

Building science leadership in Africa

biosciences
eastern and central africa



Biosciences eastern and central Africa 2011 annual letter

Dear Friends,

We are delighted to share with you the tremendous progress we have made in 2011. With the critical support of many partners and investors like you, we have continued to expand our programme of research, capacity building, and research-related services. Thank you for taking the time to read about our shared successes, challenges and opportunities.

We started the year with residual excitement from the official opening of the Biosciences eastern and central Africa Hub on 5 November 2010 by His Excellency Mwai Kibaki, the President of the Republic of Kenya. We are grateful for the attendance of this event by more than 300 invited guests and dignitaries, as we are for others who have visited us over the past years.



The year 2011 saw Dr. Carlos Seré, instrumental in the conception and birth of the Biosciences eastern and central Africa (BecA) Hub at the International Livestock Research Institute (ILRI), BecA-ILRI Hub, complete his second term as Director General of ILRI. He was succeeded by Dr. Jimmy Smith in October 2011, who incidentally helped fund the original BecA establishment grant by the Canadian International Development Agency (CIDA). We are delighted to have Dr. Smith and express our deep gratitude to Dr. Seré for the role he played in bringing BecA into being. Dr. Gabrielle Persley and Dr. John McDermott who played central roles in the establishment and operations of BecA also left ILRI in 2011. We are greatly indebted to them for their contribution to the success of the BecA-ILRI Hub.

The BecA-ILRI Hub (hereafter referred to as the Hub) has now supported the implementation of research projects and laboratory-based training involving the 18 BecA countries, and others across sub-Saharan Africa and globally.

About the BecA-ILRI Hub

Located at and managed by ILRI in Nairobi, Kenya, the BecA-ILRI Hub provides a common biosciences research platform, research-related services and capacity building opportunities to eastern and central Africa and beyond. The Hub increases access to affordable, world-class research facilities, while creating and strengthening human resources in biosciences and related disciplines in Africa. These activities focus on addressing key constraints in African agriculture.

The Hub is developed as one of four biosciences centres of excellence that are part of the African Union-New Partnership for Africa's Development (AU-NEPAD) African Biosciences Initiative. It has been created under the Comprehensive African Agricultural Productivity Programme (CAADP) to service the needs of countries in eastern and central Africa. CAADP's goal is to support agriculture-led development that eliminates hunger and reduces poverty and food insecurity, generating agricultural growth.

BecA in numbers for 2011

Funds raised: USD 14,109,000

Income generated USD 796,392

African research fellows: 17 from 10 countries

Workshops: 5 with 102 participants

Training courses: 8 with 150 participants and 61 trainers from 11 countries

Graduate students: 58

Research projects: 108

Research services provide to: 25 African and non African countries; 11 international institutions

Core staff: 35

Affiliated scientists / technical staff: 58

Institutional visits: 38

Presentations on BecA: 70

Seminars: 50

Visitors to the Hub: over 1,000

Who funds BecA?

The Hub owes its existence primarily to the significant financial contribution from the CIDA, the visionary support of the NEPAD Agency and the core donors of ILRI. CIDA has supported renovation of existing laboratories and construction of new facilities, helping us better accommodate the needs of the region. The SFSA, a long-time supporter of the Hub, is providing substantial financial and technical support critical to our sustainability.

We are also grateful for substantial financial support from AusAID through the BecA-CSIRO Partnership, BMGF, the Swedish Ministry for Foreign Affairs through Sida, the Government of Kenya and many others who have supported our partners and students. With the help of our key partners and investors, the Hub continues to grow as a focal point for the African agricultural biosciences research community and their global partners.

African graduate students and visiting scientists have continued to publish their work, graduate, and move on to higher positions including back home in their national programs. We have continued to upgrade our infrastructure and evolve our research, research-related services, technologies and capacity building portfolio to better support the region's agricultural research needs in the years ahead. Our increased capacity is being matched by growing demand from the region and beyond for world-class facilities and support for the benefit of the African farmer.

Meeting with our investors

On 13 December 2011, the major investors of the Hub and the top management of ILRI and BecA had an all-day meeting at the ILRI Nairobi campus for a structured discussion to:

- 1) synergize their efforts and investments in supporting BecA;
- 2) discuss BecA's successes, challenges and opportunities;
- 3) discuss the Business Plan and vision of BecA for the next five years;
- 4) explore sustainable models that will build on the momentum created by BecA and its supporters;
- 5) form a donor support group that will harmonize their support to BecA and African biosciences.

The investors and other stakeholders at the meeting included Marco Ferroni, Executive Director of the Syngenta Foundation for Sustainable Agriculture (SFSA); Mike Robinson, Chief Scientific Advisor, SFSA; Katherine Kahn, Senior Program Officer, the Bill & Melinda Gates Foundation (BMGF); Diane Briand, First Secretary, Canadian High Commission/CIDA; Melanie Boyd, Counsellor (Head of Cooperation), CIDA; Tesfaye Legesse, Senior Program Manager, Australian Agency for International Development (AusAID); Luke Mumba, Director of the Southern African Network for Biosciences (SANBio), representing the CEO of the New Partnership for Africa's Development (NEPAD) Agency; and Debby Delmer, Professor Emeritus, University of California, Davis. Unfortunately, Ann Uustalu, Director for Development Policy, Swedish Ministry for Foreign Affairs; Gity Behravan, First Secretary/Senior Science Advisor, Embassy of Sweden/Swedish International Cooperation Development Agency (Sida); and Peter Ewell of the United States Agency for International Development (USAID) were unable to attend due to schedule conflict. We are grateful for our supporters' commitment and passion.

Building science capacity in Africa

A strong programme in capacity building through research and training is central to the success of our biosciences initiative. By increasing the capacity of institutions and scientists to conduct biosciences-related research, develop and deliver new technologies, we are expanding the base of expertise in science and technology in Africa. Our capacity building and training activities have continued to evolve and grow.

The Africa Biosciences Challenge Fund

The Africa Biosciences Challenge Fund (ABCF) is a new and innovative way of enhancing African biosciences capacity while tackling agricultural constraints. It was established as part of the BecA-Commonwealth Scientific and Industrial Research Organisation (CSIRO) partnership with initial funding from AusAID. Subsequently, BMGF and the Swedish Ministry for Foreign Affairs through Sida have become contributors. The SFSA contributes to ABCF by supporting technical and scientist staff salaries.





Research and capacity building under ABCF is conducted via three streams: (1) hands-on training workshops, (2) provision of research fellowships to early career African scientists with placements for a period of 3-6 months at the Hub to undertake research projects, and (3) institutional capacity building and visits to BecA countries to raise awareness about the Hub, helping us identify talents and agricultural research constraints.

The research fellowships enable Africans to acquire new skills and work with the latest technologies, with emphasis on research themes of food and nutritional security. ABCF fellowships are competitive, availing scientists from African national research institutes and universities with the necessary infrastructure and training at the Hub to accomplish their research.

From late 2010 through 2011, 13 research fellows funded through the ABCF and four with other funding sources, from 10 African countries, have conducted research at the Hub on diverse and important areas including mycotoxins; striga resistance in sorghum; wheat stem rust; tick-borne diseases of cattle and sheep; molecular epidemiology of *African swine fever virus*; genetic diversity studies of crops, livestock, pathogens and disease vectors; the orphan crop enset; cassava brown streak disease; wild rice; indigenous goats and cattle; and domestic cavies.

Several research discoveries have been made by ABCF research fellows in 2011. For example, Dr. Charles Masembe (Makerere University, Uganda) has shown that domestic pigs can harbour the *Ndumu virus*, a potential zoonotic agent. Sisay Kidane (Ethiopian Institute of Agricultural Research) and Selamawit Getachew (Haramaya University, Ethiopia) have successfully adapted banana microsatellite markers to demonstrate a high level of genetic diversity in enset (an important staple crop in Ethiopia), knowledge which can be used in enset conservation and improvement.

Through the ABCF, we are providing a forum to facilitate closer collaboration among scientists across the continent and beyond. We encourage co-funded activities with African institutions, national governments, regional institutions and others, such as the Association of Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), West and Central African Council for Agricultural Research and Development (CORAF/WECARD), the Forum for Agricultural Research in Africa (FARA), Bio-resource Innovations Network for Eastern Africa Development (BioInnovate Africa) and the African Women in Agricultural Research and Development (AWARD) initiative of the CGIAR Gender & Diversity Program, through whom we give particular attention to empowering African women in agricultural sciences.

With additional funding to the ABCF, in 2012 the Hub is expecting placements of at least 50 African fellows addressing key agricultural constraints through research.

Graduate studies

In 2011, 58 African graduate students (32 women, 26 men) conducted their research in the Hub laboratories. In most cases, we catalyze linkages and synergies across projects in the region to ensure maximum benefit from all funding received.

Training courses and workshops

The Hub has continued to strengthen regional biosciences capacity through short term training, workshops and scientific conferences. In collaboration with our affiliated scientists and other partners, the Hub was involved in the organization and implementation of 13 training courses and workshops in 2011. These courses and workshops drew 313 participants from 18 African and nine non-African countries. Sixty-one experts from 11 countries (Australia, Cameroon, Finland, Germany, India,

Italy, Kenya, South Africa, Spain, Sweden, and UK) have generously donated their time and skill sets to provide training on the various courses. Topics included the application of markers to crop improvement, molecular marker-assisted breeding, introductory and advanced bioinformatics, molecular biology, next generation sequencing, data analysis, biosafety, and scientific paper writing. Based on the high regional demand, an annual practical course on laboratory management, equipment maintenance and operation is being designed to start in 2012.

Inception workshops were also held for new research projects involving regional and global partners. Projects include 'Capacity and action for aflatoxin reduction in eastern Africa', 'African swine fever diagnostics, surveillance, epidemiology and control', and 'Nutritional characterization and value addition of amaranth vegetable and grain.'

We continue to monitor the outputs from our training workshops. For example, from 42 African scientists who attended our 2009 and 2010 science writing training courses, a total of 27 papers have been submitted and so far 15 have been published. We trained a further 22 African scientists in science paper writing in 2011, and as a result we expect many more papers to be published in 2012. For effective technology transfer, Hub-based laboratory training is complemented with technical backstopping and access to our research-related services

Raising awareness and institutional capacity building

We are working to expand capacity and to support scientists in situ across the region. While the Hub receives applications and inquiries from a wide range of African countries, awareness of the Hub and our activities needs to reach institutions in those countries that are to date under-represented in our user pool. In 2011 Hub staff members visited 38 institutes and organisations in Uganda, Rwanda, Burundi, Cameroon, Ethiopia, Tanzania and Sudan to raise awareness and identify key laboratories and individuals strategically placed to benefit from Hub support. In addition, 32 presentations were given in 2011 at other venues, including workshops and conferences across Africa and elsewhere.

Overall, our visits help:

- expand representation of Hub users across our 18 countries and spread the impact of BecA activities across the region;
- contextualize and customize training workshops and research placements to ensure transferability of skills and research outputs to participants' home institutions;

- identify priority areas to which the Hub should expand its activities, based on the needs of researchers and institutions in the region;
- enhance national laboratory and university facilities through resource mobilization and /or technical support.

Seminars

Our seminar series brought cutting-edge science from around the globe to the research community in Nairobi. Fifty seminars were delivered by scientists and postgraduate students at the Hub. The speakers included prominent scientists and graduate students from institutions in the USA, Europe, Australia and Africa.

Sharing news on BecA alumni

We keep in touch with the growing network of scientists who have engaged in research or training at the Hub monitoring the overall impact of their work. For example, since conducting their graduate research under the supervision of Dr. Morag Ferguson, with the International Institute for Tropical Agriculture (IITA) at the Hub, Dr. Robert Kawuki and Dr. Heneriko Kulembeka have returned to their respective national agricultural research institutes in Uganda and Tanzania. As national cassava breeders, they now play leading roles in major projects focused on improving this important staple. Robert continues to use the Hub's genotyping services, while Heneriko recently attended one of the Hub's science writing workshops to complete a paper on resistance to cassava brown streak disease. Dr. Rosemary Mutegi-Murori, who carried out part of her PhD studies with IITA at the Hub on drought tolerance in cassava, is now a postdoctoral fellow in plant breeding at the International Rice Research Institute's (IRRI) Tanzania office, and is involved in rice improvement and training of African researchers and extension workers. Rosemary continues to use the Hub facilities for molecular characterization of rice.

Paul Visendi, Bosibori Bett and Isaac Njaci carried out MSc research projects at the Hub in 2009-2010, and all three have since been accepted for Australian Agricultural Development PhD Scholarships. Paul and Bosibori began their research programmes in Australia in 2011. Isaac will begin in early 2012.

We gratefully acknowledge the major contributions from our Hub-affiliated scientists and partner institutions, particularly the International Maize and Wheat Improvement Center (CIMMYT); IITA; the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT); the International Potato Centre (CIP); the ILRI Biotechnology Theme; Cornell University, USA; CSIRO,

Australia; the Ohio State University, USA; Washington State University, USA; Kenya Agricultural Research Institute (KARI); Agricultural Research Institute (ARI), Tanzania; Kenyatta University, Kenya; Jomo Kenyatta University of Agriculture and Technology, Kenya; Makerere University, Uganda; Mikochei Agricultural Research Institute (MARI), Tanzania; Swedish University of Agricultural Sciences, Sweden; Uppsala University, Sweden; Linnaeus Centre for Bioinformatics, Sweden; University of Dar es Salaam, Tanzania; Kenya Industrial Research and Development Institute; University of Burundi; Sokoine University of Agriculture, Tanzania; the World Vegetable Center (AVRDC); University of Cambridge, UK; University of Exeter, UK; the University of Queensland - Queensland Alliance for Agriculture and Food Innovation (QAAFI), Australia; Queensland Department of Employment, Economic Development and Innovation (DEEDI), Australia; and several others.

We are also grateful to the following experts and organizations who have participated in teaching a number of Hub-based hands-on technical trainings to our partners across Africa: Eija Korpelainen, CSC - IT Center for Science, Finland; Janet Kelso, Max Planck Institute, Germany; Harry Noyes, University of Liverpool, UK; Bert Overduin, European Bioinformatics Institute, UK; Erik Bongcam-Rudloff, Swedish University of Agriculture Sciences; Steve Rounsley, University of Arizona /Dow Agrosociences LLC, USA; Andreas Gisel, Institute for Biomedical Technologies, Italy; Rickard Sandberg, Karolinska Institutet, Sweden; Morag Ferguson, IITA, Kenya; Chris Penfold, University of Warwick, UK; Nelson Ndegwa, Research Student Group, Kenya; Chris Beadle, Peter Willadsen, Larelle McMillan, and Caroline Bruce, CSIRO, Australia; Alexander Bombom, Makerere University, Uganda; Santie deVilliers, ICRISAT, Kenya; Dan Kiambi, African Biodiversity Conservation and Innovations Center (ABCIC), Kenya; Jeremiah Matogo, Inqaba Biotec East Africa, Kenya; and Hamilton Ganesan, Inqaba Biotec, South Africa; and several others.

Research activities

In its four years of implementation, the Hub has successfully mobilized scientific resources to address critical food and agricultural production problems in Africa. These problems include pests and diseases of subsistence crops; diseases affecting livestock production and human health, including zoonotic diseases; and climate change effects, such as drought, that limit crop production and pose a threat to future food security in Africa.

Our training workshops are having an impact on the quality of biosciences research as evidenced by the feedback from participants.

Parfait Kouakou (Lecturer, University of Abobo Adjamé, Côte d'Ivoire) gained his first experience in molecular biology in the Introduction to Molecular Biology and Bioinformatics training course in 2011. He has returned to the Hub as an ABCF fellow to pursue research on cavy molecular genetic diversity in Côte d'Ivoire.

Charles Diako, a researcher from Ghana who attended our science writing course in 2009, had the following to say about his experience:

“That event will always go down in my memory as a timely and excellent program that is giving me better visibility in the scientific community. Out of the four papers I drafted at the workshop, I have had two papers published and the third one accepted.”

The Hub and its partners carry out a number of research projects on agricultural improvement for 18 eastern and central African countries (including the newest African nation, South Sudan), focused on crop, livestock and related microbial biosciences. Hub and affiliated centres' scientists, research fellows and students conducted 59 crop-related and 49 livestock-related major projects in 2011. The crops studied include banana, cassava, cowpea, enset, maize, millet, napier grass, potato, sweet potato, passion fruit, pigeon-pea, rice, wheat, sorghum, cassava and yam. Research projects on livestock and wildlife include: chicken, cattle, goats, sheep, domestic cavy, tick vectors, pigs, wild edible

mushrooms and various wild life. Projects have tackled plant and animal disease agents, including: viruses, pests, parasitic weeds (e.g. Striga), and animal parasites. Hub-based scientists and partners are actively expanding their research programs to include under-researched areas that can contribute to food and nutritional security.

National program scientists from across Africa used the Hub to integrate modern biotechnology into their agricultural improvement efforts. For example, national crop breeders continue to use our labs and services to integrate molecular markers into their breeding programs; and diagnostic tests have been developed for key diseases, and are being transferred to users for

validation and use. A number of the research projects are using the Hub's full service genotyping and DNA sequencing provision program.

Research projects Highlights

Seven research projects are supported under the BecA-CSIRO partnership: four focus on food and nutritional security (reducing aflatoxin contamination of maize; amaranth for nutrition; domestication of wild edible African mushrooms; genetic diversity and improvement of domestic cavies) and three on food security through animal health (African Swine Fever; Contagious Bovine Pleuropneumonia; thermostable vaccine for Peste des Petits Ruminants). The mushroom and amaranth projects are led by national program scientists. In late 2011, the Swedish Ministry for Foreign Affairs has generously provided a grant for USD 12 million. Three major projects that address food security are supported under this grant: tissue culture and virus indexing systems for African crops and plants; developing rapid and accurate diagnostics methods for important crop and livestock diseases; and goat genetics and improvement.

Aflatoxins: The AusAID-funded flagship Capacity and Action for Aflatoxin Reduction in Eastern Africa (CAAREA) project brings together a multi-disciplinary, multi-national team of scientists to help address the specter of aflatoxins in eastern Africa that cause major health risks across the region. The team is working in concert to: develop a mycotoxin diagnostics platform at the Hub; collect and characterize fungal isolates from Kenya and Tanzania; and screen germplasm currently in use by or of interest to the Kenyan and Tanzanian maize breeding programs for resistance/hyper-susceptibility to aflatoxin accumulation (pre- and post-harvest). Project partners include: James Gethi (KARI); Arnold Mushongi (ARI, Tanzania); Said Massomo (Open University of Tanzania); Ross Darnell, Nai Tran-Dinh, Stephen Trowell, Darren Kriticos (CSIRO,

Australia); Rebecca Nelson and Michael Milgroom (Cornell University); Mary Fletcher and Glen Fox (University of Queensland, QAAFI); Yash Chauhan (DEEDI); and Phil Pardey (University of Minnesota and Harvest Choice). While this project focuses on the application of platform technologies to understanding targeted issues related to reducing aflatoxin contamination in these eastern African maize-based food systems, the platform will also provide much needed capacity to researchers addressing other mycotoxin and related food security issues across a range of agricultural products.

Through CAAREA and the other six BecA-CSIRO partnership projects, the Hub has now expanded its established genomics and other biosciences platforms to include analytical technologies such as ultra-performance liquid chromatography mass spectroscopy (UPLC-MS), atomic absorption spectrometry (AAS), gas chromatography mass spectroscopy (GC-MS) and fourier transform - near infrared spectroscopy (FT-NIR). The nutritional analysis and mycotoxin diagnostics platform will significantly expand our ability to support a wider range of research projects, including through provision of research-related services. The FT-NIR technology, for example, will assist plant breeding and livestock programs in sub-Saharan Africa to screen materials for improved crop nutrition and overall food safety.

Peste des Petits Ruminants (PPR) Project: This project is developing appropriate and proven vaccination strategies that can form the basis of sustained PPR control in developing countries. This involves developing an effective protocol for thermostable PPR vaccine for transfer to African vaccine manufacturers. The project will also identify and test components of new institutional models for delivering effective PPR control services to small ruminant producers in two locations.

Research Services

The Hub genotyping, DNA sequencing and oligonucleotide procurement services (SEGOLIP) unit continues to expand and offer services to Hub users, visiting scientists and other scientists located at research and academic institutions in Africa and globally. The unit has provided services to 25 African and non-African countries as well as 11 international organizations. SEGOLIP is also providing support to the Generation Challenge Program (GCP) through genotyping services for various breeding programs that focus on improving productivity of major crops including maize, rice, sorghum, cowpea, chickpeas, cassava, sweet potatoes, beans, and finger and pearl millets. The Hub genomics platform housed in the SEGOLIP unit was further utilized in collaboration with partners to contribute to the re-sequencing of the





cassava genome and sequencing various viral genomes (a number of which are deposited in public databases).

Our genomics platform is complemented by a comprehensive bioinformatics platform for genome and metagenome sequencing, assembly and analysis.

BecA Hub Staff Expansion

The Hub team expanded its core scientific and technical staff in 2011, adding several key members and important expertise. Among our new recruitments include Dr. Leah Ndungu (animal health research and project management); Dr. Benoit Gnonlonfin (mycotoxins and applied microbiology); Larelle McMillan (public relations/communication, on secondment from CSIRO); Ethel Makila (communication/graphic design); Dr. Francesca Stomeo (metagenomics); Dr. Mark Wamalwa (bioinformatics); Immaculate Wanjuki (mycotoxins); James Wainaina (biochemistry/mycotoxins); and Rachael Mwangi (accounting and financial management). We are recruiting at least 10 scientific and technical staff in 2012.

The 58 affiliated scientists and technical staff, mainly from the ILRI- Biotechnology Theme, CIMMYT, CIP, and IITA, are an indispensable part of our research and capacity building activities. A number of leading scientists located

globally have joined the Hub as affiliated scientists, thus providing access to their skills for our African partners.

Visitors

We were privileged to receive over one thousand visitors in 2011, including scientists, policy makers, donors, private sector leaders, journalists and students. Her Excellency Angela Merkel, Chancellor of Germany, toured our laboratories in July, discussing ongoing research activities with scientists and students currently working at the Hub. Ann Uustalu, Director for Development Policy, Swedish Ministry for Foreign Affairs; Gity Behravan, First Secretary/Senior Science Advisor, Embassy of Sweden/Sida; Brian Keating, Director of CSIRO's Sustainable Agriculture flagship; the CEO of NEPAD, Ibrahim Assane Mayaki and his key staff; Jane Silverthorne, Clifford Gabriel and Machi Dilworth of National Science Foundation, USA; Yilma Kebede and Katherine Kahn, Senior Program Officers, BMGF; S. Ayyappan, Secretary, Department of Agriculture Research and Education (DARE) and Director General, Indian Council of Agricultural Research (ICAR); A. K. Singh, Deputy Director General, ICAR; Niu Dun, Vice Minister of the Ministry of Agriculture, People's Republic of China and delegates; Sribabratna Tripathi, Indian High Commissioner to Kenya; Officials from Korea;

officials from CIDA; Louisa Cass, Program Manager, Food Security and Rural Development, AusAID; and many others. There were also groups of visitors from the following institutions: Aga Khan University; University of Nairobi; Kenyatta University; Jomo Kenyatta University of Agriculture and Technology; Moi University; Egerton University; Maseno University; Gulu University as well as 313 participants of conferences and workshops conducted at the Hub. We are eager to share our work with visitors, many of whom have been inspired to become our unofficial ambassadors, spreading word of



our successes and aspirations. We thank all of our visitors for their enthusiasm and encouragement.

Raising our profile

Visits by various journalists have generated a number of positive news articles and feature videos, published in widely read and respected newspapers across the globe.

Coverage of the official Hub opening included over 30 print and online articles as well as radio and television coverage in the region. Exposure of our fellowships and scholarship opportunities were published on websites by over 15 agencies and institutions in the region assisting us to attract quality candidates.

The Hub has featured widely in African and international media, highlighting our expertise in animal health research including [African Swine Fever in the New Agriculturist](#), and showcasing our world-class achievements in [capacity building for African scientists](#).

Several documentary pieces including over 70 print and radio interviews focused on our research partnership with AusAID and CSIRO including on Australia's national [ABC Bush Telegraph program](#); ABC's Rural [online blog](#); national [print coverage](#); [e-mag stories](#); and in depth coverage of the [issues facing African agriculture](#) in the context of the 17th Conference of the Parties (COP17) to the United Nations Framework Convention on Climate Change (UNFCCC) and the global climate change/food security challenge.

Links to other Hub-related communications can be found on our [website](#).

Moving forward

The support of investors, scientists, policy makers, the general public and other partners from around the world is fuelling our past and future success. The hard work and dedication of the researchers using the Hub to address constraints to African agriculture forms the heart of the BecA story. Now that we have expanded our capacity to host far more scientists and students in our laboratories, reliance on our global network is even more important. The Hub facilities are estimated to accommodate up to 450 people; we are currently at less than 50% capacity. With the support of BMGF, we have developed a new Business Plan and envision approaching full capacity by 2015. With your continued support and commitment, we are confident that together we can realize our goals.

Faced with a future of harsher environmental conditions and more mouths to feed, together we can empower Africa to be self-reliant and a breadbasket for the world. We are very optimistic about the development of Africa: conflicts are ebbing; many economies are growing rapidly; internet access and use are growing; investment in infrastructure, education and medical care is increasing; management of the continent's rich natural resources is improving; foreign investment is increasing; and the African diaspora is increasingly putting its resources to use for the homeland. The future is bright for Africa and we can all add more sparkle.

Sincerely,

Segenet Kelemu
Director, BecA-ILRI Hub

For additional information, please visit our website.
<http://hub.africabiosciences.org>