

“Our initiative is African-driven, all the way”

Educating breeders to match science to the marketplace

Dr. Gabrielle Persley partners with our Foundation on the “DLB” initiative*. This education program helps African breeders develop varieties that smallholders want to buy. We asked Gabrielle to tell us more.



*CABI** is bringing out a book called “The Business of Plant Breeding”. From your work on Demand-Driven Plant Variety Design, how would you describe that business?*

Gabrielle Persley: Traditionally, breeding by the public sector has focused on generating lots of new varieties. However, it has to be about more than that. The question in every breeder’s mind needs to be: “What does the market really want, and how can science respond?”

What do you mean in this context by “the market”?

Our work on DLB – demand-led breeding – focuses on the needs of small farmers. They will buy the varieties they can sell. The more attractive a new variety, the faster it will get used. That uptake rapidly raises smallholders’ productivity and profits, and improves food security.

That sounds both highly desirable and rather obvious. How much of a gap is there to close?

It’s huge. The CGIAR# recently examined 20 crops in 30 African countries over 15 years. It discovered an average adoption rate of about 35%. That figure is disappointing enough in itself. But most of the new varieties planted by farmers were of maize or soya. For the other 18 crops, the rate was far lower. So there is a very poor return on investment for the taxpayers’ money that goes into public sector breeding.

Private companies breed what they believe they can sell. Are you saying that the incentives for public sector breeders have been less conducive to successful adoption?

In many cases, yes. Conventionally, public sector scientists have been judged by how many varieties they released per year, or how many got approval for sale. There was no real reward for high uptake – but to be fair, that was harder to measure in the past than it is now. There are some excellent exceptions in Africa: Rwandan bean breeders, for example, have excellent connections to seed companies and farmers. But by and large, there is considerable need for a shift in views and behavior. The “DLB” partners believe that breeder education is the key to that shift.

The initiative was set up by several Australian organizations and the Swiss end of the Syngenta Foundation. Is this yet another of those misguided “The West knows best” efforts?

Not at all. From the outset, African academic institutions have taken the decisions. They also do the teaching. We investigated the issues together, and helped develop the partnerships between African universities and, for example, regional CGIAR centers. But DLB is African-driven, all the way.

“It takes a whole team to get a product to market”

Academic courses are a good start. But what about practical implementation?

That is a key element of the next phase. The focus will remain on processed crops, like beans and tomatoes. Practical implementation will involve a “market corridor” concept, with close links right along the value chain. It takes a whole team to get a product to market! On the academic side, we also want to extend the scope from single courses to continuing education, and to add some new topics. These include policy and regulatory aspects.

You represent the Australian dimension of this partnership. Why isn't DLB running in Asia, on which Australian development work largely concentrates?

The short answer is that the need is in Africa. Adoption rates of public sector varieties are much higher in Asia-Pacific, as they are in Latin America. Australia has a long tradition of support for agricultural development. The country was, for example, a founding member of the CGIAR 60 years ago. We are also one of the few OECD members with a considerable area of land devoted to tropical agriculture. That special expertise is combined with some leading agricultural educational institutions. Our project partner at the University of Queensland is one of the top ten centers of excellence worldwide. So it all fits extremely well.

Breeding needs long-term commitment

What has been the main achievement so far?

The most tangible result is a high-quality educational module developed by Africans for Africans. Less tangible, but very important, is a related shift in attitudes. Young scientists have proved very open to new approaches. The initiative has also brought African breeders together, and enabled them to draw attention to the precarious state of their profession. Breeding is a long-term process; national programs are still far too dependent on short-term donor funding. That can be dispiriting and deter people from this vital discipline. Everything we can do to improve breeders' expertise, success and self-confidence is important.

Returning to the book mentioned above: CABI aims to launch it at this November's TropAg in Brisbane. What else will happen at this congress?

TropAg 17^{##} is the third such bi-annual meeting. We expect about 400 international participants at a range of symposia and workshops. For example, I'll be chairing a session on “Market-driven approaches to plant breeding in tropical horticulture”, organized by the Syngenta Foundation's Viv Anthony. Our African partners are naturally closely involved in conference activities. And by the way: The CABI book includes seven chapters by African authors, who will be present at the launch.

To finish, a more personal question: What do you do when you're not working on plant breeding?

My other main focus is also on breeding – but of livestock. I am involved in an African-Scottish partnership in this area. I also run the Doyle Foundation[§], a Scottish organization that promotes the role of science in international development. Altogether, my various activities involve a lot of travel. I try to use that time productively: Most of my ideas come in cars and trains!

In addition to the roles mentioned above, **Gabrielle Persley** is an advisor on biotechnology topics to several international organizations. They include the World Bank, the CGIAR, the Asian Development Bank, CABI and the International Council for Science. After a doctorate in microbiology at the University of Queensland, she worked as a plant pathologist in Africa and Australia. She has published widely and edits a series of CABI books on agricultural biotechnology.

* <https://www.syngentafoundation.org/demand-driven-plant-variety-design>

** www.cabi.org

www.cgiar.org

<https://tropagconference.org/>

For an interview with **Professor Eric Danquah**, one of the leading experts in the Demand-Led Breeding initiative, see: www.syngentafoundation.org/sites/g/files/zhg576/f/interview_eric_danquah_1016e_.pdf