



B4FA
Biosciences for Farming in Africa

John Templeton Foundation Grant #15652

Final Report

Activity 2 – The B4FA Media Engagement Programme

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Box 1. Biosciences for Farming in Africa (www.B4FA.org)

Rationale World population is forecast to grow from 7 to 9 billion by 2050, 1 in 6 are already hungry (1.17 billion) and food production must increase by 70-100% during that time. No single solution will solve this problem but the new genetic technologies of plant breeding developed during the last few years promise to help increase agricultural production and save people from hunger in a sustainable manner, particularly in African nations where the need is greatest. Just by adopting existing and available improved planting material and agronomic practices, agricultural production in Africa could double or treble. Furthermore, genomics, marker-assisted screening, phenotype analysis, and computer modelling have greatly accelerated the breeding process.

The latest advances can help by rapidly incorporating or developing traits for higher yields, resistance to pests, disease, drought and soil salinisation, reduced energy and pesticide use and soil damage, enhanced nutritional quality, and increased efficiency of nutrient uptake and water use. They also greatly reduce the time and costs taken to improve research-neglected local crop varieties and so-called “orphan” crops in emerging economies, and to domesticate new crops from semi-wild plants, making them practically and economically feasible.

The problems and challenges now lie in the implementation of these impressive scientific advances where they are desperately needed, currently and for the future. And this is the very issue that has not specifically received adequate attention or financial support so far.

Activities The aim is to produce a model for dialogue and communication in African nations – Ghana, Nigeria, Tanzania and Uganda. These countries have been selected on their willingness to engage in the adoption of new genetic technologies used in plant breeding (including genetic modification, GM, when required), to address food security and poverty alleviation, and because of their diverse regional climatic and soil differences. Success here could serve as a model for wider application.

Activity 1 – Overall Benefit and Promise of Genetics. Production of a scholarly publication, linked to a dedicated website, which synthesizes information and views from global opinion leaders about the potential benefits, concerns, applications and consequences of new genetic technologies for farming in Africa; audiences will particularly be policy makers, regulators, and governments, but also media, teaching and research institutions, farmers’ organizations and the general public,

Activity 2 – Effective Communication of Genetics. A professional development Fellowship on the new genetics of plant breeding for media professionals. Journalists and editors from radio, television, newspapers and journals will be enrolled, by competitive application, in a Fellowship programme that will offer technical training combined with field-visits, mentoring and support, and long-term networking amongst the Fellows, and between them and the research community of their country

Activity 3 – Strengthening and Enabling Implementation. Scoping studies of how to strengthen extension services, or their alternatives, that deal with an enterprise culture through application of the new technologies of plant breeding genetics (eg hybrid breeding, marker-assisted selection, transgenic breeding) as well as other socio-economic studies. These services can provide a crucial link between the knowledge-base in institutions that hold the intellectual know-how, and small-scale farmers, but they are by no means the only channels of knowledge transfer.



1. Introduction

The idea in the originally accepted proposal to the John Templeton Foundation (#15652) was to produce a model for engagement, enhanced understanding and informed dialogue on the breakthrough potential of GM and the new genetics of plant breeding for food security and economic and social development in Ghana and Tanzania. Those countries were chosen on the basis of their good governance, low corruption levels and willingness to engage in the adoption of new genetics technologies to address food security, as well as diverse regional climatic and soil differences.

Specifically the second activity of the project aimed to deliver a course on GM crops and new genetics for plant breeding for journalists and editors from those two countries, from both print and broadcast. These courses were intended to lead to the media in those countries being better informed, which in turn was hypothesised to elevate the debate in each country and inform the wider population about the facts of GM crops.

The longer-term outcomes of the initiative were to make a difference in the understanding of the new genetics of plant breeding in Africa, in particular by having built a base of young and professional people, from the media, students, decision-makers and regulators, as well as farmers and extension officers who had received and understood high quality information about how the new genetics of plant breeding fits strategies to improve food security, rural poverty alleviation, economic development and greater social and environmental sustainability.

Research

The initial stages of the media activity were to carry out further detailed on-the-ground research in the shape of several scoping visits and analyses:

- i. Analysis of the media universe in Ghana and Tanzania
- ii. Scoping visits to better understand the situation on the ground in Ghana and Tanzania
- iii. Scoping visit to Nairobi, Kenya where many of the pan-African stakeholder organisations are based

The analysis of the media establishment was performed by two experienced US-based journalists, trainers and media consultants – New York-based Julia Vitullo-Martin and Minneapolis-based Sharon Schmickle. The scoping visits were carried out by members of the project team.

Media research was carried out by a mixture of internet analysis and a large number of telephone interviews, consolidated by face-to-face meetings during the scoping visits. The detailed findings have already been reported to the John Templeton Foundation, but can be summarised as:



- a. journalism in both countries is operating under considerable limitations, is concentrated in urban areas, and as a result, agricultural coverage has been thin.
- b. radio has the greatest reach of all media arms, and due to rural coverage and language is the main channel to reach farmers. Cutting edge news about agriculture in general and agricultural biotechnology in particular is principally carried in print journalism however.
- c. much agricultural coverage represents single-source reporting based on official statements and press conferences. Analysis, if present at all, typically comes from academics or other experts outside journalism. However, journalism training is having an impact, prompting occasional deeply-reported stories.
- d. Government influence continues to be felt – government-owned publications in Tanzania have the most resources and, therefore, the greatest ability to cover issues widely. In Ghana, conversely, the state-owned heritage of the media still pervades and weakens coverage overall.
- e. sophisticated science coverage is rare, and often weak. The best coverage of biotech & GM is by outsiders (US, EU and South African journalists). GM foes have exerted strong influence on the coverage of agricultural biotechnology, and they continue to organize against it. The active opposition includes religious leaders.
- f. It is often challenging for reporters to persuade their editors or producers to carry a piece on science or agriculture – business and politics (and sport and entertainment) continue to dominate prominent coverage in print and broadcast media.

Similarly, the media scoping visits have already been reported to the Foundation in detail, but findings from all three can be summarised as:

- a. the idea of the media training is a novel one, and interesting to both media and scientists
- b. Ghana is a receptive environment, owing to a conducive legislative environment and enough local champions of the technologies
- c. Tanzania is a challenging environment, due to both a difficult legislative and political environment as well as a strong local network of (anti) activist organisations.
- d. our initiative comes across as very GM-focussed, when clearly other genetic crop innovations (F1 hybrid seed) have wider and more immediate impact and are equally poorly understood
- e. there is a wealth of local research activity in Africa (on both GM and conventional crop improvement technologies) for the project to tap into, though research facilities in Tanzania are particularly challenged.
- f. there is a lack of funding in local research programmes for communication of their activities, and consequently the local research establishments and scientists rarely get to discuss their work with journalists.



Modifications to the programme

Firstly, it bears re-stating at this stage what was clear to many project staff from the very inception of the activities, and what emerged very clearly from research and scoping activity – namely the unique and innovative nature of the proposed media engagement under this project. Usually interaction between research and the media – especially in Africa – is very short term, poorly funded and poorly explained, and in the African context is often not present at all, or has been added as an afterthought. This situation created a very positive reaction to our initiative from the very beginning, and genuine excitement amongst both the media and research communities to be involved and benefit from it.

The opportunity for four major changes for our initiative arose from the findings of the research phase:

Firstly, to spell out much more clearly that the scope of the project –new genetic technologies for plant breeding – encompassed many “conventional” techniques in addition to genetic modification, and also to focus more attention to these other technologies as being of more immediate relevance to much of African agriculture. It was from this insight that the project brand ‘*Biosciences for Farming in Africa – B4FA*’ was developed, and this name has served us extremely well in stimulating cross-the-board interest as well as averting suspicion.

Secondly, the technical knowledge and understanding of journalists and editors in Africa was low, as a result of streaming in the education system and a lack of focus on science reporting as a skill in Africa. Therefore for maximum and sustained impact of our efforts, the workshops needed to be adjusted to start from some of the fundamental aspects of the science, as well as a basic introduction to science journalism as a distinct discipline.

Thirdly, there was an opportunity to increase the geographical range of the activity. Whilst the argument for choosing Tanzania and Ghana still held (though the regulatory framework in Tanzania made any research in and adoption of genetic modification almost impossible in the short to medium term), both journalists and scientists kept referring us to biotechnology research being carried out in Uganda. This was so broad and so far progressed that it became clear that Uganda would be a productive third country to include in the media activity. Uganda’s proximity to Tanzania also made it sensible to make budget efficiencies by combining travel to the two counties. This in turn suggested a model for including a fourth country in West Africa, to combine with activities in Ghana, and the population and economic importance of Nigeria, as well as the biotech research being carried out there, led us to include Nigeria as our fourth target country for the activity.

Fourthly, the lack of long term engagements between researchers and the media, combined with the lower level of technical knowledge among many of the journalists and the enthusiasm among them for continuing professional development and qualifications,



suggested that significantly improved outcomes could be achieved by engaging over the long term. Rather than planning single workshop interactions with groups of journalists and editors, we redesigned the initiative into a set of longer term media fellowships in each country, which would commence with a training and dialogue workshop, but then involve continued contact, networking and follow-up opportunities with researchers and institutes, opportunities to attend international meetings, and further “consolidation” training.



2. Methodology

We planned to run three rounds of the 6-month fellowships in each of the four focus countries, to the following timetable

April 2012	Advertisement of Media Fellowships
June 2012	Interviews of applicants
Sept/Oct 2012	Training workshops for 1 st round Fellowships
Oct 2012 – Feb 2013	Follow-up period for 1 st round Fellowships
December 2012	2 nd round Fellowships advertised
Jan/Feb 2013	Interview of applicants
Mar/April 2013	Consolidation training for 1 st round Fellows
Mar/April 2013	Training workshops for 2 nd round Fellowships
Apr – Aug 2013	Follow-up period for 2 nd round Fellowships
June 2013	3 rd round Fellowships advertised
July/Aug 2013	Interview of applicants
Sept/Oct 2013	Consolidation training for 2 nd round Fellows
Sept/Oct 2013	Training workshops for 3 rd round Fellowships
Oct 2013 – Feb 2014	Follow-up period for 3 rd round Fellowships
Mar/April 2014	Consolidation training for 3 rd round Fellows

Using the repetition over three rounds of four media fellowships in each country enabled a highly modular design, so that we could reuse elements and easily apply learning from one iteration to the next.

The fellowships were first advertised in May and June 2012 on our website, as well as to our contacts from scoping visits and media research, key journalism networks in-country and to contacts in each main national media house. Journalists applying for the fellowship programmes were asked to supply examples of existing work as well indicating their experience and interest in covering agricultural biotechnology. We received applications from and interviewed 43 (Ghana), 54 (Nigeria), 24¹ (Uganda) and 54 (Tanzania) journalists.

The interview process itself served to uncover some key issues for the design of the training courses and fellowships:

- a. journalists typically had had no science exposure since the age of 12 and most had no relationship or contact with scientists

¹ Since science journalism in Uganda was more established than in other countries, we directly invited a representative cross-section of journalists with science and agricultural reporting credentials. They were still interviewed to the same criteria as those from other countries, however



- b. journalists in Uganda and Tanzania were often farmers themselves, or had families who still lived in villages and farmed
- c. given the importance of agriculture in each of the four countries, most journalists had a reasonable understanding of the main issues facing farmers in their country, even if most did not cover those issues in their work
- d. there was little understanding (other than in Uganda) of genetics, biotechnology or genetic modification, beyond scare stories spread by activists. These included widespread belief that biotech or GM crops caused infertility, had to be repurchased every year, were “foreign” and resulting in produce that looked different
- e. there was little understanding of the difference between conventional breeding technology (hybrid seed) and transgenic crops, or indeed understanding of the plant breeding at all

Between 20 and 22 journalists were selected from each country to participate in the first round of training. The reason we picked a higher number (double) of participants than originally imagined was because we anticipated that some of the fellows would not be strongly engaged with the issues covered, might not understand them, or might be unable to persuade their editors or producers to carry the pieces they produced. We chose the numbers with a potential fall-out rate of 50% in mind.

The initial training/dialogue workshops with which each of the media fellowship programmes began were programmed with the following broad content

- Basic plant breeding and agricultural practice
- Science journalism
- Principles of genetics
- Practical experiment
- “Entertaining” practical science discussion
- Non-GM breeding techniques (hybrids, tissue culture, mutagenesis, gene banks)
- Genetic modification
- Local crop science/breeding case studies
- Field trip to research institute(s)
- Journalism practice session and mentoring
- Regulatory environment for biotechnology
- Commercial considerations (seed companies, breeders’ rights, distribution etc)
- Local keynote speakers

For each of the substantive training session, a detailed content outline was prepared which experts and trainers were asked to follow in preparing their own presentations, and presentation content was reviewed and amended by the course leader to ensure that the different modules combined together well and were at an appropriate level of detail and



complexity. Up to six local case study presenters were asked to attend for the entirety of each workshop to ensure time to network with the journalists outside the formal training environment. The brief for the case-study presenters was to present their material as accessibly as possible, at a level that would be appropriate for high-school children, to ensure that the content was easy for the media fellows to understand.

To maintain a lively and participatory atmosphere in the training workshops, content and engagement methods were varied as much as possible between sessions. Hence practical journalism writing and discussion exercises were interleaved with formal presentations, and practical experiments and learning games were devised and inserted at appropriate points into the technical presentations. One additional innovation was prompted by the unavoidable late withdrawal of one of our international technical experts. Rather than recruiting a new speaker at the last minute, we decided to deal with each of the technical issues to be covered in that presentation through a mock broadcast interview by media fellows of the international national experts present.

After the four-day training workshop the plan in each focus country was to maintain a network of the fellows, continue to offer them mentoring and support for writing and broadcasting on new genetic technologies, offer them regular opportunity for facilitated visits to local research institutes, occasional opportunities for international travel to research institutes or conferences, and to consolidate their learning with a refresher training for one day before the next round of fellowship training workshops.

Fellows were requested to join a facebook discussion group for their country, and to send B4FA project staff copies or references to any piece they wrote or broadcast that was relevant to new genetic technologies for farming in Africa and derived from material they had learned from the project.



3. Results and feedback

First round of workshops

A total of 80 fellows attended the four first round training workshops in our focus countries. These fellows represented a mixture of print, online, radio and television (though print dominated) and also represented a cross-section of media roles, from freelancers through reporters, desk chiefs, sub-editors, editors and bureau chiefs. The principal technical training sessions were covered by a combination of senior international and national experts (from regulators, the media, academia and NGOs).

Plant breeding and agriculture –	Prof Wayne Powell, University of Aberystwyth (UK); Dr Tina Barsby, National Institute for Agricultural Botany (UK)
Science journalism –	Mr Alex Abutu, AfricaSTI and scidev.net (NG); Mr Diran Onifade, World Federation of Science Journalists (NG); Mr Peter Wamboga, SciFoDe (UG), Mr Patrick Luganda, Farmers Media (UG); Mr Simon Berege, Tumaini University (TZ); Mr Joseph Kithama (TZ)
Principles of genetics –	Prof Erik Danquah, University of Ghana at Legon (GH); Dr Charles Amadi, National Root Crop Research Institute (NG); Dr Tina Barsby, national Institute for Agricultural Botany (UK)
Genetic modification –	Prof Jim Dunwell, University of Reading (UK); Prof Chris Leaver, University of Oxford (UK)
Journalism mentoring –	Ms Julia Vitullo-Martin (US); Ms Sharon Schmickle (US)
Regulatory environment –	Mr Eric Okoree, Ministry of Environment, Science and Technology (GH); Dr Christian Fatokun, International Institute for Tropical Agriculture (NG); Dr Theresa Sengooba, Program for Biosafety Systems (UG); Dr Grace Chipungahelo, Mikocheni Agricultural Research Institute (TZ)
Commercial considerations –	Mr Daniel Otunge, African Agricultural technology Foundation (KE)

Each media fellow was asked to work on two journalistic pieces during the four day workshop, for which mentoring and feedback, which were then judged for their quality and content, and for the best of which small cash prizes were awarded. Certificates were awarded to media fellows at the end of each training workshop.

A feedback form was circulated to all workshops participants – trainers, media fellows, scientists and and mentors – to assess the quality and value of each workshop (and components of the training) as well to indicate productive possible changes to training workshops and engagements in future rounds of the programme. The principal items of feedback are summarised as follows:



Figure 1: B4FA Media Certificate

- a. journalists gave the training and programme consistently high ratings, and few had had any exposure of this type to genetics and agricultural biotechnology reporting before
- b. few journalists had had any opportunity to visit research institutes or laboratories before, or speak with local experts on the issues
- c. few local researchers had ever had the opportunity to meet or discuss their work with members of the media, so the training courses enabled barriers and mistrust to be broken down between the scientific and media community
- d. fewer than 10% of journalists had ever carried out a practical scientific experiment themselves before – the DNA extraction experiment was consistently rated as one of the best aspects of the training workshops
- e. in general, the practical aspects of the training workshops were rated most highly and were felt to be most valuable by participants (experiment, simulations/games, field trips and journalism exercises). The genetics simulations and games that had been designed specifically for the workshops were invaluable as learning aids as well as encouraging networking and discussion between the journalist and scientist participants. We were able to observe peer-to-peer mentoring developing during these practical sessions (see below for workshops in progress).
- f. few of the journalist participants had a good understanding at the start of the workshop of genetics or any modern approaches to plant breeding or agriculture. From the quality of their questions and participation in discussions, as well as the journalism exercises they carried out, we could observe their level of understanding and belief in the science and technology growing through the workshop, with some participants even able to crack “genetic jokes” after several days. Even those journalists (mainly Ugandan) who had covered the area previously, few had an understanding of the science underlying the technical approaches that were being taken



- g. F1 hybrid seeds and (commercial) tissue culture were the agricultural biotechnologies of most immediate potential in the countries, though all four countries were carrying out GM research at various levels of advancedness. None of the technologies were well appreciated in any of the countries and they were usually confused with each other and subject to misinformation.
- h. several journalists who were either farmers themselves or came from rural backgrounds were able to tell stories about “folk knowledge” experiences of their families, and relate these and explain them through the genetics and breeding information that they were learning

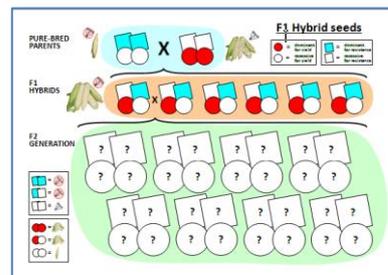
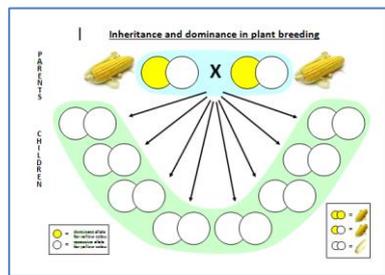


Figure 2: Photos of courses, interactive exercises and field trips



Some key quotes from our feedback:

“I have been a maize breeder for 25 years, and this is the first time I have ever had the chance to speak to a journalist about my work”

“This course was an eye opener [...] we were getting contradictory information that GM causes cancer and diabetes but now I have better understanding on the topic and its relevance to my country to improve our economy”

“It has transformed me into a more critical journalist”

As a result of the feedback, progressive changes were made to the content of the training workshops and the fellowship programme overall, for the East African component of the first round of fellowships, and for all the second-round workshops. The principal changes were:

- a. to reduce the number of technical sessions and the complexity of the content, and in particular begin with a simplified “history of agriculture and plant breeding” session
- b. to make all fellowships run until the end of the project rather than ending after six months
- c. rather than just offer a one day refresher training, to invite the 10 best fellows in each round to participate in the whole of the next round’s training workshop as alumni mentors
- d. to increase the number of field trips during the training workshops
- e. to make the application process for subsequent rounds online, via the b4fa website
- f. to add a specific session on F1 hybrid seeds and the difference between them and GM
- g. to add interactive discussion sessions on journalistic concepts and controversial ideas
- h. the introduction of a participatory audience feedback system to allow regular collection of feedback throughout the workshop rather than all at the end, and also to introduce a degree of interactivity into the training sessions
- i. the introduction of a session on biotechnology and ethics

Second round of workshops

The second round online application process resulted in 32, 50, 33, and 24 applications respectively from Ghana, Nigeria, Uganda and Tanzania. In many cases, word of mouth had made journalists enthusiastic to participate in B4FA, and we received applications from some very senior and very high profile journalists (for example two of the main daily presenters on Ugandan television, and the winner of Ghana’s journalist of the year award). Between 20 and 22 fellows were selected from each country of whom a total of 80 attended the second round training workshops, accompanied in each country by the 10 best fellows of the first round programme, as measured by the quantity and quality of their reporting. Again, the fellows had been chosen for a good representation of print, broadcast, online and



agency staff, although the second round contained slightly more broadcast journalists than the first, and more senior-level staff in most countries. Each workshop contained at least two field trips, an additional game (on marker assisted breeding), and 5 to 6 local case study presentations. The principal technical training sessions were again covered by a combination of senior international and national experts

History of breeding and agriculture –	Dr Bernie Jones, B4FA (UK);
Science journalism –	Mr Alex Abutu, AfricaSTI and scidev.net (NG); Mr Diran Onifade, World Federation of Science Journalists (NG); Mr Peter Wamboga, SciFoDe (UG), Mr Patrick Luganda, Farmers Media (UG); Mr Joachim Buwembo (UG)
Principles of genetics –	Prof Erik Danquah, University of Ghana at Legon (GH); Dr Moses Adebayo, LAUTECH and IITA (NG); Prof Chris Leaver, University of Oxford (UK); Dr Paul Kusolwa, Sokoine University of Agriculture (TZ)
F1 hybrids –	Dr Claudia Canales-Holzeis, University of Oxford and B4FA (UK)
Genetic modification –	Prof Jim Dunwell, University of Reading (UK); Prof Chris Leaver, University of Oxford (UK)
Journalism mentoring –	Ms Julia Vitullo-Martin (US); Ms Sharon Schmickle (US)
European Regulatory System –	Dr Guy van den Eede, European Commission (Be)
Ethics and Biotechnology –	Prof Sir Brian Heap, University of Cambridge and B4FA (UK)
Regulatory environment –	Prof Josephine Nketsia-Tabiri, National Biosafety Committee (GH); Dr Rufus Ebegba, National Biosafety Authority (NG); Dr Arthur Makara, SciFoDe (UG); Dr Roshan Abdallah, Tanzania Pesticide Research Centre (TZ)
Commercial considerations –	Mr Daniel Otunge, African Agricultural technology Foundation (KE)

This format was very successful – the greater focus on practical aspects (field trips and interactive games and discussions) gave us an opportunity to focus on the issues that were locally important. The interactive system also played a very powerful role when integrated into presentations, to gauge levels of understanding and belief before discussions of facts, and therefore to personalise delivery. For example, use of the system established that the majority of journalists thought that farming had always been a way of life for human beings, and that the staple crops currently grown in Africa were indigenous to that continent, when in fact many (maize, cassava, banana etc) were introduced relatively recently. The system also gave us an opportunity to “test” understanding of key issues before and after presentations, as well as at the end of the workshop.



Figure 3: Interactive feedback from course participants

The progress that the first round fellows had made in the preceding six months was evident in the mentoring role they were able to play in the workshops, but even they benefited from the opportunity to hear all the technical presentations and explanations for a second time.

Further journalist mentoring

Having taken 160 journalists in our four focus countries through the training and follow-up activities, and with over 500 articles already submitted to us as having been produced as outputs of the programme, we decided there would be little value in recruiting a further 80 journalists in a third round of the media fellowships, and that most of the able and biotechnology-enthusiastic journalists had probably already been engaged with. However, discussions with the mentors and evidence from the pieces that were being submitted to us indicated that there was a need to engage further with the fellows on improving their science journalism skills. Therefore the third round of workshops were redesigned to be media masterclasses in each country, for the top 10-12 fellows as measured by productivity and quality of content. These masterclasses would serve to engage with fellows in a group and individually to improve their science reporting skills as well as rehearsing the science and genetics underlying their reporting. The masterclasses were programmed as follows:

- Discussion of experience of reporting on agricultural biotechnology
- Deconstruction and analysis of Fellows' pieces
- Journalism ethics
- Recap of science, genetics and definitions
- Effective use of social media
- Writing for international publication
- Field trip

During the 21 months in which journalists were enrolled in the media fellowships (September 2012 to May 2014) they went on field trips to 50 research institutions and commercial and experimental facilities. These field trips were popular, and since numbers



were limited there was competition to be eligible to attend them. The importance of the field trips was two fold – typically, the media houses for which the fellows worked had little or no funds available for travel outside the city where they were located (usually the capital) making coverage of research or contact with farmers trialling new technologies difficult; furthermore, there was often limited awareness of the existence of venues for visits, and even when journalists knew of institutes, it was difficult for them to be invited without the B4FA name behind them.

In addition to the national field trips, the media fellows were offered international opportunities to visit institutes and to attend conferences:

- Science Academies conference on GM and biotechnology, Nairobi, Kenya (April 2013)
- Visit to EuropaBio industry body in Brussels and to GM farmers in Spain (March – May 2013)
- Visit to research institutes and science media organisations in UK (May 2013)
- Attendance of FARA General Assembly and African Agricultural Science Week, Accra, Ghana (July 2013)
- Visits to research institutes in Uganda (Aug-Nov 2013)
- Attendance of World Food Prize conference and CropLife International global media tour, Des Moines, Iowa (Oct 2013)
- Attendance of African Science Academies Conference on Biotechnology in Africa, Addis Ababa, Ethiopia (Nov 2013)
- Attendance of American Association for the Advancement of Science meeting, Chicago, Illinois (Feb 2014)
- B4FA concluding training workshop and visit programme, Cambridge and London, UK (April 2014)
- Attendance of AATF workshop on transgenic research in West Africa and field trips, Accra, Ghana (April 2014)

Achievements

The B4FA media fellowship programmes have proved an overwhelming success, in terms of both outputs and outcomes, and we believe that the activities are well on the way to achieving the lasting impacts that were imagined in the drafting of the original project. But there have been some further, very powerful, additional outputs and outcomes which we also report here.



<u>Output/Outcome/Impact</u>	<u>Achieved</u>
4 journalism workshops run (2 in Ghana and 2 in Tanzania)	13 journalism workshops held (3 in Ghana, 3 in Nigeria, 3 in Uganda, 3 in Tanzania, 1 in UK)
32 journalistic pieces from the workshop participants (8 per workshop)	More than 1000 journalistic pieces reported to us
20 journalists and 20 editors will be better informed about GM crops and their potential; 36 participants have a better understanding of GM crops, and 20 are more amenable to the idea of their use in Africa.	160 journalists (including over 20 editors, subeditors or bureau chiefs) better informed; and at least 60 are more amenable to GM usage in Africa
Within 5 years, 100 media professionals, 1000 students, 100 policymakers, 10,000 farmers and 100 extension service centres have gained experience on GM crops	160 media professionals (from media fellowships), 450 policymakers (from distribution of insights)
Within 10 years 100 media professionals will have an appreciation for GM crops, evidenced by [...] 400 articles in local, national and African media outlets	More than 1000 articles already published/broadcast by 160 journalists
Within 10 years, 10,000 farmers and extension workers reached with information about new genetic technologies, and having increased understanding.	Circulation figures of print media and listener/viewer figures of broadcast outlets of the 160 media fellows already exceed 17,000,000



Additional outcomes are that many of the best media fellows have, through the experience and contacts they gained from the B4FA project, become effective advocates for regulatory liberalisation and broad adoption of modern genetic technologies for crop improvement in Africa, and are regularly challenging their government decision-makers to act decisively on the issues. Biotechnology regulation has become a hot topic in all four of our focus countries over the three-year span of the project, and our media fellows have been at the centre of the debate, often presenting the best informed and most accurate coverage of the issues. But the media fellows also report to us that as a direct result of their increased focus on reporting more on agricultural biotechnology issues, their decision-makers and Ministers are becoming more vocal about the issue.

“our [Nigerian] Minister for Agriculture Akinwumi Adesina is an agric scientist, yet since being appointed in 2010 he said nothing about biotech and GM. Only since our increased coverage began in late 2012, as a result of B4FA, does Adesina now speak about the issue and advocate action”

Many media fellows report that, as a result of their interest and efforts, their publications take agricultural science stories more seriously now, and are willing to devote more prominent space to their coverage. Several fellows have established agric science “beats” for themselves, and have become the go-to people in their organisations for stories on biotechnology and modern farming.

We have also successfully broken down barriers between the national agricultural research communities and the media in our focus countries. The two groups now regularly meet and share information, and the media fellows regularly speak with their scientific contacts to enhance their coverage.

Those journalists who were also farmers have started to take their farming more seriously and see it as important, and in many cases are now testing and using the results of modern plant breeding technology themselves in their farms – mainly F1 hybrid seed and tissue cultured planting material, but they are enthusiastic to trial GM for themselves as soon as it become legally available. More encouragingly, several journalists who were not farmers initially have been motivated to begin to farm alongside their media activity and/or to explore entrepreneurial opportunities in agricultural biotechnology.

We have published all the presentations given at the training workshops on the public presentation-sharing site slideshare.net, where they have already achieved more than 6000 views and downloads globally.

To consolidate our masterclasses and fellows agricultural genetic science journalism skills, we have produced a B4FA Journalism Guidelines publication which is available from our website in pdf form



We have anecdotal feedback that at least one pan-African biotech NGO has completely revised the way in which they engage with the media as a result of seeing the effectiveness of the B4FA model of engagement, which they have now adapted to their own use.

Researchers and NGOs internationally and in Africa are recognising the quality of our programme and journalists, and make requests of us to recommend our journalists to them to cover events and stories, or to participate in visits, workshops and field trips.

At least eight of our media fellows have won national journalism awards as a result of coverage they have produced under the B4FA programme, and two have won international awards.

Eager that the African media “movement” created by B4FA should not decline after the end of the main phase of the project, our best media fellows are inaugurating a Network of African Agriculture Journalists, to enable them to continue to network and support each other, to advocate for the importance of covering agricultural biotechnology in Africa, to encourage more journalists to focus on the area, and in time to seek to raise support to facilitate more of this coverage.

4. Conclusion

The project team were enthusiastic about the model of engagement in Africa proposed for B4FA, and there was almost universal enthusiasm for the idea in Africa in our research and scoping phase. That enthusiasm and confidence has been borne out, and the model that B4FA sought to test in our target countries in sub-Saharan Africa has been validated.

Engaging with journalists in Africa to seek to improve coverage and understanding of a technical and controversial area can be most successfully achieved by engaging with those journalists for the long term, training them in the fundamental concepts of the subject matter so that they are able to critically evaluate and consider arguments and issues that they are reporting on, establishing an ethical framework for the interaction (emphasising journalistic ethics and, eg, not paying for stories), helping them establish their own networks and breaking down barriers with local experts, and providing ongoing opportunities for training or experience of the subject matter to be covered.

Many of our journalists came to the programme with only awareness of the activist-generated misinformation. But honest presentation of scientific facts and techniques, as well as opening doors for discussions and questions with domestic and international experts, soon changed their impressions and beliefs. Since the journalists know themselves what challenges their farmers and their populations face, they have become far stronger advocates of the technology than the B4FA team members, who always sought to present a balanced and honest picture of the capability and suitability of all the different technological options. This is a further strength of the very honest and unbiased approach adopted by the B4FA project: journalists are good at spotting when they have been “sold a line”.

“We were apprehensive about engaging with one of our fellows. He used to produce the fiercest critical articles about GM in his country. He told us that he would go to USAID events, and then deliberately write a story from the opposite angle to show that he “had not been bought by them”. Now his coverage of modern agricultural biotechnology, from hybrids and tissue culture to GM, is among the best and most positive in the country, as a result of unbiased learning and being able to make up his own mind.”

Strengths

The model adopted by B4FA for training, engagement, networking and follow-up has been uniquely powerful in driving media coverage of new genetic technologies for farming in Africa. The timing of the project was also perfect, since the introduction of new technologies, and GM in particular, has become a big regulatory and political issue in each of the four countries during the period of the project (encouraged, in some cases, by the actions of media fellows trained by the project). Informed and nuanced reporting of the issues and the facts during this time has been critical in all countries as the only way to



counteract the misinformation that continues to come from the activist community, and to educate and support the policymakers in their decision-making process.

Weaknesses

Though we did have reasonable participation in the programme from editors and producers, the reason why agricultural science stories are not covered more still lies with them. Therefore it would have been good to try to engage more directly with busy editors to both inform them better about the subject matter and convince them of its importance for their audiences.

While we were able to network scientists and journalists, and help make the journalists better communicators of the science, it was a missed opportunity that we did not have more resource (and the remit) to enable us to deliver training to the scientists to make them better communicators of their work to wider audiences.

Opportunities

There are opportunities to engage, using a similar training and dialogue model, with extension agencies in some countries² to improve their understanding and appreciation of the new genetic technologies and their promise for transforming agricultural productivity. Additionally, the same model could be applied for decision-makers and NGOs.

There is an opportunity to work with schools of journalism in sub-Saharan Africa to improve (or indeed to create) appreciation and skills of science journalism, especially focussing on key nationally important sector such as agriculture.

We found some excellent research being carried out in local research institutes that was virtually unknown nationally and internationally, owing to a lack of capacity in communications and outreach. Significant benefits could arise from working with these institutes to improve their national and international visibility.

Threats

European and US-sponsored activism continues to be a threat to uptake of agricultural biotechnology in Africa, and even to reporting on it. Our media fellows found themselves constantly having to defend themselves and their stories from allegations and inaccuracies fostered by this misinformation. Since the activists have sophisticated communications and PR capabilities, there continues to be the risk that they drown out the voice of the researchers and derail the debate.

² Though not, for example, in Tanzania where many extension workers are qualified agricultural scientists and the extension services themselves are carrying out some of the research and breeding activity.



Summary observations on B4FA media training

By independent journalists Sharon Schmickle (Minnesota, USA) and Julia Vitullo-Martin (Manhattan, New York, USA).

Genetics is not a regular beat in most newsrooms, even those in developed countries. So it was boldly ambitious to focus a media training program on crop genetics, especially in Africa where farmers have yet to adopt genetically improved hybrids or even Green Revolution technologies made available since the middle of the twentieth century. It also was crucially important in Africa at a time when the population is skyrocketing while crop yields remain stubbornly low.

In late 2011 and early 2012, we conducted initial research in Ghana and Tanzania for purposes of analyzing the media establishment. We found no sophisticated reporting of crop genetics – and, for that matter, very little serious coverage of agriculture. Yet, interviews with editors and reporters revealed a keen understanding of the importance of agriculture and a deep frustration with the lack of media capacity to cover the subject in any depth. Thus, we concluded that conditions on the ground were right for this highly specialized training program, and we recommended that it proceed.

That eagerness on the part of African journalists (many of whom are farmers and nearly all of whom have rural roots) became one factor in the ultimate success of the media training program. In each round of the training sessions, we judged stories the journalists were required to submit. The first round was discouraging. The quality of most of the stories was so low that it was difficult to find any articles that were worthy even of discussion and analysis in the seminars, much less of the awards the program had promised. What kept us going was the drive and intellectual curiosity the African journalists demonstrated during the sessions. They were engaged in these subjects, and they repeatedly expressed a desire to grow in the quality and the volume of their coverage. They took the training sessions seriously, markedly improving their pieces as we drilled down substantively, exploring possible leads, structure, arguments, controversies, and technical issues.

In retrospect, that weak initial coverage was an important benchmark for the media training program. In subsequent training sessions we observed a steady growth in the quality of the stories submitted for review. The improvement was uneven although all the journalists eventually demonstrated some understanding of and interest in the fundamentals of crop genetics. Best of all, a few of the journalists had grown to a very sophisticated level, delivering consistently high-quality and deeply thoughtful coverage of issues that previously had been ignored by their media houses.

The upshot is that the media training program has effectively seeded newsrooms across four African countries with well-informed journalists who are eager to report up-to-date developments in crop genetics and also to hold their public officials accountable for any failures to support farmers and local agricultural research. They also form an effective front-line guard against misinformation about crop genetics.

Recommendations:

Discussions of journalistic practices, norms and strategies should be woven more thoroughly into every aspect of the training. Journalists who rarely spoke during science lectures came alive when we turned to analyses of the journalistic challenges posed by the applied science. When the final master class session focused on journalism as it related to coverage of crop genetics, journalists in every country told us that was the most useful session in the overall training program.

Structured follow-through will be important if the training is to have a long-term impact on coverage of crop genetics. Like journalists everywhere, our African colleagues are under tremendous pressure to meet the demands of daily and weekly journalism. It will be all too easy for them to gradually lose the motivation to focus on crop genetics. Ongoing strategies could include more start-up support for the proposed African Agricultural Journalists Network and also support for more linkage between the trained journalists and local universities. Several of our trainees expressed an interest in serving as adjunct faculty if more courses in agricultural communication were offered.



Language is also a key factor – it emerges that one reason for local suspicions and negativity about new genetic technologies is that there simply is not the vocabulary in local African language to describe it, and so either people need to make up their own definitions, or as is often the case an early unfortunate description (which may or may not have been influenced by activism) becomes the accepted term, and is almost impossible to move beyond. For example, in Luganda (one of the main local languages in Uganda) the term for a hybrid seed is “improved seed”, whereas for a GM seed is “fake [or manufactured] seed”. Lack of a standard lexicon also makes it hard for journalists working in the local languages, especially those working in farmers’ radio, to discuss new technologies in a nuanced and informed manner.



5. Recommendations

- The network of B4FA media fellows should continue to be supported and encouraged to continue their coverage. Other organisations are aware of their skill and expertise and area already requesting recommendations for journalists with whom to interact, or suggestions for those that they should invite to participate in other events. However, the occasional ability to invite a cohort of them to key international conferences or field trips would still be valuable to their coverage, and their profile within their organisations.

The value of the project's model for training and interacting with the media has proven uniquely powerful in its impact and visibility. It could be readily replicated in other sub-Saharan countries

- A number of opportunities were highlighted for applying a similar model to different audiences, such as extension agents, regulators and NGO's, to further shift the quality of debate and knowledge in the countries concerned.
- The African media as a whole could be encouraged to lend greater weight to science journalism, especially in scientific fields like crop genetics which are critical for the economic and social future of the continent. An example could be a greater engagement with schools of journalism to introduce modules on science (or agricultural science) journalism.
- Even without this groundwork, local science stakeholders – such as national academies of science – could be encouraged to promote science journalism and technical training/awareness for members of the media in their countries.
- African scientists are still poorly supported in terms of resources and skills for science communication. Science communication training courses for agricultural scientists would therefore be a further channel to improve public perception and understanding of agricultural genetics
- African research institutes are still poor at publicising their work or even making public their work. Very few have their own websites which are populated with up-to-date information, making it hard – if not impossible – for national and international audiences (and potential collaborators) to find out what they are doing. PR engagement with research institutes who are willing would go some way to addressing this issue, and improving their international visibility and therefore interest in their work, and offers of collaboration and assistance.