African Agriculture in the Face of Growing Global Challenges

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First Congress of Science
Ethiopian Academy of Science
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The Ethiopian Academy of Sciences

- Creation of the Academy
- First Congress of EAS
- EAS Value and Roles
African Agriculture:

Daunting Challenges

Limitless Possibilities
The Headlines

2011  7.0 Billion
2050  9.5 Billion

A near 40% increase in Global Population + Diet Change in the Emerging Economies = ~ Double Food production in 40 years
Today,

Nearly 1 Billion Poor Face Hunger Daily

+ 2.6 Billion People earn < $2 / day

(40% of the World Population or 60% of the rural people)

= Humanity Will Face Formidable Challenges!
The struggle to reduce hunger, poverty, and attain global food security is “Humanity’s Grandest Challenge of the 21st Century”

“With all the abundance of resources in the world, and all the significant advances in science and technology around us, we have not been able to give humanity that fundamental right to enough food!”

Ejeta, 2009

“The root cause of hunger is Poverty”

Global Hunger Index
- ≥ 30.0, extremely alarming
- 20.0 – 29.9, alarming
- 10.0 – 19.9, serious
- 1.5 – 9.9, low to moderate hunger
- no data
- excluded from GHI

Challenges of the Global Food System

A: Existing, Growing Challenges

- Population Growth
- Ecological Concerns
- Land Constraints
- Pre- and Post-Harvest Food Losses
- Food Safety & Nutritional Concerns
Challenges of the Global Food System

B: Emerging Grand Challenges

- Climate Change
- Looming Water Crisis
- Energy Crisis (Demand & Cost)
- Problems of Global Trade & Inequities
The Narrative

- Rapidly Growing World Population
- Growing Demand for Food, Feed, Fiber, Fuel
- Growing Pressure on Planet Earth
- Finite Natural Resources; Infinite Demands
  
* * *

Concern About Sustainability, And What To Do About It--- both evident!
The Urgency of the Problem:

- For Poor and Rich Nations – for Humanity at Large:
  We badly need to break our habits

- We Need to Invest in Science now before the problems get out of hand!!
How Do We Feed the World?

Solutions Lie Not in Panic and Desperation but in:

Science, Technology, and Innovation

Science Needs to be Given the Chance

Governance, Policy and Commitment are Key!
Farming in Ethiopia has been a brutal struggle without science

---and somehow as people, we have

Focused for too long on “The Problems” and not “The Solutions” and doing things “The Ethiopian Way”
Modern Agriculture Has Been Slow in Taking Hold in Africa

Agriculture in Africa: 40% GDP; 80% Employment

The Basic Essentials Necessary for Livelihood Change had Major Problems in Africa
Keys to Science-Based Development

- Science, Technology, and Innovation
  - (Education)

- Human and Institutional Capacity Development
  - (Public, Private, and Incentives)

- Sound Governance, Policy, and Executive Leadership
  - (Resolve and Commitment)
Science, Technology, and Innovation?

No Nation has Developed Its Economy without the Catalytic Powers of Science, Technology, and Innovation

The African “Anti-Science” Rap is Mostly Undeserved!
Strengthening Human and Institutional Capacity of a Nation

HICD as *Indispensable* and *Enduring* Investments

Nation Building Can Only Be Achieved by Nationals
The Current African Awakening:

Includes Expansion in Tertiary Education

But,

Rapid Expansion can be double-edged Sword
Capacity Strengthening

Understanding the Problem Critical to Finding Solutions

Need to Move Away from Delivering TA via the Disaster Relief Mode: Ag Development is too Complex, Requires Integrated Interventions
Africa Has Had Challenges in Governance and Democracy

Never Could Focus on the Bigger Challenges of Hunger, Poor Health, and Illiteracy
Governance

Democracy is **not** a luxury but a right of people

Development without Democracy?
Clear Policy Declarations Vital for Development

Tendency to Dictate than Legislate Policies Problematic
Executive Leadership: Leaders that can Lead!

Current African Leaders Focus on Development Hopeful

Perhaps Democracy and Good Governance, Next?
Africa’s Challenges in Advancing Science-based Development?
In Summary?