

Biosciences eastern and central Africa (BecA)

building biosciences and innovation leadership in Africa



Appolinaire Djikeng

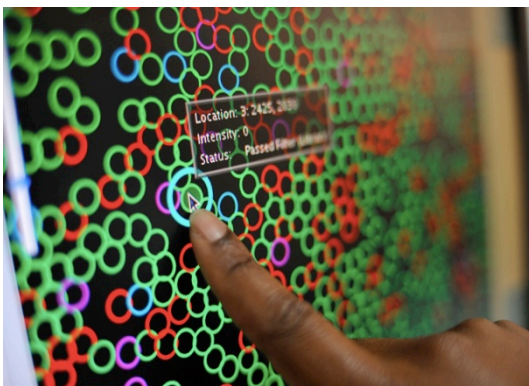
DLVD Consultative workshop
Windsor Hotel, Nairobi, Kenya

biosciences
eastern and central africa



Our focus

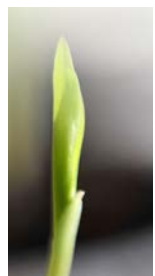
Biosciences



Farmers



BecA program development



biosciences
eastern and central africa

2002-2007
Establishment phase



syngenta foundation
for sustainable
agriculture

2007-2012
Implementation phase

syngenta foundation
for sustainable
agriculture

BILL & MELINDA
GATES foundation



Business Plan 2013-2018

2013-2018
Innovation phase

syngenta foundation
for sustainable
agriculture

BILL & MELINDA
GATES foundation



illumina



BecA core activities



I. Research

I. Capacity building

II. Technology platforms and research service

III. Networking and institutional support

IV. Product development and pathways to impact

2002-2007

Establishment phase

2007-2012

Implementation phase

2013-2018

Innovation phase

Capacity building (1)

Empowering African scientists to solve Africa's agricultural challenges

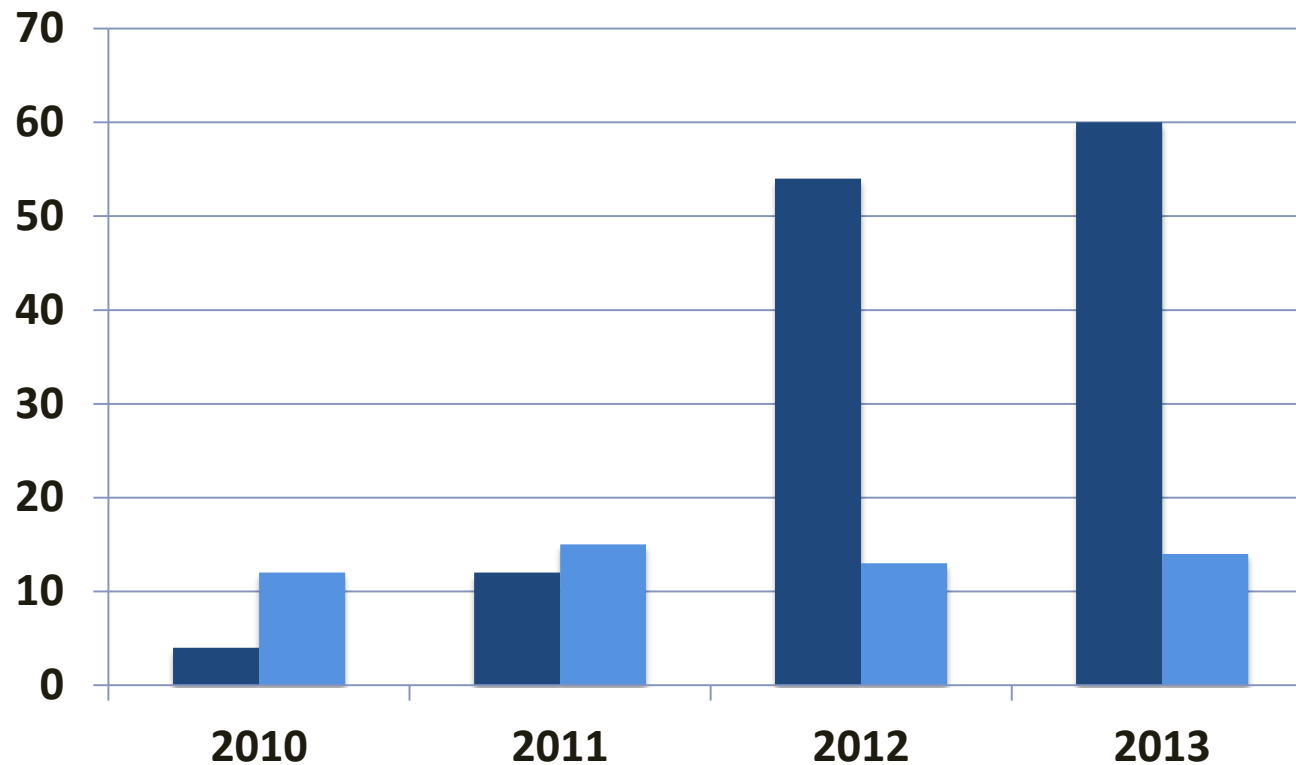
Capacity building is conducted via four streams:

1. ABCF Research Fellowships
2. Training workshops
3. Institutional capacity building
4. Creating linkages between researchers, and creating awareness of the BecA-ILRI Hub



Capacity building (2)

The ABCF fellowship



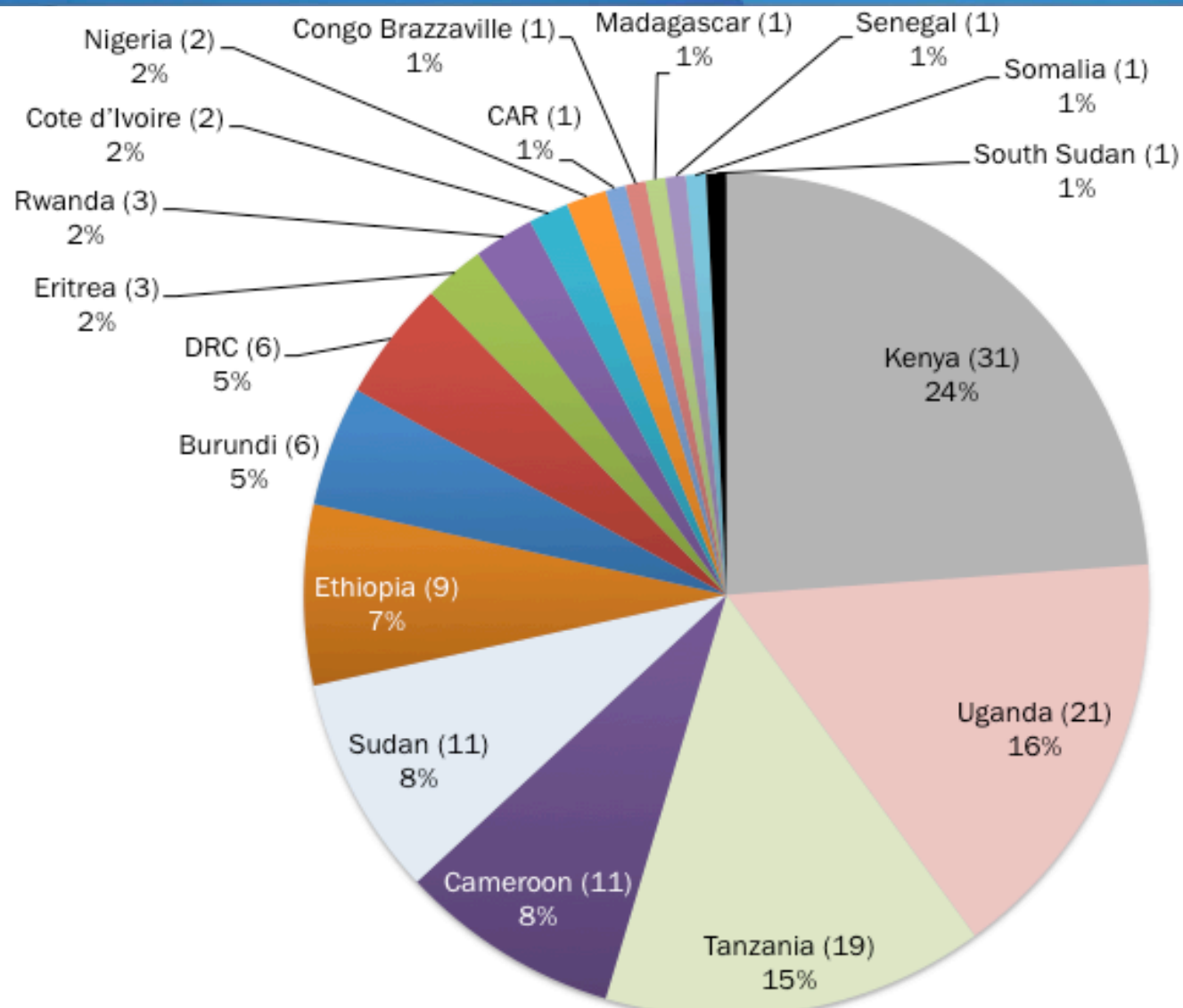
■ ABCF
Fellows

■ Directly funded
fellows

33% Women
67% Men

Capacity building (3)

Distribution of ABCF fellows



Strengthening African NARS

BecA-MARI collaboration



*Joseph Ndunguru
MARI, Tanzania*



- ❖ One of the first ABCF fellows in 2010 (understanding CBSV diversity for improved diagnostics)
- ❖ Lead researcher on multi-country cassava virus projects with BMGF and DFID funding
- ❖ Diagnostics, epidemiology of cassava viral diseases in 7 countries in Eastern and Southern Africa

Building critical masses to tackle key regional agricultural issues (2)

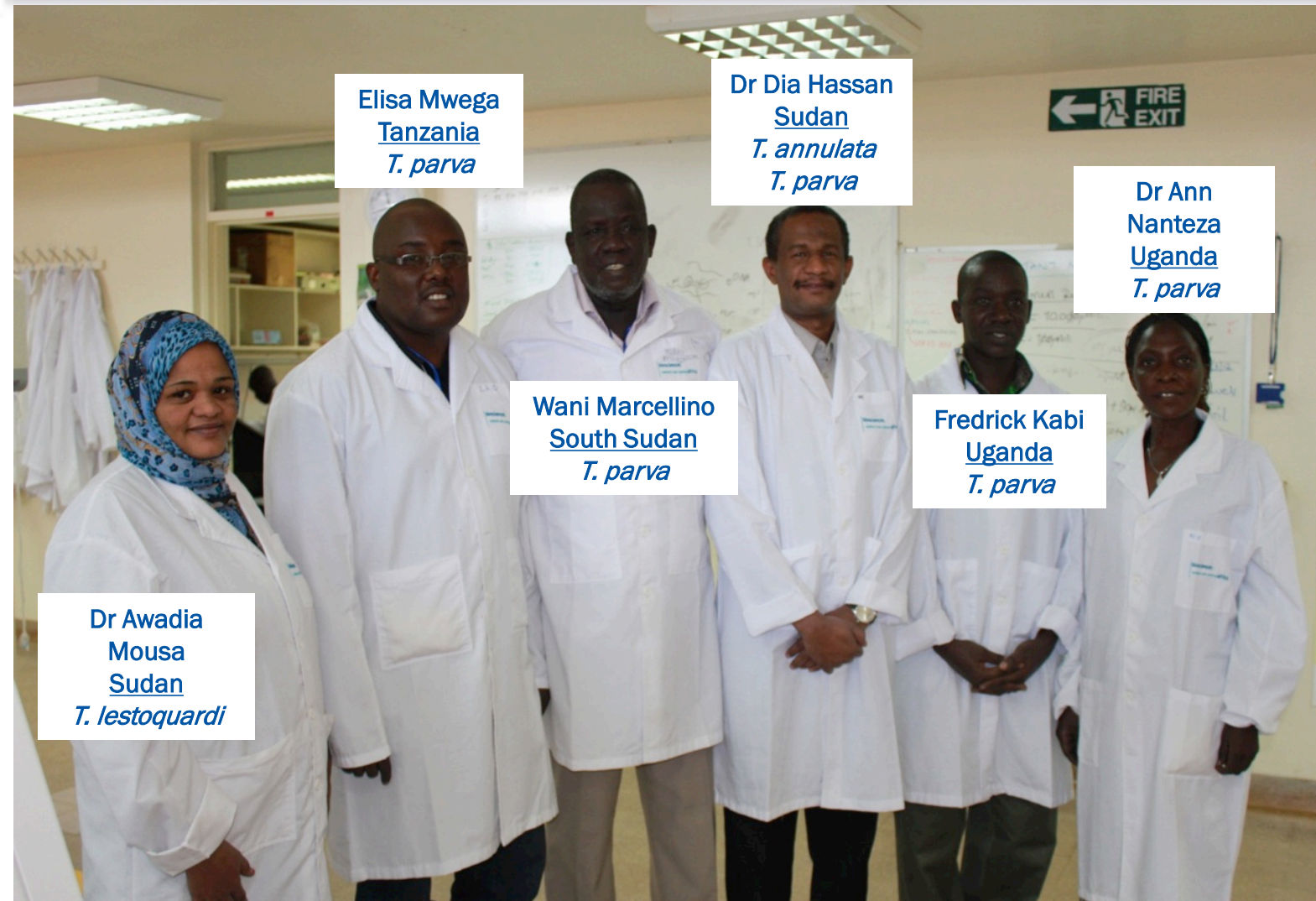


1. Dawit Beyene (EIAR, Ethiopia)
2. Donatien Bigirimana (UoB, Burundi)
3. Gaspard Ndarubayemwo (UoB, Burundi)
4. Pierre Niyonzima (ISABU, Burundi)

Outputs

- First taro pathogens survey Kenya and Ethiopia (viruses and fungi)
- Development of a diagnostics assays
- Development of a tissue culture protocol and transfer

Building critical masses to tackle key regional agricultural issues (1)



Outputs

- Confirm existence of theileriosis in Sudan
- Diversity of theileria parasite in Sudan to guide vaccine development
- Feedback information to national veterinary services and other stakeholders

BecA-ASARECA capacity building partnership

Supporting less represented NARS



- ASARECA capacity building initiative
- ABCF - ASARECA co-funded research fellowships at BecA
- Fellows from Burundi, DRC, Eritrea, Madagascar, Rwanda, Sudan
- ASARECA-BecA - proposal writing support for applicants



biosciences
eastern and central **africa**

BecA-AWARD capacity building partnership

Training today's scientists to become tomorrow's leaders



Joan Babajide (Nigeria)



Ester Kanduma (Kenya)



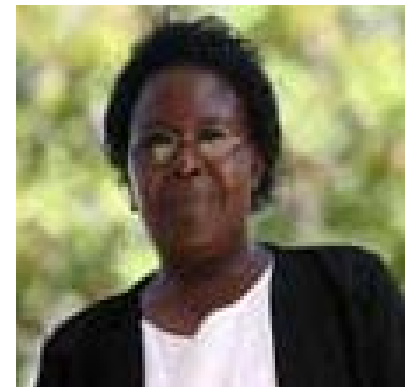
Lillian Wambua (Kenya)



Dora Kilalo (Kenya)



Olutayo Adedokun (Nigeria)



Ruth Wanyera (Kenya)

Creating linkages/partnerships between scientists

Agricultural Research Connections Workshops 2013

Encouraging Scientific Research Collaborations to Benefit African Farmers

- Organized by BecA & BMGF
- Kenya, July-Aug 2013
- 180 agricultural researchers
- Proposals to Program for Emerging Agricultural Research Leaders (PEARL)
- **2014 ARC workshops (two in June)**



BILL & MELINDA
GATES foundation

biosciences
eastern and central africa



Technologies, lab management and services

Technology platforms

- Genomics platform
- Bioinformatics platform
- Nutritional analysis platform
- Diagnostics platform
- Molecular breeding

Research-related services

Menu

- DNA Sequencing
- Genotyping
- Oligonucleotide service

Users

- Other CGIAR centers and programs (GCP, ...)
- African NARS
- Europe, North America, Middle East

Genomics platform

Capillary sequencing

ABI 3130-xl



ABI 3730-xl



ABI 3500-xl



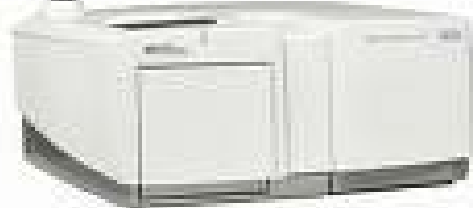
Applications

1. Cassava re-sequencing
2. Viral genomics
3. Metagenomics
4. Disease surveillance
5. Diagnostics
6. Genotyping

Next generation sequencing



*454 GS
pyrosequencer*



Illumina MiSeq

New opportunities:

**High density genotyping
platform: GBS**

Molecular breeding team/platform

Yao Nasser

Ivory Coast

- Integrated Breeding Platform
- Plant breeding academy



Gerardine Mukeshimana

Rwanda

- Beans
- Phenotyping



Alex Bombom

Uganda

- Wide crosses
(maize x sorghum)
- Phenotyping



Thank You

