Status of Food Systems In Africa: Key Drivers, Challenges And Needed Interventions

Patrick Okori
ICRISAT

Pre- UN Food Systems Summit Dialogue for African Universities

20 May 2021

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INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS

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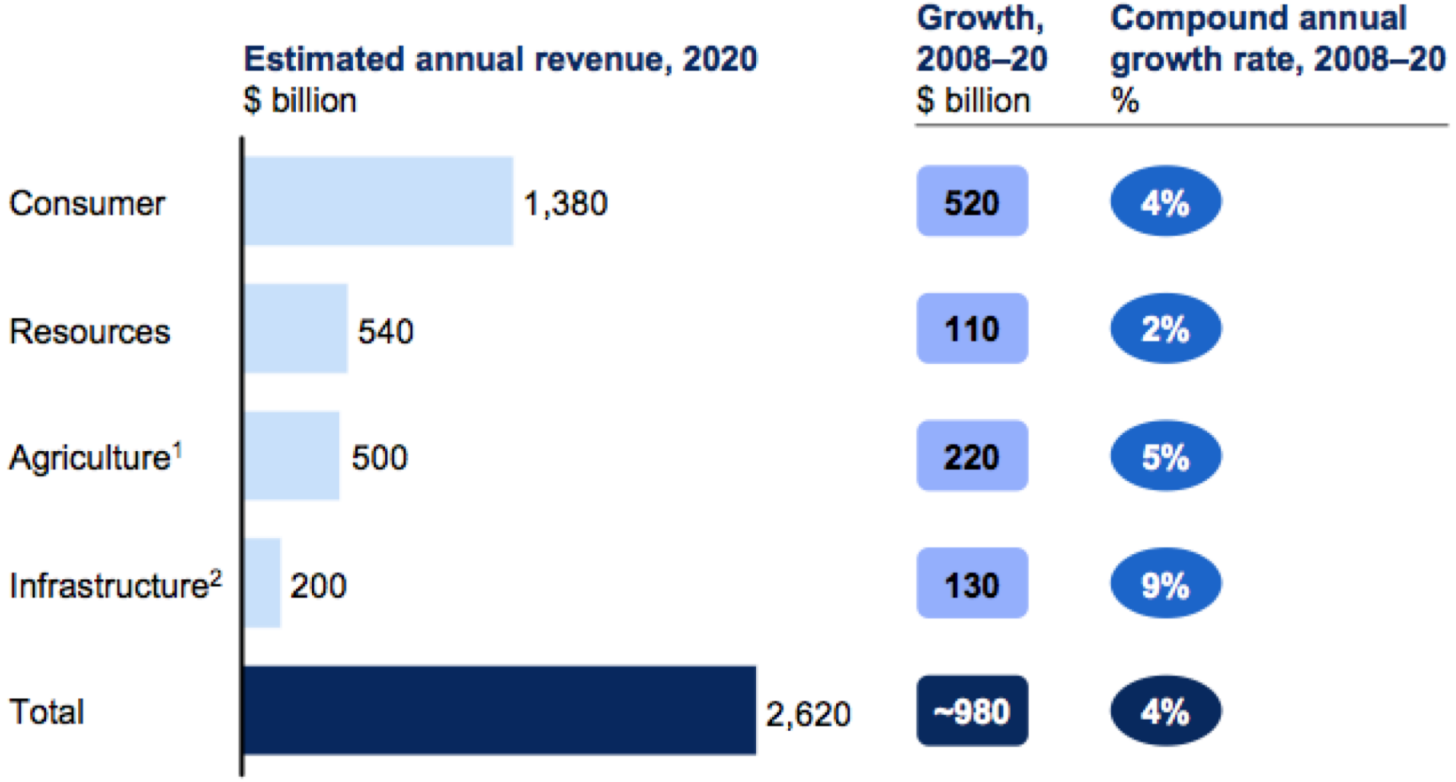
The vision then: Agri a big part of Africa's 2020 2.6 trillion economy



Source: Lions on the Move, 2010

Underpinning Agenda 2030: AfDB's high five priorities

Light up & power Africa

Feed Africa

Industrialize Africa

Integrate Africa

Improve the quality of life for the people of Africa

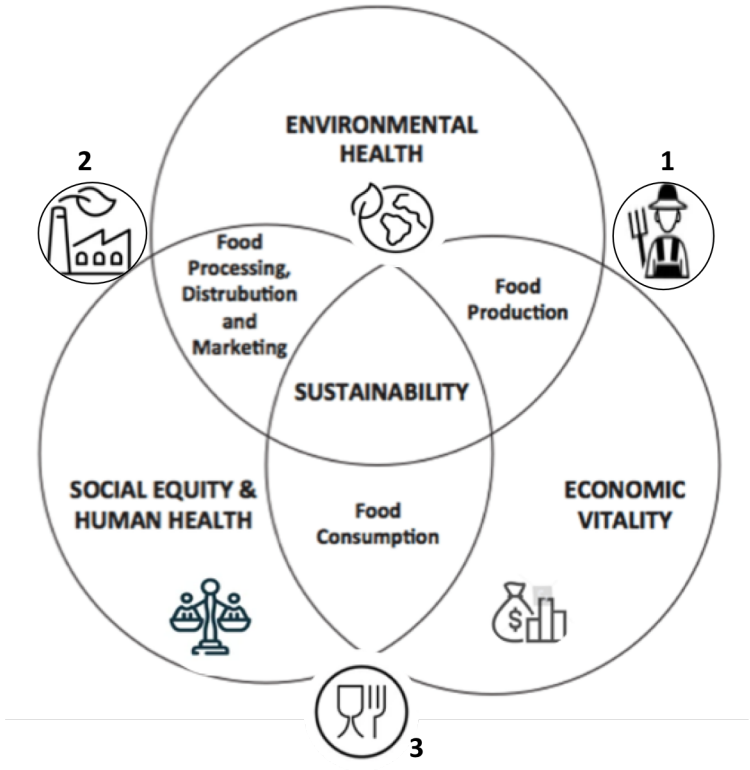
Source: www.afdb.org/en/high5s

Agriculture is critical for poverty reduction & devel.

Development region	Percentage of people living in poverty	Percentage reduction in number of poor in relation to a 1% increase in crop yield
EAST ASIA	15	0.48
SOUTH ASIA	40	0.48
AFRICA	46	0.72
LATIN AMERICA	16	0.10

A 1% increase in staple crop yield can lift 2 million people out of poverty in Africa (Thirtle *et al.* 2003). Agri is 2-4 times more effective to move people out of poverty if it can grow at least 5% annually for a decade.

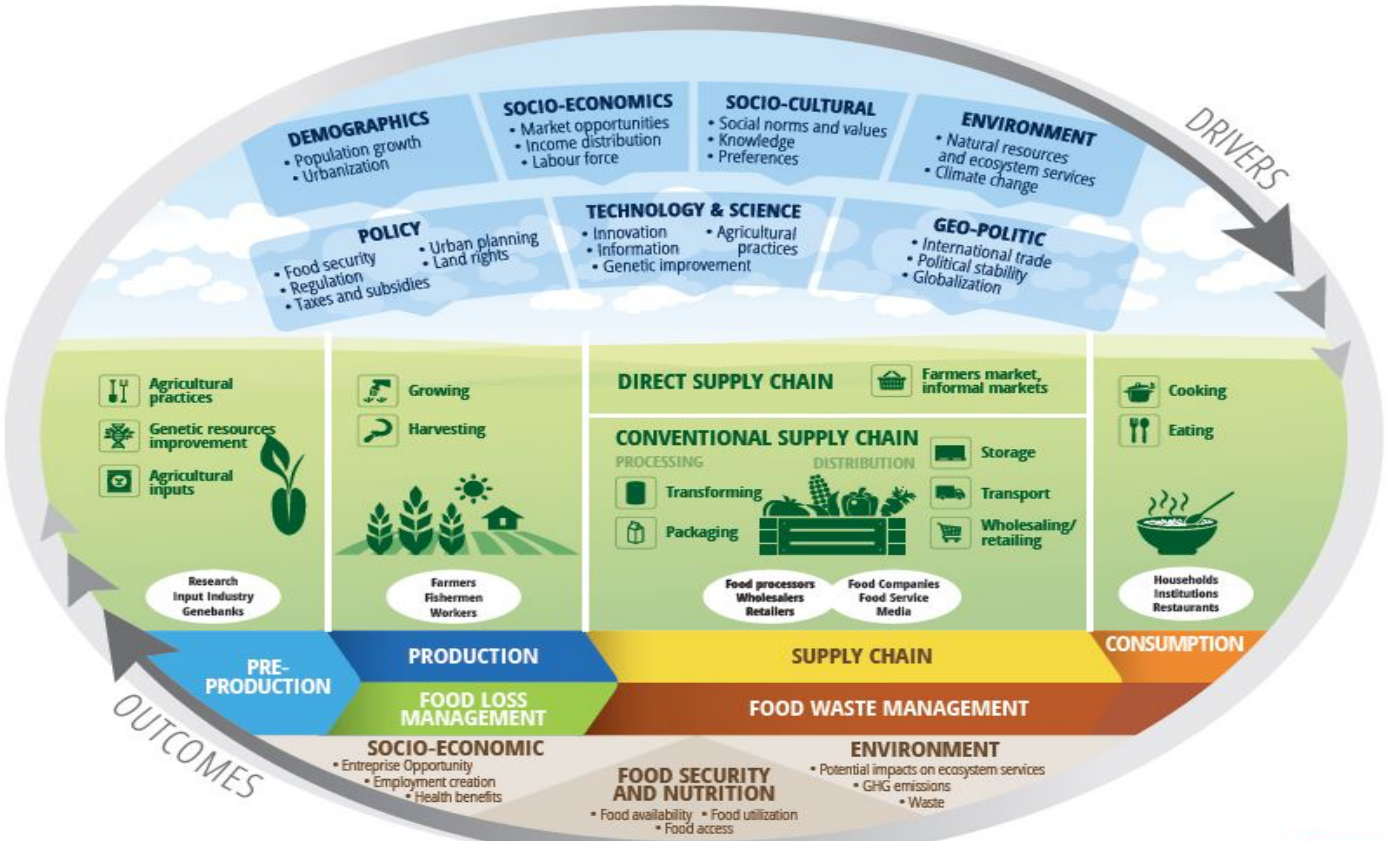
Sustainable food systems key to delivering development



Source: Alevi Francesca (2017)

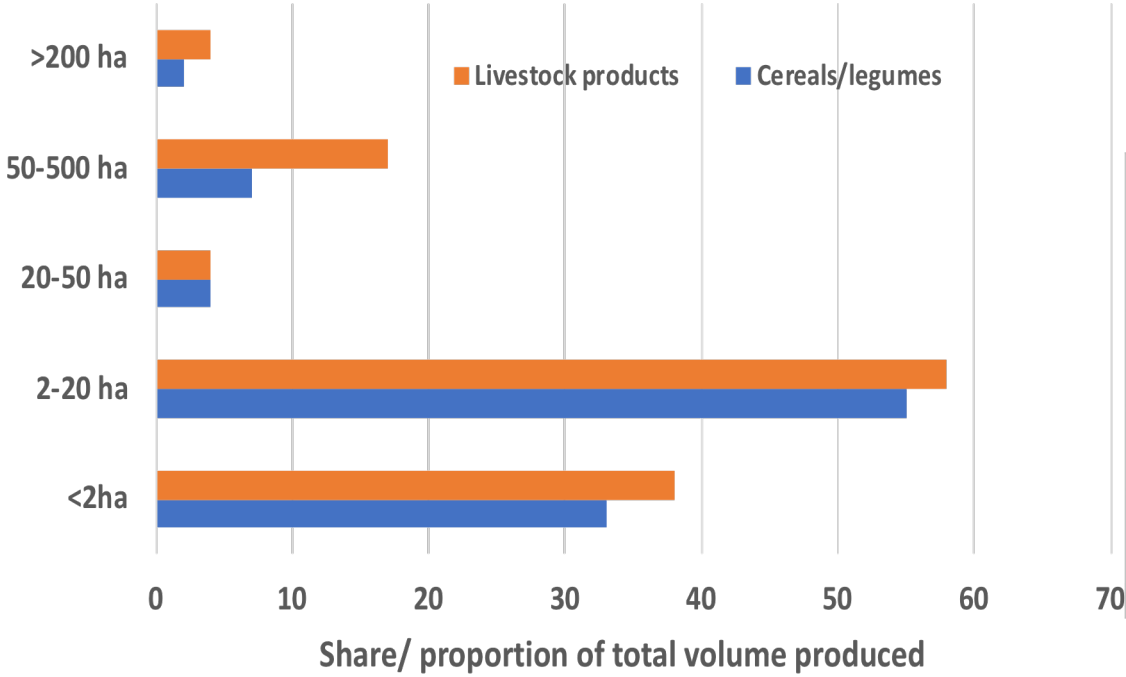
SDGS related to or impacting on sustainable food systems

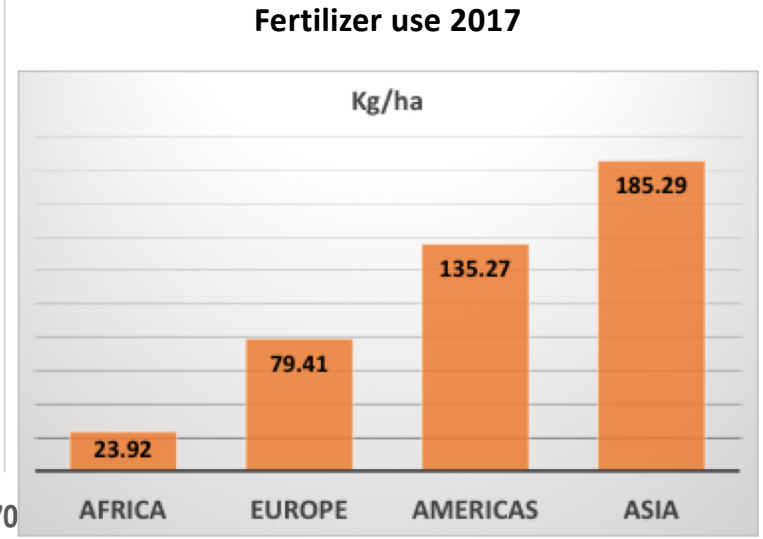
Feeding Africa: The production to consumption conundrum



Source: www.cigar.org

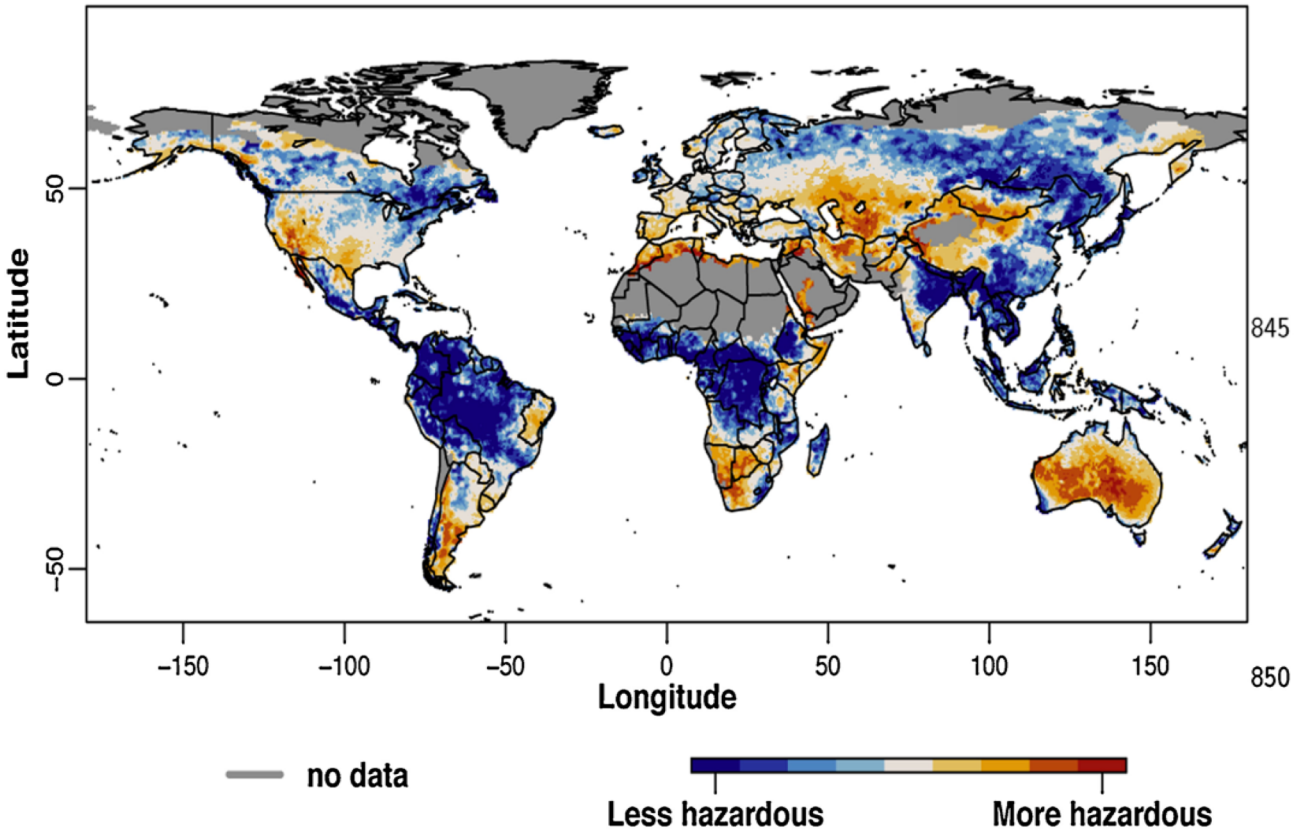
Feeding Africa: Production challenges of scale & technology





Source: DOI: https://doi.org/10.36072/wp.2

Feeding Africa: SSA agric. occurs in fragile production systems



Global map of drought hazard.
Source: Carrão et al., 2016 .

Feeding Africa: Farming under a threat of climate change

Climate Change

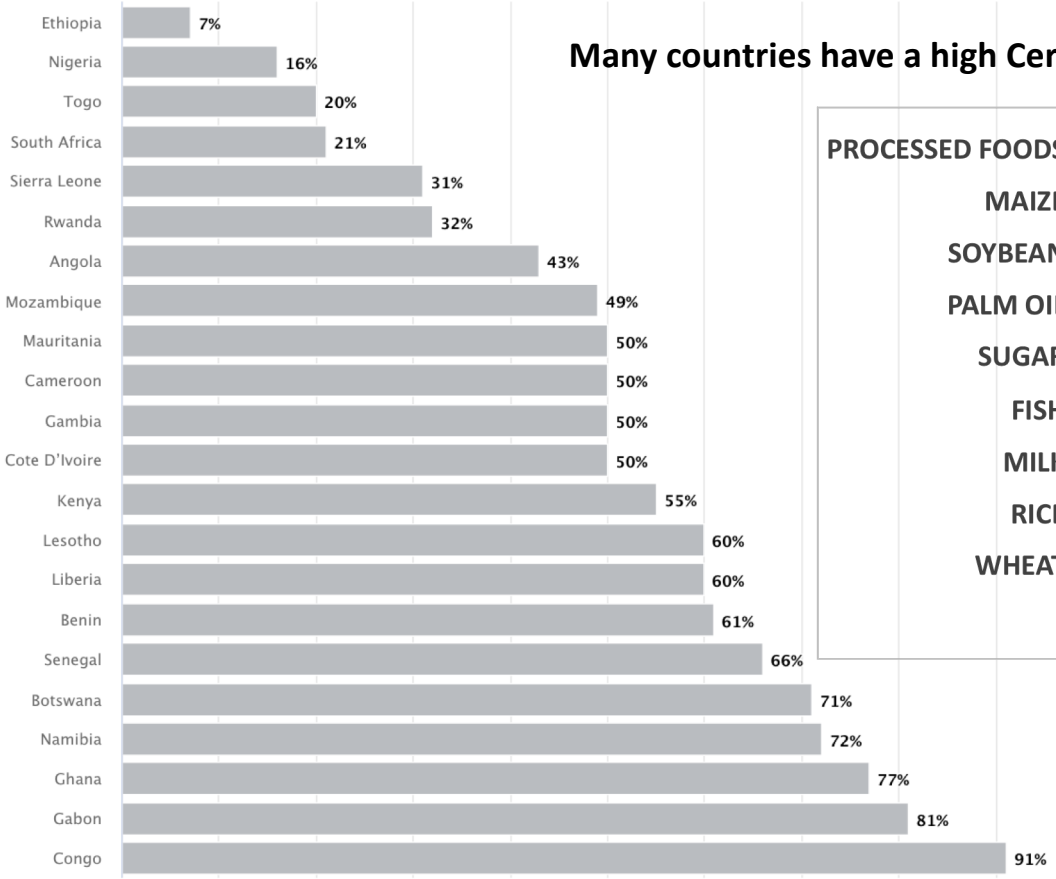
Africa has **23/33** countries most prone to climate change

	Yield loss under climate change 1.8 to 2.8 °C rise	
Crop	**Without adaptation**	**With adaptation**
Spring wheat	-14 to -25%	-4 to -10%
Maize	**-19 to -34%**	**-6 to -18%**
Soybean	-15 to -30%	-12 to -26%

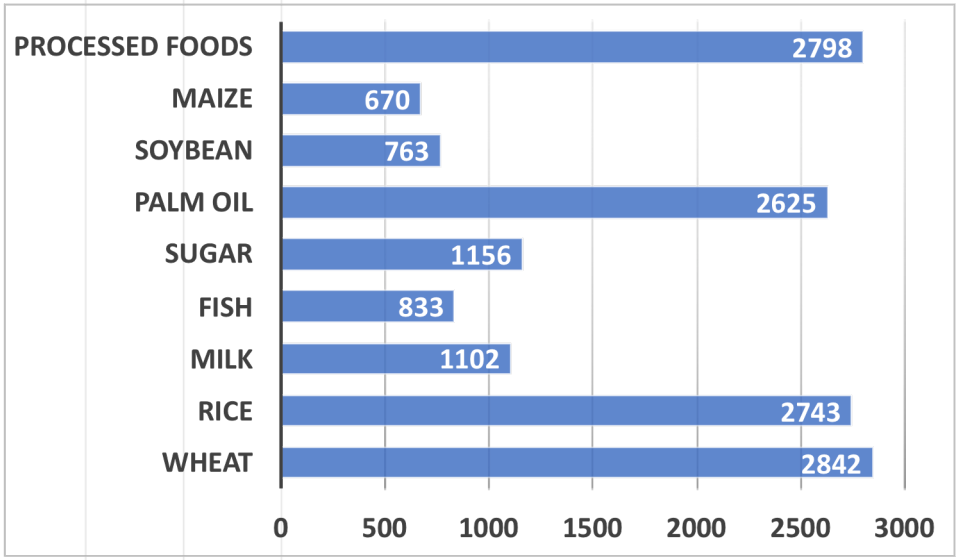
With or without adaptation we will loose up to 34% of crop yield

Source: Africa's development dynamics 2018: Growth, jobs and inequalities

Access: Demand & supply asymmetry



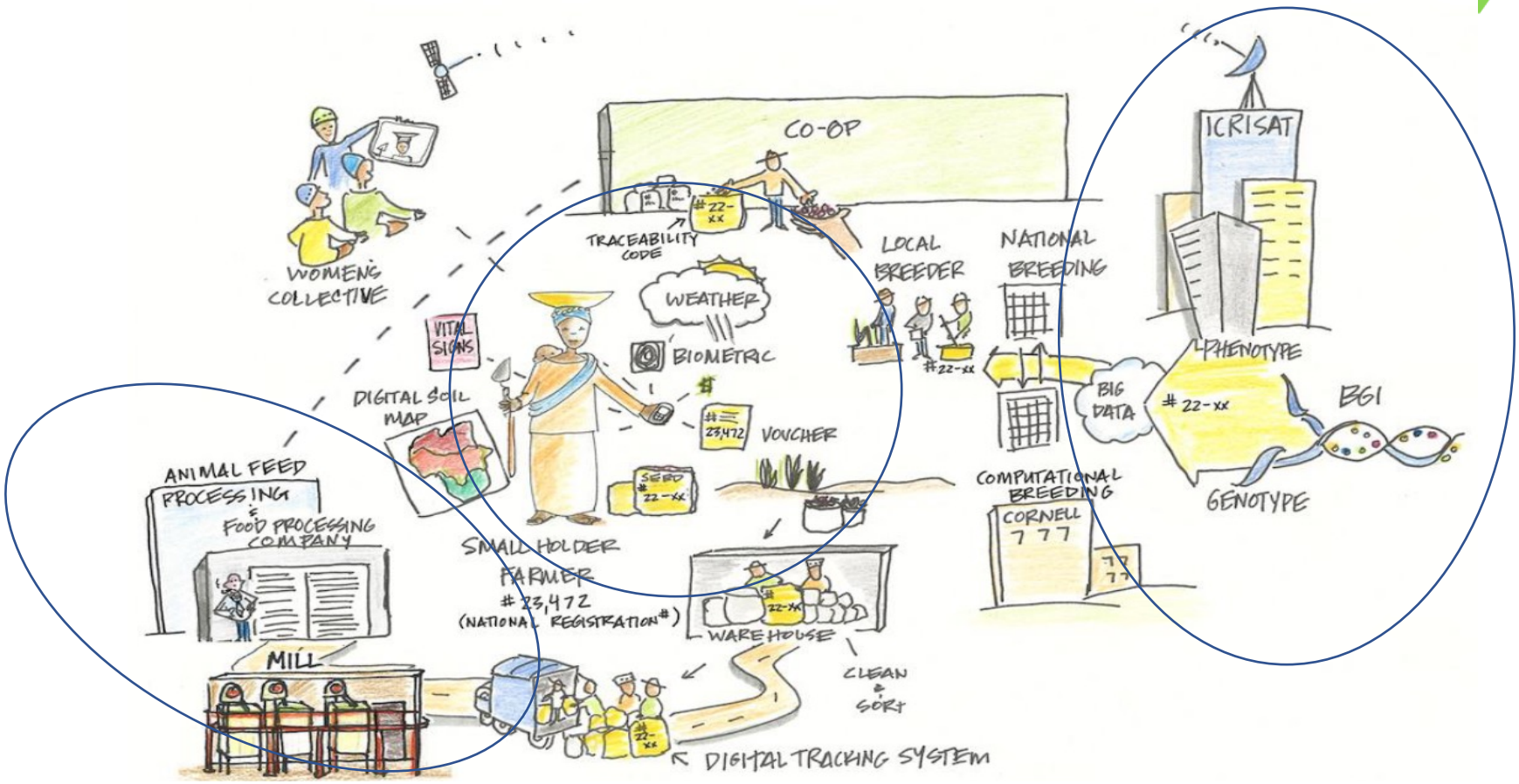
Many countries have a high Cereal import dependency ratio



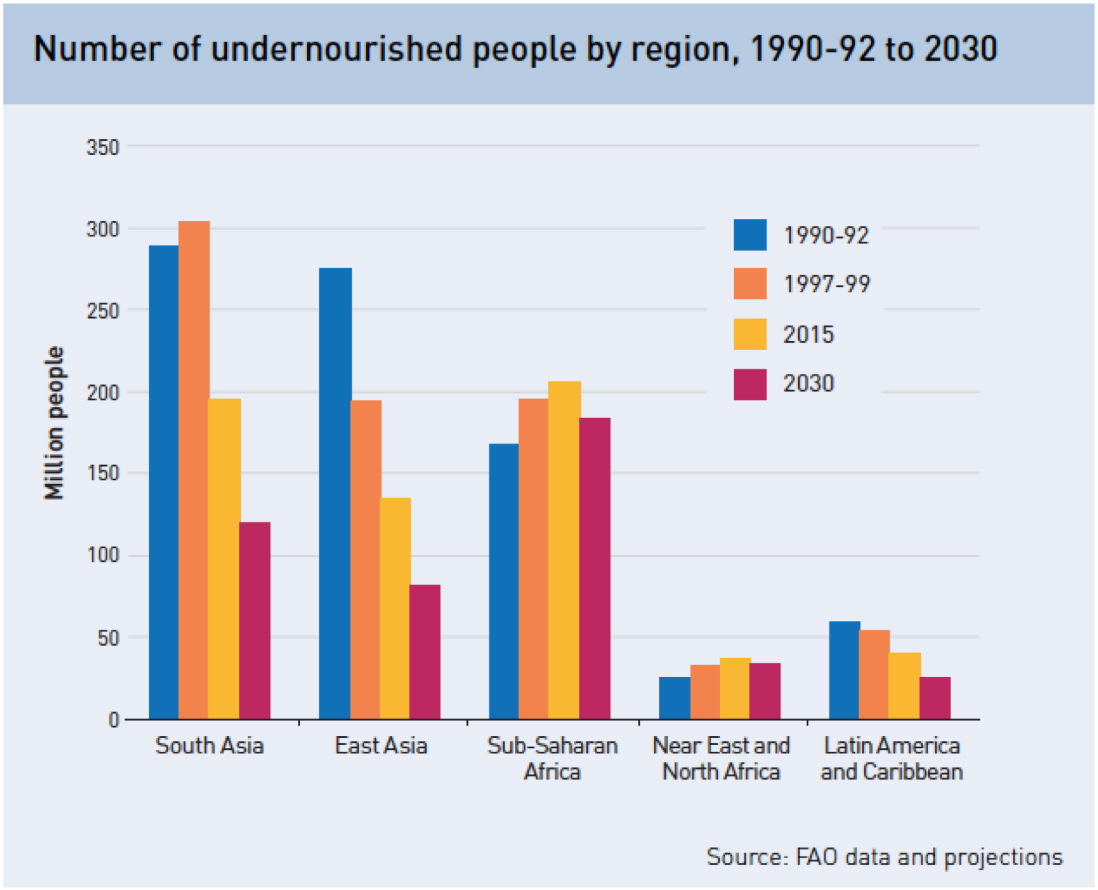
000 USD worth of imports

Source: DOI: https://doi.org/10.36072/wp.2

Access: Weak integration of farm to market sub-systems

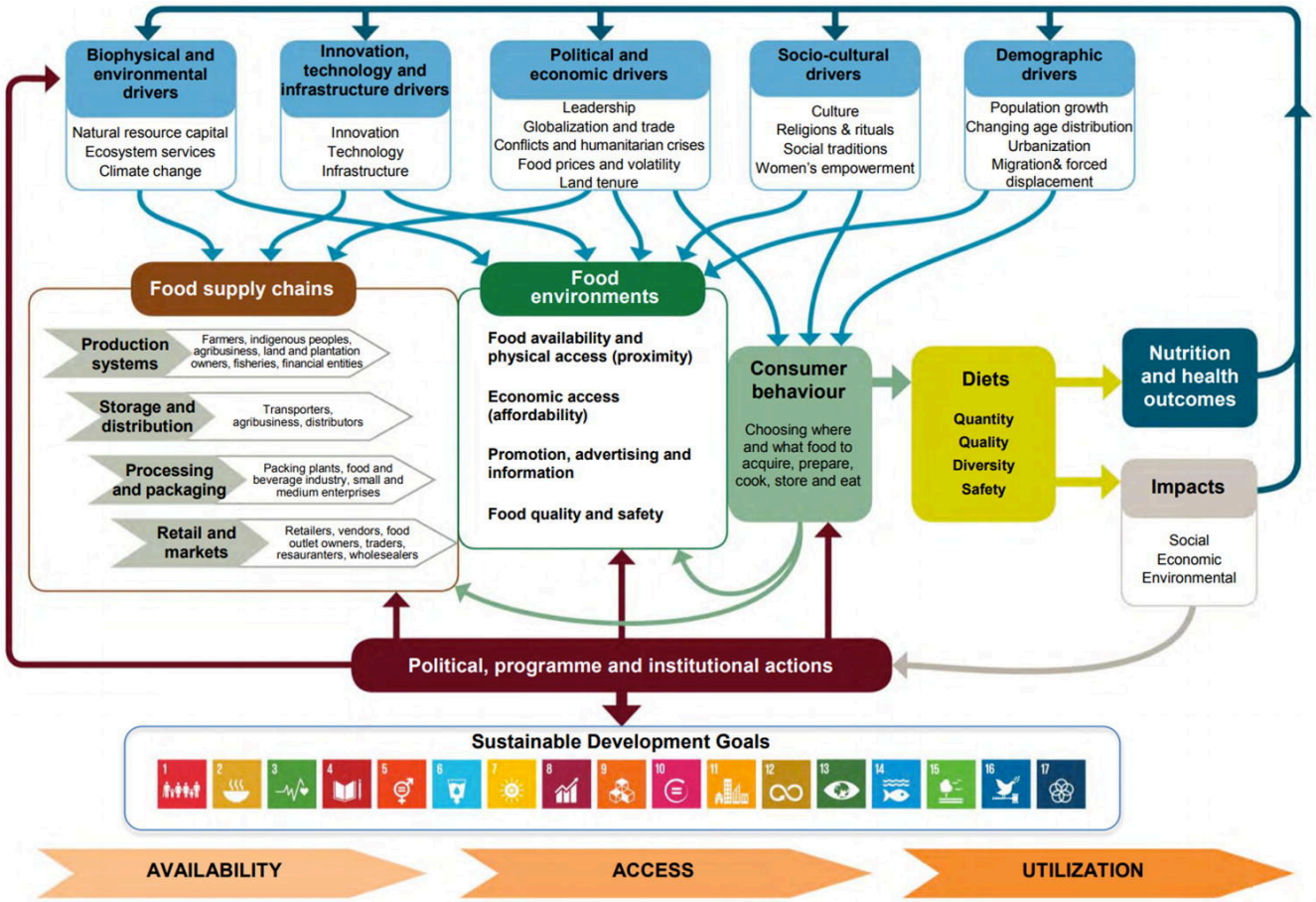


Futures: Less reduction in nutrition security by 2030



Subdued delivery of key SDG targets

Moving forward: An Africa food political economy perspective



1. Current food systems are

- Unsustainable
- Inequitable,

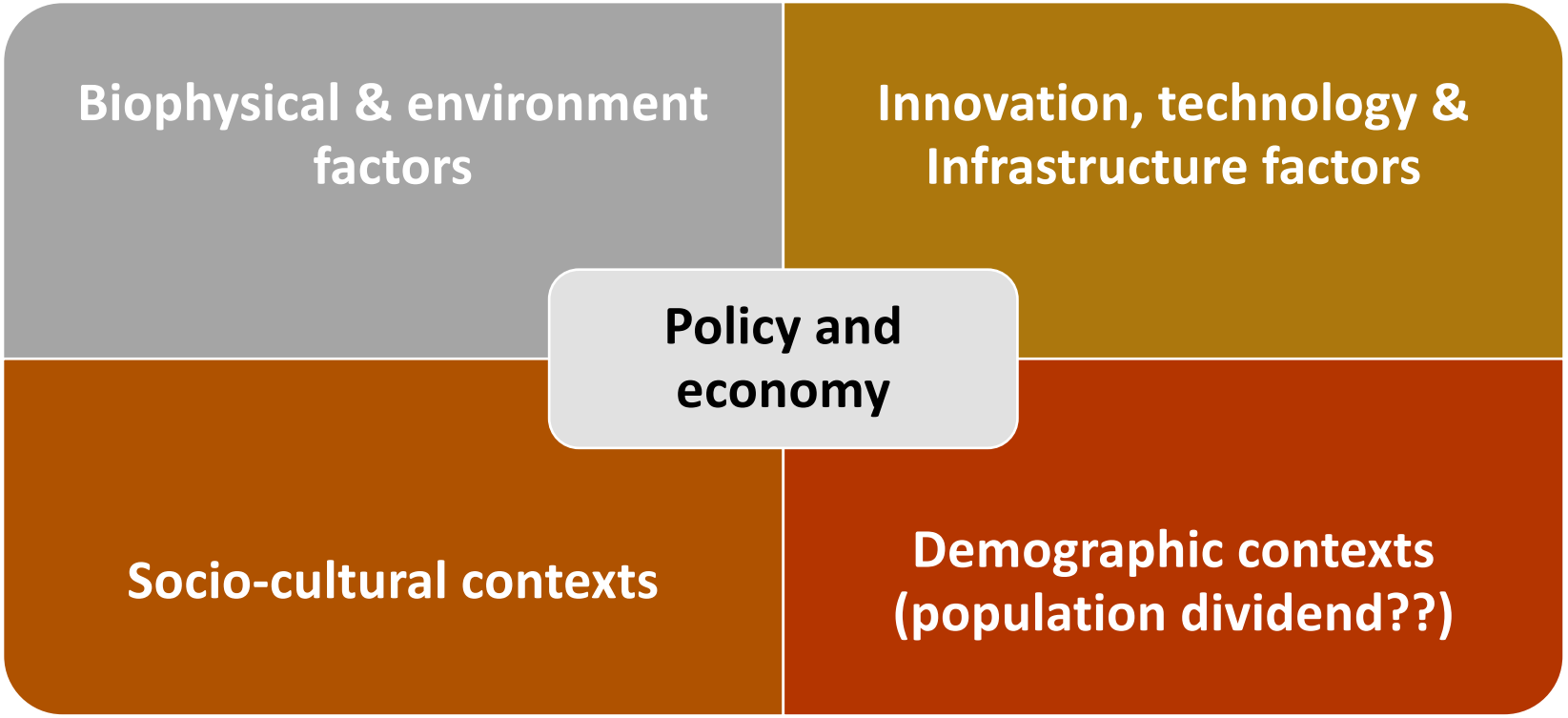
2. Problematic areas

- Food production,
- Consumption and
- Nutrition

Structural transformation needed to deliver SDGS at different scales

Source: Leach et al., 2020

Harnessing key FS drivers: STI & human capital is critical



UN Food system summit action tracks: Univ. potential actions

1. Ensuring access to safe and nutritious food for all
- **Achieving Zero Hunger**.
- Increasing **access to affordable, nutritious foods**
- Increasing **food safety**

2. Shifting to sustainable consumption patterns
- Creating enabling **Food environments**
- Shifting **Food demand**
- Halving **Food waste**

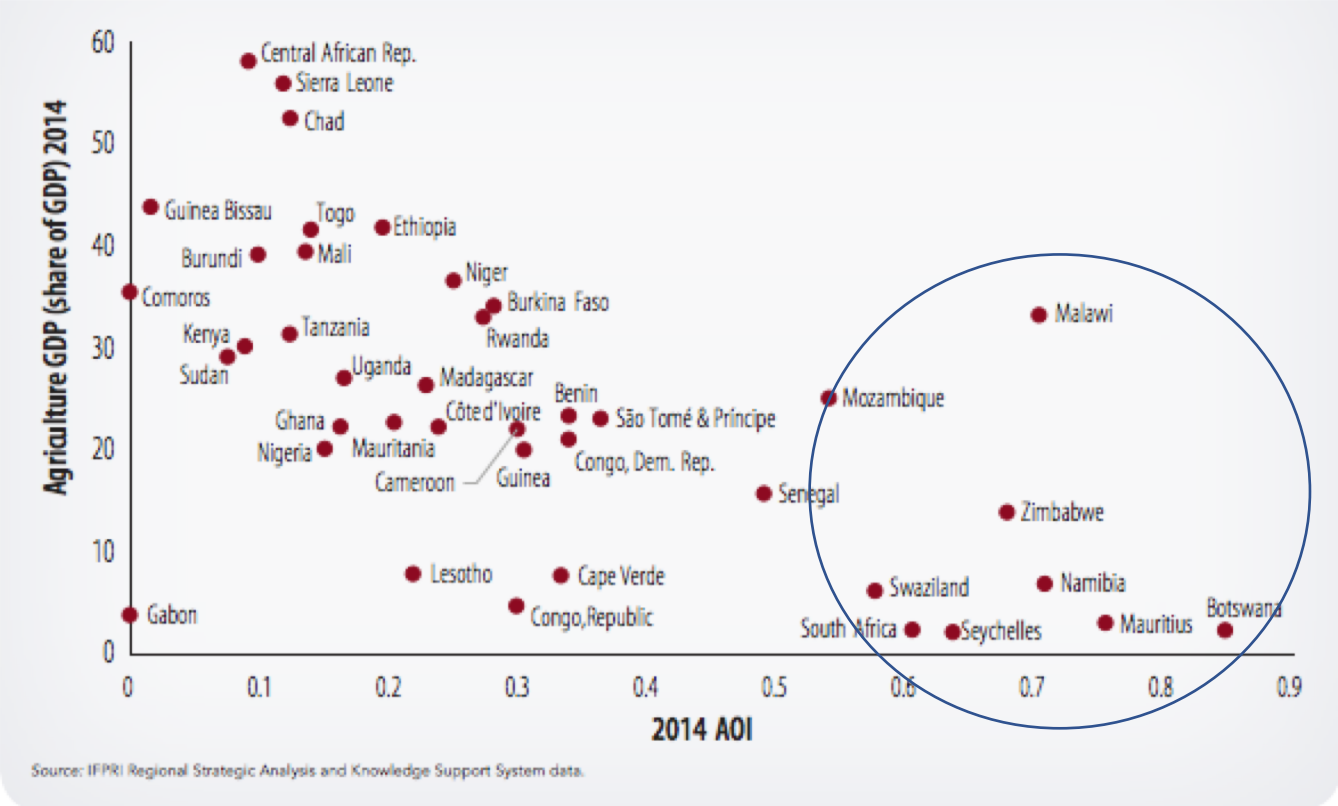
3. Boosting nature-positive production at sufficient scale
- **Protect** natural ecosystems
- **Manage** sustainably existing food production systems
- **Restore** and rehabilitate degraded ecosystems and soil function

4. Advancing equitable livelihoods and value distribution
- Strengthening **Agency**
- Inclusive **Policies**
- **Multi-dimensional Welfare and Access**

5. Building resilience to vulnerabilities, shocks and stress
- **Economic** resilience
- **Social** resilience
- **Environmental** resilience

Bold actions that strengthen
- Input and output markets
- Strengthen knowledge management systems
- Complementary Human resources for STI, and entrepreneurship

Note: Agri-sector gets disproportionate spend by governments



The Agriculture Orientation Index (AOI) is agriculture's share of public spending relative to its share in the economy.

An AOI of 1 mean Govt's expense on agriculture = to it contribution to GDP

Source: **World Bank Group -Reaping richer returns, 2016**

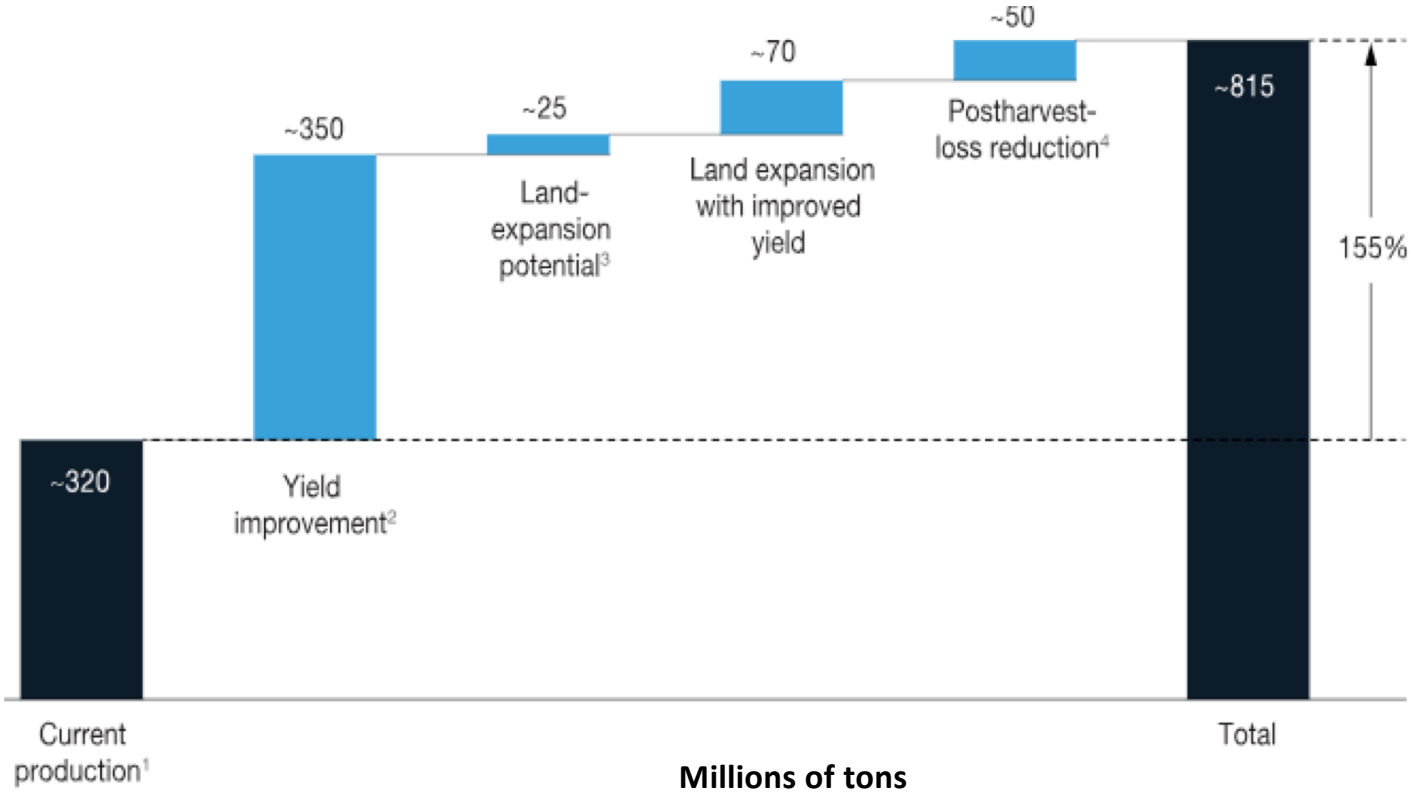
STIs essential to catalyze agricultural productivity growth

	Contribution to cumulative TFP growth
1. Agriculture research and development	51 percent
2. Improvement in agriculture's terms of trade with market and trade policy reform	20 percent
3. Reduction in conflict	18 percent
4. Increase in farmer education	8 percent
5. HIV/AIDS therapy to adult population infected	2 percent

Source: World Bank Group -Reaping richer returns, 2016

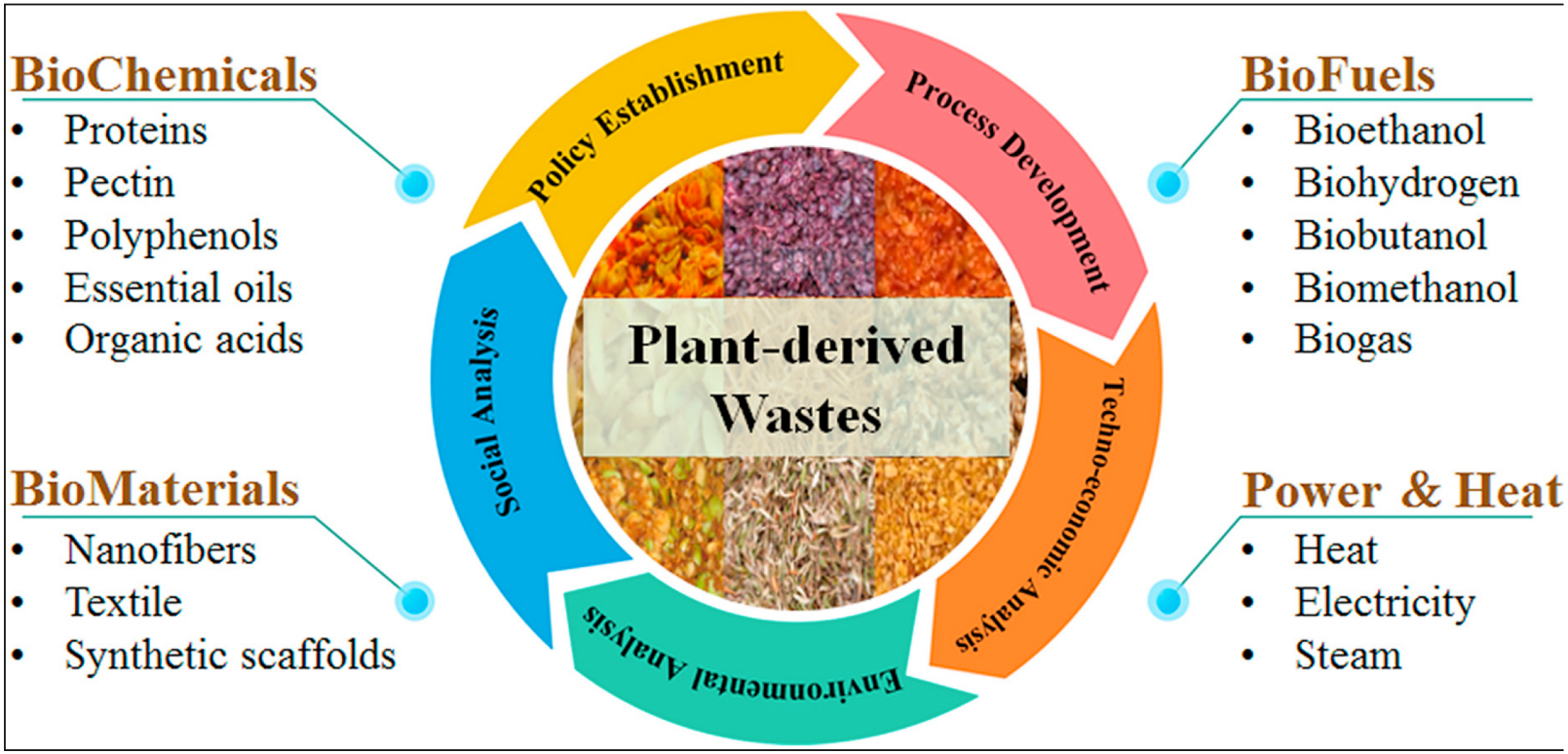
Diverse STIs are needed to increase food supply

Africa could produce 2–3 time more cereal if it intensified its agriculture



Source: McKinsey and Company 2019.

STIs can unlock value-added creating wealth and opportunity



Source:QingJin et al.,2018.

African University

A comprehensive approach for improving African food systems

Structural Reform

- Reconfigure focus, delivery and management to engage in agrifood economy
- One world, one health, a common future
- Innovative financing **including private equity for STI**

Institutional Dimension

- Strategic partnerships
- Comprehensive Human Capital programming (balanced HR pyramid: **Reduce ratio of scientist to development impact**
- Leverage and centers of leadership- **Food security, Intensification, climate Science etc**

Functional Dimension

- Redefining teaching, research & service
- Intensification of research and engagement with impact actors
- Policy and development practice.. **Lead in knowledge for national develop**

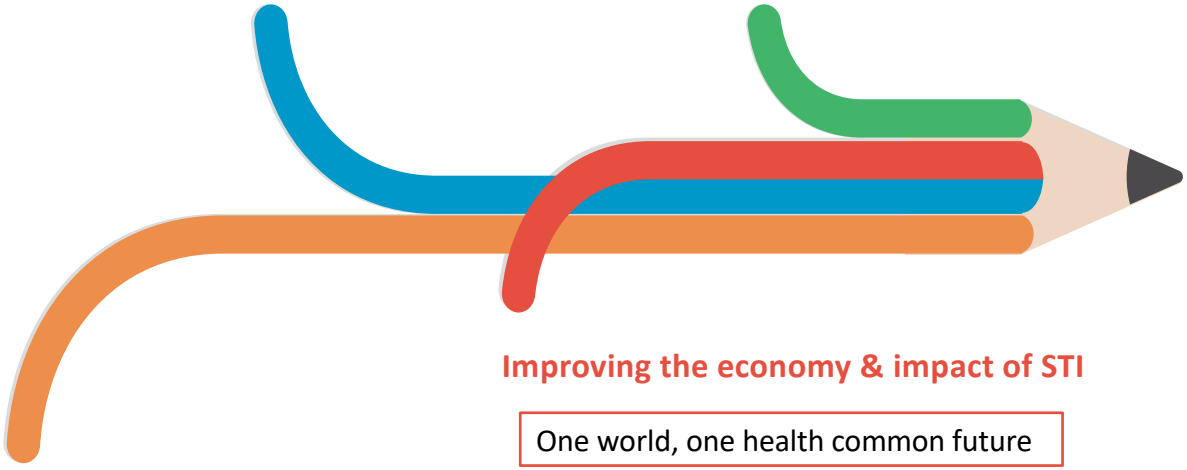
Integrated solutions for impactful engagement in African food systems agenda

Financing & engagement- private sector

STI, IP pipelines for industry

Balance STI HR pyramid

TEVET, under graduate + graduate education



Improving the economy & impact of STI

One world, one health common future

STI and operations

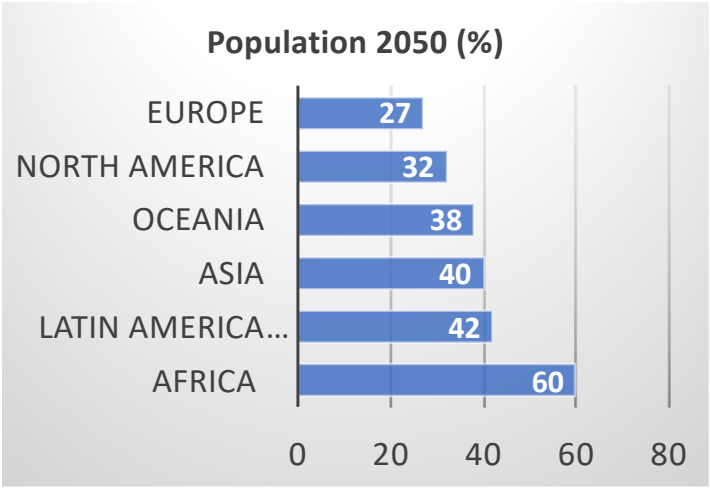
Undertake : Systems Research, to inform agrifood systems sectoral improvements

Shared future as agriculture grows to support SDGs

Renewable wealth production systems are needed

Feed a growing population

Create jobs and opportunity



Africa will have the worlds youngest population

Takeaway messages

1. **Need to strengthen food production to consumption fundamentals through STIs**
   - Yield enhancing resilient technologies (New varieties, breeds)
   - Value added and post-harvest reduction for diversified urbanising populations
   - Renewable production systems - climate change for posterity
   - Effective and efficient knowledge generation (Agricultural Education and Advisory services)

2. **Human capital development for flourishing food systems**
   - Balance the HR pyramid for STI and entrepreneurship
   - Leverage and convergence in STI and Human capital development

3. **Policies, institutions and markets**
   - Foresight and strategy investment planning
   - Measurement, accountability and learning to inform investments and redesign of adaptation measures

Thank You

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