

**Editor's Note**

At the heart of agriculture lies the diversity of crops—the source of valuable traits that provide the basis upon which farming improvements depend.

This issue deals with the theme of how the priceless rice diversity stored in the Africa Rice Center's genebank is used for the benefit of our partners across the continent.

The article *INGER-Africa: revolutionizing the rice map in Africa* describes a unique network which enables rice scientists across Africa to share and test their most promising rice varieties. Largely thanks to the catalytic effect of the network, many improved rice varieties have been released in major rice-producing countries of West Africa.

Conscious of the tremendous importance of seed for rebuilding agriculture in countries affected by wars or natural disasters, the Center has been providing improved seed and restoring lost germplasm collections in countries across Africa. The story *It all starts with a seed* presents a few examples of this valuable aid.

*News and Notes* gives an insight into the memorable moments in the Center's life.

**Listening to our traditional partners**

Owing to its twin identities, first as an Association of African countries and later as an international institute, the Africa Rice Center is unique among the Consultative Group on International Agricultural Research (CGIAR) Centers.



As part of a regular consultative process with its traditional partners—the national agricultural research systems (NARS)—the Fourth Biennial Regional Meeting was held in June 2004, in Yamoussoukro, Côte d'Ivoire. For the first time we had active participation not only from West Africa who are our traditional and long-standing partners, but also from Central and Eastern Africa.

The meeting was organized under the overall theme of *Celebrating the International Year of Rice (IYR) in Africa*. The event-filled IYR celebration in Yamoussoukro was particularly special because it kicked off a series of major IYR celebrations in Côte d'Ivoire and in other African countries.

As a follow-up to the Center's return plan to Bouaké/M'bé endorsed by the Board in April 2004, the participants strongly urged the Côte d'Ivoire Government to provide security to the Center to return to its headquarters, and fulfill the related Resolution taken by the Center's Council of Ministers in its 24<sup>th</sup> Session in September 2003.

To effectively translate our new Strategic Plan, the Board approved a new programmatic structure that will enhance the relevance and impact of the Center's research products and services in sub-Saharan Africa (SSA).

The Center's core research areas will focus on the two major challenges highlighted in the Strategic Plan: *Integrated Rice Production Systems* and *Rice Policy and Development*. The two programs will be headed each by an Assistant Director under the overall direction of the Assistant Director General, Research and Development.

I am confident that the new structure will ensure that the quality of our science continues to meet the highest international standards and will position the Center to effectively address the emerging challenges in SSA.

**Kanayo F. Nwanze**  
 Director General

**INGER-Africa: revolutionizing the rice map in Africa**

An impact study conducted by Timothy J. Dalton and Robert G. Guei in the seven major rice-producing countries of West Africa has revealed that despite limited investment in rice research, about 200 improved rice varieties have been released over the past 25 years.

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Improved rice varieties generated a producer surplus gain of about US\$360 million in 1998 in these countries. By contrast, only about US\$5.5 million is invested annually in regional rice improvement research.

The study also projected that more than 100 improved rice varieties—products of rice R&D conducted in the 1990s and regional germplasm exchange mechanisms—would be released during 2000-2004. The average number of variety releases is expected to rise from 7 varieties per annum to 30 varieties!

It concluded that without regional efforts in rice improvement, the regional balance of payment deficit for rice imports in 1998 would have been 40% higher and an additional 650,000 hectares of farmland would have to be under rice cultivation to maintain consumption levels at their current standard.

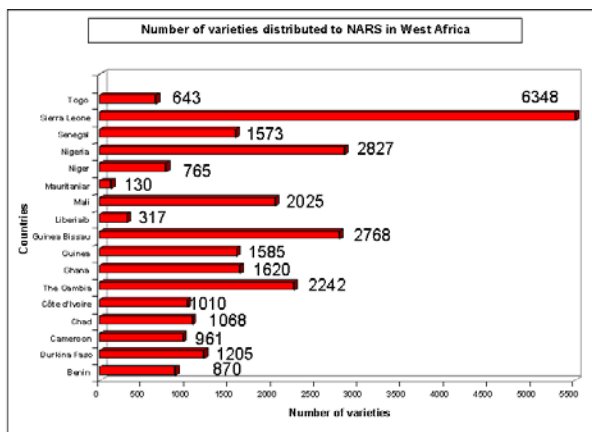
“This impressive testimony to productive public-sector rice research which provided a steady stream of improved rice varieties in the region is largely thanks to the catalytic effect of the International Network for the Genetic Evaluation of Rice (INGER)-Africa,” stated Dr Guei, Head of the Africa Rice Center’s Genetic Resources Unit (GRU) and Coordinator of INGER-Africa. “It demonstrates the efficiency of our new approach to germplasm exchange and information.”

The overall objective of INGER-Africa is to link national rice improvement programs in Africa and international centers, and to promote genetic diversity for different ecosystems through exchange, evaluation and utilization of improved breeding materials originating from worldwide sources.

For instance, the sources or origins of parents of rice germplasm distributed by INGER-Africa have been Asian, Latin American and African countries as well as international research Centers. This helps to broaden the genetic base of the breeding material provided to the national agricultural research systems (NARS).

“INGER-Africa serves as a two-way conduit for the exchange of rice breeding material between the international agricultural research Centers and NARS. The NARS scientists are provided with the means to test the stability and adaptability of their elite varieties in multi-locational trials,” Dr Guei explained.

INGER-Africa’s activities cross all political boundaries. It facilitates the distribution of seeds to cooperating countries, following guidelines of safety, quarantine, and FAO’s Material Transfer Agreement (MTA) for exchanges of germplasm that has been designated to FAO. The partners share their most promising rice



varieties, which are evaluated through the network for yield performance and resistance to diseases, pests and environmental stresses.

The highly successful INGER concept was launched 30 years ago by the International Rice Research Institute (IRRI) as a program for the global collection, distribution and testing of rice genetic materials.

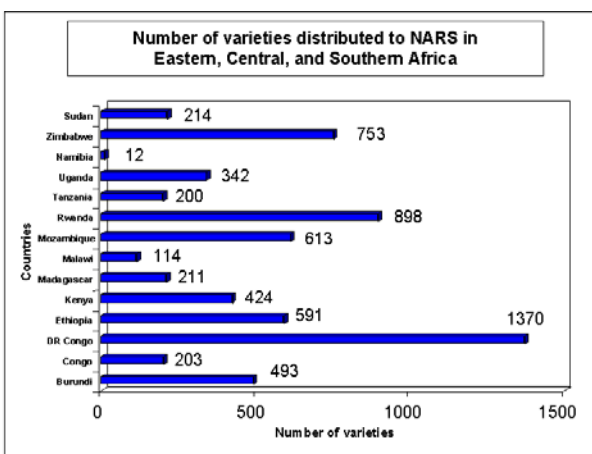
The African wing of INGER was created in 1985 and was initially housed at the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria. Between 1994 and 1996, with support from the UK Overseas Development Administration, INGER-Africa activities were transferred to WARDA, and a new germplasm exchange mechanism was established using WARDA’s successful Task Force approach.

Over the years, INGER-Africa has been fine-tuned to adapt to African conditions and to better address the needs of NARS. In contrast to the previous INGER-Africa, where the same nurseries were sent to all participants, nurseries are now tailored to meet the specific needs of each national program.

Through the activities of INGER-Africa, NERICA breeding lines are being used and tested in rice improvement programs throughout Africa. In addition to formally released varieties, many farmers have the opportunity to evaluate new NERICA material for themselves through the Participatory Varietal Selection (PVS) method.

With the arrival of INGER-Africa, WARDA’s products and services could spread across the continent, beyond the Association’s traditional mandate region of West and Central Africa. INGER has thus led the way in advancing WARDA’s geographical borders and making it truly eligible to become the Africa Rice Center.

INGER-Africa, covering 35 countries in SSA has a much greater reach and relevance than ever before. In addition to the West African countries, it facilitates the exchange of germplasm and related information with several Central, Eastern and Southern African countries, such as Burundi, Congo Brazzaville, the Democratic Republic of Congo, Ethiopia, Gabon, Kenya, Madagascar, Malawi, Mozambique, Namibia, Rwanda, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.



Emphasizing the incredible increase in the number of participating countries, Dr Guei wondered aloud, “Who would ever think that Namibia grows rice?” Indeed, INGER-Africa is quietly revolutionizing the rice map in Africa.

## It all starts with a seed

We all know that seeds are a precious resource for mankind. Food security, poverty eradication, human nutrition, environmental renewal, peace and stability—they all start with a seed.

Conscious of the tremendous importance of seed for rebuilding agriculture in countries affected by wars or natural disasters, CGIAR Centers have been providing targeted seed aid in several countries. For instance, to help farmers in southern Sudan—a region that has witnessed Africa's longest-running civil war—the Africa Rice Center as part of a CGIAR international effort has this year sent seeds of rice varieties, especially NERICA, to the Catholic Relief Services (CRS) for evaluation and distribution in the region.

“As part of the activities under INGER-Africa, we have also been sending breeding material to the national agricultural program in Sudan. In fact, farmers there are already growing NERICAs,” stated Dr Guei.

CGIAR Centers' efforts in rebuilding agriculture in countries affected by conflicts and natural disasters contribute to reducing hunger, preserving agro-biodiversity, strengthening human and institutional capacities, and making relief aid more efficient.

The vital importance of such efforts is corroborated by the Oslo-based International Peace Research Institute, which found that rehabilitation of agriculture is a central condition for reducing violence, because it contributes to reducing poverty—one of the root causes of conflicts.

CGIAR genebanks play a crucial role in mitigating the effects of conflicts and disasters by offering safe havens for storing seeds and providing farmers with the genetic resources they need to rebuild their agricultural production systems, thus serving as a source of food and income.

Increasingly aid agencies are recognizing the value of research Centers to identify suitable varieties for particular ecologies. In the past, they relied on massive seed shipments from abroad, often of varieties that were not resistant to local stresses or suited to local market demands.

The Genetic Resources Unit (GRU) of the Africa Rice Center



*Prof Musangi (left), Board Chair, donating seed for farmers in war-affected region of Côte d'Ivoire*

has been instrumental in helping countries across Africa rebuild their rice biodiversity after conflicts by providing infusions of improved seed and by helping restore lost germplasm collections. From 1994 to 2002, about 10,000 rice varieties were restored in West Africa (Liberia and Sierra Leone).

In Eastern and Southern Africa, over 3,500 rice varieties/lines were sent to Burundi, the Democratic Republic of Congo, Mozambique and Rwanda between 1997-2002.

To reduce the severe food and seed shortage in western Côte d'Ivoire, which has been devastated by the Ivoirian crisis, seeds of rice varieties developed by the Center and its partners were donated to UN and non-governmental organizations for distribution to farmers as part of a 'Seeds for Life' project in 2003.

“We have adopted a 3-pronged strategy including a preventive germplasm collection approach to save seeds from conflict-prone areas,” Dr Guei said. In Côte d'Ivoire, for example, about a thousand landraces were collected in the year 2000 in an area that was later engulfed in civil war.

Special efforts are made to restore traditional varieties to their locations of origin as soon as possible with the help of GIS tools. The Center tries to ensure that its seed donations do not replace farmers' traditional seed exchanges.

Ironically, when the Ivoirian crisis erupted in September 2002, the Center's priceless rice collection based in the headquarters at M'be was itself at risk. “You can, therefore, understand our tremendous relief when we could retrieve the duplicate samples of our collection and store them in risk-free zones,” Dr Guei said.

The agricultural rebuilding effort is not limited to just seed aid or germplasm restoration. The Center has also participated in building national capacity in countries recovering from conflicts, such as in Rwanda, where national program staff were trained in participatory research and seed production.

As part of its new medium-term plan (MTP), the Center has included a project to develop long-term, systematic approaches that would help build stronger foundations of knowledge and policies to mitigate the effects of epidemics, disasters and conflicts.

*Seed—the source of life*



## News and Notes

### Milestones

*24th Meeting of the Board of Trustees  
Bamako, Mali, 19-24 April 200*



*Board with staff*

### New faces at WARDA

*Science Writer  
David Millar*



*Policy Economist  
Patrick Kormawa*



*Cropping Systems Agronomist  
Robert Carsky*



### Celebrating the International Year of Rice in Africa



The Fourth Biennial Regional Consultative Meeting with the NARS was held under the overall theme of *Celebrating the International Year of Rice (IYR) in Africa* in Yamoussoukro, Côte d'Ivoire, 24 - 26 June 2004.

More than 500 representatives of local rice-growing cooperatives, non-governmental organizations (NGOs) and farmers' associations, including women farmers displaced by the Ivoirian conflict, participated in a colorful parade that set the mood for the Rice Day celebration.



The program included a Round-Table discussion on rice marketing and policy issues, a field visit, and an exhibition showcasing rice-based technologies and products. But the pièce de résistance was a NERICA-cooking competition that attracted entries from nine *maquis* (local West African restaurants), which were judged by a committee and prizes were awarded in different categories.



*Participating at the 6th National forum for science and technology (FRSIT), Burkina Faso, June 2004*



Please send your questions, comments or suggestions to:

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