

## Research and impact – why you can't have one without the other

Martin Kropff leads CIMMYT's drive to make a difference in farmers' fields



**Maize and wheat are two of the world's key crops. The International Maize and Wheat Improvement Center (CIMMYT)\* works on them both. We asked Martin Kropff about the research center's strengths and weaknesses, the importance of partnerships, and his job as Director General.**

**Syngenta Foundation:** *You have worked in both academia and CGIAR\*\*. What was the attraction of returning to CGIAR, through CIMMYT?*

**Martin Kropff:** First and foremost, the chance to create real impact. That was why I joined CGIAR for the first time after my PhD. During my subsequent time in Dutch academia, I always dreamed of returning to facilitate further impact in developing countries. An additional attraction for my wife and me moving to CIMMYT headquarters in Mexico was the chance to get to know a new country and language.

*What were your first impressions of CIMMYT in 2015, and how have these changed?*

I thought I knew CIMMYT pretty well, having partnered with the organization over the years. But over the last two years I've gained many further impressions. Along the way, I have realized much more clearly how vulnerable the world's food systems are to political influences. Having visited most of CIMMYT's 18 global offices, I also have the impression that people greatly underestimate CIMMYT's role in helping ensure food security.

*What has been the high point of your two years so far, and what was worst about it?*

One of the most rewarding aspects of my job is meeting smallholders whose lives we are helping to improve. There really is nothing quite like seeing the difference that harvesting wheat mechanically for the first time ever can make to a Bangladeshi farmer's livelihood. Or Ethiopian and Zimbabwean farmers' sense of security when they get access to our drought-tolerant maize, and see the benefits in their own fields.

As well as those particular moments, I'd also mention two features of CIMMYT daily life. One is very positive, the other more challenging. As a scientist, I'm thrilled again and again by our 1500 employees' huge enthusiasm for science and scientific achievements. As a manager, however, I am often worried by the fragility of funding. Plant research typically takes many years. But numerous long-term projects survive on repeated short-term funding.

### Partnerships are crucial

*What role do partnerships play for CIMMYT?*

They are absolutely crucial. We work with a wide range of partners, including national research organizations (NARS), donors, NGOs, universities, foundations and the private sector. Furthermore, CGIAR is working hard to increase the cooperation between our centers.

*How fair would it be to say that CIMMYT is happier in the lab than the marketplace?*

As a research organization, we focus on cutting-edge science. The quality of our work is mirrored in exciting new varieties and widely cited publications. But this cannot be done in isolation. Making improved maize and wheat available to millions of smallholders demands agribusiness expertise. We

have recruited staff from industry to help us better understand how to market products to farmers. They have helped us to rapidly expand public-private partnerships. We are now collaborating with more than 300 small and medium-sized local enterprises, particularly on seed production and mechanization.



*Despite all its scientific skills, CIMMYT has failed to deal proactively with some major crop diseases. What went wrong?*

It is not really fair to suggest that CIMMYT failed to tackle them proactively. In fact, we played an important role in alerting to the presence of *Ug99*, a stem rust originating in eastern Africa. We were also the first to raise the alarm about Maize Lethal Necrosis (MLN) and wheat blast. All three diseases threatened to have a devastating impact on continental and global food security.

However, donors tend to fund tackling existing issues – such as climate change – rather than “possible” problems. So our hands are rather tied when it comes to preventative R&D. CIMMYT’s global network means that we can quickly pull together genetic resources and partnerships to provide an assertive response to new diseases. We’ve recently shown that by developing MLN-resistant varieties that partners could register, within just four years. That is a remarkable achievement. However, variety development takes time, and to respond earlier we need core support for our breeding programs.

### **CIMMYT has a role for years to come**

*The private sector invests large sums in maize and wheat R&D. Major companies have declared their ambition to grow in developing countries. With that kind of encroachment on your traditional focus areas, what role will be left for CIMMYT by 2027?*

Firstly, I wouldn’t call it encroachment. Private sector activities are complementary to ours. By their nature, companies concentrate on products and markets that earn them money. They currently invest less than 5% of their global R&D activities in low and lower-middle income countries. Yet almost half of the food crop area is located there! Private and public sector breeding programs also offer different expertise. For traits such as drought- and heat-tolerance, fertilizer-use efficiency, or combatting newly emerging pests and diseases, the private sector often looks to us.

Smallholders in many countries will continue to need alternatives to the private sector offers. Many farmers require access to more affordable seed, provided by the public sector and scaled-out by small local companies who cannot afford to do their own breeding.

Secondly, CIMMYT provides services outside the private sector’s remit. We manage the global maize and wheat gene banks and share our germplasm with breeders worldwide. Last year, for example, CIMMYT sent them some 700,000 packets of seed. In wheat alone, we estimate that the resulting yield increases brought smallholders something approaching four billion dollars of extra income a year. With contributions like that to world agriculture, CIMMYT shouldn’t worry about losing its role!



*A final question about your previous employer. Wageningen University<sup>55</sup> boomed in your time there, and has a world-class reputation. What does it do better than many other universities?*

The boom is fairly recent. When I started as Rector in 2005, our student numbers were about one-quarter of what they are now; agricultural research was not then a priority in the Netherlands. With time, however, political and public attitudes began to change. Today, there is wide acknowledgement of how important the agri-food sector is for the Dutch economy, and how exciting the related science can be. Wageningen is at the forefront of innovation across the entire agricultural spectrum. The university has also been very good both at supporting start-ups and partnering with existing companies. That private sector experience has put me in good stead at CIMMYT.

\* [www.cimmyt.org](http://www.cimmyt.org)

\*\* [www.cgiar.org](http://www.cgiar.org)

§ For more information on Maize Lethal Necrosis, see *e.g.*:

[https://www.syngentafoundation.org/sites/g/files/zhg576/f/mln\\_update\\_website.pdf](https://www.syngentafoundation.org/sites/g/files/zhg576/f/mln_update_website.pdf)

§§ [www.wur.nl/en/wageningen-university.htm](http://www.wur.nl/en/wageningen-university.htm)

**Dr. Martin Kropff**, a Dutch citizen, has been Director General of the International Maize and Wheat Improvement Center since 2015. He was previously Rector Magnificus at his *alma mater*, Wageningen University. After his PhD there on the effects of air pollution on farming, he worked for the CGIAR rice center IRRI, and then led Wageningen's plant research. In his free time, Kropff is a keen sailor and runner.