



The BecA-ILRI Hub: B4FA Animal Genetics for Africa

Jagger Harvey, *BecA-ILRI*

Animal Genetic Research for Africa (Biosciences for Farming in Africa), Nairobi, 10-11 September 2015

biosciences
eastern and central africa



NEPAD
TRANSFORMING AFRICA



ILRI
INTERNATIONAL
LIVESTOCK RESEARCH
INSTITUTE

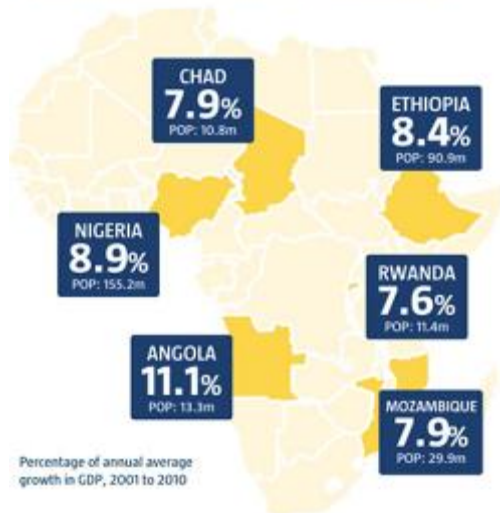
Opportunities

- A growing private sector;
- A growing African middle class;



FASTEST-GROWING ECONOMIES IN THE WORLD

Six of the world's ten fastest-growing economies in the world over the last decade were in Africa. In this decade, it is expected to be seven.



- Bioscience to add value to African genetic resources;
- Explore new markets (esp. intra-Africa trade);

Linking Research to Impact

Biosciences

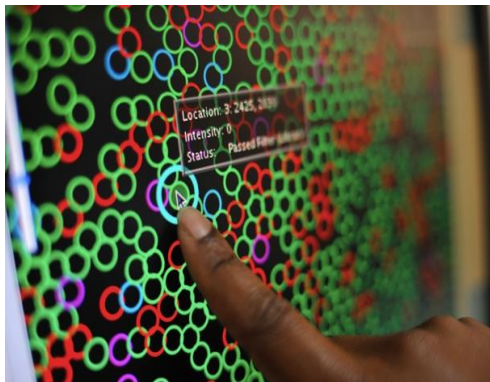


Farmers/end users



Linking Research to Impact

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1. Capacity Building
2. Laboratory Management, Technology Platforms and Research Related Services
3. Research
4. Communications and Partnerships

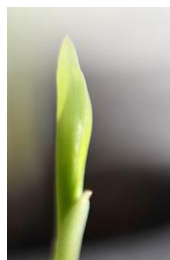
Farmers/end users



Program Evolution and Development

Mobilizing biosciences for Africa's development

Business Plan 2013-2018



biosciences
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2002 – 2007
Establishment phase



syngenta foundation
for sustainable
agriculture



2007 – 2012
Implementation phase

syngenta foundation
for sustainable
agriculture



**BILL & MELINDA
GATES foundation**



Australian Government



2012 –
Innovation phase



syngenta foundation
for sustainable
agriculture

**BILL & MELINDA
GATES foundation**



Australian Government



illumina



Some Opportunities

1. An African Center for excellence in the biosciences - *A go to place*
2. Ability to link research to impact – *National, regional and continental agendas (ASARECA, CORAF, FARA/S3A)*
3. Support to African NARS (beyond the eastern and central Africa region) - *For scientific sustainability and track record → OUTREACH*
4. The ABCF: A model for linking African NARS with ARIs including CGIAR centers
5. The high end biosciences facilities including state-of-the-art technologies – *for applications to accelerate research delivery of research outputs (Genomics platform 2015 – 2019)*
6. Influence for policies, donors and countries investments – *Capacity for Ag R4D*

Capacity building outputs

The Africa Biosciences Challenge Fund (ABCF)

1. Visiting scientist program
2. Training workshops
3. Institutional capacity building



ABCF Fellows: making a difference in Africa



Alexander Bombom
(Uganda)

- Staple crops hybrid
- BMGF grant



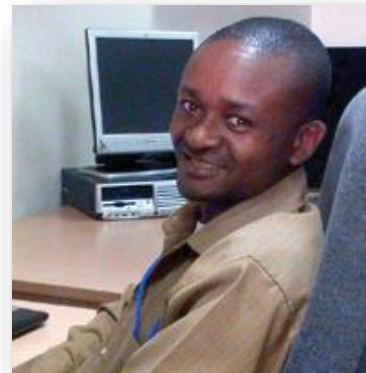
Dr Felix Meutchieye
(Cameroon)

- Cavies project lead
- Goat diversity project
- Funding: AusAID (BecA-CSIRO and Sweden)



Dr Dora Kilalo (Kenya)

- Passion fruit virus rapid diagnostics
- Funding: Sweden
- University of Nairobi
- KARI



Dr Christian Kemabou
(Cameroon)

- Chicken genetic diversity
- Highest distinction PhD
- Grant from Africa-Brazil Initiative for Africa (EMBRAPA)
- Faculty, Uni of Buea

Neglected and underutilized species (crops and animals)

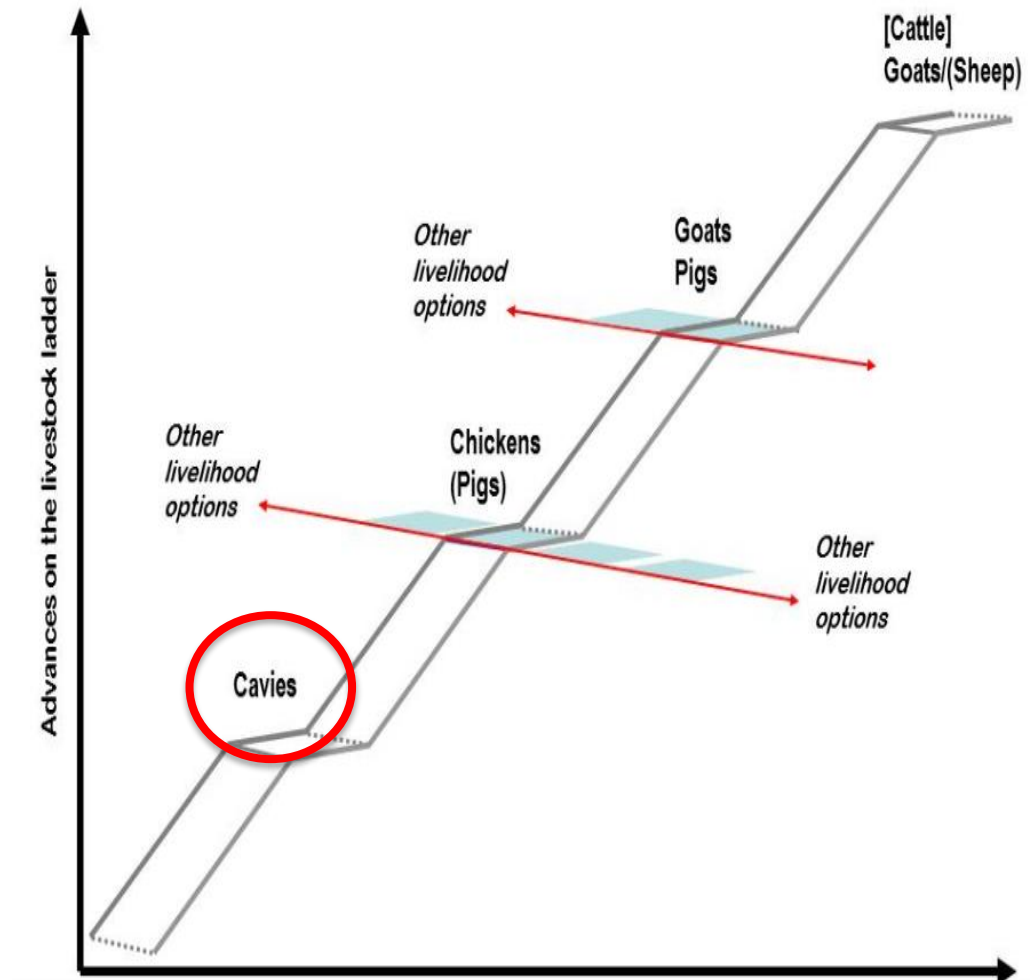
Cavies (Guinea pigs)



Neglected and underutilized species offer alternative solutions to food and nutritional security in Africa

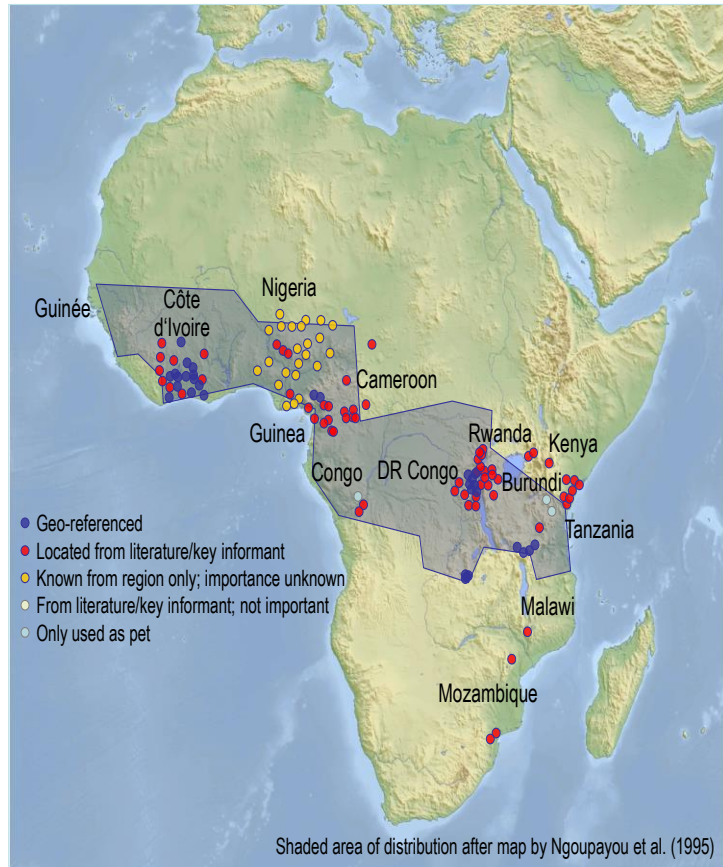


We need more than classical large livestock and more than staple crops



CIAT monogastric project, 2009- 11

Neglected and underutilized livestock (Cavies) as key contributors to food security in Africa



- ❖ High protein value ($> 20\%$)
- ❖ Low fat contents ($< 8\%$)
- ❖ High mineral content ($> 3\%$)

Our focus:

Targeting women and children:
Cavies for more protein and income

Current data:

Possible to improve cavies (breeding)
based on genetic diversity



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eastern and central africa



Improving food and nutritional security across eastern and central Africa

A research and development partnership between Africa and Australia

Granny is fed and clothed by rodents

Jane Wanja Macharia went into uncharted waters and has more than enough for her pockets

BY BONIFACE MWANGI
mwangib@ke.nationmedia.com

Sixty-eight-year-old Jane Wanja Macharia was determined to become successful in life and not to depend on her children. This is despite the fact that she went up to Class Four.

She, however, says that the few years she spent in school have enabled her to communicate easily since she understands and is able to speak both English and Kiswahili well.

Mrs Macharia, who hails from Kahuru village in Mathira East district in Nyeri County, has ventured into the rare business of rearing guinea pigs on a section of her three acre piece of land.

Apart from rearing guinea pigs, Mrs Macharia also has fifty rabbits, several fish ponds and a tea plantation. The rabbits, fish and the ponds were financed by

profits from the sale of her guinea-pigs. The mother of five started her business two years ago but she had not really planned on rearing guinea pigs. She had travelled all the way to the neighbouring Kirinyaga District in search of rabbits of a good grade as she had heard that the rabbit business was booming in the area.

She says that she changed her mind after she came across an elderly woman who was rearing guinea pigs, who convinced her to try it.

"I had planned to buy two rabbits which would later give me some offspring but I decided to try Guinea pig rearing instead." She says that she has never regretted her decision, as the guinea pigs have a bigger market than rabbits.

She started off with two young guinea pigs a male and a female which she bought at Sh350 each. Though she also rears rabbits, she has decided to concentrate more on the guinea pigs - known in the



PHOTO | JOSEPH KANYI
Jane Wanja Macharia displays a guinea pig at her Kahuru home in Mathira.

local language as 'Tunyuri' - which according to her are very profitable.

A mature guinea pig goes for Sh600 while a young one goes for Sh350 while a mature

rabbit goes for Sh1,200. She says that guinea pig meat is soft, delicious and nutritious and yet it has no cholesterol. People from all over the country go to her home in search

FACTS

■ Guinea pigs don't belong in the pig family and neither are they from Guinea; they originated from the Andes.

■ They have an average life span of five-seven years but may live as long as nine years.

of the small rodents.

The soft-spoken old woman speaking to *Money* at her home says that since she started the business, she no longer relies on her children for financial assistance. "My children are always eager to visit me because they know that I am not a burden."

Mrs Macharia says that she has become a role model and already more than five women her age have started the guinea pig business after getting lessons from her.

She says that on a good day, she sells guinea pigs worth Sh12,000 adding that through their sale, she has been able to construct rabbit hatches as well as pay her workers on the tea plantation.

"Because I wanted to succeed in this business so badly, I sacrificed the only cupboard that I had in my house to serve as a hatch and kept my utensils in a basket. I have never regretted the decision as I am now able to furnish my house," she declares. Mrs Macharia says that her guinea pigs usually give birth to two or three young ones.

She feeds the rodents on weeds as well as animal. She has already ordered five bee hives and three high grade pigs from her earnings. "I have to try all types of work which will make me self dependent," she says.

Asked why she didn't go into the dairy cow business, Mrs Macharia responds quickly that her passion towards animals only concentrates on the smaller ones.

Says the granny with a smile written all over her face, "Smaller animals like my guinea pigs don't hold me up as a cow or sheep would do, after feeding them, I am free to do other things," she says. She adds that, apart from the money she makes from them, she loves smaller animals, more so the guinea pigs which have lovely colours.

Communication/outreach approaches



- Visits to the Hub
- Policymaker engagement
- Policy briefs
- Talking to the media
- Website and Social media
- Connecting with end users
- Talks/presentations at forums
- Disseminating printed materials and posters





Outreach outcomes: JIC case study



Ruth Wanyera,
KALRO



Technology-based
capacity building



Opportunities for
sabbaticals and joint
research



Cristobal Uauy, wheat
researcher JIC



JIC committed to tech transfer with
Beca-ILRI Hub as the "connecting"
point



Tilly Eldridge, Postdoc scientist, JIC
Centennial scholarship winner

Where to from here?

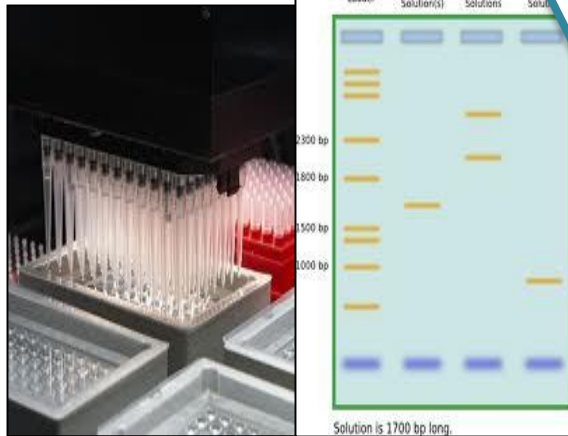


- **Participation** and a voice at strategic forums
- Increased **empowering alumni** to be our ambassadors
- Advocate for more **government resources into agricultural research** to ensure sustainability of the research
- Increasingly equip NARS scientists and development partners to communicate **with end users**
- Widening **reach in sub-Saharan Africa**



From research to impact

Biosciences



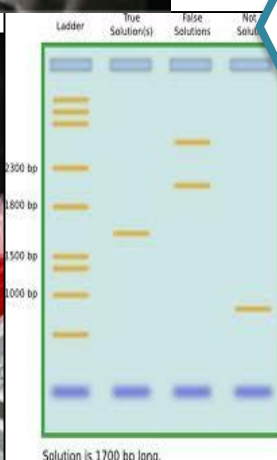
... it is one thing to have one bag of seed of a new crop variety ... it is quite another to deliver that seed to thousands and eventually millions of farmers living in isolated villages
- Joe DeVries, AGRA, 2013

Farmers



From research to impact

Biosciences



CAADP

Policy makers

FARA and SROs

(ASARECA, CORAF, ..)

Farmers associations,
Private sector, NGOs

NARIs, Universities

CGIAR/CRPs

Farmers



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