

Ethiopian Officials Praise CIMMYT Program on Eve of Second Phase

By SEIFU MAHIFERE

The Sustainable Intensification of Maize-Legume Systems for Food Security in Eastern and Southern Africa (SIMLESA) program has successfully completed its first phase with significant outputs that helped improve the food and nutritional security of smallholder farmers in eastern and southern Africa.

Photo: Seifu Mahifere



Remarks are given at the SIMLESA review meeting.

SIMLESA, funded by the Australian Centre for International Agricultural Research (ACIAR), was launched in 2010 to improve the livelihoods of smallholder farming communities in Africa through productive and sustainable maize-legume systems and risk management strategies that conserve natural resources. It is managed by CIMMYT and implemented by partners in Ethiopia, Kenya, Malawi, Mozambique and Tanzania. With lessons from these core countries, the program is also implemented in Botswana, Rwanda, South Sudan and Uganda.

SIMLESA's first phase ended with its Fourth Annual Regional Review, Planning and Program Steering Committee meeting in Addis Ababa, Ethiopia, on 7-11 April. Sileshi Getahun, Ethiopia's state minister

of agriculture and the guest of honor, said the program has paid "substantial dividends" to sustainable agricultural development in eastern and southern Africa. The second phase of SIMLESA, which will also be funded by ACIAR, is expected to launch in July.

"SIMLESA is a model for many regional and sub-regional collaborative projects to address agricultural intensification [in Africa]," Getahun told more than 120 representatives of SIMLESA partner organizations attending the event.

Mulugeta Mekuria, program coordinator, outlined the program's main achievements in developing conservation agriculture (CA)-based sustainable intensification options, technology adoption by both female and male farmers, capacity building

for national agricultural research systems (NARS) of partner countries and the creation of enhanced partnerships and collaboration for a common goal.

He noted in particular that SIMLESA has contributed to the release of 40 new maize varieties, which have yield advantages of 10 to 30 percent when compared to existing commercial varieties in its program countries. The program also trained more than 3,000 agricultural scientists in the maize and legume production value chains and engaged more than 40,000 farmers (almost half of them women) through farmer field days and exchange programs. ▶

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► John Dixon, ACIAR principal research advisor, expressed ACIAR's commitment to support SIMLESA. The program is considered a flagship program and is being adopted by donors as a framework for sustainable intensification.

Fentahun Mengistu, director general of the Ethiopian Institute of Agricultural Research and SIMLESA Program Steering Committee member, underlined that SIMLESA has significantly contributed to the generation and adoption of user-preferred maize and legume technologies, as well as information and knowledge that improve system productivity and profitability of the target farming systems.

"The outcome of SIMLESA, in terms of human capacity and research facility building, will improve our efficiency and impact in agricultural research in the future," Fentahun said.

Olaf Erenstein, CIMMYT Socioeconomic Program director and SIMLESA Program Management Committee chair, said SIMLESA II will have a broader technological focus on systems and impact



Photos: Sefu Mahfere

SIMLESA's contribution to improving system productivity and profitability was highlighted in a meeting held in April.

orientation as well as the creation of more partnerships and scaling out of program results.

The week-long event featured country-specific achievements from Australia, Ethiopia, Kenya, Malawi, Mozambique and Tanzania, backed by poster displays showing success stories.

Participants also visited maize and legume seed production, forage and irrigated intercropping trials and the Melkassa Agricultural

Research Centre, showcasing SIMLESA-supported technologies. They also saw an ultra-modern export company that cleans, grades and packages legumes and is linked with SIMLESA research teams in Ethiopia.

The SIMLESA Program Steering Committee commended SIMLESA for its substantive progress and NARS partners for their professionalism and skill during the meeting. ▮▮



Field Days in Malawi and Zambia Promote Metal Silos

By WANDERA OJANJI

The Effective Grain Storage for Sustainable Livelihoods of African Farmers Project (EGSP) Phase-II held a series of field days in Malawi and Zambia to raise awareness and demonstrate the efficacy of metal silos in protecting stored grains against weevils and larger grain borers – the two most destructive storage insect pests of maize. The project is funded by the Swiss Agency for Development and Cooperation (SDC).

During the events, farmers compared the good-quality grain stored in a silo to the damaged grain stored in traditional structures and gunny bags. Artisans and extension officers also demonstrated the proper use and handling of a metal silo.

The first field day was held on 8 April at Banda Jessy's farm in Chimtende Camp, Katete District, Eastern Province, Zambia. More than 160 farmers, metal silo artisans, agricultural officers and local leaders attended the event.

Metal silos have many benefits, said Dolan Mulumbu, Chimtende camp officer. They have the ability to store grain for many years without damage, don't require insecticides, are portable and are insect- and rodent-proof. They also give farmers flexibility on when to sell their grain and allow them to store grain

for their families. Greyson Phiri, Sambira Village headman, thanked CIMMYT for bringing the metal silo technology to farmers.

The second field day in Zambia was held on 9 April at Peter Mwanza's homestead in the Kamlaza Agricultural Camp, Chipata District, Eastern Province. The field day was attended by more than 270 farmers from the camp.

Most farmers in the area sell their grain immediately after harvest for fear of it being destroyed by post-harvest pests. Moffat Khosa, of the Zambian Ministry of Agriculture's Department of Mechanization, urged farmers to adopt the technology to help them avoid selling their grain immediately after harvest – when the prices average US\$ 10 per 50 kilogram bag – and sell at a higher price later in the season. He



Photos: Wandera Ojanji

Farmers feel properly stored grain from a metal silo during the field day at Banda Jessy's farm in Chimtende Camp, Katete District, Zambia.

challenged farmers to invest in post-harvest technologies as much as they are investing in other farm inputs, such as seed and fertilizer.

More than 240 farmers attended the third field day on 11 April at Frank Renadi's farm in Kapsala Village, Chigonti Extension Planning Area, Lilongwe District, Malawi. It was attended by Wilfred Lipita, controller of Agriculture Extension and Technical Services; Godfrey Ching'oma, director of Crop Development; his deputy, Bartholomew Ngauma; Penjani Theu, program manager, Lilongwe Agricultural Development Division; district development officers from Lilongwe and Mchinji; and local leaders from Chigothi.

Lipita urged farmers to take advantage of the 50-50 cost-sharing offer from the project to acquire metal silos, adding that those who cannot afford to pay 50 percent can opt for cheaper super grain bags. The project intends to distribute 7,500 super grain bags to smallholder farmers in the Lilongwe and Mchinji districts for demonstration.

"The crop in the field needs to be protected from maize weevils and larger grain borers, rodents and ambient moisture fluctuations," Lipita said. "Where the crop has done well, there is need for farmers to jealously guard the crop so that there are no post-harvest losses." 🌽



Chilese Mabengwa and Zidana Mbewe, district extension officers for Katete and Chipata, respectively, demonstrate proper use and handling of metal silos during the field day at Banda Jessy's farm in Chimtende Camp, Katete District, Zambia.

Supporting Sustainable Intensification by Tracking Farmers' Adoption Patterns

By FLORENCE SIPALLA

Identifying the socioeconomic constraints farmers face in adopting a technology is central to ensuring they adopt it sustainably. This is the work that the Pathways to Sustainable Intensification in Eastern and Southern Africa (Adoption Pathways) project is doing in collaboration with partners from national universities and agriculture research systems in Africa and Europe.

Adoption Pathways partners met in Addis Ababa, Ethiopia, on 10-12 April to review activities to date and to plan for 2014. The four-year project is funded by the Australian International Food Security Research Centre (AIFSRC) and managed by the Australian Centre for International Agricultural Research (ACIAR).

Project partners from seven institutions collaborating on the project in Ethiopia, Kenya, Malawi, Mozambique and Tanzania attended the meeting. Participants included policymakers and vice-chancellors from universities as well as donor representatives – John Dixon, ACIAR principal adviser for research/cropping systems and economics and Liz Ogutu, ACIAR regional manager for Africa. Fentahun Mengistu, director general of the Ethiopian Institute of Agricultural Research (EIAR), officially opened the meeting and described the project as one that represents a unique cross-country research and development effort.

“Africa is at the tipping point,” said Dixon, adding that six of the world’s top 10 fastest growing countries are in Africa. Dixon identified food, economic growth and sustainable intensification as keys to tapping global opportunities. “Sustainable intensification of maize and legumes will increase resources productivity and reduce production risk,” he said.



Photo: Florence Sipalla/CIMMYT

Egerton University Vice-Chancellor Professor James Tuitoek contributes to discussions during the Adoption Pathways annual meeting in Addis Ababa, Ethiopia.

Understanding what drives farmers to take up different sustainable intensification practices (SIPs) — such as zero/minimum tillage, maize-legume intercropping, maize-legume rotations, new maize and legume varieties and using chemical fertilizer — is important.

The project has developed several policy briefs based on research to share its outputs with a wider audience. “Don’t just push policymakers but push them with evidence,” said Wilfred Mwangi, CIMMYT’s regional representative for Africa. Mwangi emphasized the need for policy dialogue and more capacity building. The project has helped train 18 early-career economists in research design and implementation. An additional 120 people have gained practical experience in conducting surveys through their participation as enumerators or supervisors. ▶

Semu Yemane/EIAR



- Mengistu said the project has “planted seeds for impact” because different countries can benefit from the regional approach to tackling development challenges. Referencing a policy brief on the SIPs adopted by farmers in Ethiopia, he noted that farmers who implemented a suite of multiple agronomic practices were able to double or even triple their income from maize.

Menale Kassie, the Adoption Pathways project leader, shared some of the project’s key achievements, which include establishing panel data, analysis to determine gaps in technology adoption through a gender lens, impact analysis and risk assessment. “We need policy dialogue, followed by policy advocacy,” Kassie said. “We would be happy if our products are used by our partners.”

Policy makers, including top university administrators, pledged their support for policy advocacy. “We will help support this project through linkages with

policy makers and the Ministry of Agriculture,” said James Tuitoek, professor and vice-chancellor at Egerton University in Kenya. Angelo Macuacua, professor and vice-chancellor at [Eduardo Mondlane University in Mozambique](#), thanked the project for inviting the vice-chancellors to participate in the meeting. “It helps us understand, in detail, the work the researchers are doing,” he said. Other vice-chancellors at the meeting were Professor Phiri Kanyama and Professor Gerald Monela from Malawi’s [Lilongwe University of Agriculture and Natural Resources](#) (formerly known as Bunda College) and [Sokoine University of Agriculture](#) in Tanzania.

The importance of monitoring and evaluation in project implementation was emphasized by AIFSRC’s Ogotu. “Results from this project will not only help farmers, there is potential on a larger scale,” she said. The meeting provided partners an opportunity to closely interact, share their research results and plan for the next phase of activities. ▼▼

Maize-Free Window to Curb Spread of Disease in Kenya

By WANDERA OJANJI

Buoyed by the success of a campaign to curb the spread of maize lethal necrosis (MLN), the farming community around the Kiboko Crops Research Station in Makueni County, Kenya, agreed to create a maize-free window during August and September and to plant within two weeks of the onset of long rains in April.

The decisions follow an effective campaign by CIMMYT, the Kenya Agricultural Research Institute (KARI) and the Makueni County [Ministry of Agriculture](#) last year to create a [maize-free window](#) in March and April 2014, which required farmers to stop planting maize between the end of October 2013 and the end of February this year. The maize-free windows are critical in interrupting the disease cycle, thus reducing the population of vectors.



Stephen Mugo, principal scientist and maize breeder for CIMMYT’s Global Maize Program, explains facts about MLN to participants.

A meeting was organized on 1 April by Stephen Mugo, principal scientist and maize breeder for CIMMYT’s Global Maize Program, in partnership with KARI and the Makueni County [Ministry of Agriculture](#) at the Kiboko Crops Research Station. More than 25 people attended, including county administration, local community leaders, religious leaders, Makueni County agricultural staff, Kiboko farmers and CIMMYT and KARI scientists. “Farmers did, to a very large extent, respect and adhere to our resolution to have a maize-free window, which was enough to reduce vector density and consequently transmission,” Mugo said. ►

► According to Lucas Ngulu, Makindu District agricultural officer, more than 95 percent of farmers within a 5-kilometer radius of the Kiboko Crops Research Station followed the resolution passed at the first MLN stakeholders meeting on 1 October 2013. They did not plant maize and instead planted cowpeas and pigeonpeas during the period. Joel Mbithi, farm manager for the CIMMYT Kiboko Crops Research Station, attributed the success to the aggressive awareness campaigns that partners conducted in the area.

However, most of the farmers who grow maize under irrigation did not adhere to the call for a maize-free window. Their decision is attributed partly to a lack of understanding about the importance of the campaign and partly driven by the need to earn a living, as most of them depend on the sale of irrigated maize for their livelihoods.

Isaac Kariuki, the Makindu District deputy agricultural officer, noted that the few farmers who did not adhere to the advice lacked proper and accurate information on the disease. He called on the team to provide accurate information in a timely manner and to do everything possible to bring the remaining farmers on board. Some farmers wrongly believed that the disease is controlled by heavy rains. “As fate would have it, those farmers who still went ahead and planted maize lost their crop to drought that hit the region after the initial heavy and consistent rains,” Kariuki said.

Reverend Reuben Mulwa called on participants to be ambassadors and reach out to fellow farmers to respect and adhere to the maize-free windows. “Lead by example by being the first to adhere to the resolution,” Mulwa said. “But take due diligence when talking to other farmers about respecting and adhering to these resolutions.” ▼▼



Photo: Wandera Ojani

A community leader shares his perspectives on MLN and its control in Kiboko.

Photo: Wandera Ojani



Researchers Learn Use of Equipment for Improved Phenotyping

By WANDERA OJANJI

Amini Mataka, a research officer for CIMMYT's Southern Africa Regional Office in Zimbabwe, was one of many Water Efficient Maize for Africa (WEMA) scientists and technicians who experienced difficulty using data generation and processing equipment.

But after attending the "Towards Quality Data through Effective and Efficient Use of Equipment in WEMA" training course held in Nairobi, Kenya, on 15-22 March, this is no longer the case. "I can now confidently and competently use the Motorola Scanner, make it compatible with computers and use Fieldbook to analyze data and prepare nurseries and trials," Mataka said.

Photo: Wandera Ojanji



Andrew Chavangi demonstrates the use of a seed counter.

According to Stephen Mugo, CIMMYT Global Maize Program principal scientist and CIMMYT-WEMA team leader, these difficulties encouraged WEMA to train 28 scientists and technicians from CIMMYT and national agricultural research systems from the five WEMA countries – Kenya, Mozambique, South Africa, Tanzania and Uganda. The training provided participants with skills in the preparation of nurseries and trial design and seed preparation using Fieldbook; the printing of seed packet and field labels in Fieldbook; the basics of data collection using equipment and data analysis using appropriate software; and the use and care of computers, printers, seed counters, threshers and data collection equipment.

Caroline Thatelo, senior research technician for the Agricultural Research Council-South Africa, learned how to use Fieldbook, a tool developed by CIMMYT maize breeders for managing experiments and data analysis using the open-source data analysis software "R."



Photo: Wandera Ojanji

Patrick Chomba demonstrates how the bulk sheller operates.

"We had problems using Fieldbook when we started," Thatelo said. "But the practical demonstrations we have gone through have now made me perfect in the use of Fieldbook. I can now create an inventory, a seed increase nursery, a nursery to form single crosses, a stock list, consolidate inventories, generate trials and analyze data for single- and multi-location sites using Fieldbook."

To some, like Gabriel Ambani, senior technician at the Kenya Agricultural Research Institute (KARI)-Kakamega, Kenya, the training was an eye-opener. "Before this training, I had no hands-on experience on the use of most of the equipment we were trained on, particularly the Motorola Scanner, label printers and bulk sheller," he said. "I now have increased competence and am looking forward to applying my gained knowledge and skills to effectively use the equipment."

Sylvester Oikeh, WEMA project manager, called on the participants to put their new skills into use. "I want to see improvements in data collection and analysis. Do not be afraid to use the equipment and Fieldbook," he said. "You are bound to make mistakes. But through the mistakes, you will figure out the right way to operate the equipment and use Fieldbook. You will get it right after several attempts."



Caroline Thatelo receives her certificate of completion from Sylvester Oikeh.

Several CIMMYT scientists and technicians helped organize and facilitate the workshop, including breeders Stephen Mugo and Yoseph Beyene; technicians Andrew Chavangi, John Gakunga and Collins Juma; and Joel Mbithi, CIMMYT-Kiboko farm manager. WEMA Phase II is funded by the [Bill & Melinda Gates Foundation](#), the [United States Agency for International Development-Feed the Future](#) initiative and the [Howard G. Buffett Foundation](#). 📄

CIMMYT-Pakistan: Modernizing National Wheat Breeding Programs

By YAHYA RAUF AND IMTIAZ MUHAMMAD

Photos: Awais Yaqub



Imtiaz Muhammad, CIMMYT country representative, explains the wheat planter to MNFS&R, PARC and USDA officials.

In collaboration with the Pakistan Agricultural Research Council (PARC) and the U.S. Department of Agriculture (USDA), CIMMYT organized a ceremony at the National Agricultural Research Center (NARC), Islamabad, to present wheat planters to various research institutions and universities under the Wheat Productivity Enhancement Project (WPEP).

CIMMYT Country Representative Imtiaz Muhammad highlighted the importance of these newly imported small-plot planters, which will replace the traditional hand-sowing crop systems and antiquated machinery currently used by many of the Pakistan national programs. The planters will bring precision and efficiency to research trials. Planters will be used in the coming wheat season by all WPEP partner institutes and will be tested at small farms for wheat cultivation. The technology will be transferred to farmers to improve crop productivity once it is successful.

Clay Hamilton, USDA agriculture counselor in Pakistan, said the machinery handover ceremony was an example of the successful scientific collaboration between the United States and Pakistan and institutes like CIMMYT, which is critical in order to achieve better results in agriculture production. This year, CIMMYT, PARC and

USDA are celebrating the 50th anniversary of Dr. Norman Borlaug beginning his work in Pakistan to improve wheat productivity.

Seerat Asghar, the secretary of the Ministry of National Food Security and Research (MNFS&R), acknowledged the ongoing technology transfer to Pakistan from the U.S. and CIMMYT. PARC Chairman Iftikhar Ahmad said WPEP achieved its goal of increased productivity by introducing disease-resistant wheat varieties, building research capacity, improving disease surveillance systems, developing seed distribution systems and modernizing national crop development programs through upgrading infrastructure and equipment.

Moreover, Pakistan is now prepared to cope with the challenges of Ug99 while also developing new wheat varieties to help meet increasing food demand. ¶¶



Photo: Awais Yaqub

WPEP national partners attend the wheat planter handover ceremony at NARC, Islamabad.

Jeanie Borlaug Visits Central Asia

By LINDA McCANDLESS/THE BORLAUG GLOBAL RUST INITIATIVE



From left to right: Zafer Mert, Gordon Cisar, Kathy Cisar, Jeanie Borlaug, Alexei Morgounov and Ronnie Coffman look at leaf rust in the new rust screening facilities at CIMMYT-ICARDA in Ankara, Turkey.

Continuing the year-long celebration of what would have been Norman Borlaug's 100th birthday, his daughter, Jeanie Borlaug, visited wheat research facilities in Turkey and Pakistan with representatives of the Borlaug Global Rust Initiative (BGRI) and CIMMYT. She also attended the 2nd International Wheat Stripe Rust Symposium in Izmir, Turkey, on 28 April-1 May.

Photos: Linda McCandless/BGRI



Jeanie Borlaug (left) with CIMMYT wheat pathologists Esra Karagöz and Nese Kahraman in Ankara, Turkey.

On 21 April, the group visited the CIMMYT and International Center for Research in the Dry Areas (ICARDA) offices in Ankara, Turkey, to discuss the International Winter Wheat Improvement Program (IWWIP), review the development of rust-resistant varieties and tour related research facilities.

"We are all disciples of Dr. Borlaug," said CIMMYT's Alexei Morgounov during his IWWIP presentation. "He made each of us feel personally responsible for the role we play in wheat improvement."

IWWIP is a joint program of CIMMYT, the Government of Turkey and ICARDA. Its main objective is to develop winter wheat germplasm for Central and West Asia, a region where the average rural farm is 15 to 50 hectares and yields an average of 2.67 kilograms per hectare on more than 15 million hectares.

Since IWWIP's inception in 1986, more than 60 winter wheat varieties have been released – 27 in Turkey and the rest in Afghanistan, Armenia, Azerbaijan, Georgia, Iran, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

IWWIP also supplies germplasm to 130 breeding programs in more than 50 countries; participates in global rust surveillance, monitoring and screening activities; and maintains a collection of genetic materials, including wheat landraces in a central gene bank.

"CIMMYT, ICARDA, the BGRI and FAO have a unique collaborative arrangement in Ankara," said Ronnie Coffman, vice-chair of the BGRI, who traveled with Borlaug and Gordon Cisar. Coffman praised the Turkish government for its contributions to wheat and rust research, for recent investments in new yellow, leaf and stem rust screening facilities and for helping ICARDA relocate personnel, facilities and its germplasm collection from Syria. The BGRI has also invested funds for the rust screening facilities.

Masum Burak, director general of the General Directorate of Agricultural Research and Policies within Turkey's Ministry for Food, Agriculture and Livestock, noted that wheat is the number one agricultural crop on the Anatolian Plateau. He said wheat production in Turkey was 22 million tons in 2013. This year, Turkey experienced a dry winter, so production in 2014 is predicted at 19 to 20 million tons.

Topics raised during the tour included the gender ratio for women in science in Central Asia, which has always been fairly good and "better than the EU and the U.S.," according to Ali Osman Sari, deputy director of the General Directorate of Agricultural Research and Policies. Another issue was better management of seed systems and the increasing difficulty of freely moving seeds and germplasm across international boundaries.

An inventory of wheat landrace germplasm currently grown in Turkey was conducted by IWWIP and more than 3,000 accessions were deposited into Turkey's National Gene Bank. 🌾



Jeanie Borlaug, Ronnie Coffman and Gordon Cisar were among visitors to CIMMYT-ICARDA facilities in Ankara, Turkey.

Photo: Linda McCandless/BGRI

Rust-Resistant Wheat Released for Central and West Asia

By ALEXEI MORGOUNOV

In 2013-2014, numerous new rust-resistant wheat varieties that are high yielding and broadly adapted were released in Central and West Asia as part of collaborative work by the International Winter Wheat Improvement Program (Turkey-CIMMYT-ICARDA) for winter wheat and CIMMYT for spring wheat. Partners from the region contributed in identification, selection and promotion of these new varieties, which will contribute to food security in this vulnerable region.

Central and West Asia grow approximately 15 million hectares of winter wheat and fall-planted spring wheat. The region includes the countries with the world's highest wheat consumption per capita, such as Afghanistan, Armenia, Azerbaijan, Georgia, Iran, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Turkmenistan and Uzbekistan. Most of these countries import wheat to satisfy increasing demand. Wheat is grown under both

irrigated and rain-fed conditions. Yellow and leaf rusts are the main diseases reducing yield because farmers cultivate susceptible varieties. 🌾🌾



Photo: Hafiz Mumidjanov

The new variety Yusufi was released in Tajikistan for 2014.

Below are the new varieties.

Country	Variety	Institution	Pedigree	Cross ID	Selection history
Afghanistan	Bamiyan-013	ARIA-MAIL	VORONA/KAUZ/4/URES/ BBL//KAUZ/3/BCN	TCI971315	-0SE-0YC-0YE-...
Azerbaijan	Gizil Bugda	Azeri Res. Inst. of Farming	SAULESKU41/SADOVO1	TCI950295	-3AP-0AP-0E-1YE-0YE-1YM-0YM
Iran	Tak-Ab	Dryland Agricultural Research Institute	MANNING/SDV1//DOGU88	TCI90038	-0YC-0YC-0YC-12YC-0YC
Iran	Baran	Dryland Agricultural Research Institute	PTZ NISKA/UT1556-170 //UNKNOWN	TCI97AP	-037-0AP-0MA- 1MA-0MA
Tajikistan	Oriyon	Tajik Res. Inst. of Farming	ND/VG9144//KAL/BB/3/ YACO/4/VEE#5	CM85836	n.a.
Tajikistan	Yusufi	Chilgazi Farm / Tajik Agrarian University	SOROCA	CMSS96Y02567S	-040Y-020M-050SY-020SY-4M-0Y
Tajikistan	Sarvar	Chilgazi Farm / Tajik Agrarian University	CHEN/AEGILOPS SQUARROSA (TAUS0//BCN/3/BAV92	CMSS95Y00539S	-3Y-010M-010Y -010M-39Y-0Y-3M-0Y
Uzbekistan	Bardosh	SARA-NAV Seed Company	SERI.1B//KAUZ/HEVO/3/AMAD	CGSS97Y0021T	-099TOPB-048Y-099M-099Y- 099M-23Y-0B
Turkey	Dinc	GAP International Agric. Research and Training Center	KAUZ/ PASTOR	CMSS93B00025S	-48Y-010M-010Y-010M-4Y-0M
Turkey	Altın Başak	East Mediterranean Agric. Research Inst.	CHEN/AEGILOPS SQUARROSA (TAUS)//BCN/3/2*KAUZ	CMSS93B01856M	040Y-43Y-010M-010Y-010M -6Y-0M-1SA-0SA
Turkey	Seri-2013	East Mediterranean Agric. Research Inst.	WEAVER/4/NAC/TH.AC// 3*PVN/3/MIRLO/BUC	CMSS93B00223S	24Y-010M-10Y-10M-1Y-0M
Turkey	Gökkan	East Mediterranean Agric. Research Inst.	KRICHAUFF/FINSI	CMSA00M000204S	040POM-040Y-030M -30ZLM-12ZTY-0M-0SY
Turkey	Tekin	GAP International Agric. Research and Training Center	WBLL1*2/TUKURU	GGSSO0B00173T	-099TOPY-099M-099Y -099M-1CEL-0B
Turkey	Metin	Sakarya Maize Research Station	HATUSHA/MTG//TX81V6614	CMWW90M207	-0YC-0YC-0YC-5YC-0YC -1SE-0YC-3YC-0YC
Turkey	Yakamoz	East Mediterranean Agric. Research Inst.	BL 1496/MILAN/3/CROC_1 /AE.SQUARROSA (205)//KAUZ	CMSS97M03600T	-040Y-040M-020Y-030M -015Y-80M-3Y-2M-0Y
Turkey	Sarı Başak	East Mediterranean Agric. Research Inst.	STOT//ALTAR 84/ ALD/3/SNITAN	CDSS99Y00619S	0M-0Y-14Y-0M-0Y-0B

CIMMYT-Pakistan Supports Training on Physiological Breeding

By NOOR MUHAMMAD AND IMTIAZ MUHAMMAD

CIMMYT-Pakistan, in collaboration with the Wheat Research Institute (WRI), Faisalabad, conducted a hands-on training workshop on the use of sensor-based technologies for physiological breeding at the Ayub Agriculture Research Institute, Faisalabad, and the National Agricultural Research Centre (NARC), Islamabad.

Photo: Awais Yaqub



A field demonstration shows the correct use of the GreenSeeker™ at NARC, Islamabad.

Nearly 40 agronomists, breeders and physiologists representing 11 national research institutes participated in the training. The workshop was planned to train professionals on the use of sensor-based equipments to improve physiological breeding efforts at Pakistan's national breeding programs. Sensor-based technologies are useful in understanding plant response to various climate clues.

Alistair Pask, from CIMMYT's wheat physiology group, shared his knowledge of and experiences with wheat physiology and its implementation in plant breeding, especially under stress conditions. Lectures included information on wheat physiology, data recording, data handling and data interpretation in breeding approaches. Equipment including infrared thermometers for measuring canopy temperature, chlorophyll meters for measuring chlorophyll content and the GreenSeeker™ sensor used for normalized difference vegetation index (NDVI) measurements were demonstrated. CIMMYT also provided small pocket-sized GreenSeeker™ sensors to the WRI and the NARC Wheat Program. 📷

MasAgro Shows Maize Seed Advances to Mexico Seed Sector

By ALBERTO CHASSAIGNE

Representatives of Mexico's national seed sector attended two MasAgro maize events on 3-4 April. First, in Puerto Vallarta, more than 50 representatives of national seed companies interacted with CIMMYT scientists and leaders to learn about conventional breeding and the application of advanced technology such as doubled haploid technology and selection for yield, drought tolerance, heat, low nitrogen and disease tolerance. Speakers also presented the results of the Collaborative Networks 2013 evaluation and assessed new hybrids.

Next, participants went to a field station in El Cantón, where they observed plots featuring improved hybrids MasAgro offers for the highlands, tropics and subtropics. The four-hour tour allowed participants to see the performance of the hybrids while learning about best practices. They also visited a hybrid seed production field where they could see the effective application of recommendations given by CIMMYT seed specialists.

The activities allowed for the exchange of knowledge between members of the collaborative network. 📷



Photo: Alberto Chassaigne/CIMMYT

Seed producers learn about new technology at a MasAgro event.

Weekly photo contest ▶

Weekly Photo Contest Winners

Winner: Innovation for Science



Nikhil Kumar Singh sent this photo from BISA-Jabalpur. The digital weighing balance pictured needs a controlled environment for precise observation. Yogesh Gautam (left) and Abhishek Rai (right) create a temporary controlled facility for it. "It is the kind of unique innovation that we all do for science," Singh writes.

Runner Up: Yellow Maize; Green Field

Yellow maize stands out in a green field at the SEDIAC field day in Kwanza Sul, Angola. The annual field day attracts agriculture stakeholders, including seed and fertilizer suppliers, equipment manufacturers, breeders and local leaders. **Florence Sipalla** submitted this photo.

