

Germany

and CIMMYT

Germany's concern for the equitable and sustainable development of economies, societies, and ecosystems is reflected in CIMMYT's mission of sustainably increasing the productivity of maize and wheat systems to ensure global food security and reduce poverty. Our partnership with Germany has enabled us to work in more than 100 countries to improve local livelihoods. Some of our recent projects are described here.

Enhancing smallholders' livelihoods in eastern Africa

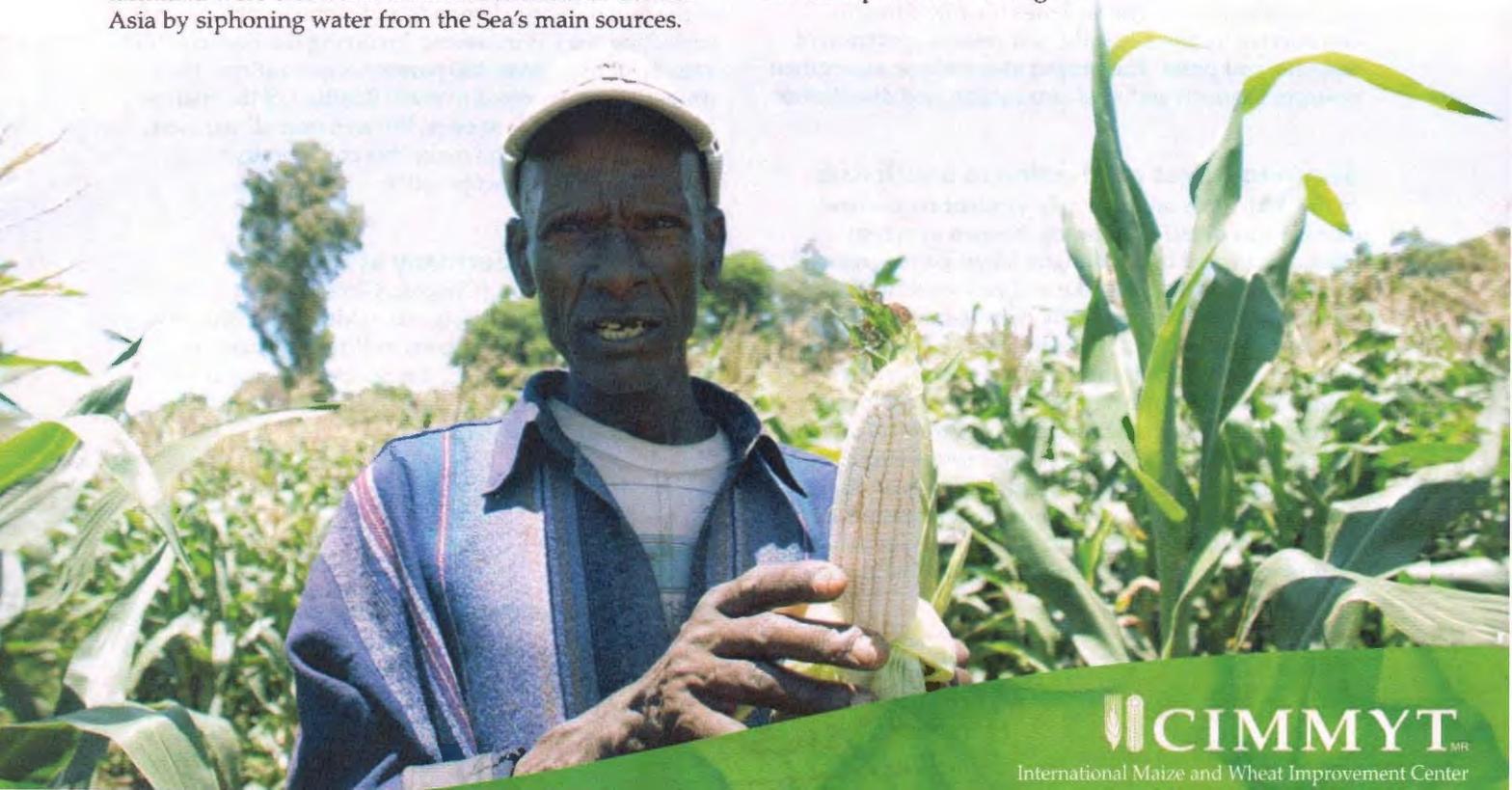
In Ethiopia, Kenya, and Tanzania, maize grain provides one-third of the calories in people's daily diets, and smallholder farmers feed their animals mostly maize stalks and leaves. Cash earnings from rearing livestock provide a way out of poverty for such farmers, improving household nutrition and generating employment. Most high-yielding maize varieties produce lots of grain but not enough fodder. To meet farmers' needs for both, with funding from Germany CIMMYT and the International Livestock Research Institute (ILRI) are studying the potential of dual-purpose, grain-fodder maize varieties for eastern Africa. The varieties will have to yield well in the presence of local diseases and constraints such as drought and poor soil fertility.

Sustainable farming systems for the Aral Sea Basin in Uzbekistan

During the Soviet era, millions of hectares of irrigated farmland were created in the Aral Sea Basin of Central Asia by siphoning water from the Sea's main sources.

Agriculture in the region still depends on heavy fertilizer use, pesticides, and water from inefficient, high-maintenance irrigation systems, where up to 70% of the water is lost. Germany has an ongoing project with partners including CIMMYT that aims to restructure land and water use in the Khorezm region of Uzbekistan, one of the Central Asian countries bordering the Aral Sea.

To maintain both high productivity and sustainable land and water use, partners are testing permanent bed cropping systems, a conservation agriculture technology perfected by CIMMYT wheat agronomists for irrigated farming. Among other benefits, cropping on permanent beds cuts production costs, reduces erosion, conserves soil nutrients and structure, and saves water and fuel. Yields of wheat trials sown on permanent beds, which combine minimum tillage with crop residue retention, are high. Researchers are testing permanent beds for wheat-cotton cropping, a common pattern in the region.





Adjusting to new agricultural realities in Central Asia

Throughout Central Asia, agriculture is still evolving from Soviet-day policies. Many nations for example seek self-sufficiency in wheat production, but national research organizations sometimes lack resources to meet farmers' needs. Thanks to support from Germany for a project that concluded at the end of 2004, farmers in Central Asia are now benefiting from a regional network designed to test and select regionally-targeted wheat varieties. The network also helps provide access for farmers to related information and seed.

Better maize for African farmers

Researchers from CIMMYT and IITA, the International Institute of Tropical Agriculture in Nigeria, are developing varieties able to cope with most major maize production constraints for 20 countries of West, Central, and eastern Africa. The varieties tolerate drought, can survive in infertile soils, and resist a spectrum of diseases and pests. The project also seeks to strengthen on-farm research and seed production and distribution.

Securing wheat production in South Asia

In the mid-1980s an extremely virulent new wheat disease was detected in Brazil. Known as wheat blast and caused by the fungus *Magnaporthe grisea*, the disease attacks the spike and can result in 100% yield loss. There are currently no resistant varieties or effective fungicides. The same fungus causes rice blast, the most important rice disease, so there is great concern that the pathogen may spread to new regions with rice-wheat rotations and tropical climates, such as India. CIMMYT has given serious attention to increasing collaborative research on wheat blast, and with support from BMZ and in partnership with EMBRAPA, Brazil, and the University of Göttingen, Germany, a project is underway to study the disease

and possible control methods. One outcome has been the launch of an International Wheat Blast Consortium to elucidate the epidemiology of the fungus and develop resistant wheat cultivars.

Improving livelihoods worldwide

Food price inflation and food insecurity occupy headlines and policymakers' agendas. CIMMYT seeks to help disadvantaged people whose subsistence and economic needs are not met simply by expanding grain imports in their countries. Through the center's work, rural communities have raised their incomes, food prices have decreased (benefiting poor urban consumers as well as rural people), and malnutrition has declined. CIMMYT-derived maize and wheat varieties are sown on more than 90 million hectares in developing countries and bring farmers billions of dollars in benefits each year. Because wheat and maize account for nearly half the developing country cereal crop area and their cropping practices can have strong consequences for the environment, CIMMYT invests heavily in developing and promoting sustainable practices like conservation agriculture. The center greatly values Germany's help in garnering long-term support for the center's mission and our shared goals.

New CIMMYT strategies to fight hunger, poverty, and resource degradation

In collaboration with other CGIAR centers involved in maize and wheat research, most prominently IITA and ICARDA, CIMMYT has developed new strategies – called the MAIZE and WHEAT CGIAR Programs – that describe how the world's maize and wheat research and development communities must work together over the next decade for food security, providing maize and wheat at prices affordable to the poor and doing so in the face of rising demands and climate change, while protecting the environment. Involving the participation already of more than 400 partner organizations, the strategies are expected to reach 2 billion of the maize- and wheat-dependent poor. We welcome all partners, such as Germany, who make this collaborative innovation and impact possible.

Scientists from Germany at CIMMYT

Hans-Joachim Braun (Director, Global Wheat Program), Susanne Dreisigacker (Molecular Biologist, Head of Marker Applications in Wheat), Christian Thierfelder (Agronomist), Kai Sonders (Geographic Information Systems Specialist), and Tina Beuchelt (Agricultural Economist).



For more information: cimmyt@cgiar.org
www.cimmyt.org

April 2011