

**MID-TERM REVIEW OF THE CSIRO-AFRICA  
FOOD SECURITY PARTNERHIPS**

**REPORT 2: THE CSIRO-BecA PARTNERSHIP**

**October 2012**

**Report Prepared for AusAID by a Review Team**

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## EXECUTIVE SUMMARY

This report presents the findings of a mid-term review of the CSIRO East Africa Partnership with Biosciences eastern and central Africa (BecA) conducted between September 10–23, 2012. This is part of an overall review of the CSIRO African Partnerships, which will be completed by October 2012. The purpose of this review is to **report on progress** towards program implementation, make detailed **recommendations to improve the overall quality** of the CSIRO African Partnerships and **develop options to guide the design of a second phase of AusAID support** to 2015-16.

CSIRO's Partner in East Africa is the BecA–ILRI hub, which is a joint activity of AU/NEPAD and the International Livestock Research Institute (ILRI) in support of the Comprehensive Africa Agriculture Development Program (CAADP) agenda. As an African Centre of Excellence, the BecA Hub is expected to contribute to the alleviation of constraints associated with scientific, technical, and human capacity aspects of bioscience.

The BecA-CSIRO Partnership has three main components:

1. **Capacity Building and Research** through the Africa Biosciences Challenge Fund (ABCF) to support African scientists in capacity building and in their use of the hub facilities
2. **Institutional Support** for BecA-ILRI Hub operations to facilitate the BecA-ILRI Hub's hosting of research projects and capacity building activities
3. **Collaborative research projects** in two main areas: Food and Nutrition Security and Food Security through Animal Health

### Key Achievements

The BecA-CSIRO Partnership has made good progress since it was established in April 2010 and has been a source of a number of significant institutional innovations in bioscience and capacity building:

1. The Partnership is strong, based on mutual respect and a passion for their joint endeavour and the “bi-modal” model of collaboration (research and institutional development support) brings high-level scientists to the Partnership in a way that provides professional satisfaction and value to both parties.
2. The establishment and organisation of the highly successful ABCF research placement program .
3. Support for a portfolio of 7 projects undertaking advanced bioscience research but also taking bioscience use to scale, especially the animal health projects with their focus on disease control in Africa.
4. Selection of development problem-driven projects, with even proof of concept projects exploring bioscience breakthroughs with a clear focus on important development problems and opportunities.
5. Ex ante design and redesign of existing projects to strengthen development focus. CSIRO played an important role in supporting this process.
6. The introduction of ethics protocols into the design and implementation of research projects.
7. Pushing the project envelope — taking science to use rather than stopping at ‘just’ the scientific outcome.
8. Working with complex partnerships, and learning about both the self-evident benefits, but also the challenges associated with this approach.
9. Specifying impact pathways for all projects, which is a critical start to the process of taking research to use.
10. World-class communication of science-for-development.

## Challenges

### Impact Pathways

The Partnership's projects have made a promising start in the process of orientating bioscience towards impact. However, there are a number of areas that need to be strengthened that are evident from the evolving program logic of the Partnership and the implementation of its projects. Weaknesses include:

- **Impact pathway analysis.** The analysis of impact pathways needs to be deeper and was undertaken too late to have a significant influence on the initial design of the projects **Realistic assumptions in impact pathways.** Many of the assumptions implicit in the impact pathways developed by projects need to be tackled as part of each project itself.
- **Monitoring partnership development and performance.** The nature, quality and extent of partnership arrangements associated with the projects are not adequately considered by monitoring arrangements. This means that a key dimension of the pathway to impact is developed and managed on a rather ad hoc basis.
- **Skill set to investigate, manage and monitor innovation and impact pathways and processes.** There is currently insufficient expertise to help projects locate and develop operational impact pathways and to generate an understanding of how impact takes place. The skill set of projects needs to broaden if a research-for-impact perspective is to be achieved.

These challenges may reduce the ability of projects to achieve impact and build capacity as they cause uncertainty about how far bioscience projects go down the impact pathway and; limit generation of lessons on how to use bioscience for impact.

### Mobilizing Scientific Expertise

The Partnership with CSIRO has allowed BecA to access world-class scientific expertise from CSIRO, and Australia more generally. However, the Partnership with CSIRO has been less successful in mobilising expertise related to investigating innovation/ impact pathways and processes and a range of social science expertise with African perspectives, particularly livelihood analysis.

### Capacity Building

The capacity building aspects of the Partnership have included the successful ABCF program. Capacity has also been built in the sense of a wider set of linkages around projects and between ABCF fellows and other researchers and impact pathway stakeholders, including policymakers around specific bioscience-for-development themes. A number of dimensions of capacity building that could be further strengthened include:

- Building skills on using bioscience for impact
- Building links to and from capacity in the private sector
- Supporting emerging platforms, networks and communities of practice

### Uncertainty in the Wider Institutional Context

BecA is at a critical point in its development. There are uncertainties arising from changes in the wider institutional environment of the CGIAR and African stakeholders in which it is situated. Key issues include its imminent change of leadership, its future vision and comparative advantage, its cost structures, and its governance. The contending priorities and perceptions of different stakeholders in this environment could distract BecA and potentially undermine the effectiveness of the Partnership with CSIRO. There are, however, opportunities for both the

Partnership and AusAID to contribute positively to ongoing processes in place to facilitate dialogue, diffuse tensions and strengthen BecA's strategic vision.

### **Ways Forward and Recommendations**

These challenges discussed above are acknowledged by the Partnership. The review team is confident that, given its strong performance to date, the Partnership is capable of addressing these. A vision of how the CSIRO BecA Partnership can move forward is provided. This focuses on strengthening the impact orientation of research and capacity building and on introducing a stronger learning orientation into both the projects and the Partnership as a whole. The latter is seen as a critical contribution to strengthening impact within projects and in future research activities. It also has a critical role in further strengthening the capacity building agenda of the Partnership. This vision holds the potential to improve both the short and long-term impact of the CSIRO-BecA Partnership.

An opportunity also exists for adding value to the overall CSIRO Africa Partnership by bridging the partnerships in East and West Africa with a mechanism that supports impact learning across the Partnership. This could also act as a mechanism to influence a wider set of organisations that are grappling with the challenge of using agricultural research for development. This could create a **third impact pathway** for AusAID's investment that has the potential to lead to very large-scale impacts sustained by fundamental change in how agricultural research is used for development in the region.

To achieve this vision the review recommends that in the design of the next phase the Partnership address the following issues.

- 1.** Create a focal point or champion in the Partnership team for understanding innovation processes, impact pathways and learning and acting as an "informed buyer" of expertise to service these needs in projects.
- 2.** Partner to access and broker expertise on innovation processes and impact pathways as well as research expertise on institutional, market, policy and livelihoods topics.
- 3.** Adopt process monitoring arrangements to generate information for adaptive management, to track institutional changes in impact pathways, and to develop plausible causal connections between these institutional changes and impact.
- 4.** Embed learning in projects as both a monitoring and research task.
- 5.** Organise learning in the Partnership to identify and document high-performing research approaches that lead to impact by creating a specific learning project for the Partnership's work with a well-defined set of learning objectives.
- 6.** Create professional incentives for scientists in impact projects by strengthening BecA's "brand" of bioscience for impact.
- 7.** Strengthen capacity development for impact by linking lesson learning on impact to (i) further develop the strategic focus of the Partnership by helping prioritise research themes with high impact pay-offs; (ii) broaden training and mentoring in the ABCF program (iii) help the Partnership identify the composition of networks and consortia that need to be developed to utilise bioscience for impact.

8. Continue to contribute to a process whereby all stakeholders have confidence that points of tension, clarity and vision in the wider institutional environment are resolved in an objective and transparent way. AusAID should be more proactive in its expected role in donor coordination on these issues.

**Recommendation for the Design Process of Phase 3**

The development of the design for phase 3 should be a participatory process, involving CORAF/WECARD, BecA, CSIRO and AusAID to ensure the insights from the Review are carried forward effectively into the design considerations. Inputs should also be sought from gender and environment specialists familiar with such programs in developing countries. A peer review process of the design document should be used to bring in wider perspectives. These perspectives include an Africa regional perspective, a bioscience perspective and a development rationale perspective. To allow sufficient time for securing appropriate personnel and preparing contracts, etc., the design will need to be approved by CORAF/WECARD, BecA, CSIRO and AusAID by March or April 2013 at the latest. The design process would probably need to start by November 2012.

## LIST OF ACRONYMS

<b>ABCF</b>	-	Africa Biosciences Challenge Fund
<b>AFSI</b>	-	African Food Security Initiative
<b>AGRA</b>	-	Alliance for a Green Revolution in Africa
<b>ARI</b>	-	Agricultural Research Institute, Tanzania
<b>ASARECA</b>	-	Association for Strengthening Agricultural research in Eastern and Central Africa
<b>ASF</b>	-	African Swine Fever
<b>AU</b>	-	African Union
<b>AusAID</b>	-	Australian Agency for International Development
<b>AVRDC</b>	-	World Vegetable Center (formerly Asian Vegetable Research and Development Center)
<b>BecA</b>	-	Biosciences eastern and central Africa
<b>BMGF</b>	-	Bill and Melinda Gates Foundation
<b>CAADP</b>	-	The Comprehensive Africa Agriculture Development Programme
<b>CAAREA</b>	-	Capacity and Action for Aflatoxin Reduction in Eastern Africa
<b>CBPP</b>	-	Contagious Bovine Pleuropneumonia
<b>CGIAR</b>	-	Consultative Group on International Agricultural Research
<b>CIAT</b>	-	International Center for Tropical Agriculture (Centro Internacional de Agricultura Tropical)
<b>CIDA</b>	-	Canadian International Development Agency
<b>CISA-INIA</b>	-	Centro de Investigación en Sanidad Animal- Instituto Nacional de Investigación Agraria y Alimentaria, Spain
<b>CMD</b>	-	Cassava Mosaic Disease
<b>CORAF/WECARD</b>	-	West and Central African Council for African Research and Development
<b>CRP</b>	-	CGIAR Research Program

<b>CSIRO</b>	-	Commonwealth Scientific and Industrial Research Organisation
<b>DFAT</b>	-	Department of Foreign Affairs and Trade (Australia)
<b>DFID</b>	-	Department for International Development, UK
<b>DRC</b>	-	Democratic Republic of the Congo
<b>DVS</b>	-	Department of Veterinary Services, Kenya
<b>EMF</b>	-	Environmental Management Framework
<b>FAAP</b>	-	Framework for African Agricultural Productivity
<b>FANS</b>	-	Food and Nutritional Security
<b>FARA</b>	-	Forum for Agricultural Research in Africa
<b>IAR4D</b>	-	Integrated Agricultural Research for Development
<b>ICRAF</b>	-	International Centre for Research in Agroforestry (Also known as World Forestry Centre)
<b>ICRISAT</b>	-	International Crops Research Institute for the Semi-Arid Tropics
<b>ILRI</b>	-	International Livestock Research Institute
<b>JKUAT</b>	-	Jomo Kenyatta University of Agriculture and Technology
<b>KARI</b>	-	Kenya Agricultural Research Institute
<b>KIRDI</b>	-	Kenya Industrial Research and Development Institute
<b>M&amp;E</b>	-	Monitoring and Evaluation
<b>MAAIF</b>	-	Ministry of Agriculture, Animal Industry and Fisheries, Uganda
<b>NARI</b>	-	National Agricultural Research Institute
<b>NARS</b>	-	National Agricultural Research System
<b>NEPAD</b>	-	New Partnership for Africa's Development
<b>NGO</b>	-	Non-Governmental Organisation
<b>NRM</b>	-	Natural Resource Management
<b>OECD-DAC</b>	-	Organisation for Economic Cooperation and Development – Development Assistance Committee
<b>QAAFI</b>	-	Queensland Alliance for Agriculture and Food



		Innovation
<b>PCR</b>	-	Polymerase Chain Reaction
<b>PPR</b>	-	Pestes des Petits Ruminants
<b>R4D</b>	-	Research for Development
<b>RNA</b>	-	Ribonucleic Acid
<b>RPG</b>	-	Regional Public Good
<b>RUFORUM</b>	-	Regional Universities Forum for Capacity Building in Agriculture
<b>SIDA</b>	-	Swedish International Development cooperation Agency
<b>SLU-SVA</b>	-	Swedish University of Agricultural Sciences, National Veterinary Institute of Sweden
<b>SROs</b>	-	Sub Regional Organisations
<b>TAG</b>	-	Technical Advisory Group
<b>TOC</b>	-	Theory of Change
<b>TOR</b>	-	Terms of Reference
<b>UEA</b>	-	Université Evangélique en Afrique, DRC
<b>UK</b>	-	United Kingdom
<b>UN</b>	-	United Nations
<b>USAID</b>	-	United States Agency for International Development

# 1. Introduction

As part of AusAID's four-year African Food Security Initiative (AFSI), Australia is funding the A\$16.9m<sup>1</sup> CSIRO Partnership with the West and Central African Council for Research and Development (CORAF/WECARD) and the A\$13.87m<sup>2</sup> CSIRO Partnership with Biosciences eastern and central Africa (BecA). The initiative runs from 2011 to 2013 and aims to lift food security and agricultural productivity in Africa through joint research — working with and building the capacity of African agricultural organisations.

This report presents the findings of a mid-term review of the BecA Partnership. It was conducted in September 2012 and is part of an overall review of the CSIRO African Partnerships, which will be completed by October 2012. A mid-term review of the CSIRO-CORAF/WECARD Partnership took place in June/ July 2012 and has already been reported separately. An overall review report will be prepared based on these two partnership reviews.

## 1.1 Review Purpose and Objectives

The terms of reference for this review (see Annex 1) request that this mid-term review “**report on progress** towards program implementation, make detailed **recommendations to improve the overall quality** of the CSIRO African Partnerships, **develop options to guide the design of a second phase of AusAID support** till 2015-16 and suggest strategies for how the program might be scaled back or concluded post 2015-16.”

The context for this review is AusAID's proposed consolidation of its food security program and an increased focus on managing for results. The Africa food security team needs to both appraise progress of its activities, and map future directions for the program. The review will be immediately useful to the following stakeholders:

- AusAID senior management
- AusAID and CSIRO desk officers
- CORAF/WECARD and BecA program and project managers

Specifically the terms of reference state that the review will:

“provide an assessment of how well the CSIRO partnerships have been carried out to date, based on evaluation of the performance and progress of the research projects, engagement in capacity building with African partners and constraints or issues encountered in implementation.”

“The overall evaluation will address whether the program logic in the design documentation is to result in higher level development outcomes. It will also provide recommendations on changes to the design of the partnership activity that can improve ability to reach the development outcomes. Further, it will develop options to guide the design and development of a second 3 + year phase of Australian Government funding for the partnerships, and consider possibilities for program consolidation at the close of this second phase of funding.”

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<sup>1</sup> \$15.8 from AusAID and \$1m from CSIRO — \$12m goes through CORAF/WECARD and the rest is managed by CSIRO.

<sup>2</sup> \$13.01m from AusAID and \$0.86m from CSIRO. Just under \$10m of this is managed by BecA, with the remainder managed by CSIRO.

## 1.2 Review Process and Approach

The review was conducted by Andy Hall (Team Leader), Steve Ashley, Howard Elliott and Ian Kershaw, with advisory support from Tristan Armstrong. The review process of the CSIRO-BecA partnership included 6 days of desk-based work reviewing documentation provided by the program and developing a review plan (see Annex 2). The review plan framed the analysis of the overall performance of the Partnership with the following definition of 'partnership':

***"A relationship between individuals or groups that is characterised by mutual cooperation and responsibility for the achievement of a specified goal."***

Six key dimensions of partnership thus defined were explored: program design and logic, alignment with regional strategies and other frameworks, effectiveness of partnership arrangements, quality of science and impact pathways and a cross-cutting issue of attention to gender and environmental concerns. These themes were used to develop, in collaboration with AusAID, a detailed set of questions to guide the exploration of the performance of the CSIRO Africa Partnerships. (These analytical themes and the questions provided by AusAID are presented in Annex 2.)

During the period September 10–23, 2012 the Review Team collected information from documented sources and attended a three-day workshop in which each project supported under the Partnership presented an overview of its research and discussed these with the review team. The African Bioscience Challenge Fund Fellows also presented their work and interacted with the review team. The team also visited two project field sites in Kenya, following which key findings of the review in progress were presented and discussed with the Partnership management team and with senior managers from CSIRO, BecA, ILRI and AusAID. A separate meeting was held with BecA donors to seek their views on current funding arrangements to BecA and wider issues of governance and donor coordination. The main findings and recommendations were also presented and discussed separately with Sue Graves (Counsellor/ Head of Aid, East and Horn of Africa, AusAID).

## 1.3 An Overview of the Partnership and its Activities

This Partnership focuses on collaboration with and support of a unique facility in Africa — the Biosciences eastern and central Africa (BecA) initiative — that was established to mobilise bioscience research and capacity building for development. The facility's origins and ways of working are essential ingredients in the way that the Partnership has emerged and developed. It is best described in its own words:

*Biosciences eastern and central Africa (BecA) initiative is a joint activity of African Union (AU)/ the New Partnership for Africa's Development (NEPAD)- AU/NEPAD and the International Livestock Research Institute (ILRI) in support of the AU/NEPAD Comprehensive Africa Agriculture Development Programme (CAADP) agenda. The BecA Hub @ ILRI is a shared regional platform for training the next generation of African scientists in the skills and tools that will enable them to define agricultural biotechnology possibilities for the next decade. From 2007, in collaboration with various African National Agricultural Research Institutes (NARIs), Universities and global research institutes, the BecA Hub is strengthening regional capacity through research and development in a wide range of areas including research, capacity building and training and research-related services. As an African Centre of Excellence, the*

*BecA Hub is expected to contribute to the alleviation of some of the constraints associated with scientific, technical, and human capacity. The BecA Hub is affiliated with a network of regional nodes and other laboratories and organisations throughout the region. The BecA Hub facilities are world class, including a range of molecular, plant transformation, and genomics laboratories and equipment (e.g. 454 sequencing, Biosafety level 2 and 3 laboratories, and plant growth facilities). The BecA Hub hosts and conducts research in crop, microbe and livestock areas where new developments in science offer promise to address previously intractable problems constraining Africa's development. Capacity building is a major goal of all activities. Other research and capacity building activities cover agriculture and food security and their intersections with human health and nutrition, and the sustainable use of Africa's natural resources. (Djikeng, 2012)<sup>3</sup>*

## **Historical Development of the Partnership**

*(Footnotes in the following section are derived from the most recent partnership progress report)*

With financial support from AusAID, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) entered into a Phase I Agreement with the Biosciences eastern and central Africa-International Livestock Research Institute (BecA-ILRI) Hub for a six-month period from April 1, 2010 to September 30, 2010. This agreement was subsequently extended to December 2010, pending the finalisation and signature of the Phase II agreement. The main purpose of the Phase I agreement was to enable finalisation of the Partnership design and design documents of the BecA-CSIRO Partnership, identify its research, develop research concept notes, and commence capacity building activities where appropriate. The Phase II Agreement was subsequently signed by CSIRO and ILRI on behalf of the BecA-ILRI Hub on December 23, 2010.

## **Main Components**

The BecA-CSIRO Partnership design document outlines three main components:

1. **Capacity Building and Research** through the Africa Biosciences Challenge Fund to support African scientists in capacity building and in their use of the hub facilities
2. **Institutional Support** for BecA-ILRI Hub operations to facilitate the BecA-ILRI Hub's hosting of research projects and capacity building activities
3. **Collaborative research projects** in two main areas: Food and Nutrition Security and Food Security through Animal Health

## **Capacity Building**

A major part of BecA's capacity building program is supported through the Africa Biosciences Challenge Fund (ABCF), which started in 2010 through the BecA-CSIRO Partnership. The program expanded in 2012 with additional funding from the Bill & Melinda Gates Foundation (BMGF) and the Swedish Ministry for Foreign Affairs through the Swedish International Development Cooperation Agency (SIDA).

Research and capacity building under the African Biosciences Challenge Fund (ABCF) has been funded via three streams: (1) Training Workshops, (2) Provision of ABCF Research Fellowships to early career African scientists with placements for up to 6 months at the BecA-ILRI Hub (3) Institutional capacity building and visits to BecA countries to raise awareness of the hub. ABCF focuses on graduate students and early career researchers from African national agricultural research institutes and

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<sup>3</sup> Djikeng (2012) <http://aaas.confex.com/aaas/2012/webprogram/Paper5683.html>

universities.

The hub also strengthens regional biosciences capacity through short-term training, workshops, etc. Subjects have so far included the application of markers to crop improvement, molecular marker-assisted breeding, introductory and advanced bioinformatics, molecular biology, next generation sequencing, data analysis, biosafety, scientific paper writing, and laboratory management.

### **Institutional Capacity Strengthening and Awareness Creation**

The Partnership supports the BecA-ILRI Hub in targeting organisations and countries that are underrepresented as hub users.

### **Collaborative Research Projects**

AusAID supports seven research projects under the BecA-CSIRO Partnership, four of which focus on Food and Nutritional Security and three on Animal Health. Table 1 summarises the key features of these projects.

**Table 1. Key Features of AusAID-Supported CSIRO-BecA Projects**

<b>Name</b>	<b>Development rationale</b>	<b>Main lines of bioscience and other enquiry</b>	<b>Country focus</b>	<b>Collaborators</b>
<b>Aflatoxin:</b> Establishing a Regional Mycotoxin Analytical Platform and its Application in Reducing Aflatoxin Contamination of Kenyan and Tanzanian Maize	Health and income benefits from improved measurement and strategies to reduce Aflatoxin contamination in maize	Determine genetic diversity. Advance measurement tools. Modeling occurrence and risk mapping.	Kenya and Tanzania	<b>Lead group</b> BecA <b>Key collaborators:</b> Kenya Agricultural Research Institute (KARI); Agricultural Research Institute, Tanzania (ARI); Open University of Tanzania; Cornell University; University of Queensland – QAAFI; CSIRO
<b>Cavies:</b> Harnessing husbandry of domestic cavies for alternative and rapid access to food and income in Cameroon and the Democratic Republic of the Congo	Improved livelihoods and nutrition through improved breeds, production and marketing	Genetic characterisation. Improve husbandry and forage.	Cameroon, DRC	<b>Lead Group:</b> BecA <b>Key collaborators:</b> University of Dschang, Cameroon; CIAT; Université Evangélique en Afrique (UEA), DRC
<b>Mushrooms</b> Domestication of wild edible mushroom species in Eastern Africa	Improved nutrition and livelihoods through promotion of mushrooms as a potential source of micronutrients.	Genetic diversity and characterisation of wild, edible mushrooms: quality, taste, ease of propagation, market potential	Burundi, Kenya, Tanzania	<b>Lead Institution:</b> University of Dar-es-Salaam <b>Key collaborators:</b> Kenya Industrial Research and Development Institute (KIRDI); University of Burundi; CSIRO

<b>Amaranth</b> Nutritional characterisation and value addition of amaranth vegetable and grain by low cost sustainable processing: towards poverty reduction, food and nutrition security in East Africa	Improve diets and livelihoods of poor people through promotion of a traditional crop as a source of micro-nutrients and bio-active compounds.	Genetic and nutritional characterisation of varieties and processed products. Market development for new products.	Kenya Tanzania	<b>Lead Institution:</b> Jomo Kenyatta University of Agriculture and Technology <b>Key collaborators:</b> Sokoine University of Agriculture; AVRDC – World Vegetable Centre; CSIRO
<b>PPR:</b> Development of Improved Control Interventions for Peste des Petits Ruminants: Component I - Thermostabilisation of Existing Vaccines; Component II – Innovations in Vaccine Delivery Systems	Eliminate major threat to livelihoods of small farmers.	Develop thermostable vaccines. Develop and deliver vaccine mechanisms through public and private services	Uganda and Sudan with potential regional applications	<b>Lead Group:</b> ILRI <b>Key collaborators:</b> African Union Interafrican Bureau for Animal Resources the Veterinary Services of Uganda and Sudan and private and community-based animal health services providers in Uganda and Sudan
<b>CBPP:</b> Providing proof of concept for the development of an inactivated vaccine for contagious bovine pleuropneumonia (CBPP)	Highly contagious disease of cattle and buffalo with 50% mortality in newly-exposed animals. Develop a vaccine that gives longer protection than a live vaccine and which does not require refrigeration.	Evaluate potential of using inactive mycoplasma to develop a better CBPP vaccine.	Kenya, with potential regional applications	<b>Lead Institution:</b> ILRI <b>Key collaborators:</b> KARI; Centre of Animal Biotechnology, Melbourne; University of Melbourne; CSIRO
<b>African Swine Fever.</b> Understanding the epidemiology of African swine fever as a prerequisite for mitigation of disease impact on pig keeping in East Africa	Improved livelihoods of producers, butchers, processors, and traders. Prevent 100% losses in infected animals	Genetic characterisation of the virus. Development of field-based diagnostic protocols. Disease surveillance, epidemiology and testing of control measures	Kenya, Uganda, Cameroon	<b>Lead Group:</b> ILRI <b>Key collaborators:</b> DVS Kenya; MAAIF: Uganda, Edinburgh University, UK; University of Pretoria, South Africa, CSIRO, Australia, CISA-INIA, SPAIN, SLU/SVA, Sweden.

## Services and Platforms

In response to the increasing demand for research and capacity building the BecA Hub has established specialised platforms. The Partnership has supported the development of a nutrition analysis platform, which supports partners from JKUAT and other African universities mentioned in Table 1.

## **2. BecA-CSIRO Partnership Achievements<sup>4</sup>**

The BecA-CSIRO Partnership has achieved much in the two years since the Phase I agreement was signed in April 2010. During an intensive period of activity projects have been contracted and commenced, and capacity building activities with young African bioscientists have been launched and have built recognition across the sub-region. The Review Team sees some of the Partnership's key achievements as follows.

### **2.1. The Partnership**

The Review Team observes that across the whole range of the Partnership's activities there are signs of a very healthy relationship, with strong mutual respect and recognition of added value from the contributions of the two key partners, BecA and CSIRO. The respective leaders of the BecA and CSIRO inputs have a very strong relationship, and the approach adopted for CSIRO's engagement is highly appreciated by BecA. This is a true partnership; both parties deserve strong recognition and congratulations for this achievement.

The bimodal support in which funds are complemented by engagement of technical expertise is highly valued. It not only helps BecA plan and finance activities, but also helps it enhance the quality of those activities. Both BecA and CSIRO see major benefits in continuing to work together to assist BecA to achieve its goals of science leadership in the sub-region, and to have CSIRO and other Australian institutes contribute to solving Africa's food security challenges.

CSIRO and other Australian partners have engaged with BecA and eastern and central African partners and stakeholders directly through the Project teams. This aspect of the Partnership model is working well with longer-term relationships being built, which will form the basis for future collaborations.

### **2.2 Partnership Projects**

The Partnership has successfully developed a portfolio of projects with nine participating countries and over 70 partnering agencies or explicit links to key partners who will help to deliver impact.

Projects are all underway and most are progressing very well. Despite the short timeframe from project commencement to the period of this review and the complexities of multiple countries and partners, all projects have effective teams and are building a significant profile in Africa and in Australia.

The Partnership has a diverse range of partners, including NGOs, agribusinesses, universities, NARS and CGIAR centres. In addition to CSIRO, the Queensland Department of Agriculture, Forestry and Fisheries, the University of Queensland and the Queensland Alliance for Agriculture and Food Innovation (QAAFI) are also major participants in the Partnership. That diversity has allowed projects to tap into world-class African (in BecA-ILRI and wider), Australian and international scientific expertise, predominantly in the area of biosciences. This ability to access expertise is a major strength of the Partnership.

### **2.3 Science**

The Partnership bases itself in BecA-Hub, which is a well-managed organisation committed to maintaining its reputation as a world-class centre of bioscience

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<sup>4</sup> Note that this section combines material from the Partnership progress report to July 2012 with the review team's own observations.

research. The organisation is dynamic and results-oriented, and the CSIRO support has played an important role in its evolution to its current level of operation as a successful platform serving the region.

Significant scientific and application advances have already been achieved — examples include: 1) the field use of state-of-the-art diagnostic tools in aflatoxin measurement (E-nose probe) 2) PCR tests for African Swine Fever in field level 2 bio-containment labs and 3) proof of principle for the PPR vaccine and CBPP — and more are underway. Generic characterization of indigenous mushrooms, cavies and amaranth set the foundation for future application advances. Epidemiological studies and risk mapping on animal and plant diseases are showing promise for future development of control measures. There is already an impressive pipeline of scientific publications from this work. The Review Team has come away with a very strong impression that this is a place where world-class science is being conducted. These themes of research have also been extended through the ABCF.

## **2.4 Capacity Development**

The capacity strengthening aspects of the Partnership (especially the ABCF) have been successful in ensuring wider participation from the mandate region and delivery of research outputs to the wider region. It has also succeeded in initially keeping the calls for proposals quite comprehensive within the skill set available at BecA. A large number of scientists have benefited from the formal training and from working on their own projects at the BecA Hub, with high quality mentoring by BecA and CSIRO scientists. Some of these short-term fellowships have been catalysts for new work. Results from these placements have been the basis for several major projects funded by other donors (e.g., projects addressing goat genetics and Maize-Sorghum hybrids), as well as projects within the Partnership.

Other than the ABCF there is a strong capacity development dimension through the seven projects, with a key strength being the practice of science through strong teams. There has also been an additional benefit through the adoption of the BecA 'brand' of conducting bioscience for impact — with project teams on a steep learning curve of what research for impact involves. Finally, fellows from diverse countries working in the same lab at BecA have formed nascent communities of practice.

## **2.5 Communication**

With CSIRO's support, the BecA Hub now has strengthened capacity in communications. BecA scientists and Project teams have benefited immensely from this support and realise the difference this makes to achieving project outcomes, especially with connecting along the value chain, raising the profile of research, facilitating new stakeholder engagement and assisting with communicating with farmers.

## **2.6 Innovation**

Looking across the range of successes so far, the Partnership has been the driver of a number of significant institutional innovations for bioscience and capacity building. Together these make an impressive package of how to enhance the effectiveness of bioscience for development impact, and include:

11. The establishment and organisation of ABCF such that demand for places as fellows far outstrips BecA's ability to supply supervision
12. Support for projects to take bioscience to scale, especially the animal health projects with their focus on disease control in Africa



13. Selection of development problem-driven projects, with even proof of concept projects exploring bioscience breakthroughs with a clear focus on important development problems and opportunities
14. Ex ante design and redesign of existing projects to strengthen development focus — a key theme for further development as will be seen later in this report
15. The introduction of ethics protocols into the design and implementation of research projects
16. Pushing the project envelope — taking science to use rather than stopping at 'just' the scientific outcome
17. Working with complex partnerships, and learning about both the self-evident benefits, but also the challenges associated with this approach
18. Specifying impact pathways for all projects, which is a critical start to the process of taking research to use
19. World-class communication of science-for-development

### 3. Analysis

#### 3.1 Program Logic

##### 3.1.1 Overall BecA-CSIRO Partnership Intervention Logic

In its original design, as described in the BecA-CSIRO Partnership design document, the objective of the Partnership was stated as:

'Establish and implement a balanced portfolio of strategic and applied research projects that contribute to BecA-Hub targets'

This was to be achieved by the delivery of 4 Outputs, focusing on:

1. High quality research to enhance nutritional quality of foods and maintain quality along the value chain from production to consumption
2. High quality research into animal disease prevention and management
3. Increased collaboration between African and Australian scientists addressing selected constraints facing food and nutritional security, and
4. Strengthening human resources in biosciences in Africa through capacity building

The Technical Advisory Group (TAG) review in November 2011 concluded that the original Partnership Objective did not sufficiently articulate the true aim of the initiative. Through discussion with the Partnership team, a number of 'minor adjustments' to the Partnership logic model were proposed, to better reflect the revised objectives in the BecA Business Plan considered by the BecA Board earlier in 2011. These included:

- A new Partnership Objective with greater emphasis on agricultural productivity and food security
- Higher level nesting of the Partnership into the new BecA Hub Goal and CAADP Pillar 4
- Removal of redundant BecA Hub targets
- Some adjustments to Outputs

Thus the current logic model for the Partnership has the Partnership Objective as:  
'Appropriate resources for increasing agricultural productivity and food security developed and made available'

And the Outputs are:

1. High quality research to enhance nutritional quality of foods and maintain quality along the value chain from production to consumption designed and implemented
2. High quality research into animal disease prevention and management designed and implemented
3. Collaboration between African and Australian scientists addressing selected constraints facing food and nutritional security increased
4. Human resource capacity in biosciences in Africa strengthened

The current logic diagram represents an improvement on the original version, in that it is more results-focused than the previous more activity-focused version. It states that the reason for the Partnership, and the thing it leaves behind, is a number of appropriate resources that are made available for others to take advantage of.

However, the Partnership logic in this current form does not necessarily take responsibility for impact arising from making these resources available: it leaves the question unanswered of what 'making resources available' entails. As section 3.3 below will discuss, the review team believes that if we are to be able to make safer assumptions about impacts arising from the investments in BecA then the level of ambition of the Partnership will need to be enhanced, and this will need to be reflected in its intervention logic model.

### **3.1.2 Project Portfolio Intervention Logic**

As described in section 1 previously, the Partnership currently has 7 projects divided into two thematic areas corresponding to Outputs 1 and 2 in the logic diagram:

- Four projects fall under the Food and Nutritional Security (FANS) theme (Output 1), and
- Three projects fall under 'Animal Health' (Output 2)

The project selection process involved inputs from the BecA-Hub, ILRI and CSIRO as well as the African scientists involved, but the process for prioritisation is not entirely clear. It seems to have taken into account the following factors:

- A set of guidelines for selection<sup>5</sup> which were applied through a relatively informal selection process
- AusAID's desire, as interpreted by CSIRO, to fund research with relevance for women and on nutrition
- The avoidance of staple food crops with the rationale that there are so many actors working on these that the uniqueness of the Partnership contribution would be difficult to define. Moreover, priority seems to have been given to the quality of the foodstuff itself (e.g., micronutrients per gram) rather than quantity produced and consumed in the total diet.
- A desire to take forward African priorities rather than define priorities by Australians. Improvement of original designs — with particular focus on scope, development orientation and impact pathway — by some elements of the CSIRO engagement

The current portfolio can be divided readily according to the nature of the projects' justification. The three animal disease projects, and the aflatoxins project, all derive from an intervention logic that starts with the identification of a large-scale and important problem that the project is aimed to address. In contrast, the other three of the four FANS projects are more speculative in nature; they start with the

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<sup>5</sup> Including: 1. Work with NARS 2. Where Australian science, not just Australian money, could add value 3. Potential for impacts during project life 4. Science quality and interest 5. Budgets 6. Capacity building

identification of opportunities rather than problems, and are more about introducing positive change to systems than solving present problems. It appears that the FANS projects in particular, through the process described above, intentionally chose to work on products with improved nutritional content over lower nutritional value alternatives with potentially bigger impact on calorific sufficiency and food availability. This understanding of project origin translates readily to their individual project logics, with some being much clearer than others. The amaranth, mushrooms and cavies projects, in particular, appear to be somewhat lacking in a clear intervention logic: are they aimed at achieving impact via the nutritional improvement arising from their wider application, or is their impact mediated mainly through incomes of the people who produce them? The answer is a balance between the two but, unlike the animal health and aflatoxin projects, none of these projects have a clear story to help unravel these sorts of questions.

This does not, however, necessarily suggest that any projects are better than others; just that some have clearer intervention logics than others. It does not also necessarily imply that the impact pathways for the animal health projects are clearer than for the FANS projects, as will be seen in section 3.5 below, all of the projects require more work on potential pathways to impact from their research components.

### **3.1.3 Individual Project Logic**

This report does not focus on the detail of individual projects, preferring instead to concentrate on lessons from analysis of the organisational and institutional context, the Partnership program, and the project portfolios. Nevertheless section 3.5 below on impact pathways reflects on observations and lessons derived from consideration of patterns with implementation of the seven Partnership projects.

The intervention logic for each of these projects was amended during the selection process — some for the better and others less so. Each now has a relatively early version of an impact pathway to which it contributes, although all of these require further elaboration. As will be discussed in more detail below, the review team feels that the Partnership and the individual projects need to employ additional tools to deepen their understanding of impact pathways and to enhance the impact in practice of their research.

### **3.1.4 Wider BecA Intervention Logic**

The focus of this review is the AusAID-funded BecA-CSIRO Partnership, rather than the BecA-Hub itself. However, if the Partnership is to be worthwhile it must be based within an effective organisation. This section looks at the wider BecA context for the Partnership.

The rationale for BecA is rather hard to pin down from its formal documentation. Its first Business Plan covering the period 2010–2015 was produced in 2009 and sets out the Vision, Mission and Goal. However, a completely different Business Plan (2011–2015) was produced in April 2011, and was used by the TAG as the basis for the revision of the intervention logic as described above in section 3.1.1. This revised Business Plan contains a different formulation of Vision, Mission, and Goal. The team understands, however, that the Board never formally approved this revised Plan, and so it has no formal status — although most of its contents were apparently supported as the way forward. Furthermore the team also understands that another Business Plan has been produced and was recently submitted to the Board, although we have yet to see a copy.

A very straightforward vision has apparently guided the implementation of BecA's mission under Director Dr. Segenet Kelemu. She characterises BecA as having an objective with two complementary dimensions:

- Excellence in bioscience, and
- Having impact on behalf of farmers

Framed in this way it is not just the science that defines BecA's identity, but the strong desire to ensure that this science is used and applied in practice to bring benefits to Africa and its people. This vision arises strongly from all conversations with BecA leadership. Nevertheless all people consulted still feel that BecA's vision is fluid and evolving and needs further clarification as it goes forward. A key explanation for this is offered in the fact that BecA is a young organisation in its startup period, which has been driven in part by the availability of funds, and the activities attached to those funds.

There appears to be an evolution of the role of "Beca-Hub" into an integrated platform and independent research role. For example the 2011 Business Plan contains an overall BecA Goal of improving the livelihoods of the poor in Africa, which is the higher-level objective of the Partnership as presented in section 3.1.1 above. This is to be based on a Development Outcome of use of biotechnology produced through BecA efforts, the expansion of institutional capacity to use bioscience, enhanced investments in delivery mechanisms for bioscience research products, and partnerships with African partners for further delivery. This is an ambitious intervention logic, which depends strongly on a number of potentially unreliable assumptions about the ability of the systems BecA relies on for impact to play their role effectively. At the national level, universities are moving towards greater impact on development (with the assistance of regional forums such as RUFORUM) and national research institutes have developed facilities that make them both scientific and development-oriented partners. The independent research role of BecA, which invites participation from international centres and advanced research institutes, serves two purposes: credibility and research collaboration that helps make efficient use of the research capacity (and cover overheads).

Elsewhere in the document, figure 1 describes the BecA business model and in doing so appears to define impact pathways to African agricultural development as external to BecA. The issue of how far in the direction of impact should BecA itself go is one of the core themes of this review and one which we will develop during the remainder of this report. However, in discussion it is clear that there is no simple answer to how BecA will manage those impact pathways to deliver on its ambition of its world-class research being used in practice.

### **3.2 M&E**

The effective monitoring and evaluation of the BecA-CSIRO Partnership was part of the original design document and has been much discussed throughout the program's life. The 2011 TAG review had a number of firm recommendations to get it up and running, and these were incorporated into the evolving M&E framework, of which Version 3 was produced in May this year.

Observations from the team on the status of M&E include:

- M&E has not been systematically prioritised during the Partnership's life to date

- Much of the responsibility for M&E has fallen on staff of both CSIRO and BecA who are not specialists and also are not allocated fulltime to this role
- The overall responsibility for M&E for the Partnership is not clearly allocated and not necessarily with the right person
- The indicators in the present M&E framework are conservative and reflect a narrow vision for the products of BecA work

There has been a recent flurry of activity on M&E, following the TAG review last year and in advance of this Mid-term Review. In particular, version 3 of the M&E Plan is an improvement on earlier versions, and incorporates a broader conceptualisation of the role of M&E in a program such as this; an Australian consultant was brought on board through CSIRO to support M&E in both CORAF and BecA; the BecA Director recently requested the Partnership M&E staff to ensure that the system it develops also services the needs of BecA more generally; and a start was recently made in mapping out Pathways to Impact with staff of the seven Partnership projects. These were outlined in project presentations to the review team.

The review team is of the view that much remains to be done to provide the Partnership with the M&E that it needs to see through the impact-focused vision implied by the Review team's analysis in section 2.3. Some key features of the required evolution are:

- The system needs to be focused not only on reporting and accountability but also on learning for change through adaptive management
- This implies a focus not only on direct products from Partnership activities (such as numbers of publications, protocols, etc.), but also M&E, which includes consideration of outcomes (uptake of results) and eventually impacts on farmers
- A utilisation-focused evaluation that looks at the sustainability of processes, the functioning of partnerships, the evolution of policy and institutional processes, and the learning of lessons on what works and why for the broader range of influencing activities envisaged by this review
- This will require a mix of appropriate quantitative and qualitative methods and also a mix of skills among staff so that all are capable of grasping the learning challenge presented by the Partnership as it evolves in order to make sense of that to enhance future action
- Ultimately it is about bringing M&E into the heart of adaptive management for the Partnership and the wider BecA context, as well as for the individual BecA projects

The current M&E team is aware of the challenges set out here and has discussed them constructively with the review team. Its current plan is to revise the Partnership's approach to M&E in readiness for the next phase. The review team is in broad agreement with this approach, but would add that it will be important to ensure the application of excellence in M&E just as much as elsewhere in the Partnership, and there may be need for additional support to this process in future to get it right.

### **3.3 Partnership Performance**

#### **3.3.1 Alignment to Regional Priorities and Value Addition of the Partnership**

The review notes that the Partnership has followed development good practice in working with the established systems and objectives of its regional partner. BecA is a joint initiative of AU-NEPAD and ILRI, and is committed to serving the region and the

CAADP agenda in collaboration with many other organisations of a national and sub-regional nature.

It is also apparent that there is strong value addition or collaborative advantage that arises from the Partnership. BecA, and ILRI more generally, has world-class facilities and staff, allowing it to host and conduct research where new developments in bioscience promise to address previously intractable problems constraining Africa's development. Capacity building is integral to BecA's work. For its part CSIRO also brings world-class scientific credentials from across a range of expertise related to agricultural development. It is the premier science research organisation in Australia, through its flagship program on sustainable agriculture. It brings high-level expertise from within CSIRO itself and leading universities as needed to strengthen the objectives of the Partnership. Within the Partnership is access to post-graduates training in Australian universities and short-term training within the broader research system.

This review does see scope for widening the range of expertise that is mobilised through the Partnership. However, a clear conclusion is that the Partnership is fostering a mode of scientific collaboration and capacity building that is highly appreciated by BecA. CSIRO also acknowledges the benefits to its own scientists that arise from this Partnership. These include scientific discovery but also application experience in the development arena.

### **3.3.2 Quality of the Relationship between Partners**

The November 2011 TAG review described the relationship between CSIRO and BecA as interactive and collegial. The present review concurs with this finding and concludes that it is strong, based on mutual respect and a passion for their joint endeavour and that the "bi-modal" model of collaboration brings high-level scientists to the Partnership in a way that provides professional satisfaction to both parties.

The progress and achievements of the Partnership are managed by a Partnership Management Committee, which comprises the CSIRO Partnership Leader and the BecA-Hub Director. Between them they have considerable latitude to take decisions that are materially within the Partnership agreement. Provision is also made in governance arrangements for changes that fall materially outside the Partnership Agreement. These are to be referred to the Head of CSIRO's Sustainable Development Flagship and ILRI's Director General. These arrangements seem to be working well and are seen to be supporting a healthy and productive partnership.

### **3.3.3 Arrangements for Selecting and Developing Projects**

In the selection and development of projects, CSIRO made conspicuous efforts to ensure that project topics were driven by African collaborators and not by CSIRO. As discussed under the project logic in section 3.1.4 there was, nevertheless, some external direction given to the selection process, particularly with regard to selecting projects that focused on women and nutritional issues and issues not addressed by other international initiatives. This may have resulted in a trade-off being made between this focus and the scale of impact likely to be achieved through such lines of research. This is an area in which the Partnership might consider assisting BecA develop criteria for project selection that best matches its comparative advantage with opportunities for large-scale impacts.

The Review Team has already noted the important role that CSIRO played in developing initial project ideas and shaping projects toward a stronger development rationale.

### **3.3.4 Mobilizing Scientific Expertise**

The Partnership with CSIRO has allowed BecA to access world-class scientific expertise from CSIRO, and Australia more generally. This expertise has been put to good use in the research projects. This has been used in the ABCF program, for example through the scientific paper-writing workshops. The Partnership has also helped BecA access some social science expertise from Australia — notably in the African swine fever projects. However, the review is of the opinion that to date the Partnership with CSIRO has been less successful in mobilising expertise related to investigating innovation/ impact pathways and processes and a range of social science expertise with African perspectives, particularly livelihood analysis. CSIRO acknowledges this challenge. This is discussed further in section 3.5 on impact pathways.

## **3.4 Risks and Opportunities in Institutional Context of the Partnership**

The review team notes that the CSIRO-BecA Partnership operates in a wider institutional and organisational environment and that the dynamics of this environment may have implications for the Partnership and future directions it may wish to pursue. While it is beyond the scope of this review to make recommendations on some of these contextual issues (detailed below), we feel it is important to note them as these present both risks and opportunities that the future development of the Partnership needs to be informed of.

### **3.4.1 The BecA Context**

**BecA is at a critical point in its development.** During the period of the Partnership, BecA has grown from an idea to a successful research and capacity building centre of excellence on bioscience. This has been recognised by both African scientific and policy stakeholders and by donors. As a consequence both demands for its services from NARS and partner country universities and its needs for financial support from donors have increased significantly especially as the NARS are unable to create an effective demand for such services at true cost. This expansion phase, if not managed well, could lead to a dilution of strategic focus and a loss of comparative advantage. This could undermine the research, capacity building and impact aspirations of the Partnership. It also underlines the need for the Partnership to help BecA chart and maintain its strategic direction at this critical time.

**BecA is undergoing a leadership change.** The growth of BecA and its progress during the Partnership has been under the leadership of the current Director, who will leave in November 2012. This change in leadership comes at a critical point for the Partnership as it looks forward to the design of its next phase of activities based on the recommendations of this review. From the point of view of the Review Team, it will be important that CSIRO and the new leadership of BecA quickly develop the shared vision of the Partnership that exists under the current leadership and use this vision to shape the next phase of activities. In part this will be dependent on BecA maintaining its current vision and strategic direction.

### 3.4.2 The BecA-ILRI-CGIAR Context

BecA is a unit of ILRI. The Partnership Agreement sets out the role that ILRI plays in BecA:

As ILRI is the legal entity that manages the BecA Hub, the contractual relationship for the Partnership will be between CSIRO and ILRI. The Partnership will operate under the auspices of the ILRI Host Country Agreement with the Government of Kenya, which conveys many privileges for the BecA Hub operations and participation by African scientists; and the overall accountability of the ILRI Director General and Board of Trustees.

BecA's location, both physically and administratively, within ILRI is critical in enabling it to operate. It does, however, mean that the institutional arrangements governing its operation are those of ILRI and the CGIAR more generally. Currently the CGIAR is going through a reform process and this is likely to have implications that may affect BecA. The centrepiece of these reforms concerns a restructuring of donor financial support away from individual centres and special projects and into multicentre, large-scale programs referred to as CGIAR Research Programs (CRPs). This is inevitably a period of financial belt tightening. BecA, as a unit of ILRI that continues to attract considerable external special project funding from donors (including AusAID), may find that it needs to make additional financial contributions to its host and may need to defend or adapt its special status within a CGIAR institute. At this point in time it is not clear how some of these issues will play out. However, it is clear that there are a number of specific issues that are causing uncertainty among stakeholders and that there are contested points of view on what is happening and what should happen (see details below). Unless everyone has confidence that these issues are being addressed in an objective and transparent fashion, this could act as a distraction to BecA's and the Partnership's further development. Specific issues and, in some cases, ways that these are being addressed are as follows:

**The evolving ILRI-BecA-NEPAD Partnership and its governance.** The review team notes that there are a range of views held by BecA stakeholders concerning the current and future ownership and governance of BecA. It is a matter of historical record that ILRI and NEPAD co-founded BecA with the support of CIDA for the expansion and modernisation of ILRI's facilities to serve both ILRI's and the emerging CAADP agenda for biosciences. During a long start-up and construction period, ILRI oversaw the creation of the facility and operated as a donor of last resort. BecA, therefore, falls under the governance of ILRI and its board. Some stakeholders hold the view that the governance of BecA should be more directly under NEPAD and other regional stakeholders. One prominent donor even made the case to the review team for autonomy of BecA, although this view is not universal among donors. The separation of BecA from ILRI would probably involve legal and institutional complexities, not to mention financial costs that would divert attention from the development of BecA at a critical moment in its history, which it can ill afford. Recent developments include the proposal by ILRI to establish an advisory committee for BecA that would help define a more proactive role for NEPAD and other regional stakeholders. The Review is of the opinion that this proposal is a valuable development in resolving this issue and is an opportunity for donors, including AusAID, to provide proactive support that can help the ongoing institutional development of BecA.

**BecA-ILRI scientific collaboration.** The review notes the strong role that ILRI bioscientists are playing in BecA research and in mentoring ABCF interns. It is also noted that ILRI has a large body of expertise on economics and social science,



partnership development and commercialisation, all of which is highly relevant to BecA and the research being conducted through the Partnership. An opportunity exists to make more use of this expertise. It would be useful for the Partnership to explore in more detail the relevance and availability of this expertise to its projects and get a better understanding of how such collaboration could operate under the evolving CRP scenario.

**The evolving BecA business plan.** The April 2011 business plan is still considered as the current and official Board-approved business plan pending revisions that deal more completely with the “demand” side of how BecA generates resources for its ambitions and makes efficient use of available space. In a December 2011 meeting on biosciences for the poor, the Director-General of ILRI noted<sup>6</sup>:

I liked BecA’s business plan but thought it lacked the “demand side”....It’s possible that different donors have different expectations of BecA. I want these to be aligned so that I can fulfill on them....

This ongoing process of business plan development holds the opportunity to craft a strategic vision that will help tackle some of the current dynamics in the wider institutional environment. The Partnership could make valuable contributions to this ongoing process.

**Donor Coordination.** AusAID has emerged as the largest donor to BecA, although Sweden and Syngenta have had major stakes in the evolution of BecA’s programs. Donors to BecA have been sharing information and ideas informally. The review team has had discussions either face-to-face or by teleconference with BecA’s key donors. They agree that there is need for some harmonisation of approach. An opportunity exists to reduce the reporting and review burden on BecA, but also to ensure that donor support is coordinated and consistent with the support of the emerging vision and comparative advantage of BecA. Once again AusAID should play a more proactive role in this coordination process.

### **Summary of Risks and Opportunities**

BecA is at a critical point in its development. There are uncertainties arising from changes in the wider institutional environment in which it is situated. The contending priorities and perceptions of different stakeholders in this environment could distract BecA from its vision and comparative advantage. This could potentially undermine the effectiveness of the Partnership with CSIRO. There are, however, opportunities for both the Partnership and AusAID to facilitate dialogue, diffuse tensions and strengthen strategic vision. This is discussed further in the 'recommendations' section.

## **3.5 Impact Pathways**

### **3.5.1 Good Impact Practice in Agricultural Research**

As discussed in section 3.1 on program logic the Partnership seeks to support BecA’s vision of high-quality bioscience research that leads to development impact. This desire to achieve impact presents a number of challenges for agricultural and bioscience research. Emerging international experience suggests a number of good

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<sup>6</sup> <http://www.ilri.org/ilrinews/index.php/archives/category/ilri/beca>

practice points (World Bank, 2012) that are worth stating here to give a lens to explore the way impact pathways have been tackled in the projects.

- **A systems approach to defining the scope of research through a development lens:** A systems perspective on defining research questions and approaches assists in focusing on the most binding constraints on a development theme and helps map pathways to impact. While identified constraints might be bioscience questions, there will be policy, institutional and social and market issues that need to be understood and addressed at the design and implementation stages.
- **Partnership:** Partnership involves developing functional links between research and impact chain stakeholders (policy, markets, development organisations, etc.) to co-design solutions, products and delivery mechanisms. This is important for achieving impact in the immediate domain of the project as well as wider-scale impacts that arise from policy change and the development of multi-agency/ international initiatives around, for example, animal disease control.
- **Doing and learning:** This involves generating generic lessons from experiences of achieving impact to help sharpen research practice — informing strategies and priorities, institutionalising new research and delivery practices, improving capacity building strategies, and strengthening the policy and enabling environment for agricultural innovation.

This review recognises that the CSIRO-BecA Partnership has taken laudable steps in this direction towards good practice in tackling impact pathways. In respect to scope of projects, CSIRO has helped shape the design of projects so that scope of research goes beyond biophysical research to include a wider set of complementary research enquiries. For example, the ASF project was initially conceived as a genetic characterisation of the ASF virus as part of an effort to develop a rapid diagnostic tool. This focus was expanded to also explore both social and biological aspects of ASF epidemiology with a view to developing management-based control measures supported by the diagnostic tools being developed. Similarly, CSIRO has helped all projects make an initial attempt at mapping impact pathways.

In respect to partnerships a number of the projects have developed a range of alliances around their research. For example, the aflatoxin project has made links to public plant breeders in Kenya and the ASF project is partnering with the district veterinary offices in both Kenya and Uganda. The cavies project has developed an innovation platform (a way of linking together partners in a particular development arena).

This is a promising start in the process of orientating bioscience towards impact. However, the Review Team finds that there are a number of areas that need to be strengthened.

**Impact pathway analysis.** The analysis of impact pathways appears to be rather superficial and was undertaken too late to have a significant influence on the initial design of the projects and the research impact strategies used. It was also notable that while a number of projects had undertaken scientific reviews of the bioscience aspects of projects, there had been no reviews of documented experiences of earlier efforts to put research into use on these topics. For example, there is a range of experience on attempts to tackle aflatoxin in developing countries. Similarly there is extensive documented experience on novel food product development and

commercialisation, including the pitfalls that others have encountered. Such reviews may have altered research to different lines of enquiry and partnership as well as highlighting strategies that have been found to lead to unresolvable delivery/ impact bottlenecks.

**Realistic assumptions in impact pathways.** Many of the assumptions implicit in the impact pathways developed by projects are unrealistic and need to be tackled as part of each project itself. For example, the amaranth project makes assumptions about the uptake of amaranth-based products by market-based delivery mechanisms leading to impact on livelihoods and nutrition. Not only are these very brave assumptions, but they are also research questions that need to be explored to understand how impact can be achieved. Many projects make similar assumptions in the policy, institutional and markets and livelihoods space.

**Monitoring partnership development and performance.** While many of the projects indicate a wide range of partners involved, it is less clear what the role of each partner is and whether these are organisations that simply attend meetings, or whether they are co-designing project strategies, activities and delivery mechanisms, or simply waiting in the wings to adopt research products. These roles will need to vary from project to project and will change during the research and innovation process. However, the nature, quality and extent of partnership arrangements associated with the projects are not adequately considered by monitoring arrangements. This means that a key dimension of the pathway to impact is developed and managed on a rather ad hoc basis.

**Skill set to investigate, manage and monitor innovation and impact pathways and processes.** The Review Team believes that there is currently an insufficiently broad range of expertise in some projects to best develop operational impact pathways and to generate an understanding of how impact takes place. For example, senior-level expertise in social science is only found in a limited number of the projects — notably the ASF and the cavies projects. In another project social science expertise is used for mathematical modeling for aflatoxin risk mapping; however, an accompanying analysis of the behaviour of markets and people and the challenges these can place on delivery mechanisms has not been undertaken. The reviewers recognise that the expertise required goes beyond social science (which in itself includes a very broad set of disciplines). It is, nevertheless, clear that the skill set of projects needs to broaden if a research-for-impact perspective is to be achieved.

These challenges have a number of implications for the projects:

- **Undermines the ability of projects to achieve impact.** In the current scenario the most likely outcome will be that many of the projects end up having completed high-quality research, but the assumptions about impact pathways may prove to be unrealistic and the partnerships and networks developed by the projects will not be sufficiently sustainable to enable the policy and institutional developments needed to put research into use for impact.
- **Causes uncertainty about how far to go down the impact pathway.** In the current situation, the way projects use the “impact pathway” in the different topics demonstrates an incomplete understanding of the scope of research and partnering activities that are realistic and within the comparative advantage of bioscience projects. A better understanding of impact pathways would help better define the scope of bioscience projects and would assist in decisions on the types of partnerships needed to both undertake

complementary research activities as well as create functional delivery mechanisms for research.

- **Limits systematic investigation and generation of generic lessons on how to use bioscience for impact.** In the current scenario, projects have neither been set up to learn their way towards achieving impact (chiefly a monitoring function) nor to learn generic lessons (a research function). This weakens the ability of projects to navigate complex and evolving innovation processes and impact pathways. It also compromises their ability to inform future bioscience research on high-performing research strategies (nature of pathways; types of partners; mix of disciplines; boundaries between research action, policy and development; and the scale, type and timeframes of impacts that can be expected). These generic lessons could play a major role in sharpening the definition of priority areas of research and better define the comparative advantage of bioscience in wider development initiatives and capacity building approaches (see below).

This review acknowledges that the Partnership and its projects are at a relatively early stage of development and that the establishment of projects has been an important step in facing up to the challenge of designing a portfolio of research-for-impact projects. This was necessary to help reveal the magnitude of the challenge and the Review Team congratulates the Partnership on the progress it has made to date. The weaknesses identified above have also been acknowledged by the Partnership and its projects. Ways of addressing these are discussed in the 'ways forward' and 'recommendations' sections.

### 3.6 Capacity Development

As already discussed the capacity building aspects of the Partnership have included a well-received and appropriate institutional innovation element in the form of the ABCF program. The review notes that capacity has also been built in the sense of a wider set of linkages around projects and between ABCF fellows and other researchers and impact pathway stakeholders, including policymakers. If developed this capacity could start to assume the role of communities of practice around specific bioscience-for-development themes. The review also sees a number of dimensions of capacity building that could be further strengthened.

**Skills on using bioscience for impact.** Currently the ABCF fellows do not receive specific mentoring or formal training through short courses on using bioscience for impact. It is understandable that the primary skills building need to be on bioscience. However, since the vision of BecA and the Partnership is about creating excellence in bioscience for impact, it is important that the next generation of African bioscientists is equipped with an understanding of the role science plays in the wider process of innovation and impact. This sort of rounded expertise should be what underpins the BecA brand of capacity building. Stronger impact learning from the Partnership's projects would feed directly into this form of skill building.

**Building links to and from capacity in the private sector.** Currently almost all ABCF fellows are from universities or public research organisations. This is understandable, given that private sector bioscience capacity is at a fairly early stage of development in Africa. However, it does mean that the BecA alumni is not developing links with the private sector and gaining exposure to their way of working, particularly in terms of commercialising bioscience products such as vaccines. The Partnership needs to keep in view the role the private sector is likely to play in

bioscience applications in the future and address the capacity building needs that emerge from this.

**Supporting emerging platforms, networks and communities of practice.** A number of the current projects have established multi-stakeholder platforms as a way of bridging science and development; for example, the cavies project. These platforms represent an important form of capacity that now and in the future will support the use of bioscience for development. The Partnership needs to give some thought to how these capacities can be sustained beyond individual projects. In the same vein the nascent communities of practice and networks of BecA alumni and its partners that are emerging around research and innovation themes would benefit from further support and organisational focus. This would strengthen the long-term sustainability of these critical dimensions of capacity. Platform development could be given more attention beyond the scope of projects — such as sustainability considerations and creation of communities of practice. In this respect, its links with ASARECA and sub-regional organisations such as RUFORUM enhance BecA's role in research and capacity building.

### **3.7 Cross-Cutting Issues**

#### **Environment**

Agriculture is an environmentally sensitive sector. Although the risks to the environment arising from research activities might be modest, it is important that due consideration is given at the time of project development.

BecA, under the stewardship of ILRI, has well-developed procedures and arrangements in place for managing biosafety/biosecurity hazards in its laboratories. However, BecA does not currently have any specific requirement or procedure for environmental screening or environmental management of research projects, particularly for research and development activities it supports in the field.

Under the Environmental Protection and Biodiversity Conservation Act, all activities supported by the Australian aid program overseas are expected to satisfy similar environmental screening requirements as projects in Australia. In essence, this boils down to ensuring that prior to project commencement:

- (i) proposals are assessed to identify any activities that have the potential for significant environmental impact; and
- (ii) where environmental risks are identified, measures are taken to manage those risks in order to minimise or mitigate potential adverse impacts.

The 2011 TAG recommended that a simple environmental screening process be introduced to ensure that potential negative effects on the environment are identified early and appropriately managed. The Management Committee has agreed with the recommendation and proposes to introduce such a process before the commencement of Phase III. In the meantime, the M&E framework includes an annex that briefly assesses the environmental benefits and risks of the existing projects. In developing its environment screening process, it would be useful for BecA to review the Environmental Management System developed by CORAF/WECARD, which could provide helpful suggestions on how to manage these issues in BecA.

## Gender

In many respects, the program to date shows a commitment to gender:

- Benefits for women and children highlighted in goals of the BecA Hub
- Two senior management positions held by women, including the Director
- Efforts made to ensure a reasonable proportion of partners and ABCF fellows are women and this is increasing above the benchmark of 33%.
- Signs that efforts are being made to include women in participatory work in the field

However, there is no formal requirement to address gender in this way in project selection and program management. It would be better to have a clear policy and strategy on this, to ensure it is not left to chance. The M&E Plan indicates that the Partnership will support the implementation of the BecA Gender Strategy. It is indicated that this will occur after the implementation of the ILRI Gender Strategy. ILRI has prepared a draft Gender Strategy, which will be considered by the ILRI Board at its next meeting.

## 4. Ways Forward

The review finds a highly successful partnership with a successful partner (BecA) that is growing its way into a critical role within the African agricultural research-for-development landscape. The research and capacity building supported through the Partnership has the potential to make major advances in the use of bioscience that will lead to both immediate and long-term development impacts. The Partnership also has the potential to help BecA strengthen its role as a centre of excellence for bioscience for impact in Africa. In its third phase the Partnership should focus on the opportunity that exists for realising this potential for achieving impact and strengthening BecA and its emerging role. Looking forward, the Partnership needs to re-orientate in a number of ways that would allow this happen. Given its strong performance to date, the review is confident that the Partnership is capable and well placed to achieve this reorientation. This will involve changes at the level of the Partnership and its projects, at the level of the institutional setting of BecA and at the level of the CSIRO partnership in West and East Africa as a whole.

### 4.1 Partnership and Project Level

**Strengthen the role of CSIRO in accessing high-quality expertise in science and impact.** A wider range of expertise is required in projects to better understand innovation processes and impact pathways. The expertise required sits across a range of social, economics and policy studies disciplines coupled with experience of the African/ development setting. CSIRO needs to become a broker of excellence — in areas where it does not have the expertise in its existing role — as well as a supplier of expertise that it has or is otherwise familiar with. This will involve mobilising the best people irrespective of where they come from.

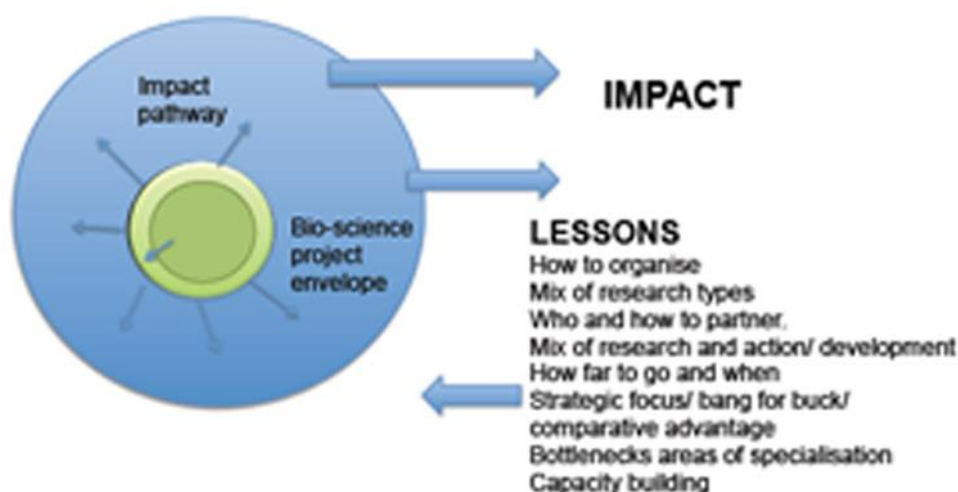
**Strengthen the analysis of innovation processes and impact pathways in projects.** To achieve impact from projects the Partnership needs to strengthen its analysis of innovation processes and impact pathways associated with the projects. This would help better identify researchable assumptions beyond bioscience (particularly policy, institutional and livelihood issues). It would also help better identify the key stakeholders and partnerships needed for the co-design of research

products and the development of impact pathways as well as better defining the role these organisations should play within the research process.

**Expand the scope of projects.** In many cases the scope of projects needs to increase to tackle a range of research, institutional and policy issues that constitute the impact pathway of research. This will entail an expansion of the types of research topics that are addressed and an expansion in the range and role of partners in the projects. While this runs the risk of diluting the unique comparative advantage of projects seeking to make use of bioscience expertise, this needs to be viewed as an experiment that explores the nature of impact pathways for this sort of scientific expertise. It needs to be recognised that these impact pathways are currently poorly understood and often underdeveloped. A better understanding of these pathways will help identify effective innovation pathways that, in the future, can be led and championed by other organisations and regional and continental initiatives, allowing BecA to focus on its comparative advantage in bioscience. It has been noted that in BecA's management of BioInnovate it is already moving into this space and this is compatible with where the Partnership projects need to move.

**Strengthen institutional learning for impact.** A learning perspective is the key ingredient that is currently missing from the projects and the Partnership as a whole. Its role is critical in achieving impact both in the framework of current projects but also in terms of future research and capacity building around bioscience use for impact. Giving this sharp operational focus at the level of both projects and the Partnership as a whole will help address the impact expectations of AusAID for its current investment, but perhaps, more importantly, it will help BecA deliver on its overarching vision as a centre of excellence of bioscience for development. In the diagram below the central green core is bioscience research; the surrounding light green represents the current extent that projects are researching and engaging impact pathways; the blue outer circle describes the scope of potential impact pathways with the arrows indicating that the scope of bioscience projects needs to expand further into this space. This will allow projects to achieve outcomes of the Partnership and lead to development impact. It will also allow the Partnership to learn lessons on how to achieve impact and this will strengthen the capability to use bioscience for impact in the future.

# Win-Win Opportunities



**Introduce impact pathways perspectives in capacity building.** The ABCF program will play a key role in developing the next generation of bioscientists in Africa. An opportunity exists to ensure that these bioscientists are equipped with perspectives that allow them to locate their expertise in the wider process of innovation and impact. This could be achieved by both internships in bioscience for impact projects as well as by introducing specific modules on bioscience for impact in formal training courses.

## 4.2 BecA–ILRI and Wider Context Level

The Review Team consciously stays away from specific recommendations on BecA and the BecA-ILRI partnership; its focus is on the effectiveness of the BecA-CSIRO Partnership. That being said, there are several issues that can be treated as contextual variables, which will affect decision-making for a proposed third phase of the project. These include the stability of the ILRI-BecA-NEPAD partnership, the governance of that relationship, agreement on the mission and mandate of the arrangement, and the need to have an evidence-based negotiation around the cost and maintenance of this joint venture.

## 4.3 Overall CSIRO Partnership

The review has now looked at the CSIRO Partnerships in both West Africa with CORAF and East Africa with BecA and this highlights an opportunity that emerges across the two partnerships in the area of using science for impact and development. This goes beyond our review of CSIRO and BecA, but is discussed here as it has implications for how the CSIRO-BecA Partnership moves forward.

The partner organisations in the two regions have both differences — biosciences in East Africa and farming systems research in West Africa — as well as similarities. Both organisations have an explicit role in building capacity to use research for the development objectives articulated in pillar IV of the CAADP agenda.



The review findings, and suggestions for strengthening both partnerships, while differing in detail are also remarkably similar in their main thrust. Namely, both partnerships, with appropriate reorientation, have the potential for not only delivering impact from agricultural research, but also have the potential to pioneer new ways of using research for impact and building regional capacity to do this. The opportunity therefore exists for CSIRO's Africa Partnership to bridge these two partnerships with a mechanism that adds value over and above the sum of the individual partnerships.

This bridging device would not only support impact learning in East and West Africa but also act as a clearing house for lessons that can be used to influence a wider set of organisations that are grappling with the challenge of using agricultural research for development — SROs, AU, CAADP, bi-lateral and multilateral donors, etc. The precise nature of this device is a design question that is discussed further in the recommendations. The opportunity here, however, is that it creates a **third impact pathway** for AusAID's investment that has the potential to lead to very large-scale impacts sustained by fundamental change in how agricultural research is used for development in the region.

The review also notes that as part of the CSIRO Africa Partnership, CSIRO has established a Learning Project. This project, led by Monash University, Australia, is designed to help CSIRO learn about its engagement with its African partners in East and West Africa. The review team has read the design paper (Ison et al., 2012) for this project and discussed the project with a number of CSIRO scientists. A number of observations emerge. CSIRO has used the project to bring scientific rigour to the way it learns about its experience of collaborating in agricultural research for development.

- The theoretical framing and language of the project design, while certainly robust, tends to act as a barrier to participation by non-specialists.
- CSIRO scientists are struggling to see how the approach can help them answer pragmatic questions about better ways of doing research.
- The learning objectives appear theoretical, contributing to the science of learning, rather than the practice of agricultural research for development.
- Ethical protocols are cumbersome and discussions with CSIRO scientist suggest there are tensions around the issue of authorship of publications.
- The project has very limited interaction with the African partners and is largely Australia-based.

The review acknowledges that this is a perfectly legitimate and valuable exercise for CSIRO to undertake and it is up to them to negotiate with its partners in Monash University about how this exercise could be made to deliver CSIRO's desired outcome. However, the review strongly recommends that this activity not be seen as a substitute for the development of an impact learning perspective in each of the East and West Africa Partnerships and also not as a substitute for a learning and influencing device that links the two partnership. This needs a much more pragmatic and embedded approach to learning that keeps in balance the linked objectives of achieving impact and learning how to achieve it. CSIRO's Learning Project should not become a distraction to the already challenging task that CORAF and BecA face in establishing their own learning systems.

### **Summary of Opportunities**

The Ways Forward suggested above are certainly challenging, but these present important opportunities that are worth highlighting.

- Better impact from projects
- Better impact from capacity building efforts
- Strengthened capacity in BecA
- Strengthened capacity in the wider bioscience innovation landscape and the future impacts from this (new communities of practice, BecA alumni backstopping private sector activity, etc.)
- Strengthened ability to influence the wider agricultural research for development community
- In the longer term, wider scale and sustained impacts

## 5. Recommendations

The previous section on Ways Forward gives details of the key challenges and opportunities that the Partnership faces and that the review recommends need to be addressed. The focus in this section is the ways these issues can be operationalised in the design of phase 3 of the Partnership.

### 5.1 At the level of the Partnership and the projects

#### Challenges and Opportunities

- Strengthen the role of CSIRO in accessing high quality expertise in science and impact
- Strengthen the analysis of innovation processes and impact pathways in projects
- Expand the scope of projects
- Strengthen institutional learning for impact
- Strengthen impact perspectives in capacity development

**1. Create a focal point in BecA/ the Partnership for understanding innovation processes, impact pathways and learning.** The Partnership management team currently lacks specific expertise in the area of understanding innovation processes, impact pathways and learning. This type of expertise is required so that the Partnership can act as an “informed buyer” of expertise to service these needs in projects. The opportunity also exists here to strengthen these perspectives in BecA at a time when it is sharpening its strategic focus and impact. The Partnership could do this by supporting the recruitment into BecA of a senior innovation and impact scientist (for want of a better title) as a way of embedding this expertise and piloting its value in a centre of bioscience excellence. This individual could also act as a champion for monitoring and learning perspectives in and across projects and more generally as a champion and focal point for efforts to achieve impact through bioscience research.

**2. Partner to access and broker new skills in projects.** Projects will need a greater quantity and range of research and allied expertise on innovation processes and impact pathways as well as research expertise on institutional, market, policy and livelihoods topics that are likely to emerge as issues that need to be understood and resolved in impact pathways. It is neither feasible nor desirable to expect BecA to be able to provide all of these skills. The most efficient way of accessing these

skills for individual projects is to partner with organisations that have this expertise, preferably from within the region but also internationally. One option might be for BecA to form an alliance with one or more organisations that can provide these skills across a number of projects. The clear advantage of partnering in this way is that it allows the Partnership to access regional and international sources of excellence on these topics without diluting the core bioscience capability of BecA and the Partnership projects. A partner at the level of the Partnership could also help CSIRO broker excellence in the area of innovation processes and impact pathways.

**3. Practice adaptive management.** An explicit emphasis in projects on analysis and engagement with evolving impact pathways implies that during the course of a research project unexpected areas of research may need to be done (which may require different research skills and partners) and that unexpected impact pathway partners might need to be brought into the project. This suggests that projects will need to adopt an “adaptive management” approach to running projects and that this flexibility will need to be reflected in financing and reporting arrangements. Providing a flexibility fund in projects for unforeseen expenditure is one way this could be achieved.

**4. Adopt process monitoring arrangements.** A shift to projects that include an enquiry into innovation processes and impact pathways as part of bioscience research projects has implications for the role of monitoring and the types of monitoring arrangements that are needed. Monitoring needs to play a much stronger learning role: feeding adaptive management, tracking institutional changes in impact pathways, and developing plausible causal connections between these institutional changes and impact. A particular challenge is that indicators of progress cannot necessarily be defined at the outset of the enquiry. There is a range of techniques that have emerged from the development sector that address these challenges and is now starting to be applied in agricultural innovation projects (a review of these techniques and their uses can be found in World Bank, 2012). Specific expertise in these techniques is also an issue that the Partnership will need to address as it moves forward.

**5. Organise learning in projects.** The core of the recommended way forward of this review concerns both the doing of research for impact as well as the learning how to use research for impact. This learning needs to be organised at both the project level and at the Partnership level. At the project level, while an appropriate monitoring system is key in driving an adaptive approach to achieving impact, this needs to be full embedded in the projects and not viewed as a distracting add-on. This implies that a more reflective culture is developed in projects; and this can be difficult in an institutional setting where funding imperatives focus on reporting success. This can be tackled by ensuring that in projects or at the level of the overall Partnership there is a champion encouraging reflective learning (see point above on focal point in BecA). Learning workshops, write shops, the development of institutional histories of projects and positive deviance exercises are ways in which project scientists and their partners can be drawn into this learning agenda. (Practical advice and examples of using these approaches can be found at [www.cgiar-ilac.org](http://www.cgiar-ilac.org).)

**6. Organise learning in the Partnership.** At the Partnership level, learning needs to assume a different form than at the project level. It needs to be more concerned with identifying and reporting high-performing research approaches that lead to impact. This should have a more research-like flavour, requiring critical analysis and the distillation of key policy and practice messages. To address this, the Partnership needs to give this sharp operational focus by creating a specific learning project for its work with a well-defined set of learning objectives. Examples of these learning

objectives might include the following: impact assessment of different themes of research, conducting trans-disciplinary research for impact, commercialisation of research products, working effectively with the private sector for impact, managing multi-stakeholder consortia in animal health interventions, policy engagement and advocacy, and capacity building for impact. While these enquiries will require expert input, publication and authorship should be inclusive of scientists doing the biophysical research projects and that ultimately generate these lessons.

**7. Create professional incentives for scientists in impact projects: establish a BecA “brand”.** From the outset it needs to be recognised that the core comparative advantage of the Partnership's projects is excellence in bioscience research. The adoption of an impact orientation and learning about impact orientation approach must not be allowed to dilute this bioscience excellence. Scientists must continue to conduct and publish high-quality bioscience research. One of the key challenges in making this approach work is in developing productive relations between bioscientists and other research disciplines and a range of partners in impact pathways. Finding professional incentives for them to do this will be as important as the mechanics of building teams and organising reflective learning exercises. One way that the Partnership could assist here is to help BecA build an internationally recognised brand in excellence in bioscience for impact. By doing so, scientists would gain recognition not only in their own disciplinary science communities, but also in the international development sector more generally. This would assist in attracting funding for future research as well as helping with professional advancement.

The Partnership already has a strong development communication component. It might also consider ways of strengthening the BecA alumni; supporting scientists to present their work in international development forums; expanding the ABCF program and short-course program to cover bioscience for development topics; developing an in-house discussion paper series on bioscience for development, etc.

**8. Strengthen capacity development for impact.** Adopting a stronger impact and learning orientation to bioscience research in projects also presents opportunities for the capacity building efforts supported by the Partnership. Embedding a champion for this perspective within BecA will strengthen BecA's capacity, not only in the development of high-performing research approaches, but it will also contribute to further developing the strategic focus of BecA by helping prioritise research themes and partnerships with high impact pay-offs. At the level of the ABCF and the short-course program it offers the opportunity to expose fellows to research practices that lead to impact. Lessons about achieving impact might form part of the short-course content of existing training programs or could even be developed as specialised modules. At the level of developing the capacity of the wider African bioscience landscape it will help BecA focus more clearly on the composition of networks and consortia that need to be developed to utilise bioscience for impact. The Partnership might consider how to support the emerging communities of practice consisting of bioscientists, the private sector, and development organisations and policy actors that are associated with the major themes being addressed.

## **5.2 At the BecA-ILRI Institutional Context Level**

### **Challenges and Opportunities**

Continue a process whereby all stakeholders have confidence that points of tension, clarity and vision are resolved in an objective and transparent way.

### **Win-win scenario**

**1. Further development of BecA governance arrangements.** The proposal to establish an advisory committee for BecA is the start of a process of including a wider set of African stakeholders in its development of a vision and direction. This could be a powerful development if coupled with strengthened evidence and strategic planning capabilities in BecA. This would be particularly so if the governance structures include AU-NEPAD and relevant SROs to ensure alignment with CAADP objectives.

**2. Continued development of BecA strategic focus.** BecA is at a point of its development where it needs to make choices about how best it can deploy bioscience for impact. To make these choices it needs stronger evidence about the nature of impact pathways and impacts from different interventions. This evidence would help it hone its strategic focus and build capacity in line with its comparative advantage. This would help better define its role and modus operandi in the evolving institutional context in which it sits.

**4. Strong BecA links to demand from regional/ African initiatives.** With a clear strategic focus based on its comparative advantage in targeting impact, and with African governance arrangements, BecA could start to build links to research demand from CAADP and other regional and sub-regional initiatives.

**5. Stronger Donor Coordination.** Improved donor coordination would build commitment to the goals of putting biosciences into use and a shared concern for results-based management. A key role of donor coordination may be to facilitate dialogue around the changing institutional context of BecA — its governance, its costing and its strategic focus. There seems to be support for AusAID, as the donor with the largest current investment in BecA, to take the lead in this.

### **5.3 At the CSIRO Africa Partnership Level**

#### **Challenges and Opportunities**

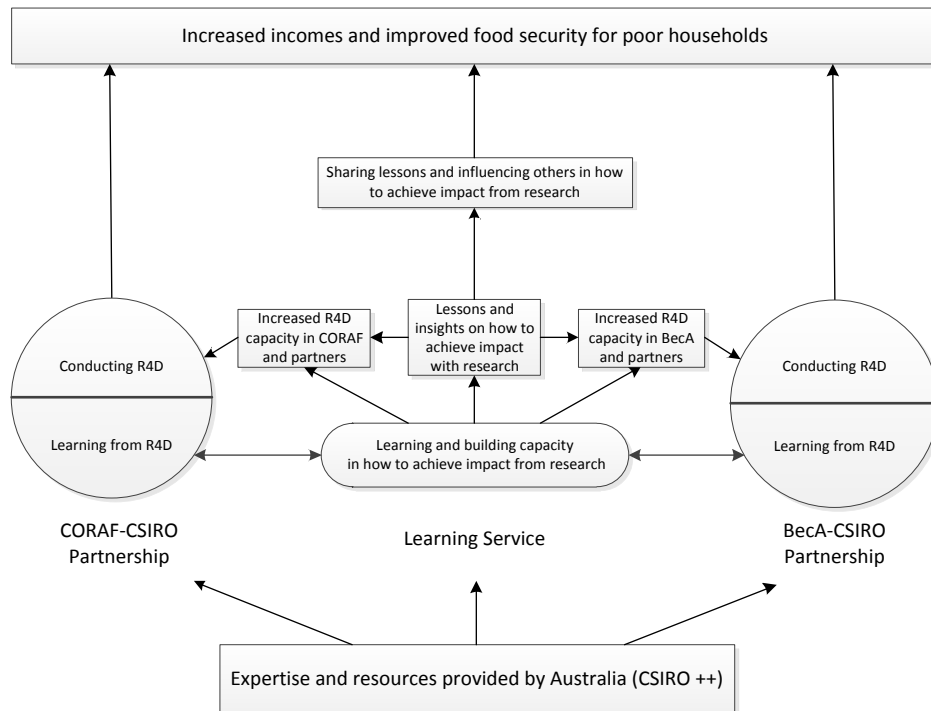
Develop an overall program logic that adds value to the CSIRO Partnership in Africa.

#### **Recommendation**

##### **Connect East and West with a learning and influencing mechanism**

In the current phase of the CSIRO Partnership program, the main element that has linked the two partnerships (with CORAF and BecA) was CSIRO as the common partner, providing expertise and resources for both. There has otherwise been no meaningful logic for combining the two programs, apart from a general desire in both to conduct research that leads to development impacts, under the broad umbrella of the CAADP objectives.

The Review Team proposes that for the next phase, a new element be added to the Partnership program to strengthen each of the Partnerships, but also build a basis for cooperative effort between the two around a common objective: learning about and building capacity in how to undertake research to achieve development impacts. The following diagram illustrates the logic for how such a design might be structured, should the partners agree to this.



The diagram sketches out some of the basic elements of a program logic for the next phase, but would need to be developed into a more complete program logic or theory of change during the design process. The aim should be to develop it so it can nest within the theory of change currently being developed by AusAID’s Africa team for the food security delivery strategy.

There has been discussion of the potential for CSIRO to take prime responsibility for the selection process for AusAID’s program of agricultural PhD scholarship in Africa. If this were to proceed, it could be integrated into the learning and capacity building functions outlined in the program logic above. This would result in a much more substantial capacity building component of the program and provide opportunities for forging closer synergies between the CSIRO partnerships and the scholarship program (e.g., greater opportunities to select PhD candidates with associations to the partnership program and other Australian aid programs, greater opportunities to support PhD scholars researching the policy, institutional and operational challenges of research for development, etc.).

In keeping with the aim of demonstrating excellence in research for development, it would be appropriate in phase 3 to supplement CSIRO’s scientific expertise with deeper expertise in development disciplines relevant to the program. This could be achieved by CSIRO contracting in individuals with relevant expertise and international experience or partnering with other organisations that have the required expertise.

Included in the diagram above is an activity around sharing lessons and influencing others in how to achieve impact from research. This would provide a vehicle for the program partners to start influencing other stakeholders beyond BecA, ILRI, CORAF and their immediate partners, and would open up an avenue for impact on a broader scale in Africa and elsewhere.

### Recommendations for the Design Process

The development of the design for phase 3 should be a participatory process, involving BecA, CSIRO and AusAID. It should also, if possible, involve at least one member of the Review Team to ensure the insights from the review are carried forward effectively into the design considerations. Terms of Reference for the design would need to be endorsed by the three partner organisations, as well as AusAID.

Inputs should also be sought from gender and environment specialists familiar with such programs in developing countries. A peer review process of the design document should be used to bring in wider perspectives. These perspectives include an Africa regional perspective, a bioscience perspective and a development rationale perspective.

The design process should include a review of fiduciary risks — and how the program might best manage those risks — by a specialist with experience working in African institutions. The same specialist might also be tasked with analysis of the cost structures and budgets of the various partnership arrangements, unless this has already been undertaken by then (it could perhaps be commissioned by the BecA donors group).

The existing Partnership program and funding will end by mid-2013. To allow sufficient time for securing appropriate personnel and preparation of contracts, etc., the design will need to be approved by CORAF/WECARD, BecA, CSIRO and AusAID by March or April 2013 at the latest. Working back from that deadline, it would be best to have the main part of the design process completed by the end of December 2012. Given the competing commitments in December, the key month for the design process would probably need to be November 2012.

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## Annex 1

# MID-TERM EVALUATION OF THE CSIRO AFRICA FOOD SECURITY PARTNERSHIPS WITH CORAF AND BECA: TORS

### Background of the program

As part of AusAID's four year African Food Security Initiative (AFSI), Australia is funding a A\$12m CSIRO partnership with the Western and Central African Council for Research and Development (CORAF/WECARD) and a A\$10m CSIRO partnership with Biosciences Eastern and Central Africa (BecA). The activity which runs from 2010 to 2013 aims to lift food security and agricultural productivity in Africa through joint research; working with and building the capacity of African agricultural organisations.

The CSIRO partnership program is aligned with the framework of the Africa Union's Comprehensive Africa Agriculture Development Programme (CAADP) and is accordingly is being delivered through regional organisations to further build African capability in agricultural development.

AusAID Africa branch is proposing to continue funding past the 2012-13 financial year and a senior management decision is being sought on this. This evaluation will form part of the decision making process.

AusAID is scaling up its food security support in Africa and several new programs/activities are being funded in 2011-12. The Africa Food Security program has been organised into two portfolios comprised of activities focused on a common set of objectives. The CSIRO partnership was the first and is one of the largest activities and sits under portfolio one. The Food Security Program is currently revising its program strategy.

The portfolio details are as follows:

**Portfolio one: Building agricultural productivity through improved research and adoption.** The activities in this portfolio directly address availability related food security challenges (and may indirectly address food access issues). The activities have a strong regional component and broad geographic spread.

**Portfolio two: Building community resilience and sustainable livelihoods.** The activities in this portfolio directly address access-related challenges to food security (and may indirectly address food availability issues). It will strengthen our bilateral engagement in small number of priority countries.

### CORAF/WECARD

CORAF/WECARD is the primary agriculture research organisation in West and Central Africa. Australia's partnership with CORAF/WECARD focuses on Farming Systems Research and Animal Health Research projects in the sub-humid-semi-arid region of West and Central Africa. Seven AusAID and CSIRO funded projects are underway in Senegal, Mali, Burkina Faso, Niger, Chad, Cameroon, Ghana, The Gambia and Benin. Each project includes West African National Agricultural institutional partners, sub-regional agribusiness partners as well as experienced researchers from CSIRO.

### Partnership objectives

The CORAF/WECARD partnership contributes directly to the implementation of the CORAF/WECARD operational and strategic plans and to the achievement of CAADP Pillar IV in West and Central Africa, specifically, to:

- Add value to crop productivity through more efficient water and nutrient use and management
- Add value to livestock productivity through better feed and animal disease management
- Disseminate relevant agricultural knowledge at the farm and community level
- Build the capacity of institutional partners and community stakeholders
- Develop a research portfolio aimed at addressing market access and informing policy

### **BecA**

The BecA-CSIRO Partnership is a program developed by the BecA Hub, AusAID and CSIRO, which has been framed within the CAADP policy framework for African agricultural development. The Partnership addresses CAADP issues by contributing to CAADP Pillar IV, with implementation of projects and other activities based on the guidelines provided under the Framework for African Agricultural Productivity [FAAP] developed by the Forum for Agricultural Research in Africa [FARA].

CAADP and FAAP provide the strategic basis for agricultural research, technology dissemination and adoption activities throughout African agricultural research

The BecA Hub has been created by AU-NEPAD under the Comprehensive African Agricultural Productivity Program [CAADP] to service the needs of countries in east and central Africa. CAADP's goal is to support agriculture-led development that eliminates hunger and reduces poverty and food insecurity, generating agricultural growth.

### **Partnership objectives**

The BecA-CSIRO Partnership project and capacity building activities have been designed to contribute to a greater or lesser extent to CAADP strategic policies. Within this context, the overarching objective of the BecA-CSIRO Partnership is: **Appropriate resources for increasing agricultural productivity and food security developed and made available.**

### **Purpose of evaluation**

AusAID is consolidating its food security program and increasing its focus on managing for results. The Africa food security team needs to both appraise progress of its activities, and map future directions for the program. The evaluation will be immediately useful to the following stakeholders:

- AusAID senior management
- AusAID and CSIRO desk officers
- CORAF and BecA program and project managers

AusAID senior management will use the findings of the evaluation to verify effectiveness of the CSIRO partnerships and make decisions about how to continue funding the CSIRO partnership activity.

AusAID and CSIRO desk officers will use the findings and recommendations of the evaluation to inform any changes that need to be made to the implementation of the current phase of the activity.

The evaluation will also be used to inform future directions. The design of the extension of the partnership activity will need to ensure necessary outcomes can be met and contain a monitoring and evaluation framework which can capture these outcomes and results. The robustness of the program logic also needs to be examined to ensure the next phase of the partnership is able to produce the stated end of program outcomes.

### **Objectives and evaluation questions**

The mid-term evaluation will **report on progress** towards program implementation, make detailed **recommendations to improve the overall quality** of the CSIRO African partnerships, **develop options to guide the design of a second phase of AusAID support** to 2015-16 and suggest strategies for how the program might be scaled back or concluded post 2015-16.

The evaluation will be based on two field missions; one reviewing the CSIRO partnership with CORAF/WECARD and the second reviewing the CSIRO partnership with BecA. These will need to provide an assessment of how well the CSIRO partnerships have been carried out to date, based on evaluation of the performance and progress of the research projects, engagement in capacity building with African partners and constraints or issues encountered in implementation.

Drawing from the field visits for each of these missions an overall evaluation report will be completed which will address specific evaluation questions.

AusAID will provide evaluation questions, corresponding to these parts. The evaluation team will be given the opportunity to review and revise these questions as part of the evaluation plan preparation process. The questions for the two field missions will address the OECD/DAC criteria and look at effectiveness, impact, relevance, sustainability and efficiency of the partnership activity based on the design and its implementation. The overall evaluation will address whether the program logic in the design documentation is to result in higher level development outcomes. It will also provide recommendations on changes to the design of the partnership activity that can improve ability to reach the development outcomes. Further, it will develop options to guide the design and development of a second 3 + year phase of Australian Government funding for the partnerships, and consider possibilities for program consolidation at the close of this second phase of funding.

Three separate reports will be provided; one for each field mission and an evaluation report for the overall AusAID–CSIRO partnership.

## Evaluation process

Task	Time allowed and due dates	Details
<p>Produce evaluation plan for the CSIRO-AusAID strategic review</p> <p>Produce evaluation plan for the CORAF partnership mid-term review</p>	4 days allocated	<p>In consultation with AusAID officers:</p> <ul style="list-style-type: none"> <li>-review and revise evaluation question provided by AusAID</li> <li>review ToC of activity provided by AusAID</li> <li>-review design documentation</li> <li>-develop plan and share with AusAID officers</li> </ul> <p>(plan should include division of responsibility among the evaluation team)</p>
Field visit to Senegal and Burkina Faso	<p>12 days in-country allocated, 2 days travel time.</p> <p>Dates: 22 June – 4 July 2012</p>	<p>Inspect a selection of projects as determined in evaluation plan</p> <p>Meet with various partners</p> <p>Full itinerary will be prepared by AusAID in consultation with the team and CSIRO</p>
Prepare Initial report on CSIRO - CORAF/WECARD partnership (for review and comment by AusAID).	<p>4 days allocated</p> <p>Due 3 August 2012.</p> <p>Comment from AusAID will be provided by 17 August 2012.</p>	Maximum of 20 pages excluding appendices.
Produce evaluation plan for the BecA partnership mid-term review	2 days allocated	<p>In consultation with AusAID officers:</p> <ul style="list-style-type: none"> <li>-review and revise evaluation question provided by AusAID</li> <li>- review ToC of activity provided by AusAID</li> <li>-review design documentation</li> <li>-develop plan and share with AusAID officers</li> </ul> <p>(plan should include division of responsibility among the evaluation team)</p>
Field visit to Kenya	<p>10 days in-country allocated, 2 days travel time.</p> <p>Dates: 10-20 September 2012</p>	<p>Participate in BecA- CSIRO annual review process</p> <p>Visit laboratory facilities</p> <p>Conduct relevant field visits in Kenya</p>
Prepare Initial report on CSIRO-BecA partnership (for review and comment by AusAID).	<p>4 days allocated</p> <p>Due 5 October 2012</p> <p>Comment from AusAID will be provided by 19 October 2012.</p>	Maximum of 20 pages excluding appendices
Prepare Initial Report on	4 days allocated	Maximum of 20 pages

AusAID Food Security in Africa Strategic Review Report for review and comment by AusAID).	Due 19 October 2012 Comment from AusAID will be provided by 2 November 2012.	excluding appendices
Final versions of: 1. CSIRO - CORAF/WECARD partnership review 2. CSIRO-BecA partnership review 3. AusAID Food Security in Africa Strategic Review	Due 17 November.	Incorporating comments on initial versions from AusAID.

**Skills Required for the Evaluation Team:**

- Relevant expertise and experience in international agricultural research and agricultural innovation;
- Knowledge of the institutional and strategic context of African agricultural research and development;
- Relevant expertise and experience monitoring and evaluation for agricultural research and development programs, including knowledge of, or ability to build an understanding of the specific requirements of AusAID;
- International organisational and institutional development and strengthening;
- Strong report writing skills

**Documentation to be provided:**

- Partnership design and contractual documentation
- Relevant AusAID strategic policy documents
- Peer review documentation
- Progress reports and partnership M&E plan
- AusAID Quality at Implementation Report
- Model of program logic for the partnership activities
- Three sets of evaluation questions to inform evaluation plan

## Evaluation questions for Africa Food Security mid-term evaluations

### Definition of terms:

*Project:* individual research projects

*Partnership activity:* the CSIRO and BecA partnership or the CSIRO and CORAF partnership and encompasses the selection of projects

*Program:* the whole program encompassing the AusAID and CSIRO partnership and their partnerships with CORAF and BecA

### Partnership activity level questions for both CORAF/BecA

#### Effectiveness

- *Are individual projects being designed with and shaped by clearly articulated pathways to impact (theories of change)?*
- *Are project and institutional capacity building outputs on track to be achieved and to what extent will they contribute to program outcomes?*
- *What changes need to be made to maximise chance of the 'end of program' outcomes being achieved?*

#### Relevance

- *Is the partnership activity aligned with relevant African government and institutional policies, priorities and strategic goals?*
- *Are the projects appropriately matched to the needs of farmers and other intended beneficiaries in the region?*

#### Sustainability

- *Is the partnership activity strengthening the institutional capacity of CORAF or BecA, in line with its strategic objectives, in a way that allows for the sustainability of the program?*

#### Efficiency

- *Has the implementation of the partnership activity made effective use of time and resources to achieve the outcomes?*
- *To what extent do Australia's contributions complement and harmonise with the contributions of other donors to CORAF & BecA?*

### Overall Program level questions

#### Relevance

- *Is the program logic sufficiently clear and robust and does the monitoring and evaluation system provide a credible basis for reporting on progress and results?*
- *Does the program represent international best practice in agricultural research for development; if not, how could it be improved?*
- *Is the program aligned with relevant African government and institutional policies, priorities and strategic goals?*
- *Is the program aligned and complementary to similar donor initiatives to improve food security in Africa?*

#### Effectiveness

- *Are the program outcomes on track to be achieved and to what extent are those outcomes able to contribute to AusAID's higher level food security development objectives in Africa?*
- *What changes need to be made to maximise the chance of linking the activity outcomes to higher level outcomes?*
- *How do African partners view the Australian technical assistance provided to date, and how would they like to see Australia's engagement evolve?*

#### Impact

- *Are the partnership activities designed to ensure maximum potential impact at scale, in line with partnership objectives?*
- *What impact has there been on our partners in the program (ie. CORAF and BecA) as a result of AusAID funding and their engagement with CSIRO?*

**Sustainability:**

- *How can partners be supported to continue to develop effective ownership and implementation?*

**Further questions:**

*Consult with CSIRO, AusAID and African partners to develop options for the focus and approach for the second phase of AusAID funding, including opportunities for expansion or contraction of existing projects, or the development of new projects. In doing this, consider the best way of achieving maximum development impacts for the smallest investment.*

*Recommend an appropriate process and prepare draft Terms of Reference for the design of the second phase of the program.*

## Annex 2

### DRAFT FOR DISCUSSION

# DRAFT REVIEW PLAN FOR MID-TERM REVIEW OF THE CSIRO AFRICA FOOD SECURITY PARTNERSHIPS WITH CORAF AND BECA

## Introduction

This review plan frames an assessment of how well the CSIRO Africa Food Security Partnerships with CORAF and BecA have been carried out to date. This assessment will be based on the performance and progress of the research projects, engagement in capacity building with African partners and constraints or issues encountered in implementation. This assessment will be used for making recommendations for program strengthening and future directions.

## Purpose of Review

AusAID is consolidating its food security program and increasing its focus on managing for results. The Africa food security team needs to both appraise progress of its activities, and map future directions for the program.

AusAID senior management will use the findings of the review to verify effectiveness of the CSIRO partnerships and make decisions about how to continue funding the CSIRO partnership activity.

AusAID and CSIRO desk officers will use the findings and recommendations of the review to inform any changes that need to be made to the implementation of the current phase of the activity.

The review will also be used to inform future directions. The design of the extension of the partnership activity will need to ensure necessary outcomes can be met and contain a monitoring and evaluation framework which can capture these outcomes and results. The robustness of the program logic also needs to be examined to ensure the next phase of the partnership is able to produce the stated end of program outcomes.

## Review Objectives

The review has the following objectives:

- **Report on progress** towards program implementation
- Make detailed **recommendations to improve the overall quality** of the CSIRO African partnerships
- **Develop options to guide the design of a second phase of AusAID support** to 2015-16
- Suggest strategies for how the program might be scaled back or concluded post 2015-16

Specifically the review will:

- Provide an assessment of how well the CSIRO partnerships have been carried out to date, based on a review of the performance and progress of the research projects engagement in capacity building with African partners and constraints or issues encountered in implementation.



- Address whether the program logic in the design documentation is likely to result in higher-level development outcomes.
- Provide recommendations on changes to the design of the partnership activity that can improve ability to reach the development outcomes.
- Develop options to guide the design and development of a second 3 + year phase of Australian Government funding for the partnerships, and consider possibilities for program consolidation at the close of this second phase of funding.
- Three separate reports will be provided; one for each field mission and an evaluation report for the overall AusAID–CSIRO partnership.

### **Review Users**

AusAID is consolidating its food security program and increasing its focus on managing for results. The Africa food security team needs to both appraise progress of its activities, and map future directions for the program. The review will be immediately useful to the following stakeholders:

- AusAID senior management
- AusAID and CSIRO desk officers
- CORAF and BecA program and project managers

AusAID senior management will use the findings of the review to verify effectiveness of the CSIRO partnerships and make decisions about how to continue funding the CSIRO partnership activity.

AusAID and CSIRO desk officers will use the findings and recommendations of the review to inform any changes that need to be made to the implementation of the current phase of the activity.

### **Review Approach**

The overall review question provided by AusAID can be stated as follows:

“How well have the CSIRO Africa Food Security Partnerships with CORAF and BecA been carried out to date based on their performance and implementation issues encountered”

The review frames its analysis of the overall performance of the partnership with the following definition of partnership:

***A relationship between individuals or groups that is characterised by mutual cooperation and responsibility for the achievement of a specified goal.***

Six key dimensions of partnership performance will be explored: program design and logic, alignment with regional strategies and other frameworks, partnership effectiveness, quality of science, impact pathways, and a cross-cutting issue of attention to gender and environmental concerns.

### **Design and Implementation Logic**

The program design makes assumptions concerning the way support of research and capacity building activities leads to higher level development outcomes. Specifically there are assumptions concerning the adequacies of capacities and institutional arrangements in partner organisations and their strategic plans, as well as support provided by the program to convert investments in research into widescale impacts. The evaluation will explore whether these design assumptions and the associated theory of change of the program were realistic and it will assess

whether over time the implementation of the program will be sufficient to achieve high-level development outcomes. An important dimension of this will be to revisit steps in the impact chain to understand the necessary conditions that need to be put in place to achieve higher-level development outcomes. The evaluation will also explore the effectiveness of the M&E system in tracking progress and revisiting assumptions. The review will explore these issues both for the individual partnership programs as well for the overall partnership, where the overarching strategy is understood to be articulated by the Africa Food security Initiative of AusAID. (Steve Ashley with Ian Kershaw and others)

### **Partnership Effectiveness**

Partnership is the central operational approach of the program and is premised on the assumption that a partnership between CSIRO and subregional organisations provides value added compared with other ways of supporting agricultural research for development. In order to understand the effectiveness of this partnership arrangement the review will explore (i) the quality of the partnership, including the degree of collaboration in planning and implementing activities and monitoring progress and the range of institutional issues that effect this (ii) The collaborative advantage of the partnership, including the range of methodological, technical and institutional innovations/ capacity building outcomes that have emerged as a direct result of the partnership (see also quality of science and capacity building theme) (iii) The scope of the partnership, including the role of partner organisations (research vs. administration vs. wider capacity development contributions) and the capacity of partners to play this and other roles that might support the overall effectiveness of the program. (Howard Elliot with Andy Hall and Ian Kershaw)

### **Alignment with Subregional and Regional Priorities and Strategies**

The program frames its research and capacity building activities as a contribution to regional strategies (CAADP Pillar 4 in West Africa and FAAP in East Africa). The review will explore the extent to which the portfolio of projects under the partnership program and capacity building activities align with relevant subregional and regional strategies and ongoing processes to monitor progress in these strategies. Another dimension of this will be to explore wider landscape of donor-supported activities that are contributing to these strategies and the way the partnership program complements these or suggests where synergy could be better achieved. (Howard Elliot with Steve Ashley and Ian Kershaw)

### **Robustness of Research into Use and Impact Pathways**

A key approach of the partnership program in West Africa is the development and use of IAR4D. IAR4D covers a flexible suite of principles and practices that include but are not restricted to: the development of innovation platforms, use of partnerships between research and development and private sector actors; links between research and policy, innovative financing mechanisms; results-based and learning-orientated management approaches. The approach often suffers from attempts to use the key tools as best practice rather than to take inspiration from these to guide a range of best fit arrangements that can help research lead to innovation and impact under different technological, market, social and policy conditions. The review will approach the robustness of research into use and impact pathways by first exploring the way projects have interpreted IAR4D (and allied approaches). It will then explore whether this interpretation of IAR4D is appropriate for the types of research into use tasks that are associated with the partnership program's portfolio of research projects and the results ambitions of these projects and the program as a whole. (Andy Hall with Steve Ashley and Howard Elliot)

### **Quality of Science and Capacity Building**

The rationale for the collaborative advantage of partnerships with CSIRO is that it offers the potential to transfer high performing research methods and approaches from Australian researchers to African partners. Farming systems research and systems approaches more generally are highlighted as a particular strength. The review will explore this by looking for new research approaches that are a direct result of the CSIRO partnership. This will also be explored by judging the extent to which CSIRO scientists are actively involved in research projects rather than in a research management role. (Andy Hall and Howard Elliot with advice from Tristan Armstrong)

### **Gender and Environment Mainstreaming**

Aid best practice demands that all development programs tackle gender and environmental issues in a cross-cutting fashion. The review will explore this by investigating the extent that these issues have been addressed in the selection of projects, choice of research partners, staffing and other management protocols and the extent to which these issues are considered in M&E arrangements. (Ian Kershaw with others)

### **Review Questions**

AusAID provided a set of review questions in the Terms of Reference for the review, including a series of key questions that address the OECD DAC evaluation criteria. These questions were discussed by the review team with AusAID and have been adjusted to take into account the 6 criteria of partnership performance discussed above.

### **Effectiveness**

#### **Partnership performance/ value added**

- How well is the AusAID-CSIRO partnership working and what is its value addition over and above direct funding regional organisations or other international research partners?

#### **Partnership scope**

- In the future, what should be the balance of emphasis between support for CORAF and support for BecA?
- Is there adequate interaction between the BecA and CORAF partnerships?
- What is the niche that the partnership program occupies? Is this adequate in scope to achieve overall program objectives?

#### **Program logic**

- Is the original theory of change still relevant?
- Are current M&E arrangements adequate to address this?
- Are the assumptions about links between program outputs and expected outcomes realistic?
- What mid-course corrections are necessary in the current program and in future strategies?

### **Impact**

#### **Capacity development**

- Quality of the biological science methods underpinning the program
- Extent and quality of IAR4D/ research into use arrangements
- Institutional change in partner organisations
- What impact has there been on partners in the program (i.e., CORAF and BecA) as a result of AusAID funding and their engagement with CSIRO?

### **Evidence of research uptake and use**

- Is there any evidence of technology dissemination/ uptake?
- What are the necessary conditions for this to take place?

### **Evidence of higher-level development impacts**

- Are the partnership activities designed to ensure maximum potential impact at scale, in line with partnership objectives?
- Are there any impacts on food security and agricultural productivity?
- When are these likely to emerge and under what conditions?

### **Relevance**

#### **Alignment**

- Is the program aligned with national, sub-regional and regional agricultural research and development frameworks (CAAPD, FAAP, AU-NEPAD)?
- Is overall program-level M&E working adequately and well enough linked into AusAID's food security strategy for Africa?
- Is the program logic sufficiently clear and robust and does the monitoring and evaluation system provide a credible basis for reporting on progress and results?
- Does the program represent international best practice in agricultural research for development; if not, how could it be improved?
- Is the program aligned with relevant African government and institutional policies, priorities and strategic goals?
- Is the program aligned and complementary to similar donor initiatives to improve food security in Africa?

#### **Sustainability**

- Is the partnership activity strengthening the institutional capacity of CORAF or BecA, in line with its strategic objectives, in a way that allows for the sustainability of the program?
- What wider set of implementation issues and contextual issues affect sustainability?
- How does the wider landscape of donor and national and sub regional and regional support/ funding affect sustainability?

#### **Efficiency**

- Are the program outcomes on track to be achieved and to what extent are those outcomes able to contribute to AusAID's higher-level food security development objectives in Africa?
- What changes need to be made to maximise the chance of linking the activity outcomes to higher-level outcomes?
- How do African partners view the Australian technical assistance provided to date, and how would they like to see Australia's engagement evolve?
- Is CSIRO and the partnership program an effective vehicle to help build capacity for high impact research/ IAR4D?
- Are there rigidities that are preventing CSIRO taking on a role beyond farming systems/ scientific focus?
- Do they need additional support in exploring new methods, training staff, etc.?

**Cross cutting**

- How well are the partnerships dealing with gender equality issues and is adequate attention being given to environmental impact and climate change issues?

**Review Approach**

The review will use the questions outlined above to guide its analysis of program documentation and discussion with partners and stakeholders in impact pathways. In-country missions will use a combination of informal participatory workshops and one-to-one meetings to both develop an analysis of the performance of the CSIRO-Africa partnership and to share and develop and recommendations for ways forward.

The CSIRO-CORAF Partnership will be reviewed through an in country mission in June–July 2012 and reported in August 2012. The CSIRO-BecA Partnership will be reviewed through an in-country mission in September 2012. An overall review report will be prepared based on these two partnership reviews.

## Annex 3

### PERSONS AND ORGANISATIONS CONTACTED

#### **AusAID**

**Sue Graves**

Counsellor/ Head of Aid, East and Horn of Africa

**Tristan Armstrong**

Program Manager  
Food Security and Climate Change

**Emily Edwards**

Program Officer  
Africa Food Security Program

**Louisa Cass**

First Secretary, Food Security  
East and Horn of Africa-Regional Office

**Tesfaye Legesse**

Senior Program Manager, Food Security  
East and Horn of Africa-Regional Office

#### **Commonwealth Scientific and Industrial Research Organisation (CSIRO)**

**Chris Prideaux**

Deputy Chief  
Livestock Industries

**Bruce Pengelly**

Partnerships Leader  
Forage and Farming Systems Specialist

**Larelle McMillan**

Engagements Officer

**Manny Noakes**

Research Program Leader

**Jocelyn Davies**

Senior Research Scientist, Ecosystems Sciences

**Ross Darnell**

Senior Applied Statistician

## **Biosciences eastern and central Africa (BecA) Hub**

**Segenet Kelemu**

Director, BecA

**Leah Ndungu**

Project Coordinator

**Ethel Makila**

Communications Officer

**Appolinaire Djikeng**

Technology Manager

**Rob Skilton**

Research Scientist

**Jagger Harvey**

Plant Biosciences Research Scientist

**Timothy Kingori**

Assistant Technology Manager

**Gbemenou Joselin Benoit Gnonlonfin**

Post Doctoral Scientist

## **International Livestock Research Institute (ILRI)**

**Jimmy Smith**

Director General

**Vish Nene**

Director, Livestock Vaccine Initiative

**Edward Okoth**

ASF Coordinator

**Joerg Jores**

Scientist

**Jan Naessens**

Scientist

**Jeff Mariner**

Scientist

**Martin Van Weerdenburg**

Director of Corporate Services

**Okeyo Mwai**

Scientist

**Philip Toyé**  
Scientist

**Richard Bishop**  
Senior Molecular Biologist

## **Others**

**Sara Webb**  
Monitoring and Evaluation Consultant

**Diaeldin Hassan**  
ABCF Fellow  
Assistant Professor, Central Veterinary Research Laboratories

**Gladness Elibariki**  
ABCF Fellow  
Assistant Lecturer and PhD Student, University of Dar-es-Salaam

**Dawit Beyene**  
ABCF Fellow  
Researcher, Ethiopian Institute of Agricultural Research

**Cécile Ewané**  
ABCF Fellow  
Lecturer/Associate Researcher, African Research Center on Bananas and Plantains (CARBAP)

**Peter Akoll**  
ABCF Fellow  
Lecturer, Makerere University

**Adey Feleke Desta**  
Addis Ababa University

**Donatha Tibuhwa**  
Lecturer, University of Dar-es-Salaam

**Daniel Sila**  
Lecturer, Jomo Kenyatta University of Agriculture and Technology

**Daniel Otieno**  
Kenya Industrial Research and Development Institute

**Félix Meutchieye**  
ABCF Fellow  
Lecturer, University of Dschang

**Glen Fox**  
University of Queensland/ Queensland Alliance for Agriculture and Food Innovation



**Henry Wamwayi**

African Union Inter-African Bureau for Animal Resources

**James Karanja**

Kenya Agricultural Research Institute

**Wanjiku Chiuri**

International Center for Tropical Agriculture