that major resistance genes (R genes) can continue to play a useful role in developing better potato varieties. New findings reveal R genes in other species of potatoes that are different and, thus, more potentially useful than the R genes found in conventional potato germplasm.

international convention on biological diversity and that national sovereignty will play a role in moving them across borders, even for research purposes. “If we are going to continue to study late blight in different locations,” says Wanda Collins, “GILB co-operators are going to have to play by a new set of rules.”

As if to highlight the point, a session on plant quarantine showed that pathogen data from different locations varied significantly more than scientists anticipated. “This simply shows that we need to know a lot more about the disease,” says Ugandan pathologist Theresa Sengooba, a member of the GILB Steering Committee. “If we are going to handle the problem, we need to be much better organized.”

More than 160 people attended the GILB meeting. “This was probably the first international meeting ever held where biotechnologists worked hand-in-hand with IDM specialists and organic farming experts on late blight,” says Collins. The result was an unusually broad exchange of ideas and information.

Support for the meeting was provided by CIDA Canada, the US Department of Agriculture, the European Union (CTA), the Swiss Agency for

Development and Cooperation-SDC, USAID, DANIDA-Denmark, GTZ-Germany, CIP, Frito-Lay Corporation and Monsanto (NatureMark). 



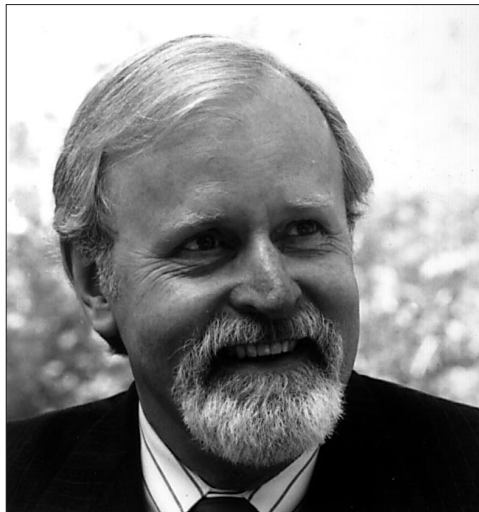
CIP Photo

## IFPRI Director Receives Indian Honors

Dr. Per Pinstrup-Andersen, Director General of the International Food Policy Research Institute (IFPRI) in Washington, D.C. received an honorary Doctor of Science degree from Tamil Nadu Veterinary and Animal Sciences University in India for the critical role he has played in global food security.

“The mandate of this university is at the heart of solving future food problems,” said Dr. Pinstrup-Andersen in accepting the degree. “The demand for livestock products is increasing rapidly, particularly in fast-growing, low-income developing countries.”

Tamil Nadu Veterinary and Animal Sciences University is exclusively devoted to veterinary, animal, and fisheries sciences in India’s southeastern state of Tamil Nadu. Building on its almost 100 years of experience, the university has evolved into an important and dynamic center for teaching, research, and extension.



*Dr. Per Pinstrup-Andersen*

## Japanese Scientist Earns Royal Decoration

The Thai government conferred a royal decoration on Japanese plant breeder Kazuo Kawano. Deputy Minister of Agriculture Nevin Chidchob presented Dr. Kawano with a certificate corresponding to “the 3rd class of the Most Exalted Order of the White Elephant.” It comes in recognition of Kawano’s “significant and lasting contribution to cassava farmers in Thailand,” said Dr. Ananta Dalodom, DOA Director General.

Dr. Dalodom wrote: “Dr. Kawano devoted himself to the cassava farmers, research scientists of DOA, and to Thailand as a whole. He is not only an academician and researcher, but he is also an extension agent as well. Through his dynamic leadership in cassava breeding we were able to release seven to eight cassava varieties to farmers, which are now planted on 1.2 million rai per year. We are extremely grateful for the friendship, goodwill, concern, and sense of humor that he is always willing to share with the Thai people.”

Until last year Dr. Kawano served as a cassava breeder with the International Center for Tropical Agriculture (CIAT). He was posted in Bangkok from 1983 to lead the Center’s cassava research for Asia, with financial support from the Japanese government. Kawano helped create and coordinate the Asian Cassava Research Network, in which the DOA’s Field Crops Research Institute has played a prominent role.

In Thailand Kawano worked with Institute researchers in a collaborative breeding program at Rayong to develop improved cassava varieties through crosses between tropical American and Thai germplasm. In addition to reaching Thai farmers, the new varieties have spread to other Asian countries as well. According to CIAT estimates, they cover about 880,000 hectares in the region, with benefits of US\$245 million annually.



## New Name for Water Institute

The Board of Governors of IWMI has formally approved a change of name of the Institute from the “International Irrigation Management Institute” to the “International Water Management Institute.” The government of Sri Lanka was asked to formally approve this change. Legal documents will remain in the name of IIMI pending final approval by the government. All other documents – letter heads, calling cards, etc. – have been changed to IWMI.

## Biotech Conference in October

Humanity is at the cusp of a new revolution in the biological sciences. Biotechnology – the technique of using living organisms or parts of organisms to make or modify products, improve plants or animals, or develop microorganisms for specific use – is increasingly being suggested as a powerful tool to address the problems of improving agriculture. In order to explore a broad range of issues relating to the role of biotechnology in sustainable agriculture, the CGIAR and U.S. National Academy of Sciences (NAS) will be hosting a two-day conference (October 21-22) in Washington, D.C. The conference has the following objectives:

- Explore biotechnology’s role in promoting sustainable agriculture in developing countries, particularly with a view toward harnessing the new technologies to the needs of poor farming communities;
- Expand understanding of areas where collaborative research and partnerships – public and private – can take shape; and
- Promote reasoned debate based on scientific evidence and up-to-date information, and address the concerns and interests of all segments of society.

The conference is an open event, and seeks to attract diverse stakeholders – governments, academics, scientists, international and national research organizations, non-governmental and community-based organizations, and the private sector. The results will be available as edited proceedings.

For further information, please contact the CGIAR Secretariat.

## Agrobiodiversity Partnership for the Near East

A new partnership to conserve plant genetic resources for use in crop improvement programs was launched in Aleppo, Syria in May. Jordan, Lebanon, Palestine, and Syria are participating in the US\$8.1 million Agrobiodiversity Project, set up by the Global Environment Facility (GEF) of the United Nations Development

Programme. A meeting at the Tel Hadya headquarters of the International Center for Agricultural Research in the Dry Areas (ICARDA) served to finalize details about how central and nationally-based actors in the agrobiodiversity project will work together.

The project aims to tap the local knowledge of farmers and others at two sites in each member country to identify and maintain valuable landraces (local varieties) and wild relatives of cereals, legumes, and fruit trees. This genetic diversity, and the local knowledge about the plants, is under threat from the adoption of new varieties, land reclamation, and overgrazing by livestock.

GEF coordinator, Ms Inger Anderson, explained that safeguarding a diverse and wide-ranging genetic base for food plants is critical to strengthening food security in arid and semi-arid areas. Conserving biodiversity in farmer-grown cereals and other crop varieties, as well as the progenitors and wild relatives of these food plants, is especially important.

Dr. John Dodds, Assistant Director General of ICARDA, added that this region is a major center for food crop diversity. Scientists and officials from the member countries, and from the Arab Center for Studies of the Arid Zones and Dry Lands (ACSAD), based in Damascus, and the regional office of the International Plant Genetic Resources Institute (IPGRI), based at ICARDA, agreed to work together to ensure the maintenance of these essential plant building blocks for a healthy future.

For more information on the GEF Agrobiodiversity Project, please contact: Dr Jan Valkoun, Head of Genetic Resources Unit at ICARDA. E-mail: J.Valkoun@cgiar.org.

## IRRI Pioneer Dies

Robert F. Chandler, Jr., the first Director of IRRI, died following a heart attack in late March. Dr. Chandler, 91, led IRRI during its formative years from 1960 to 1972. It was during his leadership that yields of indica rice were dramatically raised through the development and release of IR-8, the “miracle rice” that spurred the Green Revolution. Dr. Chandler molded IRRI into an international center of scientific excellence to help alleviate hunger worldwide. He was the second recipient of the prestigious World Food Prize and the Presidential End Hunger Award.

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