

IRMA Executive Committee Meets; Project Bids Dave Poland Goodbye

The IRMA Project Executive Committee held its mid-year meeting on 26 June 2006 at the CIMMYT-Kenya office. Chaired by Mr. Obongo Nyachae, CEO of the Seed Trade Association of Kenya, the meeting had representation from CIMMYT, KARI, Syngenta Foundation for Sustainable Agriculture (SFSA), the Rockefeller Foundation, and the Kenya Ministry of Agriculture.

CIMMYT Director-General Masa Iwanaga announced at the meeting that the project's longstanding Writer/Editor Dave Poland was moving on, to take up employment with the Malaria Vaccine Initiative in his native USA. "Dave made a tremendous difference to IRMA and his experience, input, and dedication to the project, and CIMMYT's work in general, will be greatly missed," remarked CIMMYT Global Maize Program Director Marianne Bänziger.

—Daisy Ouya

All of us wish Dave and his family the best in the new job and environment

*Kwaheri ya kuonana;
Hasta luego!*



KARI Head of Biotechnology Dr. Simon Gichuki; Dr. Masa Iwanaga, and SFSA Executive Director Dr. Andrew Bennett



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The IRMA project was launched in 1999 with the primary goal of increasing maize production and food security for African farmers through the development and deployment of improved maize varieties that provide high resistance to insects, particularly stem borers. To achieve this goal, KARI and CIMMYT scientists will identify conventional and novel sources of stem borer resistance and incorporate them into maize varieties that are well suited to Kenyan growing conditions and to farmer and consumer preferences. Major funding for the project is provided by the Syngenta Foundation for Sustainable Agriculture.

Dryland Farmers Give the Nod to Insect-Resistant Maize Varieties

Six maize varieties developed for the drylands by the IRMA project won farmers' approval in participatory evaluations conducted at Kiboko, Kampi ya Mawe, and Katumani in Kenya. The three hybrids and three open pollinated varieties (OPVs), conventionally bred to carry multiple borer resistance (MBR) in addition to other farmer-preferred characteristics, were evaluated during August 2006 at the three sites, located in the dry transitional and dry mid-altitude maize zones of the southeastern part of the country.



Farmers evaluating Varieties in Katumani

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(Dryland Farmers.....cont'd)

Farmers evaluated the hybrids (CKIR06007, CKIR06008 and CKIR06009) and OPVs (CKIR04002, CKIR04003 and CKIR04005) against four checks—Katumani (Katumani Composite B, KCB), Makueni (Dryland composite-1, DLC1), Dryland Hybrid 1 (DH01), Western Seed 103 (WS103), and a local variety—the checks allocated according to test site.

Participatory rural appraisals (PRAs) conducted earlier in the area had revealed that farmers here use about a dozen well-defined criteria for selecting their preferred maize varieties: (1) early maturity, (2) multiple number of ears per plant, (3) high grain yield, (4) medium ear height (not too low or too high up the stalk), (5) good resistance stem borers and other field pests, (6) good resistance to foliar diseases, (7) large ears, (8) well filled cobs, (9) large cob diameter, (10) large grain size, and (11) kernel

texture (flint or dent). The evaluation questionnaires were therefore designed around these criteria.

Our preliminary results indicated that overall, farmers in Kiboko and Kampi ya Mawe preferred the new, insect-resistant maize varieties to their local and commercially available varieties. In Kiboko the new varieties were clear favorites, taking the first six positions in the farmers' ratings—the hybrids first, then the OPVs; the checks occupied the last four positions. In Kampi ya Mawe the new hybrids were rated highly, coming second only to DH01, a dryland variety that came into its own in the below-normal rainfall in the area during the trial period.

In Katumani, a rainfed trial, a mixture of new and old hybrids and OPVs occupied the first six positions, and no clear

winners were seen. During the growing season there had been a storm that caused severe lodging of the maize plants, and, unlike in the irrigated trial in Kiboko, this made it very difficult for us, or the farmers, to discern varietal differences.

The evaluation will be repeated during the coming short rains, and the data collected used to support those being gathered in the maize national performance trials (NPTs), in which the new hybrids are in their first year of testing, and the new OPVs in their third.

Two other sets of varieties are being similarly evaluated in the moist mid-altitude and in the transitional mid-altitude ecologies, in IRMA project work being coordinated from KARI Embu and KARI Kakamega, respectively.

—Charles Bett, Stephen Mugo, Hugo De Groot, and James Gethi

African Governments to Craft a Common Position on Biotechnology

Can African countries expect to prosper without embracing modern technologies? Evidently not, according to Kenya's Minister for Science and Technology Dr. Noah Wekesa, who was Chief Guest at the official opening of a 3-day consultation of the AU/NEPAD African High-Level Panel on Modern Biotechnology, in Nairobi on 25-27 July.

"African countries and regions must invest in agricultural biotechnology projects," said Wekesa in his address to the African Union (AU) and New Partnership for Africa's Development (NEPAD) event. African Agricultural Technology Foundation (AATF) was the local host of the meeting, called to solicit the views of a broad range of stakeholders on the Panel's draft report.

The Panel is the first ever to be set up by the AU to address biotechnology in Africa, and, according to its co-chair, Kenya-born Harvard professor Calestous Juma, it is akin to "the writing of a new narrative for Africa, in which African themselves look at how best to exploit modern tools for their economic development." Juma and Ismail Serageldin, President of the Alexandria Library, are chairing the 14-member panel, appointed last year to

provide "independent strategic advice to African leaders on modern biotechnology and its implications for agriculture, health and environment."

Wekesa said African countries should think hard about the long-term cost of non-adoption of emerging technologies,

and aim at developing and harmonizing the relevant regional regulations. He gave the example of Ireland, where he studied in the 1960s, to assert that "science and technology is the engine for development." That country transformed itself from a hotbed of English/Irish



Kenya's minister for Science and Technology Hon. Dr. Noah Wekesa, responds to questions at the NEPAD/AU High-Level Panel consultation on biotechnology in Africa. He said the only way for to start up Africa's development engine is to embrace modern technologies. He is with Permanent Secretary Prof. Christpin Kiambi, Panel Co-Chair Prof. Calestous Juma, and member Prof. Lydia Makhubu

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(African Governments....cont'd)

tensions, to the developed country that it is today, by strategically embracing modern technologies. Several Kenyan MPs attended the opening ceremony, and participated actively in the Q&A session.

If they can adopt a common position on biotechnology and biosafety, African governments will save the time, effort and money needed to develop country-specific policies, and ease some of the regulatory intricacies that would arise without a united stance, in, for instance, cross-border trade. And an Africa-wide position on biotechnology would allow

the continent to ride the biotechnology wave now unfolding.

The full text of the draft report—Freedom to Innovate: Biotechnology in Africa's Development—is available at www.nepadst.org. It will be revised with insights gained from the panel's consultations at the Nairobi meeting, and later presented at the AU Addis Ababa summit in January 2007.

Another recent win for biotechnology in Africa is the endorsement by the COMESA (Common Market for Eastern and Southern Africa) and Association

for Strengthening Agricultural Research in East and Central Africa (ASERECA) members of the adoption of GMOs in the region. The announcement, published in several outlets including <http://www.fromafrica.blogspot.com/>, says the COMESA bloc has resolved to support the development of a regional centre of excellence in biotechnology and biosafety; form of a panel of experts to direct the technology development in the region; and promote public awareness on GMOs at the national level.

—Daisy Ouya

Kenya's MPs Support Biotechnology

Biotechnology projects throughout Kenya can now breathe easy after an overwhelming defeat of a private member's parliamentary motion on July 12 seeking to ban all genetically modified products from the country.

The motion's mover cited a human health concern as the main reason the country should prohibit GM products: "We have seen areas where genetically modified products have been sold... we are producing a chemical that we do not know. There are no assurances that the products are safe for human consumption," he said.

But many MPs were able to counter the motion, some using real-life examples gained from "Seeing-is-Believing" study tours organized by ABSF (African

Biotechnology Stakeholder Foundation), ISAAA (International Service for the Acquisition of Agri-biotech Applications), and partners, of Bt cotton confined field trials at KARI-Mwea, and commercial biotechnology crops in South Africa.

The Assistant Minister for Health Dr. Enoch Kibunguchy was one of the MPs in favor of Kenya's embracing biotechnology and its products, and he clarified that no chemicals were produced by GMOs. "The way I understand 'genetically modified' is that you simply modify the genes [genetic makeup] of an organism to [solve] a particular problem..." he explained.

Other members opposing the motion pointed out that GM food is now being produced, sold and consumed in South

Africa, the United States, China, and other countries. It would be irresponsible, they said, to let the promise of food security elude the country by failing to embrace genetic engineering, which could one day allow the cropping of marginal areas, including the drylands that make up nearly 80% of Kenya's land area. Banning GMOs would be like "shooting ourselves in the foot" in the fight against hunger and poverty, one MP said.

A Biotechnology Bill that will govern the development, commercialization, use and trade of biotechnology products in the country is about to be debated in parliament, and the country's Biosafety Policy was adopted by Cabinet on 28 September.

—Daisy Ouya

IRMA Participates at Ag Shows

KARI's long tradition of a strong presence at Kenya's agricultural shows and trade fairs continued this year.

Grace Kimani and Murenga Mwimali, an MSc student affiliated to the IRMA project, attended the Nairobi International Trade Fair, Kenya's, which features both trade and agriculture displays. Many showgoers took a keen interest in the work being done to control pest stem borers, and asked when they could

expect to have seed of the insect resistant maize varieties. But they also voiced some concerns about Bt maize's safety on human and animal health, and the cost of seed, which Murenga was able to discuss using IRMA public awareness materials.

Grace, in addition, attended most of the regional events, which focus on Agriculture, as well as the Mombasa show, which is the second-largest.



—Grace Kimani Murenga at the KARI stand

AHarvest-USAID Communication Seminar

AHarvest CEO Dr. Florence Wambugu encouraged scientists to use communication as a tool for development, “break down scientific jargon into media stories,” and not to lose hope. “You will sometimes be misquoted, but don’t give up,” she told the participants at a seminar on media communication on 6 June 2006.

The meeting was jointly organized by AHarvest (Africa Harvest Biotech Foundation International) and USAID, and aimed at empowering scientists to better communicate their work, including that in the relatively new area of biotechnology. Communication specialists from AHarvest, AATF, and the local press, gave plenary presentations followed by question-and-answer opportunities.

Nancy Muchiri, Communications and Partnerships Manager at African Agricultural Technology Foundation featured in her talk, the “Ten Commandments of Science Communication,” while Daniel Kamanga, AHarvest Communications Director, discussed the challenges and pitfalls of communicating science through the media in Africa. His talk included Walter von Wartburg’s seven ‘attitudinal sins’ that impede public acceptance of new technologies,— see Box. Gatonye



Kenya Agriculture Secretary Dr. Wilson Songa, pictured here with Dr. Florence Wambugu, made a brief visit to the Seminar, and encouraged scientists to communicate their work for the sake of the country’s development.



Some of the participants at the AHarvest-USAID workshop. Seated are (L-R) Stephen Mugo, Florence Wambugu and Geoffrey Muluvi, Dean, School of Pure and Applied Sciences, Kenyatta University.

Gathura, Science Editor with the Nation Newspapers, enlightened us on the process dailies use to select stories, and the hierarchical structures that would-be communicators of science should be aware of.

Stephen Mugo and Daisy Ouya represented the IRMA project at the meeting.

—Daisy Ouya and Daniel Kamanga

Seven “attitudinal sins” of researchers and research administrators in dealing with public issues

—by Walter von Wartburg

Over the years I have identified what I call attitudinal sins, the things researchers and research administrators should not do.

- The first is the wait-and-see attitude. If you receive criticism, you do not react because you think science is self-explanatory, and people will find out one day how marvelous this all is.
- Second, if you receive criticism and the criticism is mounting, you adopt a belittling attitude, as if the problem does not exist. This can result in reduced credibility of future work.

- The third one is the “everything under control” attitude. People know what happened in the atomic energy industry. Is the mad cow disease under control? It is well to remember that not everything is under control.
- The next one is the “we know best” attitude, because we developed the technology. The difference between knowing best and knowing better is sometimes quite important.
- “You have to believe me.” Nobody has the absolute truth or the absolute trust. Trust is a matter of experience and trust has to be earned.

- “Freedom works best,” because a system of total freedom has always produced the best possible economic output. This is probably not true, because people want to have at least some level of control.
- “Discredit the critics.” We should all take opposing views seriously. Opposing views are part of the problem-solving process in a mature society, so you have to take them seriously, and deal with them.

reproduced from http://web.aces.uiuc.edu/agcomdb/archive/2000/2000_6.html#seven

Kenya to Graduate First Crop of Biotechnology Bachelors'

This December Kenya will graduate its first ever crop of Bachelors of Science in Biotechnology: 20-odd students who have completed a 4-year degree course within the Department of Biochemistry and Biotechnology at Kenyatta University.

Dr. Eucharia Kenya, the Department Chair, says the new course was spurred by the need for local personnel trained in biotechnology. "We anticipated the need for Kenya to have adequately trained manpower in the then 'emerging' science of biotechnology. At that time there was a raging debate that multinational companies would 'dump' GM products in Kenya, and the only way local scientists could gain the public's confidence was to actively participate in the development of these products. And we couldn't do that without the technological skills required," she says.

The Department opened its doors to the first BSc in Biotechnology students in 2002, offering a broad-based program to prepare for a career in industry, or further studies in the biological sciences or biotechnology. The course covers the

fundamentals of chemistry and biology, and in addition, introduces techniques such as tissue culture, molecular markers, and gene cloning.

Kenya says enrolment has been stable, with an average of 25 students registered per academic year since its initiation. The university also offers Masters' and PhD training in biotechnology. But until the department has its own, fully equipped labs for biotechnology research "post-graduate students are being attached to better-equipped labs in institutions such as KARI, ICIPE, KEMRI, CDC, KEPHIS and others."

Another boost to the department's goals would be a clear regulatory framework in the country. "The non-existence of either a biotechnology policy or a biosafety bill is a major setback to the development for our research. This, together with negative publicity, in particular of genetic engineering, hinders the public's understanding of biotechnology, and has a negative effect on training directly, and post-training opportunities indirectly," says Kenya. "Many students constantly



Kenyatta University dean Dr. Eucharia Kenya at a recent meeting

inquire and express anxiety over career prospects and post-graduate training opportunities in the field," she adds.

Kenyatta University is at the forefront of developing an indigenous capacity in biotechnology, essential for any country wishing to use this tool to achieve development.

—Daisy Ouya

Passionate for 'White-lab-coat-and-gloves' Work



Rose Gakenia, one of the BSc Graduates from Kenyatta University

Rose Gakenia Macharia is among the first Bachelors' graduates from Kenyatta University, and she says she would like to eventually work in a challenging position in biotechnology, preferably with a progressive organization, where she can contribute as well as learn.

But first, she would like to get a PhD in biotechnology. "White-lab-coat-and-gloves work is my passion, and I'll stick

to this area; Although currently there aren't many job opportunities in this field in Kenya, I know the time is coming when people skilled in biotechnology will be in high demand," she says.

Gakenia was awarded a distinction in her BSc research project into molecular marker techniques, and she's eager to sink her teeth into even more complex biotech questions.

—Daisy Ouya

Tenth International Conference on Agricultural Biotechnology, Italy

As part of my ongoing G&D-Rockefeller fellowship, I was fortunate to participate at a conference in Italy, where I gained useful knowledge, made many new contacts, and had a chance to visit several historic sites of that beautiful country.

I was among the few participants from Africa to attend the Tenth International Conference on Agricultural Biotechnology: Facts, Analysis and Policies, organized by the International Consortium on Agricultural Biotechnology Research (ICABR) in Ravello, 29 June to 2 July 2006. Over 100 participants, drawn from research, academia, the seed industry, development agencies, and the private sector, mainly from the developed world, came to the conference. I chaired

one socioeconomics session, which I found to be very good exposure to the international environment. The knowledge I've gained will be shared with the IRMA team, and used to guide ongoing research and new projects.

I learned about the growing interest in biofuels as potential substitutes for gasoline. FAO in collaboration with other UN and non-UN agencies and the private sector are carrying out several bioenergy activities, and have even recently launched an international bioenergy platform.

I also discovered that to promote biotechnology, some countries have initiated 'biotechnology summer camp



The scenic, historic town of Ravello is set on a hill overlooking Italy's Amalfi coast.

mentors,' who talk to and motivate high school students on the importance of biotechnology applications.

—Margaret Mulaa

SFSA Supports Seed Entrepreneur



Josephine Okot, winner of the SFSA-supported fellowship

The Syngenta Foundation for Sustainable Agriculture (SFSA) is supporting one of the eleven CGIAR 'Gender and Diversity (G&D)-Rockefeller Fellowships for Enhancing the Careers of East African Women Scientists' awarded in 2006. The recipient of the SFSA-sponsored fellowship, Josephine Okot, is the founder and Managing Director of Victoria Seeds, a company dedicated to supplying quality cereal, legume and pasture forage seed to smallholder farmers in Uganda.

Her three-year-old company is thriving, and she hopes that this success will encourage other women to take up the challenge of agribusiness entrepreneurship. "In the longer term, I would like to become a role model to others as a successful, indigenous, woman entrepreneur, and inspire others to take bold steps," she says.

During the past two years IRMA project theme leaders Josephine Songa, Jane Ininda and Margaret Mulaa, have been awarded G&D fellowships.

—Daisy Ouya

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Do you have a question or comment about the IRMA project or the quarterly newsletter articles? Or perhaps you have an article you would like to contribute. If so, please contact IRMA Project Manager Stephen Mugo (s.mugo@cgiar.org).CIMMYT-Kenya