

Forum for Agricultural Research in Africa

Contextualising Plant Variety Design within the CAADP and Science agenda Frameworks

Dr Yemi Akinbamijo

Executive Director

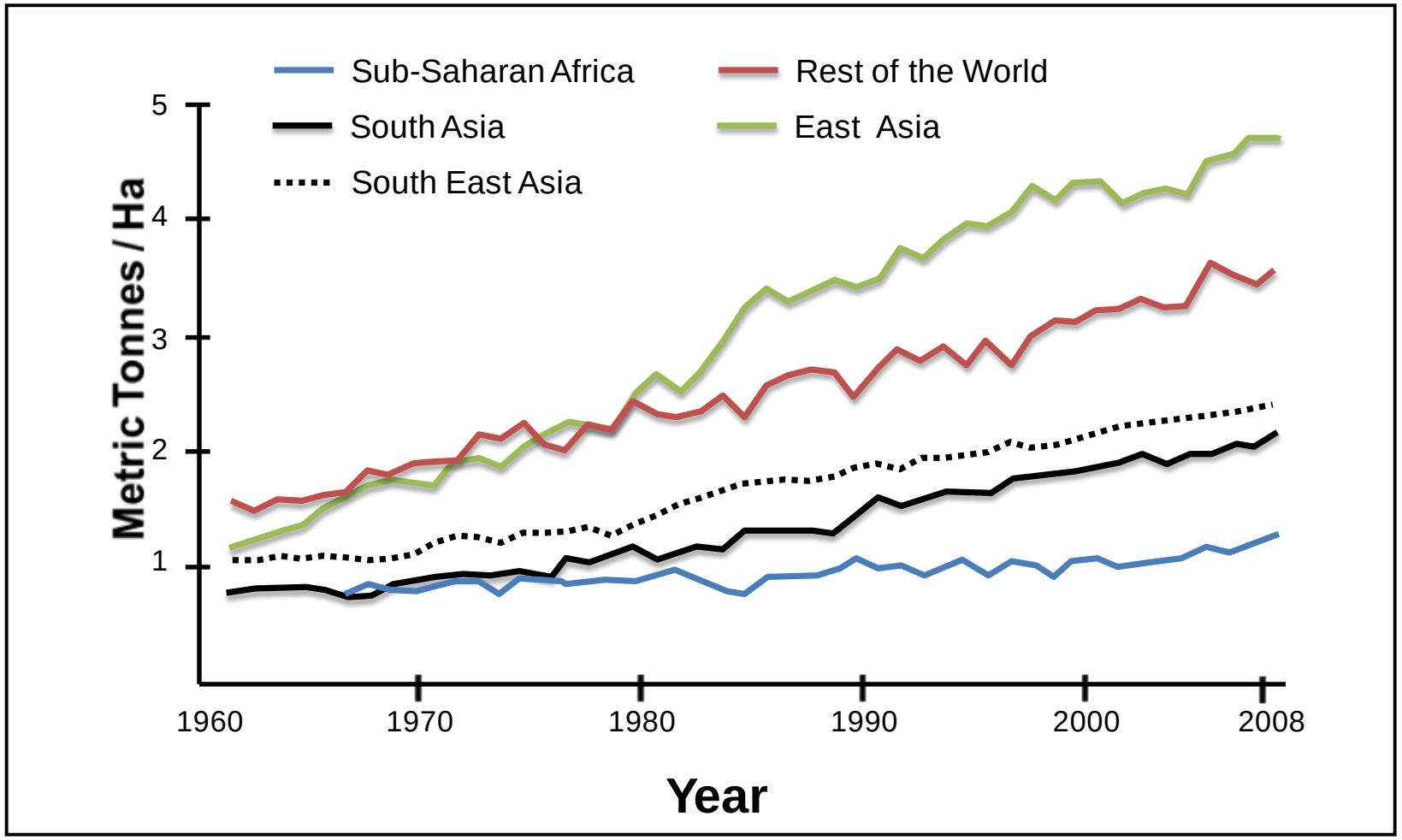
Consultative meeting on
"Demand-led plant variety design
Windsor Hotel, Nairobi Kenya
May 14-15 2014

Outline

1. The overarching policy framework for transforming African agriculture—CAADP
   - Where we are coming from (from decay to growth)
   - Where we are going –sustaining the CAADP momentum
2. Situating plant variety design in CAADP
   - Science Agenda for Agriculture in Africa
   - Overcoming the biological and mechanical challenges
   - Demystifying science and scientific tools
3. About FARA
4. Concluding Remarks

From decay to growth

Cereal Grain Average Yield by Region (mT/Ha)



From decay to growth—the challenges

- **Major trends are pointing in the desired direction (growth) but progress is too slow to achieve development targets and aspirations**

- **Concerns abound regarding sustainability and inclusiveness of recent growth gains**

- **Science, Technology and Innovation (STI) is instrumental to addressing above challenges**

The real challenge

“Challenges will always abound; overcoming them is the real challenge”

Yemi Akinbamijo

The African Agriculture Transformation Agenda

- **The Comprehensive Africa Agriculture Development Programme (CAADP): An initiative of the African Union and NEPAD**

- **A framework for revitalising agriculture as the driver for Africa's structural transformation**

- **Represents a fundamental shift toward African ownership and leadership of its development agenda *(a demand-led orientation)***

- **Emphasis of the new CAADP phase (2013-2023) is on results and impact**

CAADP: The pathway to transformation

Wealth creation; Improved Food and Nutrition Security; Resilience

Sustained inclusive agriculture growth

(Agribusiness & Entrepreneurship; jobs, poverty reduction; national & regional agric markets & trade; Africa's share in global agriculture trade)

1	2	3	4	5
Increased agriculture production and productivity	Increased value-addition and access to better functioning markets and trade	Food and nutrition security for all	Resilience to climate change and other risks	Public-private engagement and investment financing

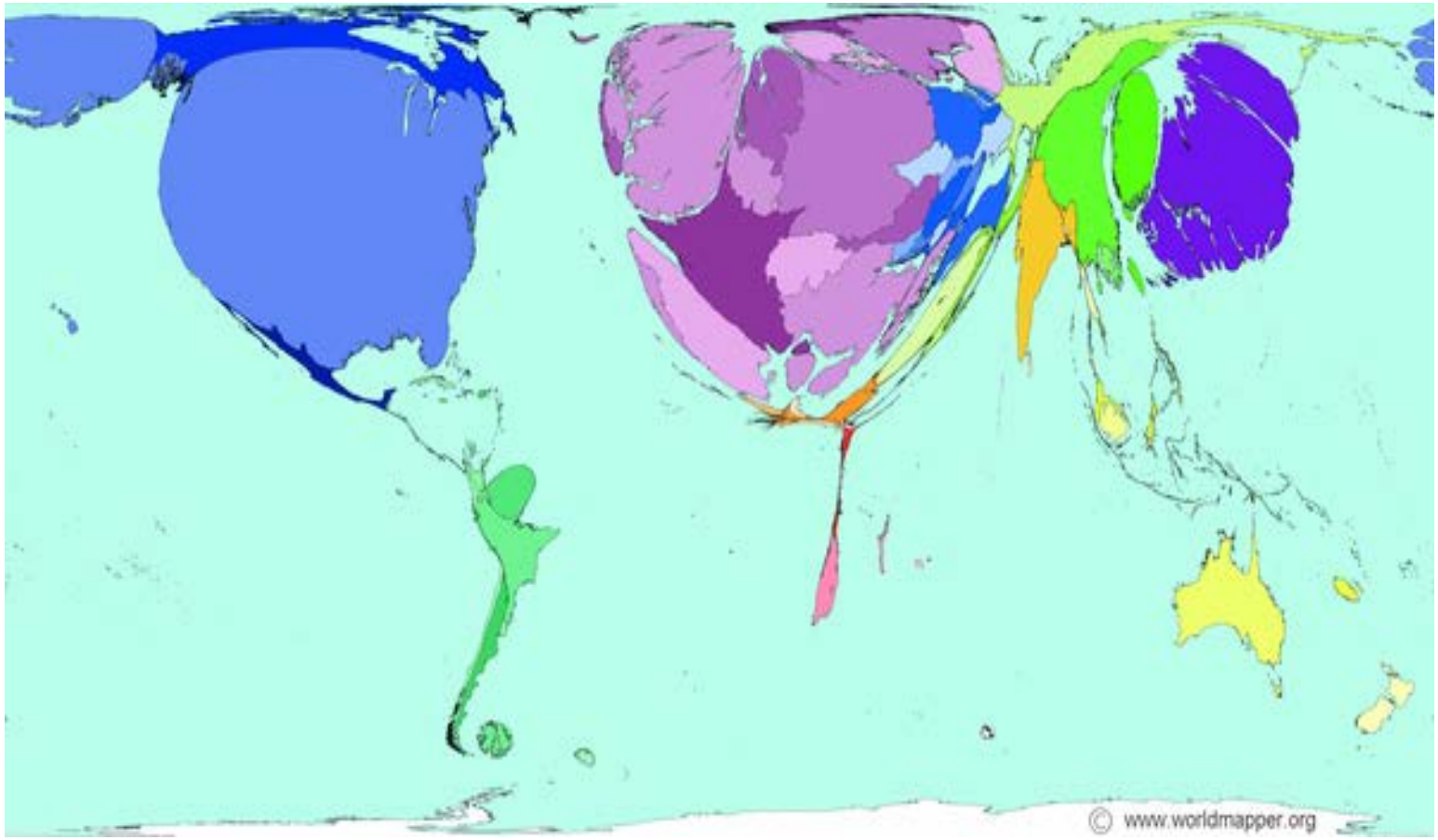
STI is necessary for improving production, productivity & competitiveness

- **Africa lags behind in both the generation and adoption of science outputs**

Region	No. variety releases, 1965-1998	Share area to modern varieties, 1998	Share area to modern varieties, 2010
LAC	3,146	0.51	
Asia	2,229	0.83	
MENA	715	0.56	
SS Africa	1,157	0.23	0.35
All	**7,246**	**0.65**	

Source: Renkow and Byerlee, 2010

Science Outputs: Africa lags behind



Countries re-sized according to scientific output

Situating STI in CAADP

Wealth creation; Improved Food and Nutrition Security; Resilience

Sustained inclusive agriculture growth

(Agribusiness & Entrepreneurship; jobs, poverty reduction; national & regional agric markets & trade; Africa's share in global agriculture trade)

1	2	3	4	5
Increased agriculture production and productivity	Increased value-addition and access to better functioning markets and trade	Food and nutrition security for all	Resilience to climate change and other risks	Public-private engagement and investment financing

STI in CAADP

- **Science Agenda designed to assure full African ownership of and leadership of STI**
  - ***to ensure the STI is demand-led***

- **The Science Agenda is:**
  - ***An agenda with a game plan'***
  - ***Will be endorsed by Heads of State & Governments in July 2014***
  - ***Meaning it combines Science with Politics***

Vision for Science in African Agriculture

"By 2030 Africa ensures its food and nutrition security; becomes a recognised global scientific player in agriculture and food systems and the world's bread-basket"

Vision aligns with the Africa Agenda 2024 (STISA) and 2063 of the African Union

In the short- to -medium-term, the Science Agenda will advance CAADP's targets under the Sustaining the CAADP Momentum strategy

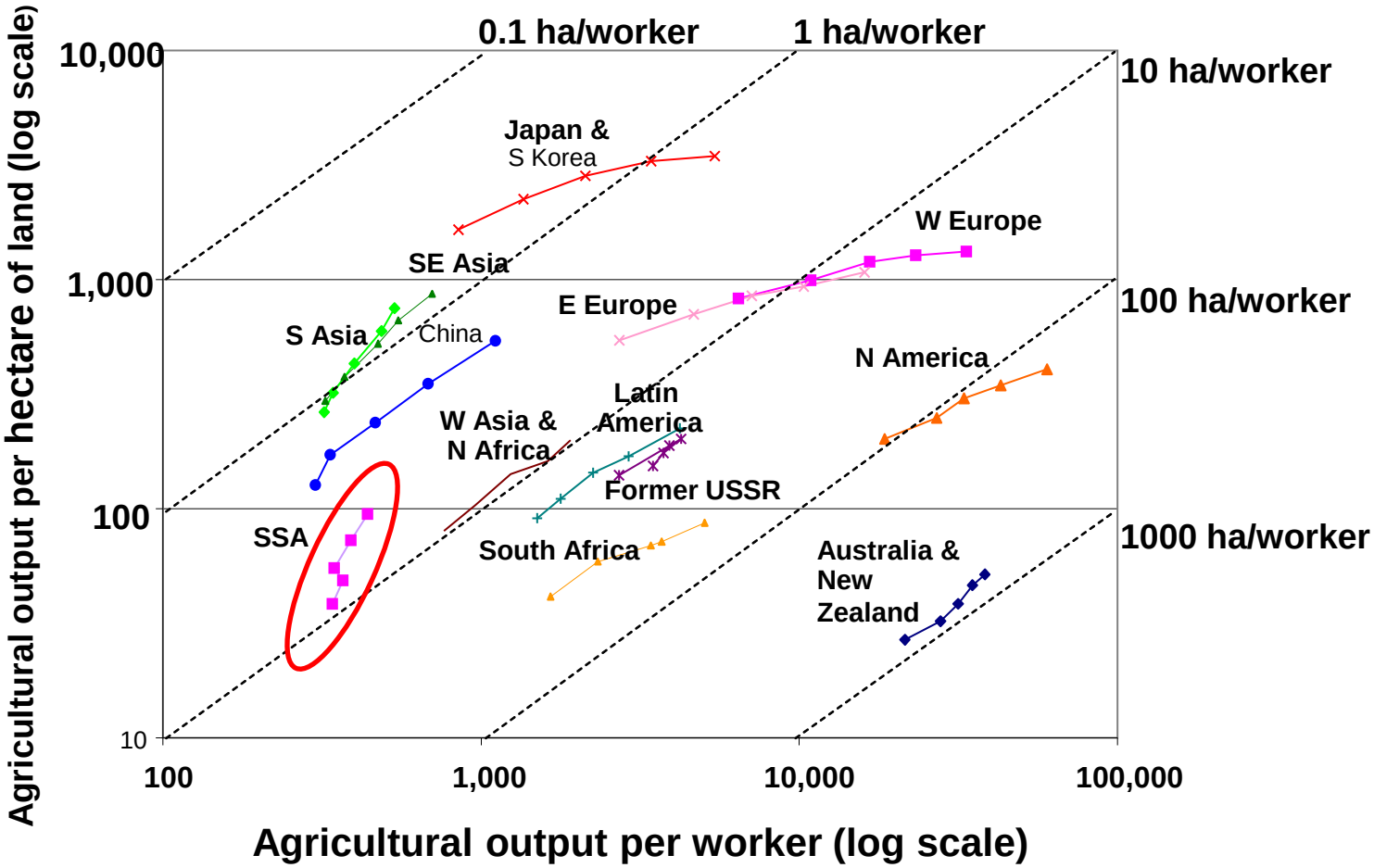
TARGET:

Double agriculture total factor productivity (TFP) by 2025

Doubling TFP will entail …

… devoting special attention to:

- labour productivity and biotechnology (genetic productivity)



Improving labour productivity

"We will have to phase out the hand hoe if we are to attract the youth into agriculture."

"… the right place for the hand-hoe should be the museum."

HE Tumusiime Rhoda Peace,
AUC Commissioner for Rural Economy and Agriculture

Science Agenda Themes

Categories

1. Sustainable productivity in major farming systems
2. Food systems and value chains
3. Agricultural biodiversity and natural resource management
4. Mega trends and challenges for agriculture in Africa

Cross cutting themes

1. Sustainable intensification,
2. Modern genetics and genomics
3. Foresight capabilities

Breaking the myth of Biotechnology

- Possibilities already demonstrated in existing varieties that are widely used NERICA, disease resistant bananas, livestock vaccines, etc

- Decisions on use of specific biotechnology tools (GMOs) held up by campaigns not backed by evidence & driven by external interests (contradict demand-led)—a unique challenge

- **Needed actions:**

  1. A rational debate to consider the problem, all possible solutions including all forms of biotech and their associated benefits and risks)
  2. Communication strategy on benefits and risks

Breaking the myth of biotechnology

Further needed actions

3. Assess the success of regional biosciences platforms to identify biosciences based innovations emerging from research conducted & their scaling up

4. Strengthen biosciences research platform used to generate new knowledge of potential impact on African agriculture

Realising the Science Agenda Vision: Making it happen …1/3

1. Strengthening Institutional Systems of Science for Agriculture

- Enhance supra-national collaboration and collective action (regional, continental and Global)
- Regional centres of excellence
- Facilitate mobility of people, knowledge and resources among African countries and beyond

2. Sustainable financing of the Science Agenda

- Financing from domestic sources is the key
- Mobilizing revenues from Africa's growing economies

Realising the Science Agenda Vision: Making it happen …2/3

3. Creating a favourable policy environment for science

- legislative and regulatory environment
- Strong commitment to women and youth
- Managing the science-policy interface

4. Using the Science Agenda at national level

- Mainstreaming the Science Agenda
- Strengthening African ownership and leadership of the Science Agenda
- Ensure capacity at the national level

Realising the Science Agenda Vision: Making it happen …3/3

5. African Solidarity in Science

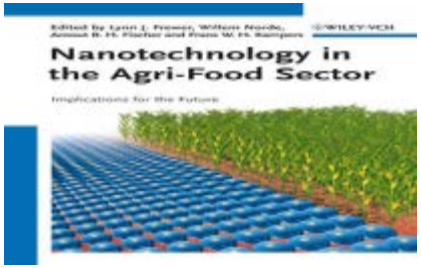
- Commitment to share benefits of discovery
- African Science and Agricultural Transformation Initiative (ASATI)
  - Science honours (African Food Prize)
  - Science mobility *(e.g. ReMoCaSt)*
  - Engaging Africans in the diaspora.

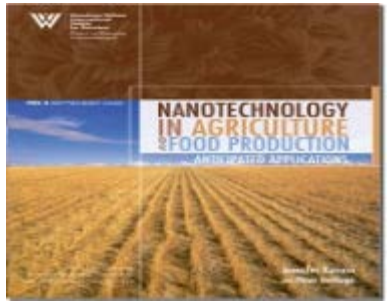
Taking advantage of the possibilities offered by Nanotechnology

- Produce more food on less land, water, chemicals, waste, GHGs
- Produce safer, healthier more nutritious foods

Frontiers of STI and opportunities

Nanotechnology has estimated global market $2.5 trillion in 2015 with promising applications for food security





- Improve precision farming through nanotech-based sensors and monitoring systems
- Provide efficient delivery system for water, nutrients and pesticides
- Provide smart food packaging system

Demand-led innovations

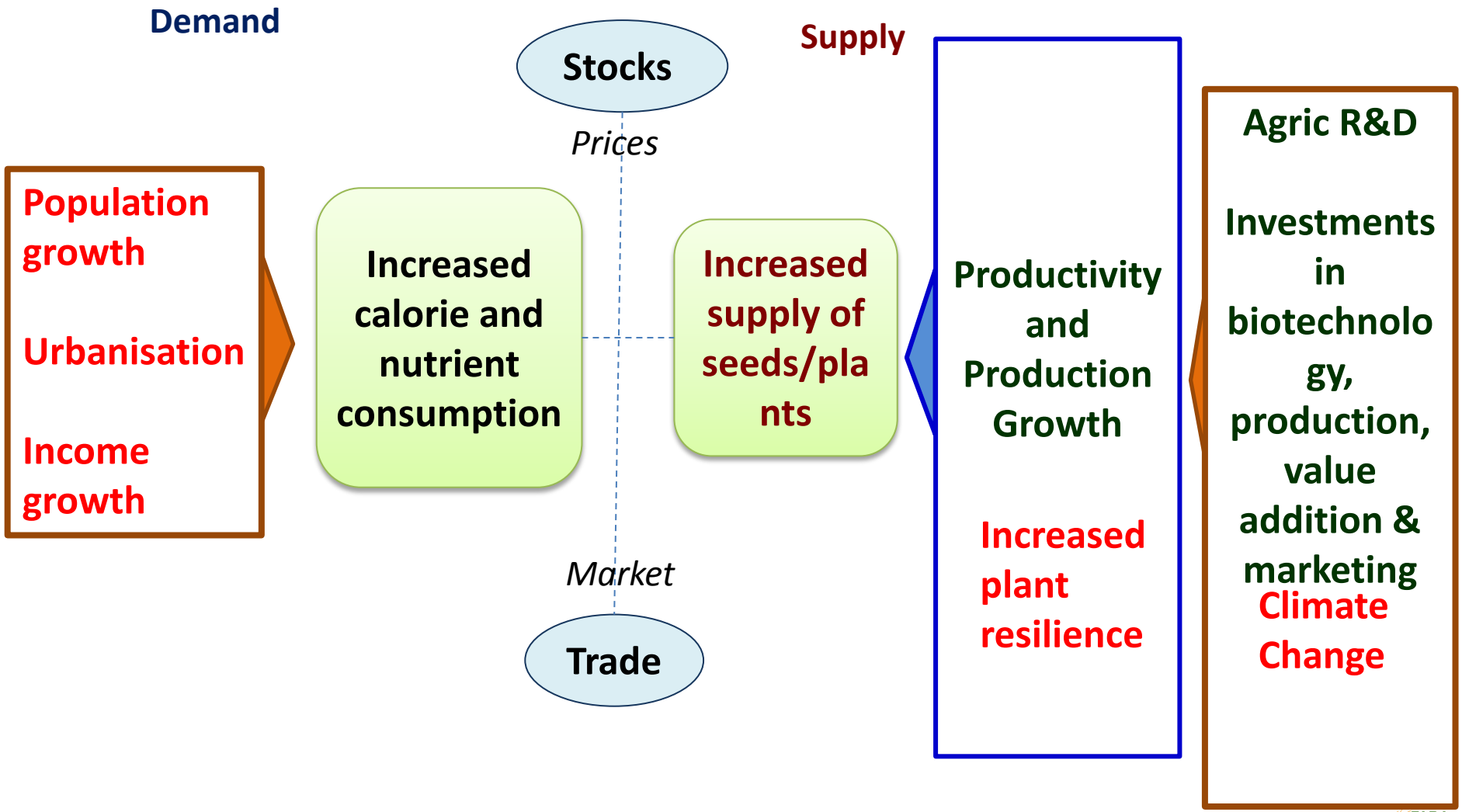
Whose Demand?

Not only producers, but all actors across the value chain

When?

Consider not just current demand, but future demand as well *(medium term and long term)*

Mega-trends place greater demand on Plant Variety Design



IAR4D assures variety design is demand-led at local level

FARA-led 7- year Proof-of-concept study confirms that IAR4D:

- reduces product uptake –time lag
- improves adoption and
- benefits across the value chain

The Forum for Agricultural Research in Africa

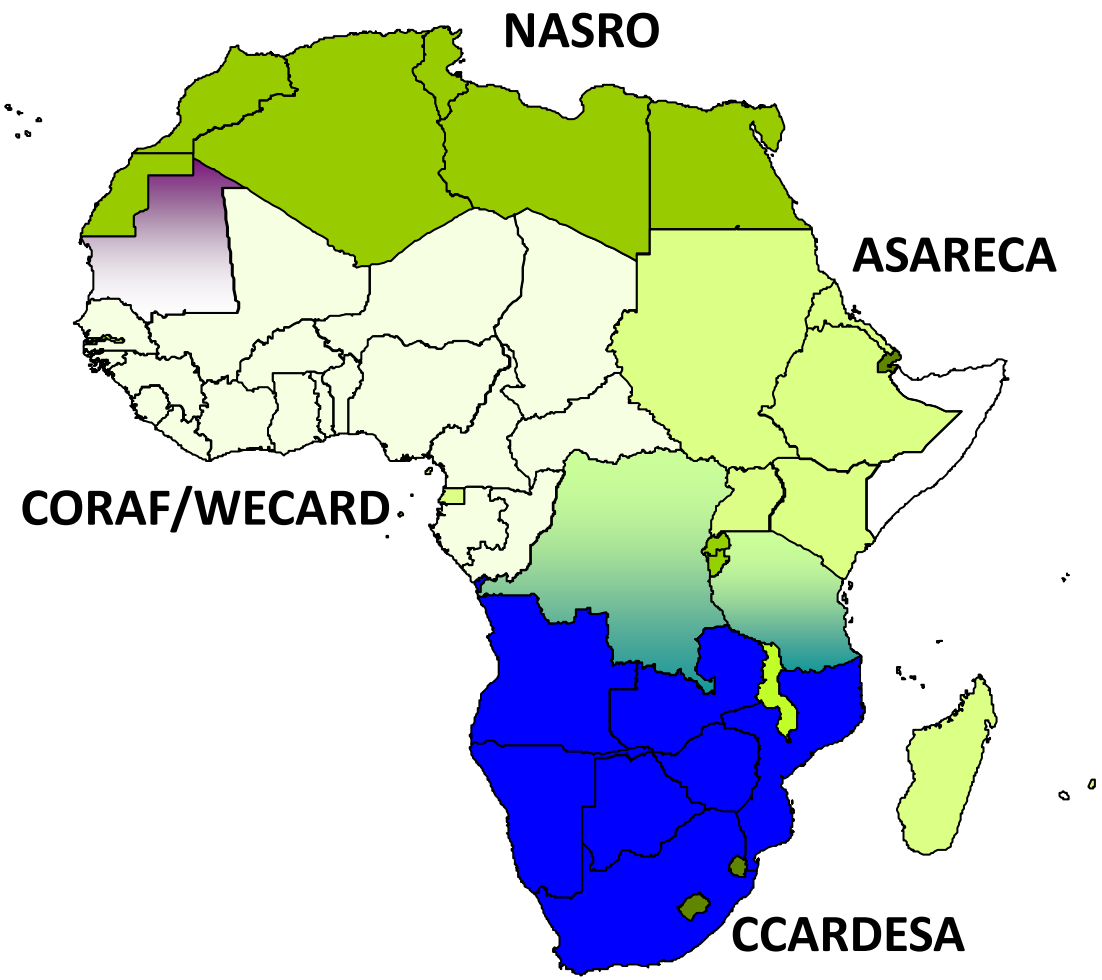
Rationale

Created in 2002 to meet the demand for collective action in agriculture science, technology & innovation at continental level

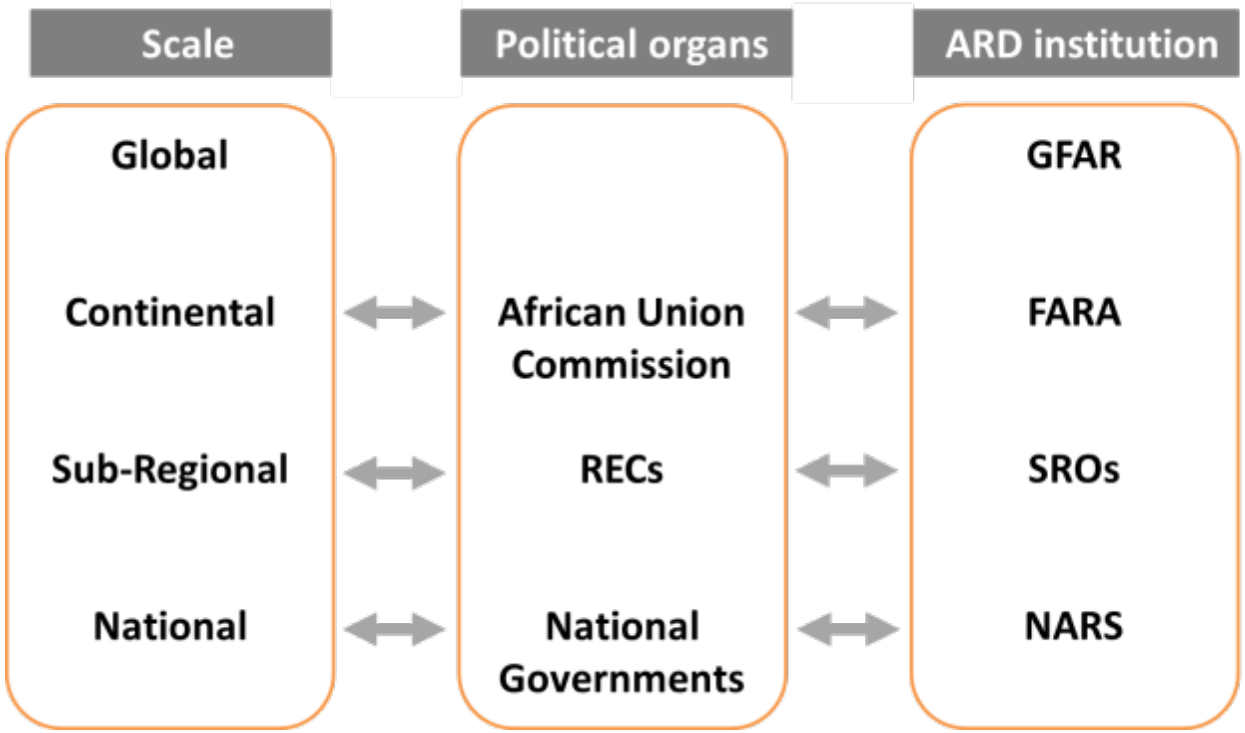
Purpose:

To contribute to generating high broad-based and sustainable agricultural growth in Africa by improving *productivity, competitiveness* and *market access*

SROs are the building blocks of FARA

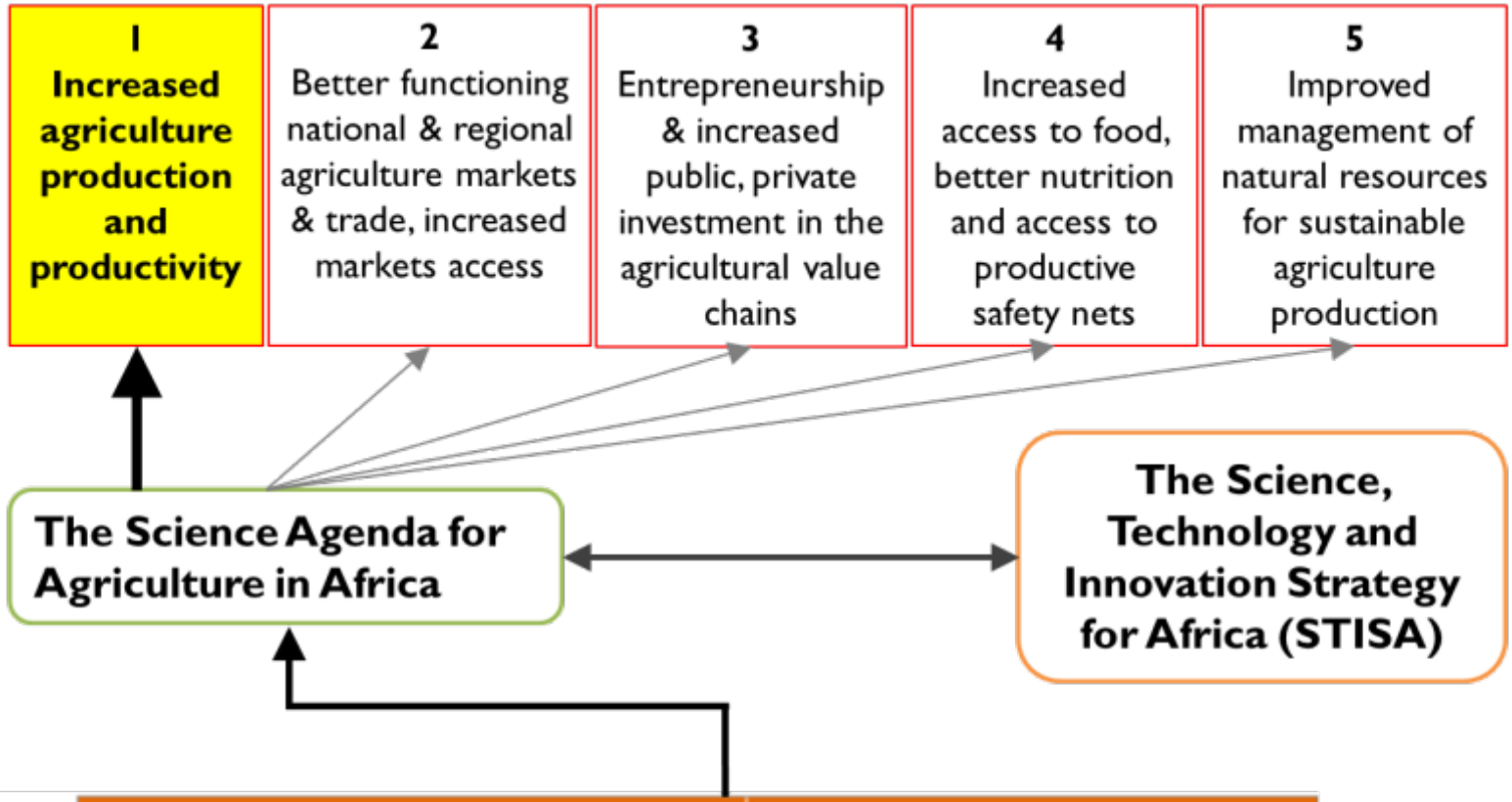


Architecture of African ARD institutions



FARA is well placed to facilitate the linkage between Science and Politics at the continental level

How FARA's Strategic Priorities Contribute to CAADP



Strategic Priorities of FARA	FARA Programmes	
I. Visioning Africa's agricultural transformation	AFDA, PAINT, PSTAD, SSA CP	Gender and Youth
II. Integrating capacities for change	ReMoCaSt, UniBRAIN, AHC-STAFF, E-capacities, CD JAG	African SPEAR
III. Enabling the policy environment for agricultural transformation	AFAPP, PAEPARD, ASARD, Africa Feeding Africa	

FARA's engagement in Biotech

SABIMA (Strengthening Agricultural Biotechnology Management in Africa) supported by Syngenta Foundations for Sustainable Agriculture

Objective:

Strengthening Biotechnology Stewardship capability especially GMs to ensure:

- **Product safety**
- **Product integrity**
- **Product meets requirement for trade.**

Under good stewardship, it is possible for conventional, organic and GM crops to coexist in the same country.

SABIMA Achievements

- Six (6) countries supported to develop capacity in biotechnology stewardship
- Over 100 persons trained on biotechnology stewardship
- Contributed to breaking the myth about biotechnology

Concluding Remarks

- First step to ensuring that plant variety design is demand-led is to situate it within CAADP and Science Agenda framework
  - They represent the aspirations of Africans
  - They are African owned agendas

- At local level innovation systems approaches provide framework for assuring demand-led innovations

- It is possible to demystify the myth of biotechnology.
  - We need concrete steps to be agreed upon by science and policy leaders needed.
  - Potentially one of the game changing outcomes of the African year of agriculture



Thank you

www.fara-africa.org

Follow us on @FARAinfo

FARA@15 Commemoration
Accra, Ghana, November 2014