The Role of African Research and Training Institutions in the Implementation of the African Fertilizer and Soil Health Action Plan

Organized by ANAPRI, FARA, AAP, AFAP, PRCI

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Keynote address

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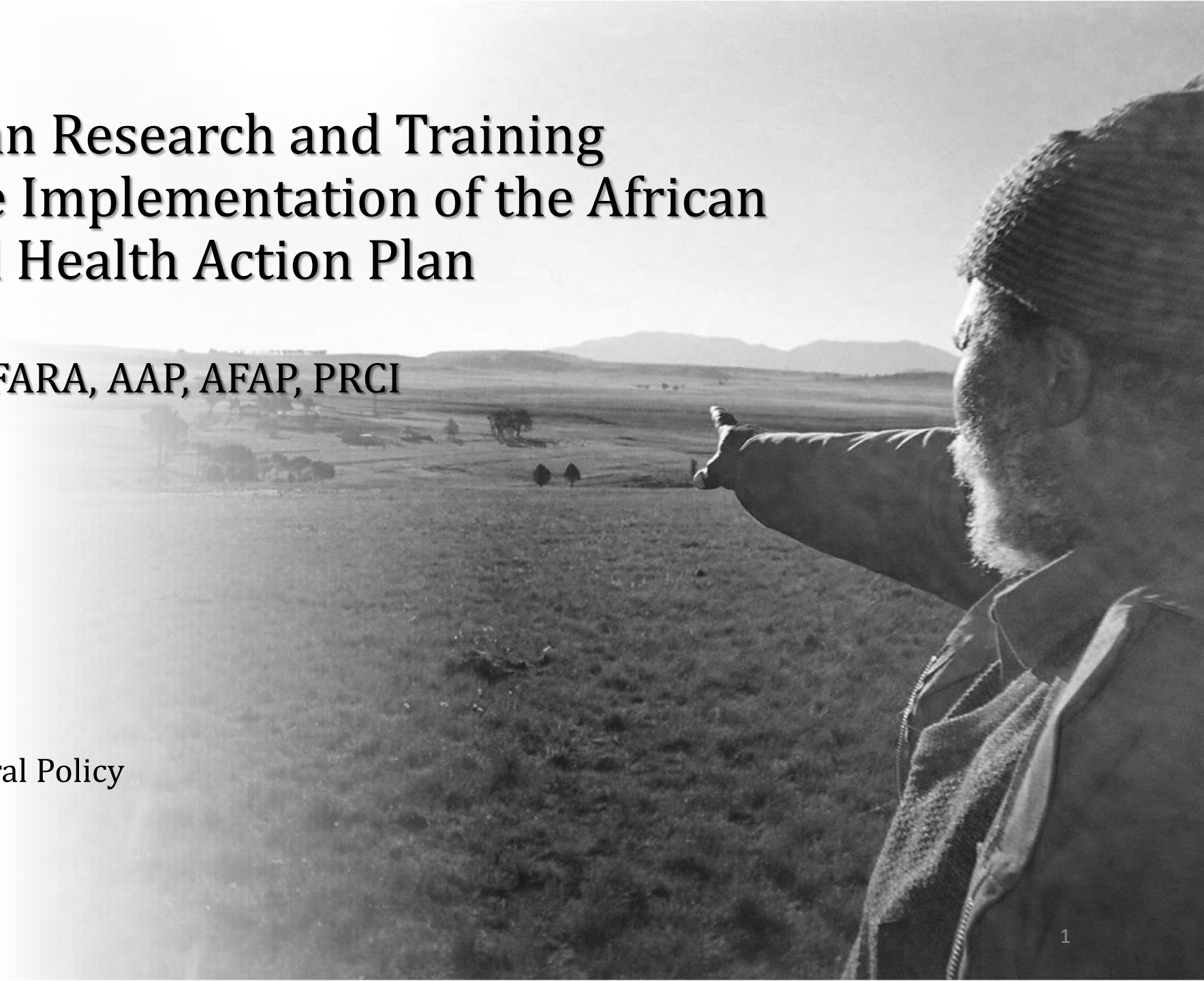


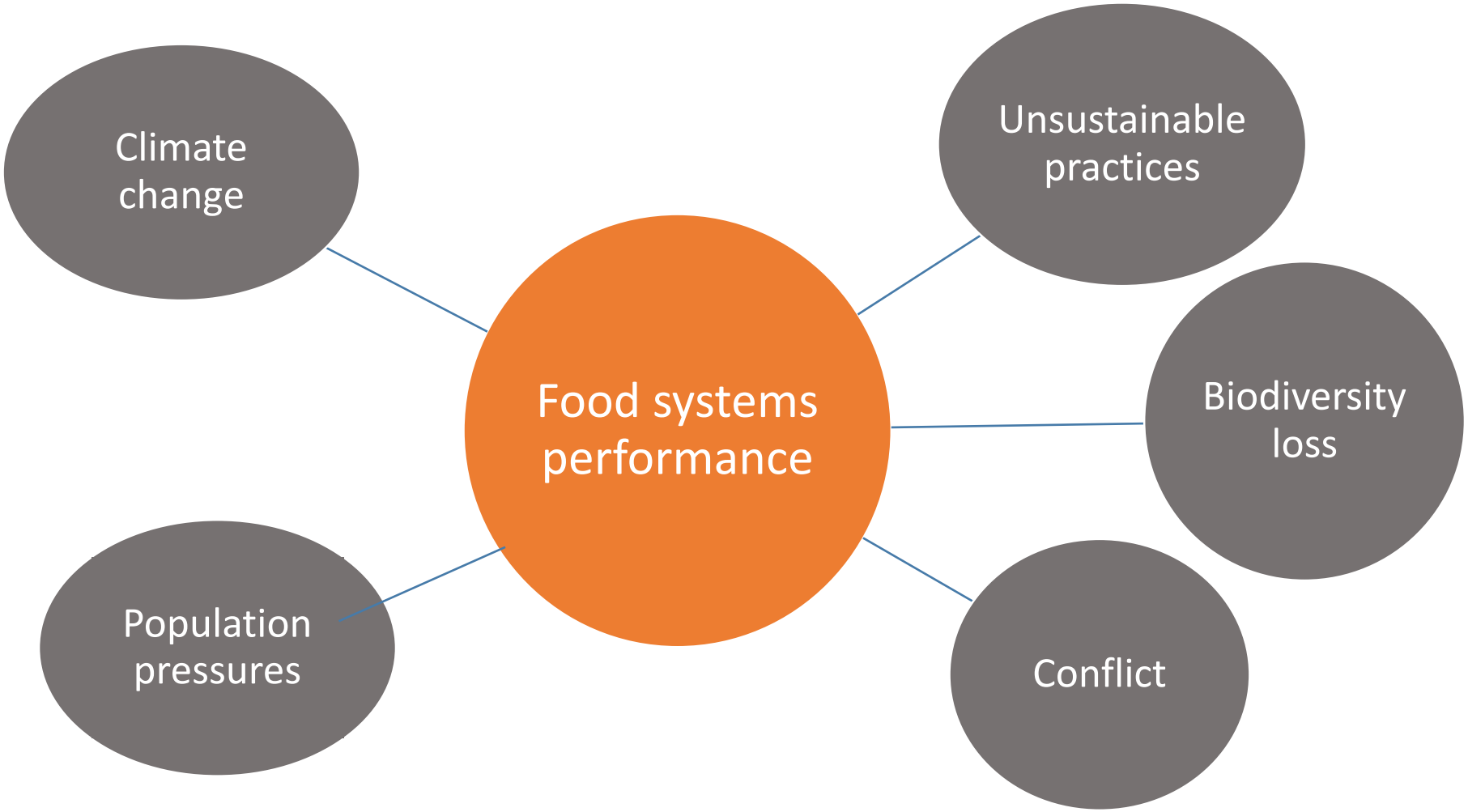
Alternate titles:

- "It's not just ***what*** needs to be done, it's also ***who*** needs to do it?"
- "Let's Stop Empire Building and Start Supporting Established African-led Processes"
- "How to Achieve Real Government Ownership and Commitment to Implementing AFSH Action Plan?"
  - Government action depends on who is leading

Africa remains the only region of the world whose major continental agricultural development initiatives are designed and implemented mainly by international organizations

Flow of presentation

1. Objectives: to demonstrate that effective implementation of the AFSH Action Plan will require that
   - African governments fundamentally boost their support to their National Agricultural Research and Extension Systems (NARES)
   - International partners support – from behind, not in front – of African organizations mandated to lead implementation of AFSH
2. Four main conclusions
3. Policy actions – who needs to do what?



Warning: Global changes happening faster than our ability to adapt and respond to them

Strong international consensus that:

- Humanity must innovate: become more sustainable, resilient, and productive.
- But how can humanity do this?
  - Investments in R&D&E – both science/technology (including traditional knowledge) and social science

“We cannot in the third world simply borrow or buy science from those ahead of us. Pure science we can take as it comes, but much of applied science we have to make for ourselves.”

— Arthur Lewis, Nobel Banquet address, 1979

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Historical division of labor between CGIAR and NARES:

CGIAR manages international gene bank, generates improved technologies/know-how, and transfers them to NARES

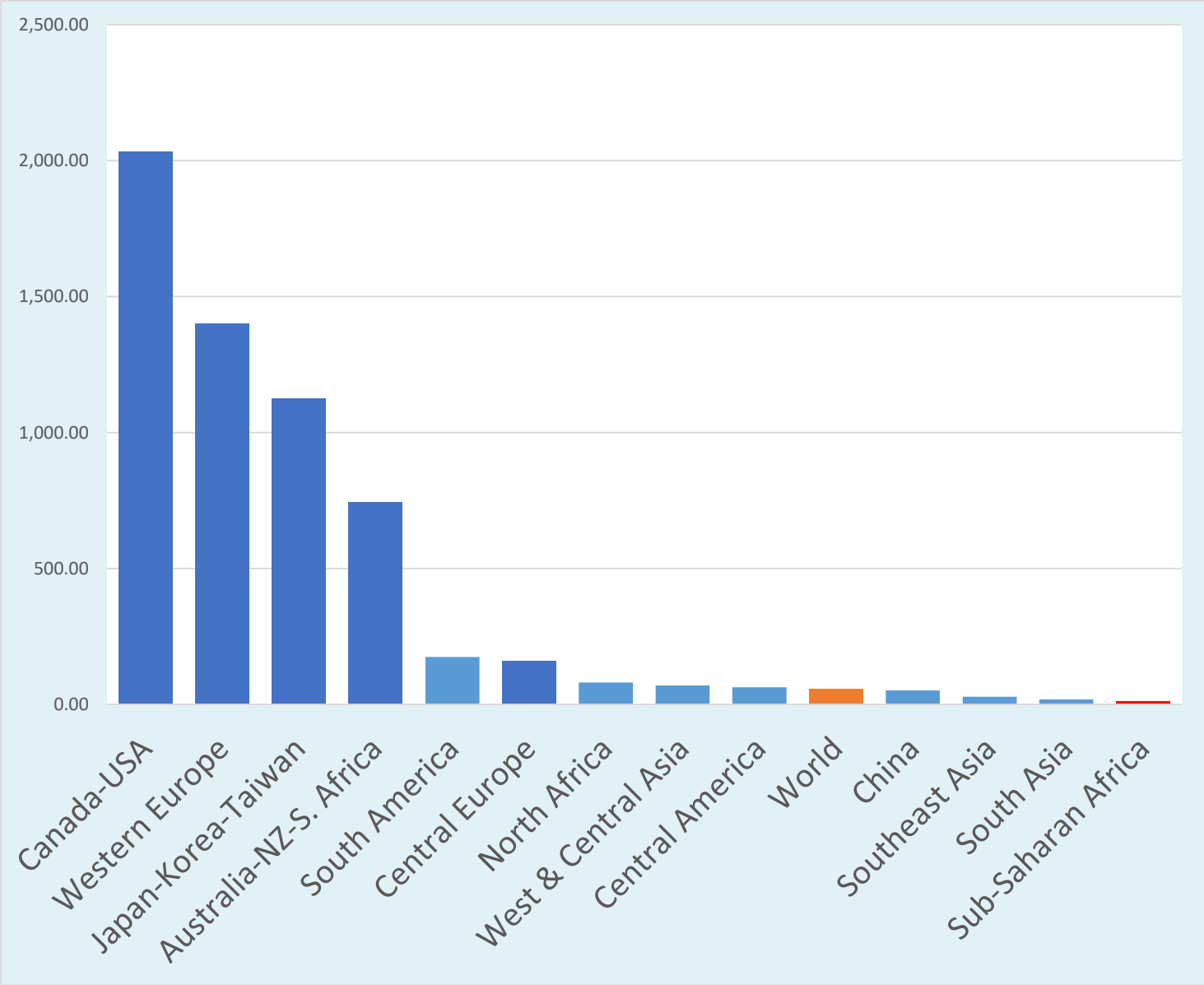
NARES interact with farmers to adapt technologies/practices to local conditions

The AFSH Action Plan specifies four outcomes

- Outcome 1: Improved Policies, Investment, Finance and Markets for Sustainable Soil Health and Fertilizer Management
- Outcome 3: Greater Efficiency, Resilience And Sustainable Use of Mineral and Organic Fertilizer Inputs and Enhancement of Soil Health Interventions

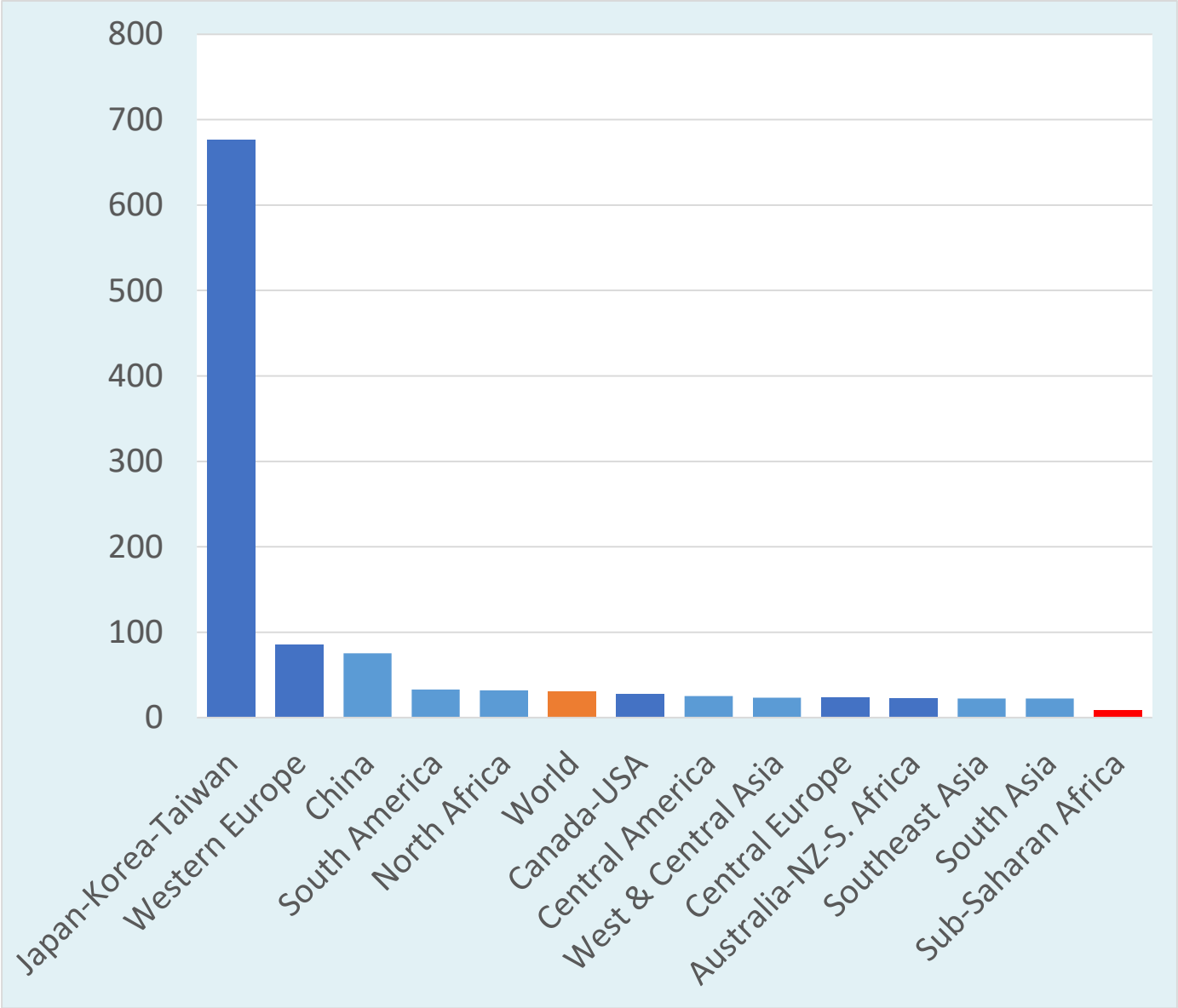
Outcomes 1 and 3 require substantial "adaptive" R&D&E and policy leadership

R&D expenditures (US$) per farmer



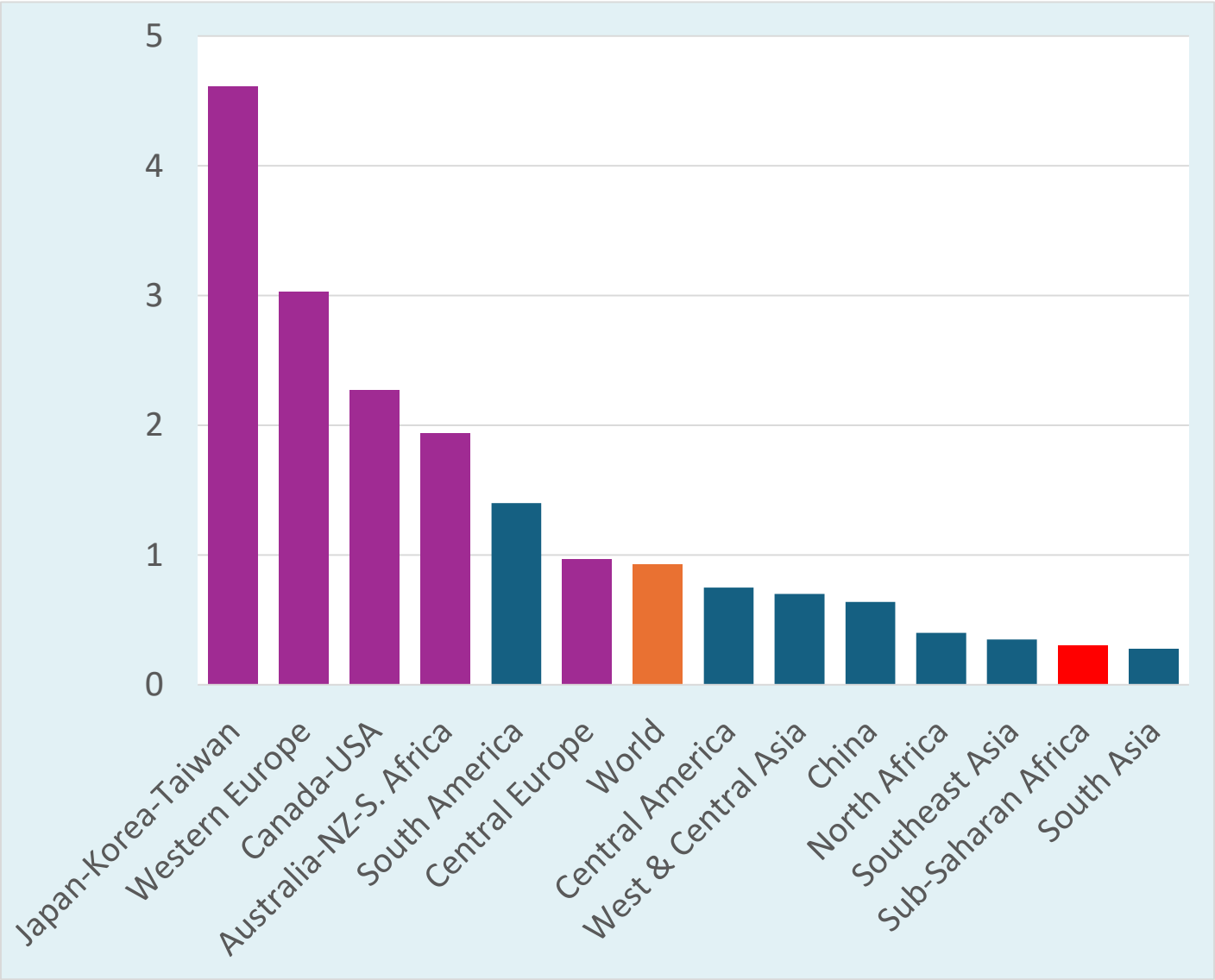
Source: Fuglie et al, 2020

R&D expenditures (US$) per hectare of cropland



Source: Fuglie et al, 2020

R&D expenditures are % of GDP



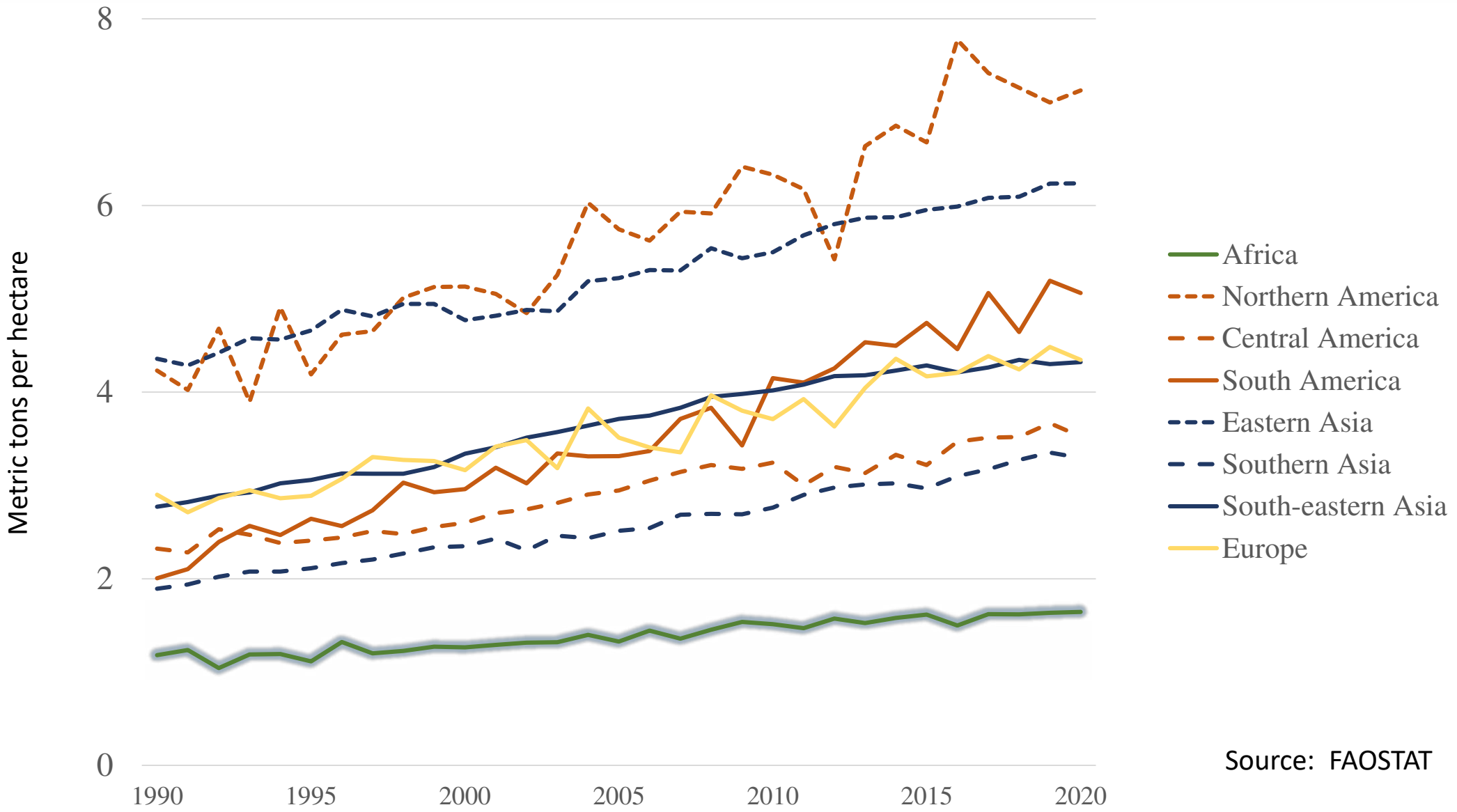
Source: Fuglie et al, 2020

Public agricultural research and development expenditures by region

Region	% increase in public agricultural R&D expenditures (1980 to 2016)	Public agricultural R&D intensity in 2016		
		R&D/GDP (%)	R&D/cropland ($)	R&D/farmer ($)
Central America	44.9	0.75	25.22	62.86
South America	88.7	1.40	33.04	174.61
China	1,018.2	0.64	75.20	51.67
Southeast Asia	229.8	0.35	22.54	27.68
South Asia	441.4	0.28	22.30	18.63
West & Central Asia	174.0	0.70	23.40	69.27
North Africa	164.2	0.40	32.09	79.85
Sub-Saharan Africa	**64.6**	0.30	8.31	10.55
World	130.2	0.93	30.45	55.23

Source: Fuglie et al, 2020

Cereal yield trends by region (metric tons per hectare), 1990 to 2020



Source: FAOSTAT

Flow of presentation

√ 1. Objectives: to demonstrate that AFSH Action Plan implementation requires strong national/regional partners on the ground

2. Four main conclusions

3. Policy actions – who needs to do what?

Main conclusions

Main conclusion #1

- Implementation of the AFSH Action Plan requires too much "adaptive" R&D&E for international research organizations to handle on their own – strong national/regional partners are required to implement
- African commitment to building strong NARES is crucial for AFSH Initiative to succeed!

Conclusion 2: Building strong NARES will initially require a regional approach for many countries

1. At least 20 countries have historically allocated so little public resources to their NARES that they essentially lack a viable national agricultural R&D&E program
2. They are not in a position to implement the AFSH Action Plan in their countries
3. Stads et al (2021) propose organizing agricultural R&D investment by agro-ecological zones rather than political boundaries, at least for relatively small African countries

Conclusion #3:

Fundamental difference between *individual* and *institutional* capacity development

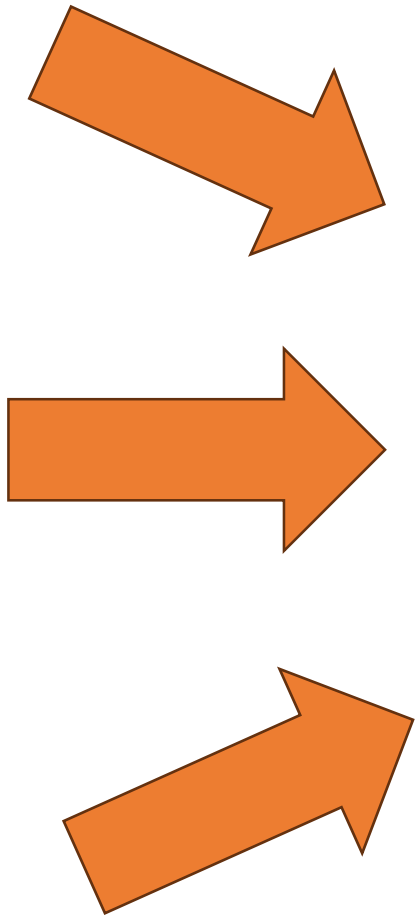
- individual capacity development largely widens the gap between international and African R&D and policy organizations
- Donors can support African-led processes by galvanizing their commitment to Institutional Capacity Development

Indicators of institutional capacity

"Core" support

Internally-facing management

Externally-facing management



Empire builders suck support away from legitimate African agricultural organizations

Conclusion 4: The effectiveness of the IARS depends on the performance of the NARES

1. Transferring global public goods to African countries requires adaptation on the ground
2. IARS depend on local partners to adapt and scale-out
   - international germ-plasm,
   - integrated soil fertility management practices (ISFM)
   - fertilizer application recommendations appropriate to specific local conditions
   - Policy guidance – this component especially needs to be African-led!

Recap of 4 main conclusions

1. Implementation of the AFSH Action Plan requires too much "adaptive" R&D&E for international research organizations to handle on their own – strong national/regional partners are required to implement

2. Building strong NARES will initially require a regional approach for many countries

3. Donors can support African-led processes by galvanizing their commitment to Institutional Capacity Development

4. The effectiveness of the IARS depends on the performance of the NARES

Flow of presentation

√ 1. Objectives: to demonstrate that AFSH Action Plan cannot be effectively implemented without strong national/regional partners on the ground

√ 2. Four main conclusions

3. Priority actions – who needs to do what?

Priority actions: who must do what?

Priority Actions

For Continental African development organizations (AU, AfDB, NEPAD):

1. Invest more in established African R&D&E organzations: FARA, ANAPRI, RECS
2. Encourage African governments to invest more in their own R&D&E systems – e.g., FARA, ANAPRI
3. Revive Maputo and Malabo Declaration commitments -- and put particular focus on strengthening the NARES in recognition of their pivotal role

Priority Actions (ii)

At national level:

- Mobilize *coalition of the willing* (public, private, NARES, and IARS) to advocate for a 21st Century model whereby established African organizations
  - take charge of how agricultural research is prioritized, implemented, and evaluated in their countries.
  - provide sustained and much greater funding, commitment, and accountability

Priority Actions (iii)

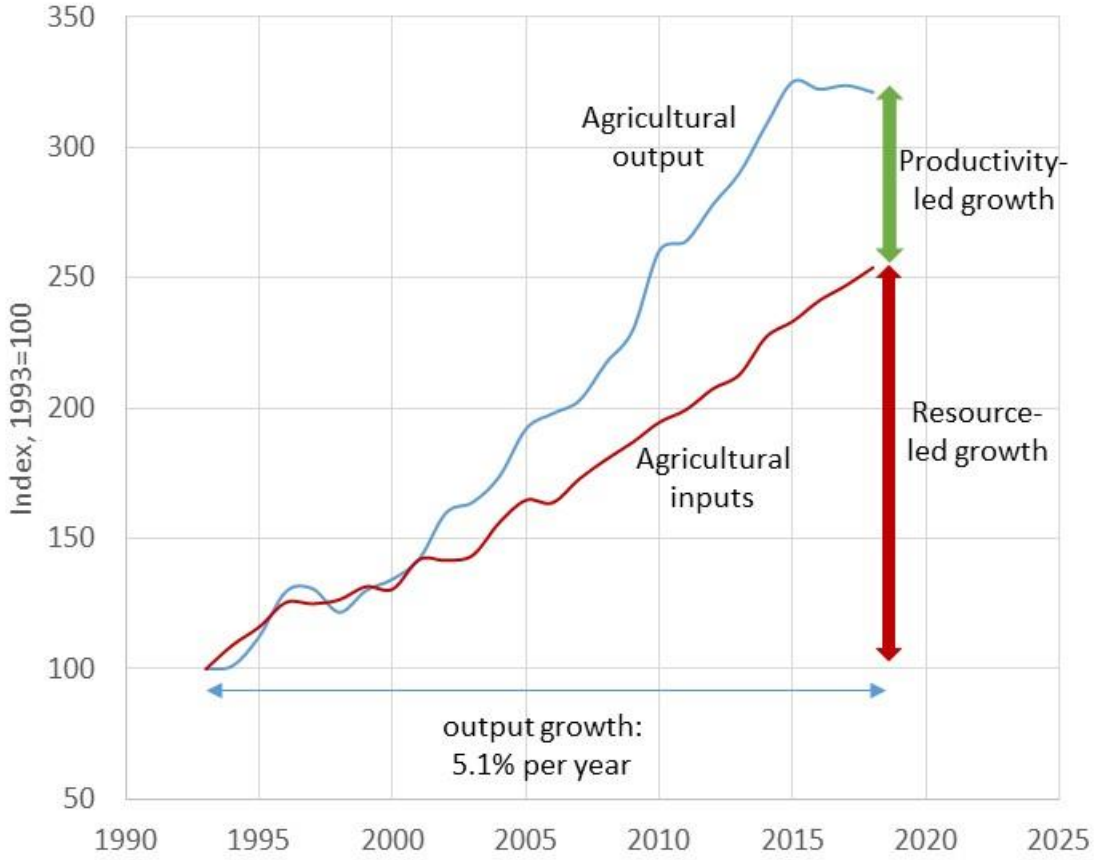
International Donors: Restructure the grant-making process

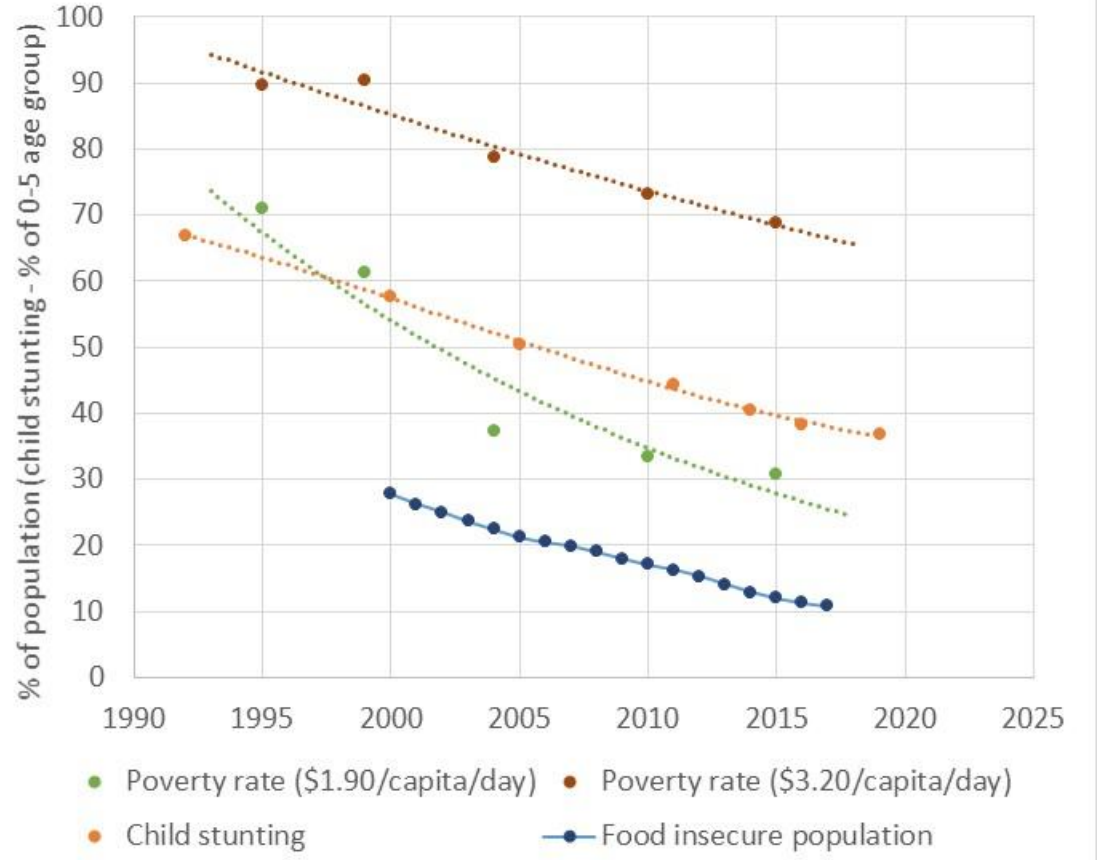
- Set the following key criteria for grant consideration:
  - Emphasize *institutional* -- not just *individual* -- capacity development of NARES
  - involve NARES as grant co-awardees and co-directors – in countries where national governments also show strong commitment

Are there any African success stories to consider?

Yes, there are!

Evidence from Ethiopia





Key elements of Ethiopia's "success story"

- Ethiopia's expenditures on agricultural R&D tripled in real terms between 2000-2020.
- Ethiopia has roughly half of SSA's agricultural extension workers
- Ethiopia has enjoyed the highest rate of agricultural growth of any country in SSA since 2000.
- Ethiopia's successes provide a powerful example for other SSA countries

Concluding remarks

- Sub-Saharan Africa remains the only region in the world where the design and implementation of its agricultural development plans are largely driven by international organizations

- It's time to change this – successful implementation of the AFSH Action Plan requires stronger African NARES

- Today, there is much greater analytical and management capacity in Africa compared to three decades ago – so the focus should be on institutional capacity development of the NARES and regional R&D&E organizations

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Special thanks to:

- *African Network of Agricultural Policy Research Institutes (ANAPRI)*
- *The Forum for Agricultural Research in Africa (FARA)*
- *Alliance for African Partnership (AAP)*
- *African Fertilizer and Agribusiness Partnership (AFAP)*
- *Michigan State University, Innovation Lab for Food Security. Policy Research, Capacity, and Influence (PRCI)*
- *All attendees today*