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BUILDING BRIDGES, CROSSING BORDERS

ROLE OF GOVERNMENT IN ADVANCING AGRICULTURE IN AFRICA

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AFRICA FOOD SYSTEMS

Population

- Changes in middle class
  - 1990 – 495 million
  - 2010 – 822 million

  expansion 119 to 271 million
  - Share (U$2 – U$20 a day) 24% in 1990 to 33 % in 2008

Urbanization

- Cities (more than 1 million inhabitants)
  - 2 in 1950
  - 50+ in 2010 – projected to exceed 100 in 2030
- Urban food markets to increase – exceed U$400 billion
- Rising incomes
- Changing consumption patterns – more protein & processed foods
- However, poverty persists

source: World Bank 2013

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AFRICA FOOD SYSTEMS TRANSFOMATION

SILENT REVOLUTION

- FOOD SYSTEM STRUCTURE CHANGES
  - Interlocking networks of relationships – not necessarily integrated systems – production, processing & distribution
  - Capacity to meet safety and quality standards
  - Value chain alterations and capacity to meet expectations
- Rural – urban food supply increased more than 5 fold since 1970
- Rural market purchasing volumes expanded more than 8 times
- Continent where rural populations and livelihoods are growing
- Private investment in food systems rapidly expanding
  - Retail, wholesale, branding and logistics (e.g. shoprite, woolworths etc)

Source: World Bank 2015

ROLE OF GOVERNMENT IN AFRICA FOOD SYSTEMS TRANSFOMATION

REGIONAL APPROACHES

- Regional Economic blocks – SADC, ECOWAS, etc
- African Union

- SACU
  - Oldest economic trade block
  - Trade barriers – tarrifs, harmonization etc.
  - Collective agreements (SACU & Mercosur)
- SADC
  - Harmonization
  - Collective agreements -- (SADC & EU)
  - Maputo Declaration
- African Union
  - Alignment
  - Malabo Declaration
  - Strategic – long term – Agenda 2063
  - Science Agenda for African Agriculture – S3A

AFRICAN AGENDA 2063

DEVELOPMENT AGENDA

- Agriculture as an instrument for sustainable growth through:
  - Productivity
  - Market access profitability
  - Making agriculture attractive for youth employment
  - Science and Technology Innovation for Sustainable Agriculture

IMPLEMENTING THE AFRICAN AGENDA 2063

SCIENCE AGENDA FOR AFRICAN AGRICULTURE (S3A):

- Sustainable productivity in major farming systems
- Food systems & value chains
- Agricultural Biodiversity & natural resource management
- Responses to mega trends & challenges in Africa
- Crosscutting Themes:
  - Sustainable intensification
  - Genetics and genomics improvements
  - Foresight capabilities

AGRICULTURAL INNOVATION SYSTEM

A network of organizations, enterprises and individuals bringing new products, processes, and forms of organization into economic use, with institutions and policies that affect their behaviour and performance

What would be the impact of technology innovation on agriculture productivity and trade?

Case studies

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AGRICULTURE TECHNOLOGY INNOVATION MUST BE INCLUSIVE FOR TRANSFORMATION

KEY LESSONS

- Broad – based productivity is essential for inclusive rural and structural transformation – driven by investments in R & D
- Sustained investment to enhance productivity has significant impact on growth and poverty reduction
- Agriculture research intensity is main indicator
- R & D funding in most African countries dependent on donor partners – often volatile (e.g. CGIAR)
- South Africa has most advanced national system of innovation with sustained funding – **agriculture research intensity is low**

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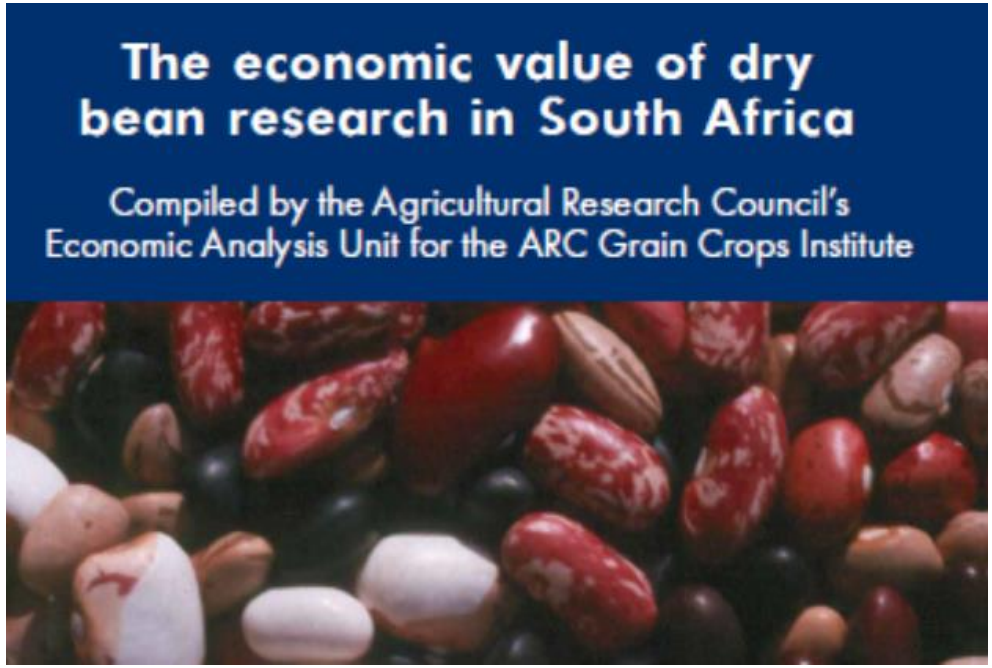
Impact of ARC Dry bean breeding programme



- Yield increased by *304%* from 0.62t/ha in 1979 to 1.89t/ha in 2013
- *37* cultivars produced by ARC from 1980 - 2012
- ARC's breeding increased yield by *11.65kg /ha/year* from 1980-2014
- PG funding for the programme declined from 98% in 1993 to 56% in 2015
- Dry beans are an affordable, healthy source of protein for the sick and poor
- **There is R5.67 in economic growth for every R1 spent on dry bean research**

There is R5.67 in economic growth for every R1 spent on dry bean research

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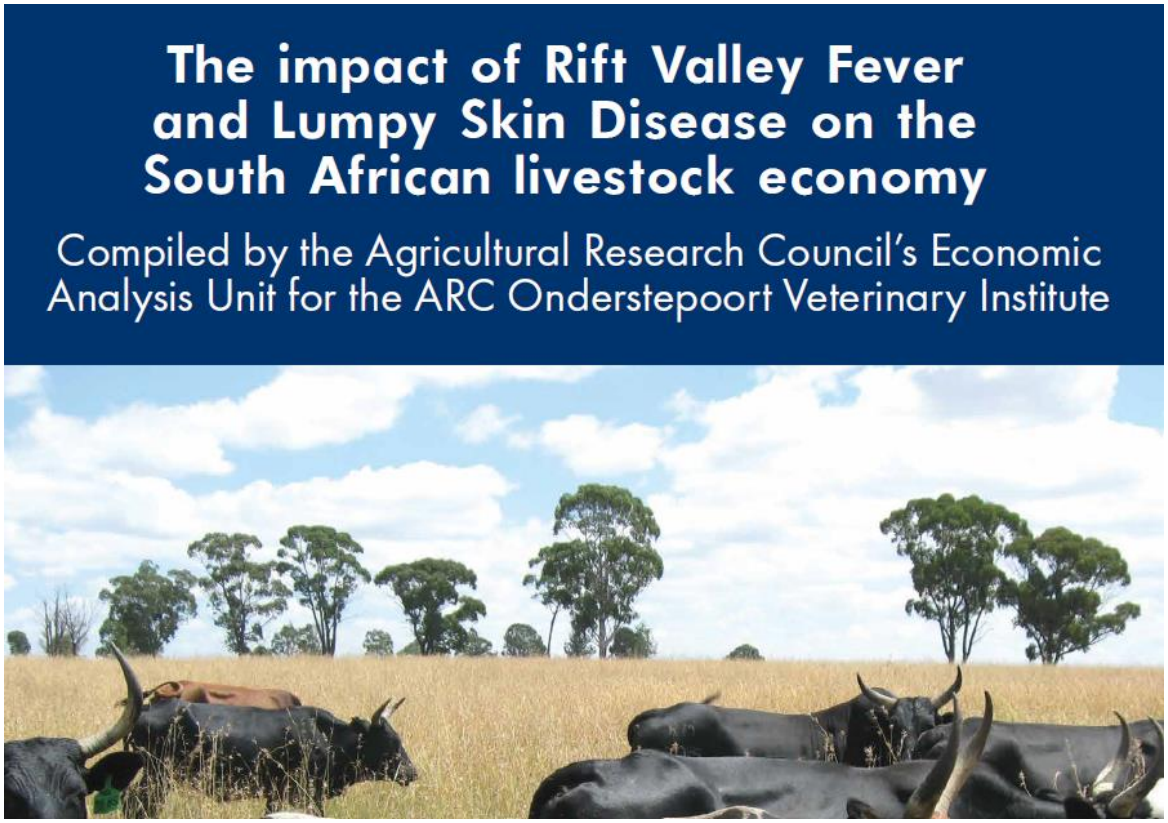
THE ECONOMIC IMPACT OF THE SOUTH AFRICAN AGRICULTURAL RESEARCH COUNCIL'S DRY BEANS BREEDING PROGRAM

- Investment in the breeding programme has multiple benefits and a positive economic impact on SA
- Investment research and innovation yields significant impact in the long term

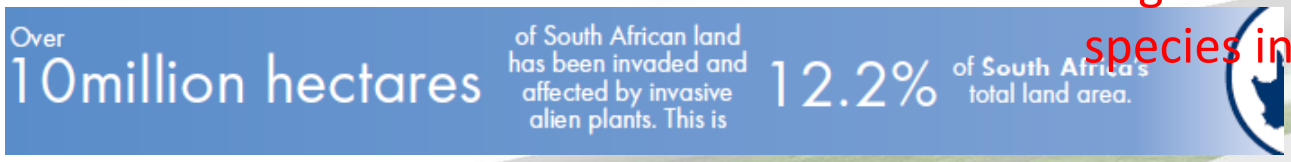
Rift valley Fever (RVF) and Lumpy Skin Disease (LSD)



- 69% of smallholder farmers spend money on vaccines and other livestock vet costs
- For some households this is about R1500/year
- Financial losses due to RVF outbreaks in EC, NC and FS were R295m from 2008-2010
- Farmers vaccinate many animals with one needle, spreading the disease
- ARC's OVI is developing a combined LSD/RVF vaccine for use in cattle, sheep and goats
- The vaccine will not need refrigeration and will be easy to administer by smallholder farmers

The value of investing in biocontrol research

- Invasive alien species (IAPs) use up to 3.3b m^3 of water every year in SA and can result in loss of local biodiversity
- Mechanical control through felling, clearing or burning creates employment, but is at least 10times more expensive than bio control
- ARC's bio-control measures resulted in *R1.38b saved in managing invasive alien species* in SA
- ARC researchers have tested over 270 agents for bio control, *106 of which were approved for release*
- Increased investment in bio-control research will reduce the spread and negative effects of Invasive alien species in SA



Analysis of Meat for Food Safety to Support Regulatory Decisions

Country of origin	Port of entry	#samples tested	#positive samples	Meat type for positive *L. monocytogenes*
Argentina	Durban	2	0	n/a
Australia	Durban	16	1	Beef Liver
Belgium	Durban	1	0	n/a
Brazil	Durban	27	1	Chicken Feet
Canada	Durban	4	0	n/a
Denmark	Durban	2	0	n/a
Germany	Durban	3	1	Beef Hearts
Netherlands	Durban	13	2	Poultry Backs (n=1); chickenDrummets (n=1)
New Zealand	Durban	3	0	n/a
Spain	Durban	13	3	ChickDrumsticks (n= 1);legquarter (n=1); Chicken Wings (n = 1)
Ireland	Durban	1	0	n/a
UK	Durban	17	0	n/a
Uruguay	Durban	7	0	n/a
USA	Durban	2	0	n/a
Unspecified origin	Durban	21	1	lamb
Total for Durban		**132**	**9**	

- The ARC plays an important role in ensuring that meat imported into South Africa is safe and consumers are protected from possible risk of foodborne infections.
- This is done through analysis of meat samples from diverse animal species for zoonotic foodborne pathogens such as *Salmonella* spp, *Listeria monocytogenes*, and Shiga toxin *Escherichia coli*
- Last year we analysed meat from all three major ports of entry into the country; Durban, Cape Town and Port Elizabeth (eg DurbanTable)
- Our work in this area is key to keeping consumers safe from food borne pathogens

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AGRICULTURE TECHNOLOGY INNOVATION MUST BE INCLUSIVE FOR TRANSFORMATION

WHAT ABOUT PRIVATE SECTOR

- Key in areas not subject to market failures (e.g. seed, agrochemicals & machinery)
- Global contribution has been increased by more than 40% (1970 –2010)
- Concentrated in developed countries, but potential for benefits in developing countries – particularly within Africa
- Tends to focus on specific types of commodities where returns can be easily appropriated – still essential to smallholder farmers
- Often overlook crops, traits and technologies vital for livelihoods of the poor
- **Should we not explore the expansion of private sector partnerships with the public sector?**

Comments or Questions

Re a Leboha!
Siyabonga!
Ria Livhuwa!
Ha Khensa!
Siyathokoza!
Re a leboga
Siyabulela!
Baie Dankie!
Thank You