VISION of African Union

“An integrated, prosperous and peaceful Africa driven and managed by its own citizens and representing a dynamic force in the international arena”

MISSION of STISA-2024

To accelerate Africa’s transition to an innovation-led, Knowledge-based Economy

STI

Role

Tool

Relating the most performing tool to the most experienced hand, that is to say Improving STI status in terms of infrastructure and critical mass of skills and entrepreneurial mindset

Setting priorities and implementing mobilizing programs supported by an efficient management to meet the needs of the society including education
The African Agricultural Policy Agenda

- Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods, 2014. Recommitment to allocate at least 10% of public expenditure to agriculture, and to ensure its efficiency and effectiveness.
- The NEPAD/CAADP agenda
- Commitment to invest in agriculture
Lack of Political will

AG SHARE OF TOTAL EXPENDITURES %

0 5 10 15 20 25

Guinea Bissau  DRC  Morocco  Mauritius  Rwanda  Cameroon  Burundi  Swaziland  Sudan  Tanzania  Benin  Nigeria  Zambia  Madagascar  Mozambique  Ghana  Ethiopia  Senegal  Niger

CURRENT, 2007 (Unless otherwise noted)  CAADP 10% BENCHMARK
Comprehensive African Agricultural Development Programme (CAADP)

To address key challenges:

• market/ trade-related difficulties;

• technological obstacles and policy constraints that lead to low agricultural productivity and resulting in food insecurity.

It was endorsed by the AU Summit of July 2003 in Maputo, Mozambique and all RECs in Africa were mandated to implement the programme in their respective regions.
CAADP Objectives

• To assist African countries to reach a higher level of economic growth through agriculturally-led development;
• Eliminate hunger;
• Reduce poverty and food insecurity; and
• Enable expansion of trade.

CAADP targets agriculture growth rates of 6 percent per year with NEPAD as the key organ for its implementation.
CAADP Implementation: Key results and lessons

- 45 Countries actively engaging
- 32 Country Compacts
- 29 Investment Plans
- 27 Business Meetings

Regional Investment Plans
(ECOWAS; COMESA; IGAD; SADC; EAC & ECCAS)
Progress being made in Africa

• Total biotech crop ha increased by 6%. From 3,233,781 (‘12) to 3,435,759 ha (‘13). B Faso 51%, Sudan 207%.

• 7 countries conducting CFTs on food security crops. Banana, cassava, potato, cowpea, maize, rice, sorghum, wheat & sweet potatoes.

• Distribution of biotech crops’ trait broadened. 37 on-going; 23 on tropical pest and disease resistance; 5 nutritional enhancement; 3 NUE & salt tolerance; 2 on flower colour in Gypophysia; & 1 modified oils in soybean.

• New commitment of governments to research as integral to development
## Status of GM Technology Development in Africa

1. **Crop Improvement Projects**
   - Insect resistant maize, cowpea
   - Nitrogen use efficiency maize
   - Virus resistant cassava
   - Nutritionally enhanced cassava, banana, sorghum

2. **The African Orphan Crops Consortium (AOCC).**
   - Genomics Lab
   - The African Plant Breeding Academy
   - Whole Genome Sequencing began for 12 species at BGI
   - Re-sequencing done for 40 accessions (P. vulgaris 12; Cleome gynandra 28) at AOCC lab, ICRAF, Nairobi.
   - Gene sequencing: 50 AOCC species and Genome size estimation: for 101 species (on going)
Status of GM Technology Development in Africa II

3. GM technologies for malaria control
   - Transgenic insects for Malaria control
   - GM entomopathogenic fungus
   - Paratransgenesis using mosquito gut bacteria

4. Genetically improved tilapia

5. New plant breeding techniques
   - Oligonucleotide Directed Mutagenesis;
   - Zinc Finger Nuclease Technology;
   - Cisgenesis and Intragenesis;
   - Grafting; Agro-infiltration; RNA-dependent DNA methylation;
   - Reverse breeding; and Synthetic genomics
Challenges Facing Africa on Biotechnology and Biosafety

• Lack of fund
• Loss of technical expertise
• Quality seeds and inputs (fertilisers & agrochemicals)
• Slow development of a biotechnology sector
• Inadequate IPR infrastructure
• Government not taking a more active political role in promoting the technology
• Public acceptance
What we have done to build confidence to African regulators in decision making

1. Policies and regulations to promote safe development, diffusion, and adoption of agricultural GMOs
2. Risk assessment techniques and their application to inform decision-making
3. Training to improve critical mass of regulators with enhanced competencies in biosafety regulation
4. Enhanced biosafety communication and cooperation
5. Exposing regulators to best practices
Most Important Success Factors

- Political will to embrace the technology
- Workable biosafety laws and regulations that provide an enabling environment for appropriate regulatory decision-making
- Capacity building for application handling, review and timely decision making
- ‘Seeing-is-believing’ study tours under the South-South Cooperation
Areas for collaboration

• Seed Sector;
• Small Farm Machinery;
• Water/Irrigation;
• Post-Harvest Management;
• Livestock-Dairy Sector; and
• Social Science/Gender/Youth Empowerment
Seed Sector

• Private seed companies to share technology dev.t, regulatory, commercialization, and stewardship experiences with countries in Africa; e.g. Bt cotton hybrids in Sudan.

• Demonstration trials in African countries;

• Licensing of Bt genes; and

• Development of partnerships with institutions in Africa.
Technology Transfer: *Modus operandi*

India-Africa Partnership towards sustainable development

- Need determination of local stakeholders
- Feasibility assessment
- Partner engagement and network building (long term sustainability).
- Capacity building
Conclusion

• Absence of functional, efficient & technically competent regulatory system-major constraint.

• Risk of backsliding by some countries.

• No coherent position among govt. agencies; or within key government entities.

• Elections: a challenge and an opportunity.

• Use scientific prediction as a basis for action.