



Forum for Agricultural Research in Africa



Deploying Science, Technology, Innovation & Intellectual Property (STI&IP) for Enhanced Agricultural Productivity and Food Security in Africa

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Outline

The Background: Africa's development context and role of STI&IP

FARA's Response to Addressing Africa's Agricultural Productivity Challenges through STI&IP strategies and programmes

Leveraging on S3A (and STI&IP) as Tools for Transforming African Agriculture in alignment with the CAADP

Conclusion and Policy Recommendations

Africa's Development Context

Recent impressive economic growth in the last decade; 7 out of 10 fastest growing countries in the world are in Africa.

Optimism about the future (*structural transformation*)

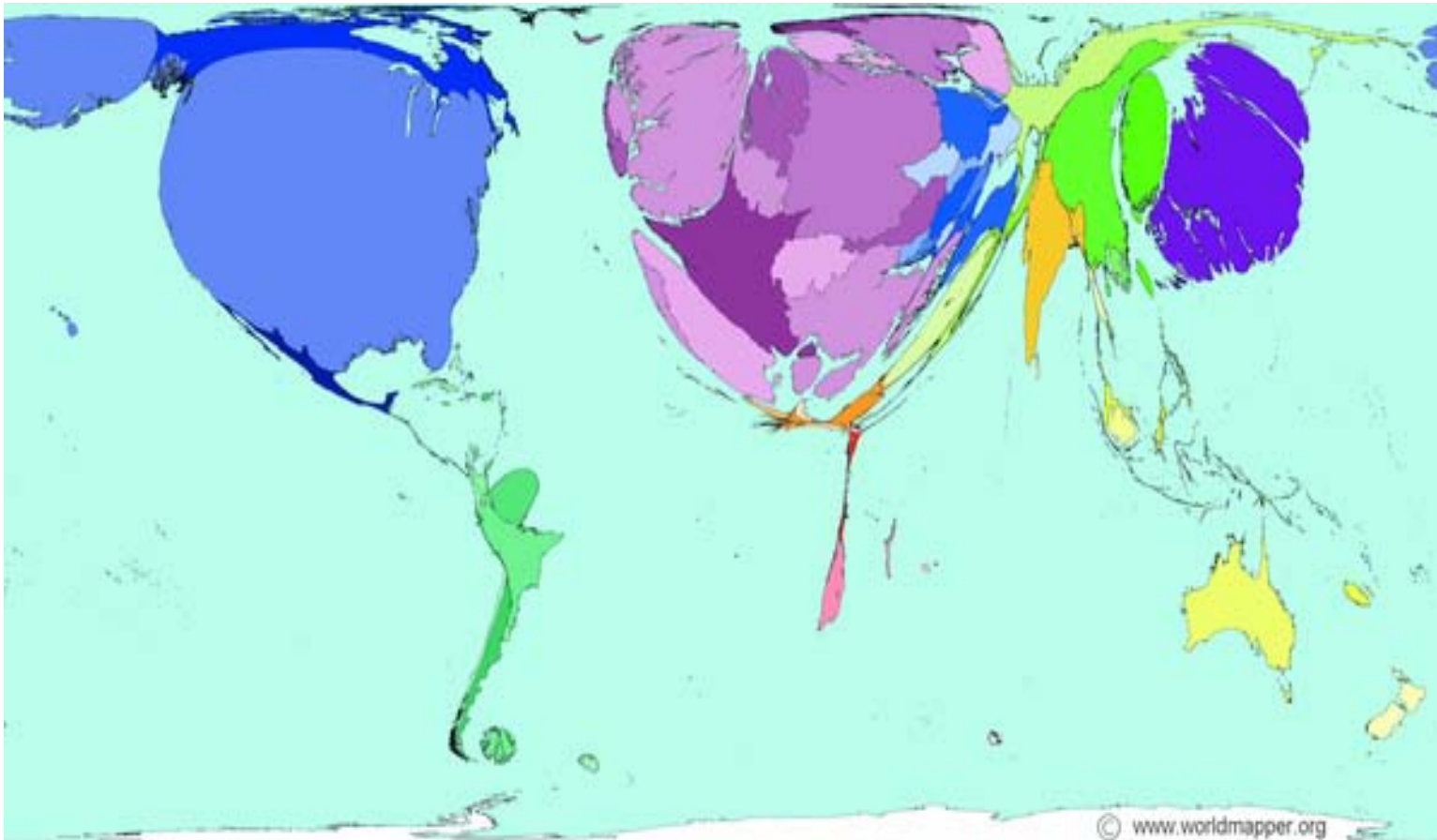
However Africa remains at the bottom of the inclusive development pyramid, with increasing level of hunger, poverty, and unemployment; why?

- 1. Instability**
- 2. Balkanisation (small states) / regional integration not deep enough**
- 3. Unfavourable economic policies (domestic and international)**
- 4. Limited exploitation of STI&IP hampers the transformation from agrarian to industrial societies**

Africa's Development Context: STI&IP's Angle

- **STI&IP are critical for realizing Africa's transformation agenda; yet STI investments fall far short of requirements.**
- **STI&IP amenities: considerably inadequate; state of decadence; eroded quality of science education; thereby undermining Africa's capacity to becoming a player in global knowledge value chain.**
- **USA and China: impressive performance (contributions to global patent fillings, trademark filling activities, plant varieties and industrial design fillings)**
- **Africa's share of patent application is not only the least in the world, but it stagnated at 0.6% from 2003 to 2013.**
- **In 2004, Africa contributed the least % of 2.8 to the global trademark application class counts; this % dropped further to 2.4 in 2013**

Global inequalities in production of scientific knowledge



Source: Worldmapper--Countries re-sized according research output

STI&IP is fundamental to enhancing agric productivity

Science & Technology kick-starts the agricultural development engine;

Complementary conditions (*socioeconomic, institutional & political*) keep engine running



STI&IP unlocks numerous opportunities

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

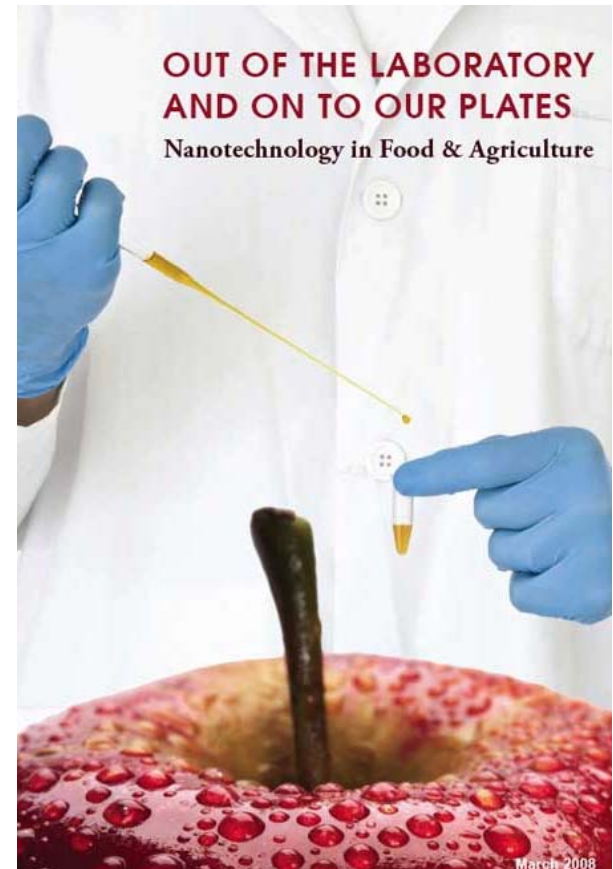
Improve precision farming through nanotech-based sensors and monitoring systems

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

Provide efficient delivery system for water, nutrients & pesticides

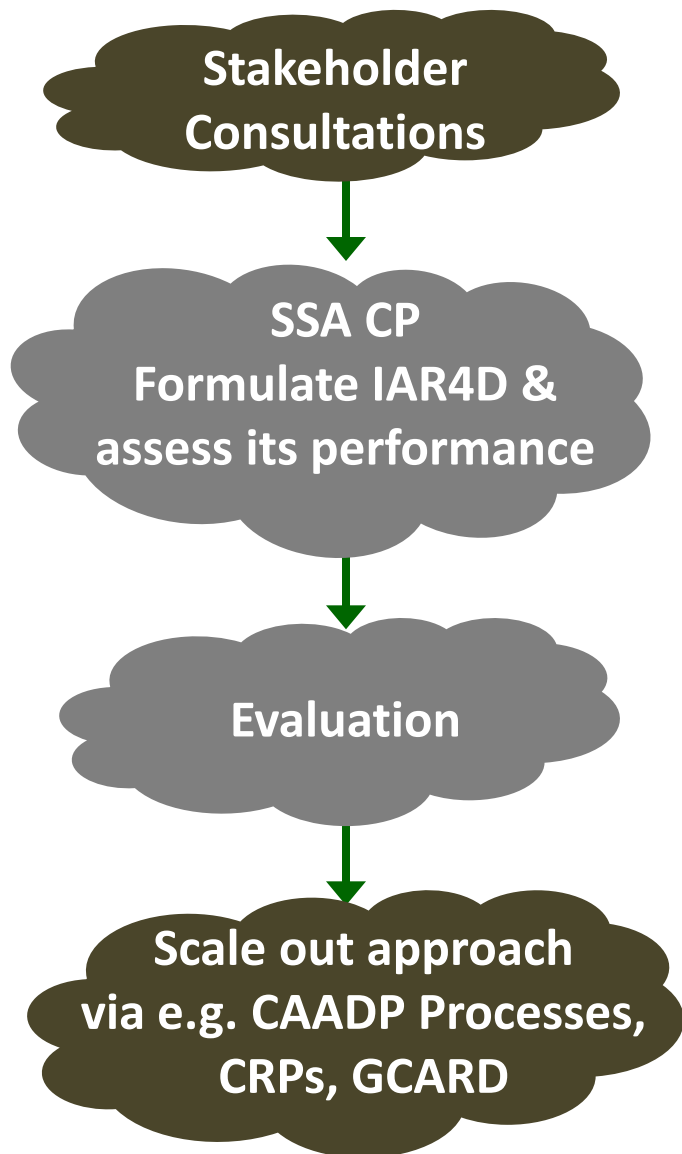
Provide smart food packaging system

Higher expectations from agriculture in a more challenging environment

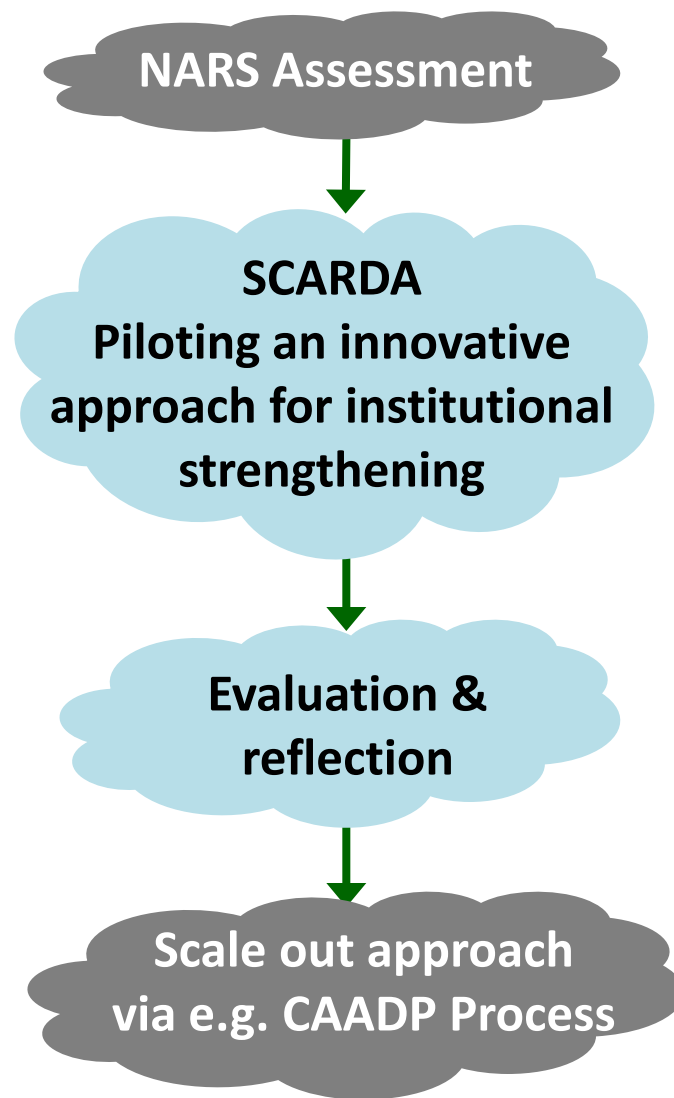


FARA's Responses through testing and scaling intellectual property (IP)-driven innovative approaches

Enhancing Ag. R&D impact



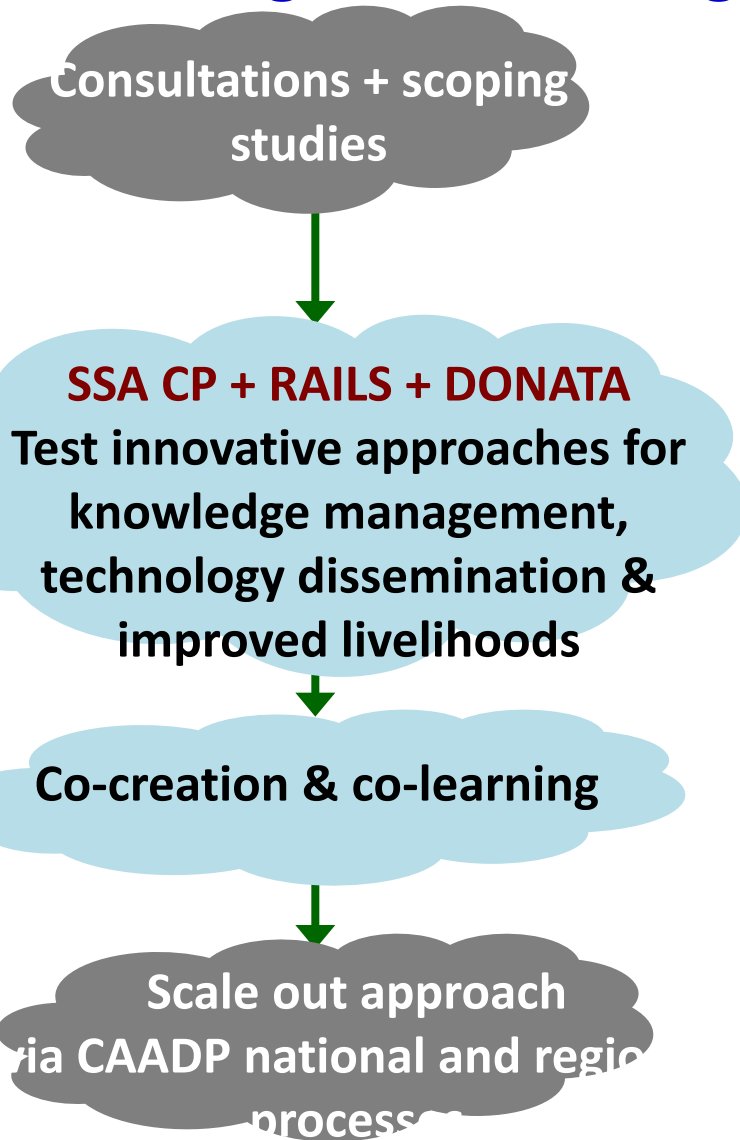
Institutional strengthening



FARA's Responses through testing and scaling

IP-driven innovative approaches

IP, Knowledge & Technologies



Others

- **Linking universities, agribusiness and research (UniBRAIN)**
- **ABBPP Strengthening Capacity for Safe Biotech Mgt in SSA (SABIMA)**
- **Strategic alliances with other regions & countries (Europe, Brazil, China)—PAEPARD**

What the S3A is about

The breadth of science, meaningful engagements between disciplines & effective transfer of outcomes of science to end users.

Within the framework of STISA 2024, S3A recognizes wide scale application of STI&IP for sustaining and realizing the CAADP goals, A3GT and the Malabo Declaration.

1. African decision-makers with the rationale for increased investments in science for Agriculture

2. The rationale for effective engagement of tertiary agricultural educational institutions with agricultural research systems & CAADP

3. The case for strengthening synergies in AR4D at all levels

4. A framework for measuring the impact and returns from agricultural innovations

Goals of S3A

Vision: *“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”*

Goals

Short-term: Increase domestic public and private sector spending and create the enabling environment for sustainable application of science for agriculture

Medium-term: Build basic science capacity at national and regional levels with special attention to the youth and women

Long-term: Double the current level of Agricultural Productivity by 2025 through application of science for agriculture

S3A Themes

Categories

1. Sustainable productivity in major farming systems

2. Mechanisation

3. Food systems and value chains

4. Agricultural biodiversity and natural resource management

5. Mega trends and challenges for agriculture in Africa

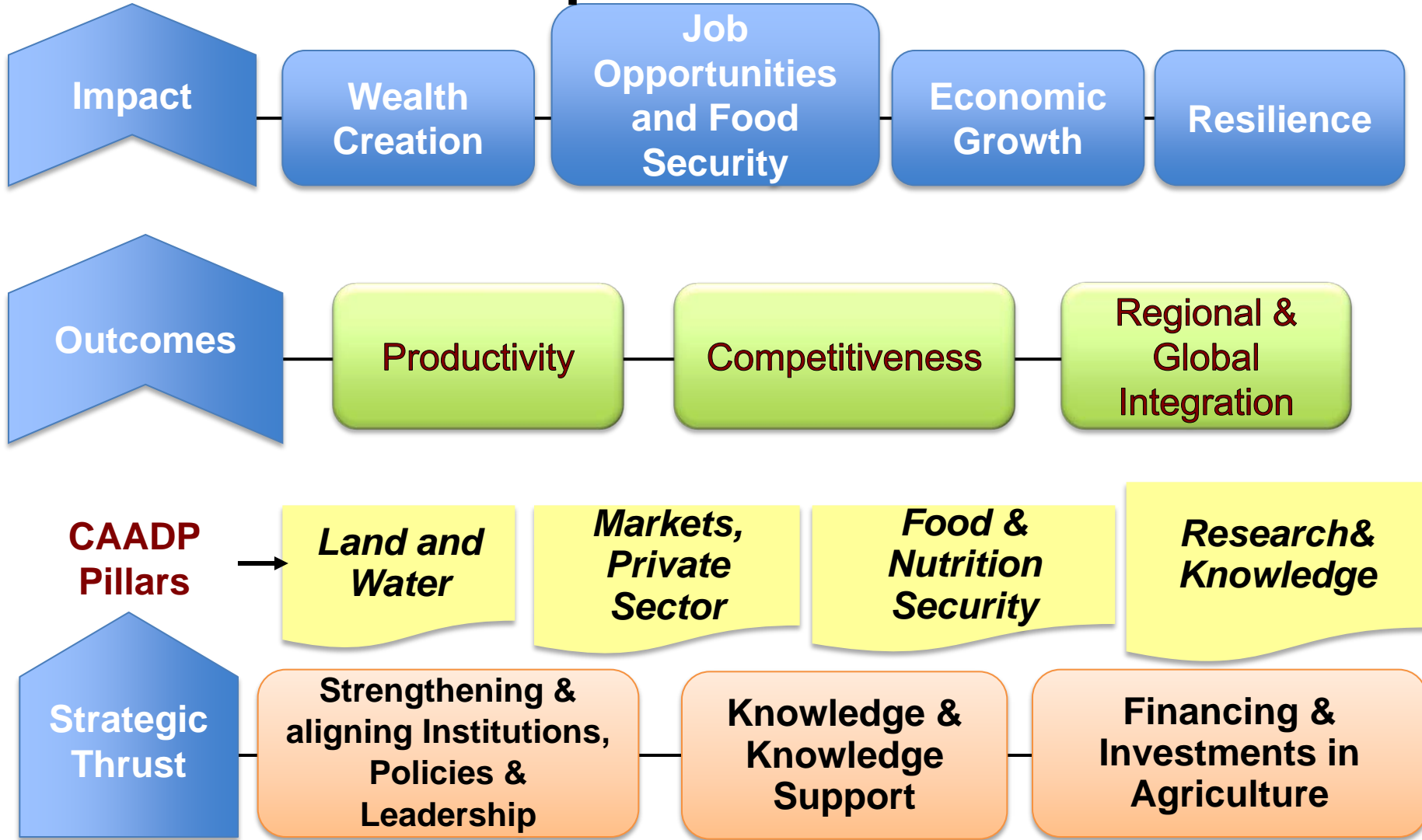
Cross cutting themes

1. Sustainable intensification

2. Modern genetics and genomics

3. Foresight capabilities

Leveraging on STI&IP for enhanced agric productivity in response to CAADP



S3A Alignment to CAADP RF

Outcomes: Wealth creation & poverty reduction; Improved Food and Nutrition Security, Resilience; and Environmental sustainability

Transformation & Sustained Inclusive Growth of Agriculture

1
Increased agriculture production and productivity

2
Better functioning national agric. and food markets & increased intra/inter-regional trade

3
Expanded local agro-industry and value addition

4
Improved management and governance of natural resources for sustainable agricultural production

Science Agenda for Agriculture in Africa (S3A)

STISA & Agenda 2063

Conclusion and Policy Recommendations

More actions needed for using IP-legislations to stimulate national agric innovations and productivity.

Pan African Intellectual Property Organization (PAIPO), African Regional Intellectual Property Organization (ARIPO), and African Intellectual Property Organization (OAPI) need to be re-invigorated, by creating an enabling regulatory environment in which food-related IP is respected, enforced and commercialized.

Leveraging on FARA's innovation-to-impact programme, a proposed WIPO-FARA partnership could focus on efficient IP management, institutional IP capacity building and IP awareness creation for realizing Africa's agric. Transformation agenda.

Thank you for the attention

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Science Agenda for Agriculture in Africa

"Connecting Science" to transform agriculture in Africa

