

The DTMA Project Platform

January – March 2010

In this issue

In this issue, we turn the spotlight on West Africa, and we also begin a new section – ‘Country Partner Updates’. Share your feedback and submissions for the next issue of the DTMA Platform, to be published in July. Happy reading!

Recent Publications

La Rovere, R., G. Kostandini, T. Abdoulaye, J. Dixon, W. Mwangi, Z. Guo, and M. Bänziger. 2009. *Potential impact of investments in drought tolerant maize in Africa*. CIMMYT, Addis Ababa, Ethiopia. More information: **Roberto La Rovere** (r.larovere@cgiar.org)

Warburton, M. L., P. Setimela, J. Franco, H. Cordova, K. Pixley, M. Bänziger, S. Dreisigacker, C. Bedoya, and J. MacRobert. 2010. Toward a cost-effective fingerprinting methodology to distinguish maize open-pollinated varieties. *Crop Science* (50). More information: **Peter Setimela** (p.setimela@cgiar.org)

Setimela P.S., J. Crossa and M. Bänziger. 2010. Targeting of early to intermediate maize hybrids for yield performance and yield stability using SREG model. *Plant and Soil* (2010, forthcoming). More information: **Peter Setimela** (p.setimela@cgiar.org)

Production of drought tolerant maize in Nigeria. An extension bulletin produced by the National Agricultural Extension and Research Liaison Services, Ahmadu Bello University, Zaria, Nigeria, in collaboration with IITA, CIMMYT and Nigerian Universities. More information: **Baffour Badu-Apraku** (b.badu-apraku@cgiar.org)

Langyintuo, A.S., W. Mwangi, A.O. Diallo, J. MacRobert, J. Dixon, and M. Bänziger. 2010. Challenges of the maize seed industry in eastern and southern Africa: A compelling case for private-public intervention to promote growth. (forthcoming in *Food Policy* and available at: <http://dx.doi.org/10.1016/j.foodpol.2010.01.005>) More information: **Augustine Langyintuo** (ALangyintuo@agra-alliance.org)

Badu-Apraku B. and A. Fontem Lum. 2010. The pattern of grain yield response of normal and quality protein maize cultivars in stress and non-stress environments. *Agronomy Journal*. More information: **Baffour Badu-Apraku** (b.badu-apraku@cgiar.org) <http://agron.scijournals.org/cgi/content/abstract/102/2/381>

Key Events

- West Africa DTMA Regional Review and Planning Meeting, IITA, Ibadan, Nigeria 31 March – 2 April 2010

DTMA Policy Briefs

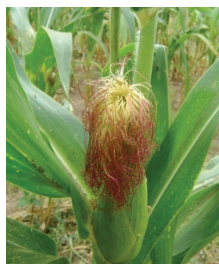
The current issues of the policy briefs focus on the improvement of the maize seed sector, in terms of production, marketing and policy reforms. These are intended to popularize information on policy issues, providing them in a user-friendly format, easily digestible to those without deep technical knowledge.

Policy Brief 1: *Reforming seed sector policies for livelihood improvement in eastern and southern Africa*
Policy Brief 2: *Improving efficiency of maize seed production in eastern and southern Africa*
Policy Brief 3: *Improving maize seed marketing in eastern and southern Africa*

The briefs are accessible on <http://dtma.cimmyt.org/index.php/publications>

Ghana releases four new DT maize varieties

On 15 March 2010, four new drought tolerant quality protein maize varieties were officially released in Ghana. The varieties were collaboratively developed by the International Institute of Tropical Agriculture (IITA) and Ghana’s Council for Scientific and Industrial Research (CSIR)-Crops Research Institute (CRI) and the Savanna Agricultural Research Institute (SARI). Manfred Ewool, maize breeder from CRI led the CSIR team. Ghanaian farmers have welcomed these new varieties which are expected to boost maize production and have even given them local names – denoting their importance in Ghanaian society and based on their characteristics. They are CSIR-Omankwa (‘gives life’), CSIR- Aburohemaa (‘Queen mother of maize’), CSIR-Abontem (‘extra early maize’) and CSIR-Enii Pibi (‘father’s child’). Says Ewool, “The extra early DT varieties will help bridge the ‘hunger gap’ during the planting season. Farmers could plant early, harvest and sell or use it as food before the main season begins.” On average they harvest between 1.5 and 2 tons/ha, and when drought hits this drops to 0.5 tons/ha, especially where local varieties are planted. With the new DT maize varieties released, farmers could harvest between 1 and 2 tons/ha under drought. The yellow DT variety – CSIR-Abontem – would contribute to national savings of US\$ 1.8 million annually spent on importing yellow maize for the poultry industry. <http://www.modernghana.com/print/270067/1/ghanaian-farmers-get-quality-protein-drought-toler.html>



CSIR-Omankwa (‘gives life’)



CSIR-Abontem (‘extra early maize’)

West Africa holds review and planning meeting

During 31 March – 2 April 2010, DTMA project partners from West Africa reviewed progress and made plans to achieve their 2010 goals. The main achievements in 2009 were the official releases of new DT maize varieties in Ghana and Nigeria. Each of the four countries – Benin, Ghana, Nigeria and Mali has now released at least one DT maize variety – with more varieties in the pipeline. Getting seed of these new varieties to farmers remains a challenge and partners all agree that working more closely with private seed companies is the way to go.

Ethiopia, Ghana and Nigeria excel again

In 2009, in eastern Africa, Ethiopia won both DTMA excellence awards – in breeding and variety dissemination – further raising the bar in excellence standards. This is the third time that the Ethiopian team has won the breeding award and with this double-win have Kenya, Uganda and Tanzania energized and eyeing the 2010 prizes. In West Africa, Ghana won the breeding award in 2009 while Nigeria won the variety dissemination award. Both teams had previously won these awards in their respective categories (in 2008 and 2007, respectively). The awards were presented to the Ethiopian teams in Addis Ababa by Ethiopia’s State Minister for Agriculture and Rural Development H.E. Dr Abera Deressa, while in West Africa, Dr Robert Asiedu and Mrs Asiedu, presented the awards at IITA in Ibadan, Nigeria. Dr Asiedu is IITA’s R4D Director for West Africa. These regional awards were introduced in 2007 to foster team work and excellence among project partners.



Ethiopia DTMA awards ceremony in Addis Ababa, Ethiopia

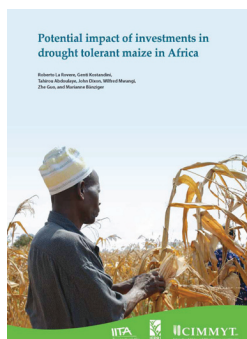
ZM 309 and ZM 523 thriving in Malawi

Two new DT maize varieties – ZM 309 and ZM 523 – launched in Malawi in 2009 continue to be popular among farmers, especially those in the country’s drought-prone areas. Some sowed seed of these varieties for the first time last October. Working with staff from Malawi’s Ministry of Agriculture and farmers, the DTMA project set up 300 demonstrations in six districts. On these comparative demonstration plots farmers had sown ZM 309, ZM 523, ZM 521 and a local variety – to see for themselves their performance. Between last December and this February the country experienced a dry spell. Farmers who grew the DT varieties were able to harvest a crop while their neighbors who grew other varieties suffered crop losses. Some of the farmers surveyed this February preferred ZM 309 for its earliness, while others liked the larger ears of ZM 523. They noted that ZM 523 had withstood the dry spell better than all other varieties. Seed Co and Farmers World are marketing these varieties and in May 2010 will have significant amounts for sale to farmers.

Projected pay-offs for Africa's farmers and consumers from drought tolerant maize

More than 4 million people in sub-Saharan Africa stand to escape poverty and several millions more will improve their livelihoods, if all current improved maize varieties were replaced with drought tolerant ones developed by the DTMA project between 2007 and 2016.

This is one of the broad aims of the project and one of the key findings of a recent study conducted in the 13 project countries (Angola, Benin, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique,



Nigeria, Tanzania, Uganda, Zambia, and Zimbabwe). The study – *Potential impact of investments in drought tolerant maize in Africa* – was led by CIMMYT socio-economist Roberto La Rovere, and evaluates the potential impacts of the DTMA project.

Using geographic information system data, data on the probability of failed crop seasons (PFS), yield data from breeders, projected maize adoption rates mainly from seed experts, and poverty data from socio-economists, the study's authors found that farmers and consumers will benefit from higher yields and from reduced season-to-season yield fluctuations, through the adoption by farmers of improved, drought tolerant maize varieties. At the most likely rates of adoption, based on several recent studies and expert advice, and assuming conservative yield improvements, drought tolerant maize can generate US\$ 0.53 billion from increased maize grain harvests and reduced risk over the study period. Assuming more optimistic yield gains, the economic benefit is nearly US\$ 0.88 billion in project countries. The most striking economic and poverty benefits will accrue in Nigeria, Kenya, and Malawi, based on the amounts of maize sown in these countries, the importance of maize in local diets and livelihoods, and their historical levels of adoption of improved maize. In comparison, the benefits will be more modest in Angola and Mozambique and moderate in Uganda and Mali.

The drought tolerant varieties considered are the product of conventional breeding—that is, they are not transgenic. It is expected that farmers who adopt these varieties will continue to grow them beyond 2016 – making the returns on investments to the project's work even more significant. This report is available at <http://libcatalog.cimmyt.org/download/cim/93558.pdf> and <http://www.cimmyt.org/english/wps/news/2010/apr/study-dtma.htm>

Country partner updates Kenya

For Ngila Kimotho, Managing Director of Dryland Seeds Ltd, this January to March has been a busy season for him. In February he held a series of demonstrations and field days to promote two DT maize varieties that his firm is producing – KDV1 and KDV 4. Developed jointly by CIMMYT and Kenya Agricultural Research Institute (KARI), the varieties are open pollinated (farmers can save grain they harvest to sow as seed in subsequent seasons, with minimal loss of yield or other favorable traits). Farmers have responded well to the KDV varieties preferring their higher yields (double that of 'Katumani' - a popular local variety), earlier maturity and larger ear size as compared to other marketed varieties. So far Dryland Seeds plans to market one ton of KDV 1. "This seed is enough for 1,000 farmers assuming each buys 1 kilo of seed," says Kimotho. To ensure that he meets farmers' seed demand for the next main growing season, Kimotho has sown 11 ha of KDV1 on a commercial seed farm and expects this to be ready by July 2010. "This maize is a breakthrough – it is drought tolerant. The area is very dry and farmers usually grow unimproved varieties. With this variety (KDV1), they will be assured of getting a crop" adds Kimotho. Dryland Seeds will officially launch KDV4 this July during a major agricultural show in eastern Kenya. Dryland Seeds collaborates strongly with the Kenya Agricultural Research Institute (KARI) and CIMMYT. For more on these varieties and Drylands Seeds contact Ngila Kimotho, through dsseeds@yahoo.com and visit www.africancrops.net/dsl



Ngila Kimotho at his 11-hectare KDV1 seed farm with Urbanus Makau, Production Manager, in Kibwezi, Kenya

Nigeria

Following their hugely successful variety releases and promotion in 2009, Premier Seeds, Nigeria began this year with various seed production activities aimed at bridging the gap between seed demand and supply. The three new DT hybrid varieties are Oba Super 5, Oba Super 6, and Oba Super 7. They have shown remarkable performance with good yields, resistance to main maize leafy diseases and are flinty – a desirable trait for flour milling. Between January and March, Premier Seeds focused on seed multiplication of the parent lines of the new hybrids (4 hectares each) and certified

seed production of the new hybrids (5 hectares). Through demonstration plots set up in key areas, and flyers in the main local languages (Hausa, Yoruba and Ibo) and English, Premier Seeds have been promoting the new varieties among farmers. "We are educating farmers on the new hybrids' characteristics and availability so that we can build up demand, which we will meet when this seed is available in 2011," says Olumide Ibikunle, Head of Research and Development, "Farmers are very encouraged by the yields they have seen on the demo plots. They are sure that the yields on their fields will be increased five times!"

Premier Seeds works closely with the maize breeding team at IITA and also the national agricultural research systems (NARS), notably, Institute of Agricultural Research (IAR), Samaru, Zaria, that has the mandate for maize genetic improvement in Nigeria.

For more on these varieties and Premier Seeds please contact Olumide Ibikunle, through mideolu_2006@yahoo.com



Oba Super 5 being promoted among farmers in Nigeria

DTMA in the news

New varieties to boost maize output, food security in West & Central Africa
IITA news release. 15 February 2010
http://www.iita.org/cms/details/news_feature_details.aspx?articleid=3286&zzoneid=342

Ghanaian farmers get quality protein, drought-tolerant, and Striga-resistant maize varieties to boost production
<http://www.modernghana.com/print/270067/1/ghanaian-farmers-get-quality-protein-drought-toler.html>

2 April 2010. Modern Ghana News . Godwin Atser. (picked up by African Press International <http://africanpress.wordpress.com/2010/04/02/ghanaian-farmers-get-quality-protein-drought-tolerant-and-striga-resistant-maize-varieties-to-boost-production/> and Afrique en Ligne <http://www.afriquejet.com/news/africa-news/ghanaian-farmers-get-drought-tolerant-maize-to-boost-production-2010040347069.html>)

Photo credits

Manfred Ewool, CSIR-CRI, Ghana
Kimani Kamau, CIMMYT, Kenya
George Kebaso, Sunday Express, Kenya
Olumide Ibikunle, Premier Seeds, Nigeria

The Drought Tolerant Maize for Africa (DTMA) Project is being implemented jointly by CIMMYT and the IITA, and is funded by the Bill & Melinda Gates Foundation and the Howard G. Buffett Foundation. The project is part of a broad partnership also involving national agricultural research and extension systems, seed companies, non-governmental organizations (NGOs), community-based organizations (CBOs), and advanced research institutes, known as the Drought Tolerant Maize for Africa (DTMA) Initiative. Its activities build on longer-term support by other donors, including the Swiss Agency for Development and Cooperation (SDC), the German Federal Ministry for Economic Cooperation and Development (BMZ), the International Fund for Agricultural Development (IFAD), and the Eisel Foundation. The project aims to develop and disseminate drought tolerant, high-yielding, locally-adapted maize varieties and to reach 30-40 million people in sub-Saharan Africa with these varieties in 10 years.