

# “DLB will bring advantages across the value chain”

## How Ghana plays a major role in modernizing African agriculture

**Professor Eric Danquah is a leading expert in our Demand-Led Breeding\* initiative. Based in Accra, Ghana, he has played a key role in establishing the excellence of his institution, WACCI\*\*. We recently discussed topics from breeding to barriers, and from funding to football.**



*Syngenta Foundation: WACCI's mission revolves around innovative solutions that benefit agriculture. What do you regard as the three top priorities in this area?*

**Eric Danquah:** We are a semi-autonomous university institution. Generating innovation requires high-quality academic and administrative staff. Attracting and retaining them is vital. However, we also need good partners and successors. So we invest considerable effort in strategic partnerships with national and international institutions. These enable strong delivery of our doctoral program in Plant Breeding and the MPhil in Seed Science & Technology. We want to equip PhD students with the knowledge and skills to improve the crops that feed West and Central Africa.

*What have been key milestones in WACCI's evolution to its present excellence?*

There are a whole series, as my personal list at the end of this interview shows. But most milestones are related either to particularly important partners, to students and teachers, to funding, or a combination of these.

*WACCI is working with our Foundation and other organizations to improve Demand-Led Breeding. Intuitively, 'DLB' makes good sense. But what evidence is there that concentrating more resources on this approach will benefit the sustainability of West and Central African agriculture?*

I would turn that question around. What has frequently failed? Breeders have often produced new varieties not geared to farmer and consumer requirements. Not surprisingly, smallholders reject them. We expect DLB, on the other hand, to improve adoption of new crop varieties. That will lead to higher farm productivity, and bring advantages all along the value chain.

## “We still have a lot of work ahead of us”

*What are the main hurdles to overcome in the next couple of years?*

As with any university centre of excellence, sustained funding is a constant concern for WACCI. So is the retention both of academic staff and our international partners. There is also a lot of work ahead creating awareness of DLB, promoting new varieties to improve adoption, and training farmers on better agronomic practices.

*In the past, the international private sector often seemed reluctant to invest in agricultural opportunities in your region. Why is it now keener?*

Policy improvements have played a big role. Many parts of West and Central Africa are now generally investor-friendlier than before. More particularly, policies are now in place to strengthen seed systems and harmonize seed laws in ECOWAS<sup>s</sup> countries. Land is available for food production. Investors are increasingly aware that innovation in science and technology will improve agriculture and raise profits. And countries such as Ghana, for example, are enjoying a prolonged period of peace and stability. All this adds up to a much more attractive investment environment.

### **The greatest needs are usually easy to identify**

*DLB is based on seeking the views of distributors, retailers and growers. You presumably hear conflicting opinions. How do you weight and prioritize the inputs?*

Opinions come in from around the world. A lot of the inputs are socio-economic data. Our socio-economist assesses these with routine analytical tools. There are some out-lying views, of course. But usually it's rapidly clear which are the most frequent and pressing needs.

*Tomatoes and vegetables are highly popular foods in West Africa. Why have international researchers so far done little to breed better ones here?*

In many cases, seed systems were not well developed for these crops. That's a major deterrent to research investment. The money was available elsewhere: Donors have conventionally concentrated on food security and staples. So crops such as maize and cassava have so far received much more attention than vegetables.



*You say elsewhere on our website<sup>ss</sup> that DLB is “not a certainty in every case and it won't resolve every problem”. What are its main limitations?*

There are two main areas where DLB can't really help. They're both about anticipation. One is related to innovation, the other to unpredictable problems. Following 'demand' means that people have already defined what they want. But sometimes technology innovation creates opportunities that nobody anticipated. The applications only become apparent after the breakthrough. Markets and demand then develop rapidly.

In farming furthermore, unexpected events can occur. Epidemics of previously unimportant diseases or insects break out, or new virulent strains surprise everybody. Ug99 wheat rust is a classic example. There was no advance demand for Ug99 resistance. In such circumstances, not even the best DLB practices will produce the varieties that farmers suddenly require.



*Let's turn to you more personally. You recently received the University of Ghana's Meritorious Service Award. What qualified you for this accolade?*

Well, I have a long track record here. As well as teaching, research and publications, I have also been Dean of International Programmes, and

established several fruitful partnerships. WACCI (*photo*) has proved attractive for PhD students from across West and Central Africa. My team has also been very good at attracting funds for research and institutional building. Our university was kind enough to call that "outstanding grantsmanship".

*Your own studies included two periods at Cambridge University. How far has that time in the UK influenced your working style in Ghana?*

Cambridge was a life-changing experience. We were encouraged to be independent, critical thinkers with a craze for seeking knowledge. Several Cambridge role models inspire me to this day. Encouragement as a PhD student there taught me how to motivate my own students and allow them the flexibility to flourish. But Cambridge also made it clear to me that one not should not be asked and found wanting!

### **"Hard work pays!"**

*You earlier spent six months on a farm in Neunkirchen, Germany. What are your main memories of that time?*

Neunkirchen was an eye-opener. My first trip abroad! It was also the first time I'd seen farms that stretch to the horizon. Living with a family taught me the German way of doing things. All round, it was tough, but the dividends were enormous. I learnt there that hard work pays, and that farming can be big business.

*How do you now spend your time outside work?*

My family has been the secret of my success. Home is where I want to be when I have a minute. I also love sports. I used to play football and table tennis very well, and I was a handball goalie. But at my age, I now only watch football, preferably live. My team is Accra Hearts of Oak. I don't like television much. I would rather read - information is power, as they say!

*As a keen sportsman, what lessons can you transfer from sport to science – and vice versa?*

I'm not sure about 'lessons'. But there are several parallels that can enable one to transfer strengths

and approaches. Both disciplines are competitive. In sports, you dream about winning gold medals. Scientists dream of setting the Gold Standard, for example by publishing a breakthrough article that everyone cites. And in both sport and science, you keep trying and trying until you get things right.

\*Here's more on Demand-Led Breeding: [www.syngentafoundation.org/index.cfm?pageID=768](http://www.syngentafoundation.org/index.cfm?pageID=768)

\*\*WACCI: West African Centre for Crop Improvement, <http://waccci.edu.gh/>

§For more on the ECOWAS group of countries, and on regional harmonization, see [www.syngentafoundation.org/index.cfm?pageID=537](http://www.syngentafoundation.org/index.cfm?pageID=537). Read more about Seeds Policy on [www.syngentafoundation.org/index.cfm?pageID=782](http://www.syngentafoundation.org/index.cfm?pageID=782).

§§ [http://www.syngentafoundation.org/\\_temp/Eric\\_Danquah.pdf](http://www.syngentafoundation.org/_temp/Eric_Danquah.pdf)

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## Some WACCI Milestones

### Eric Danquah's list of his institution's major achievements includes:

Strategic international collaboration in June 2007 with Cornell University to kick-start the programme, realizing the vision of our Founding Director.

Committed funding from the Alliance for a Green Revolution in Africa for a 10-year project

Establishment of WACCI as a semi-autonomous institution in the University of Ghana (UG)

Recruitment of UG faculty as Associate Faculty to teach courses at WACCI

Innovative and comprehensive curriculum development for training plant breeders and seed scientists.

Recruitment of very able students from West and Central Africa

Recruitment of In-country supervisors in home institutions to supervise students' research

Agreements with students' home institutions and CGIAR centers in West Africa - IITA, ICRISAT, AfricaRice.

Recruitment of renowned Visiting Scientists worldwide to deliver advanced modules in modern plant breeding

Enrolled students from Kenya, South Sudan, Liberia, Ethiopia, Uganda, Cameroon, Ghana, Nigeria, Sierra Leone, Mali, Niger, Burkina Faso, Senegal, Gambia, Togo, Malawi

Enrollment of 98 PhD plant breeding students over nine years, 20 MPhil students in Seed Science & Technology

Graduated 35 PhD students in plant breeding

Establishment of a program to breed maize hybrids for West Africa.

Endorsement of WACCI by many donors, including the private sector: generous grants for scholarships and research

Recognition by the World Bank as an Africa Centre of Excellence; \$8 million grant to strengthen this position

Launch of WACCI's "Ambassadors of Goodwill": Ten eminent persons give visibility to the Centre and extend its range of contacts for resource mobilization