



Agriculture means Business: An African Narrative

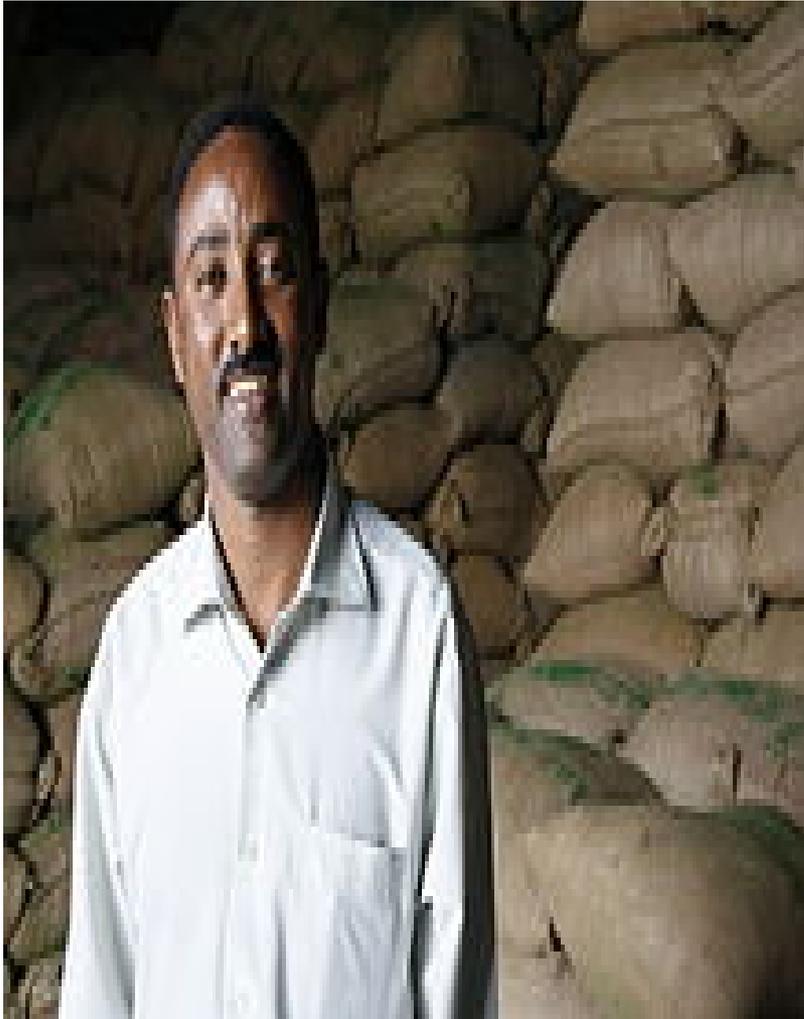
Presentation to McGill University Food Security Conference
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Agriculture as a social sector

- Traditional farming, few external inputs, little output marketed
- Traders lend to farmers and underpay and exploit them in tied credit-output relationships
- Very wasteful in postharvest processes
- Farmers and markets are unable to differentiate quality and merely supply bulk commodities, without grading, labeling or branding
- Value chains are traditional, stagnant, and poorly performing, both in efficiency and equity
- Few defenses against natural disasters
- Consumers overpay for food

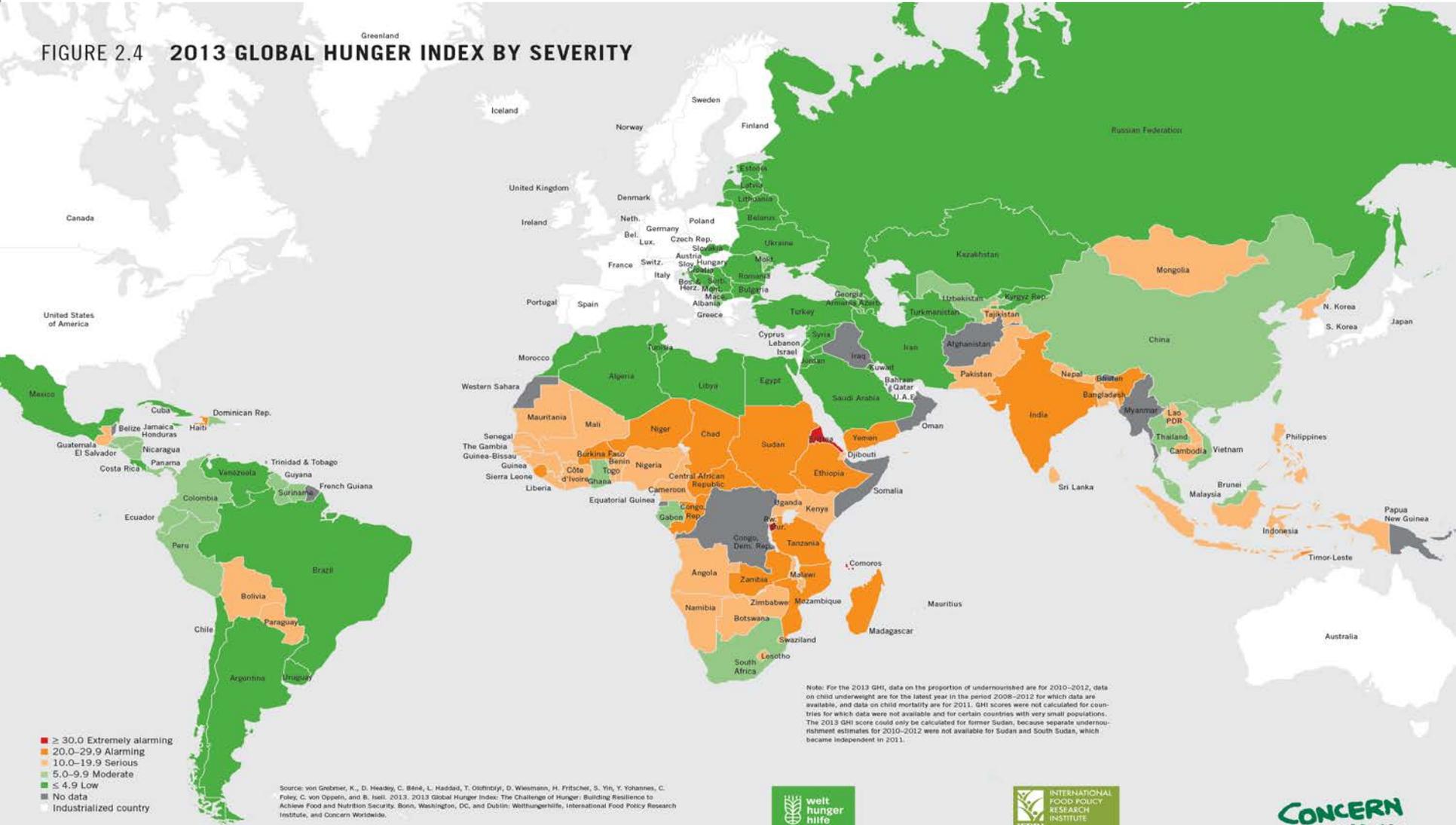


Agriculture as business

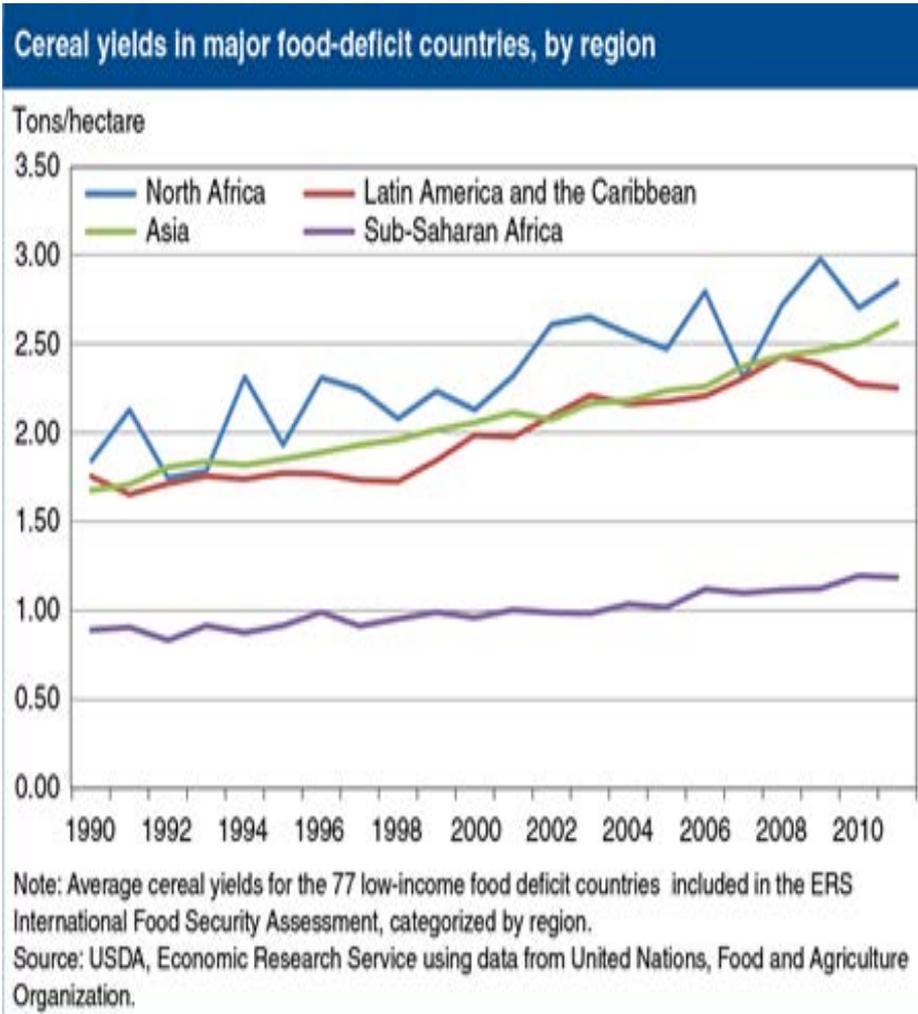
- Agriculture is not a social sector, productivity investments are critical
- Governments catalyze investments to overcome constraints to dynamism in value chains
- Farmers are entrepreneurs, directly linked to wholesale markets
- Midstream processing and handling and downstream retail segments are diverse and directly linked to urban consumers
- Input supply and food prices are declining

How relevant is this new narrative?

FIGURE 2.4 2013 GLOBAL HUNGER INDEX BY SEVERITY

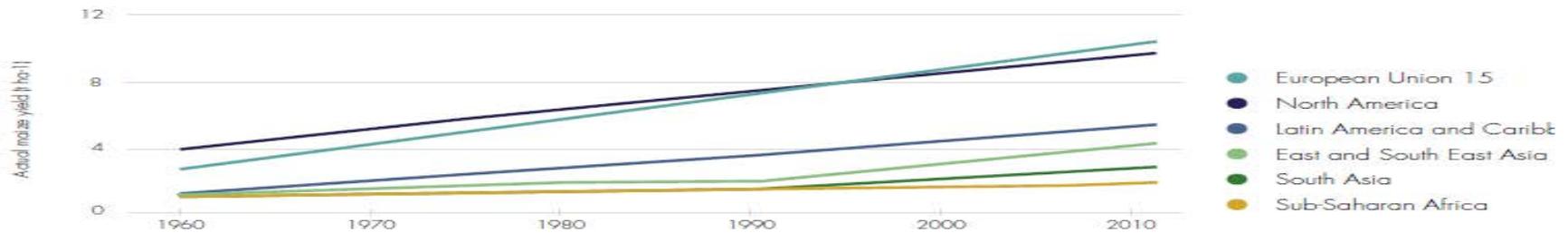


How relevant is this new narrative?

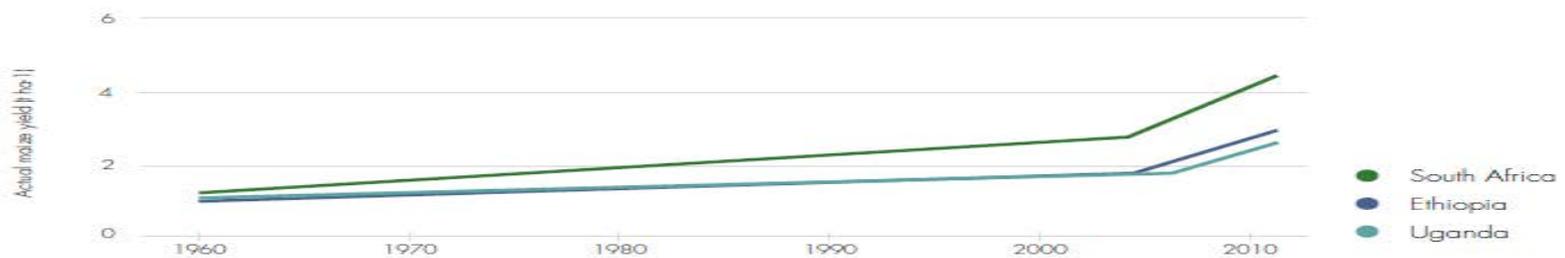


- GDP growth in agriculture is 2-4 times as effective in reducing poverty
- African ag productivity growing slowly from lowest levels in world, at extensive margin?
- Tremendous scope for agricultural and post harvest productivity and sustainable intensification investments
- Infrastructure investments lag behind

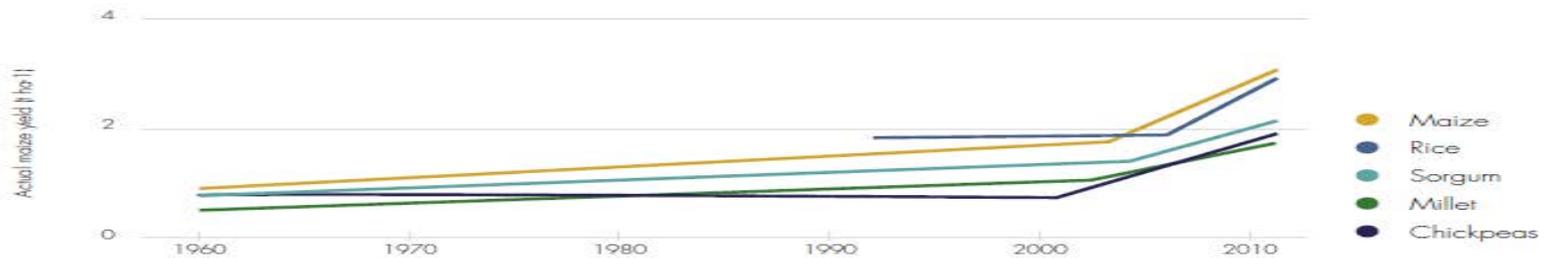
1. BY GLOBAL STANDARDS, YIELDS IN SUB-SAHARAN AFRICA REMAIN VERY LOW...



2. ... BUT SOME COUNTRIES HAVE STARTED TO SHOW IMPRESSIVE PRODUCTIVITY INCREASES.



3. ... AND IN ETHIOPIA, THESE GAINS COVER SEVERAL CROPS.



Africa's Opportunity...

Rural-urban food supply chains have become central to food security

95% of the African food market (in value) is domestic (local and regional)

Dramatic increases in SMEs in food value chains in SSA

60% of SSA's workforce is in agriculture

40-50% of rural income is now from off-farm sources

Africa's opportunity

SMEs in distribution and processing segments of supply chains deserve more attention

African farmers and agribusinesses need to improve value chain efficiency to compete against growing international agribusiness presence

Policy differentiation is critical, no one size fits all

Coordination is a growing problem holding up dynamic transformations

Catalytic Roles of Government

- investments in rural areas in
 - research and development and seeds
 - infrastructure, especially irrigation canal, road, and railway systems, rural wholesale markets, power grids, and mobile phone communication grids
 - extension
- subsidies are important but accessibility and impact is mixed
- the modernization of farm input supply chains and postharvest logistics and wholesale, cold storage, milling, and retailing is critically important

Knowledge and innovation for large scale impact

- Skepticism
- Lasting impacts within shorter timeframe
- Can research benefit large numbers of poor people?
- Pilot scale and “islands of success”

FROM THE LAB

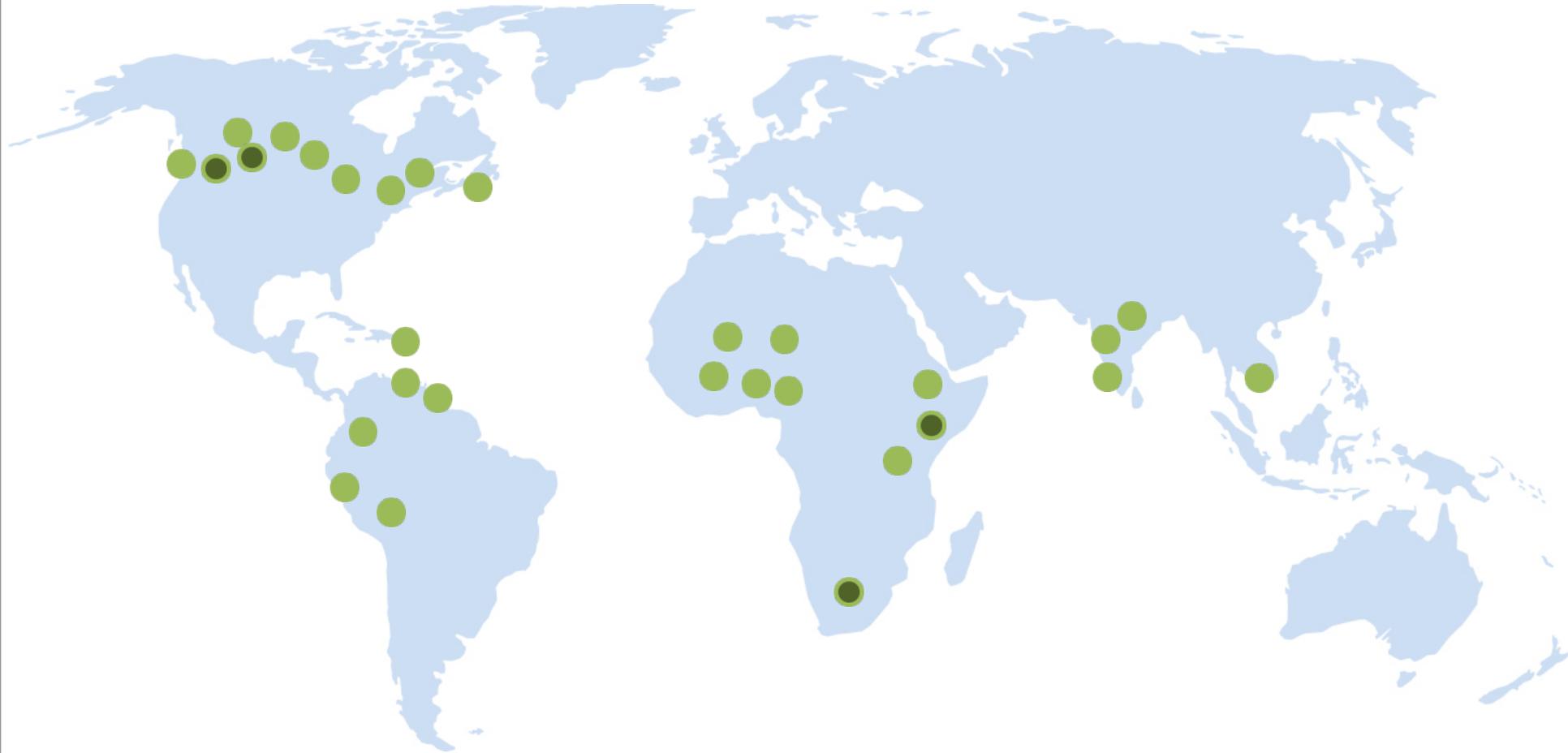


TO THE FIELD



Ensuring that **RESEARCH** can make a difference in people's lives:
This is IDRC's mission

Canadian International Food Security Research Fund ●
New Vaccines to Combat Livestock Diseases in Sub-Saharan Africa ●

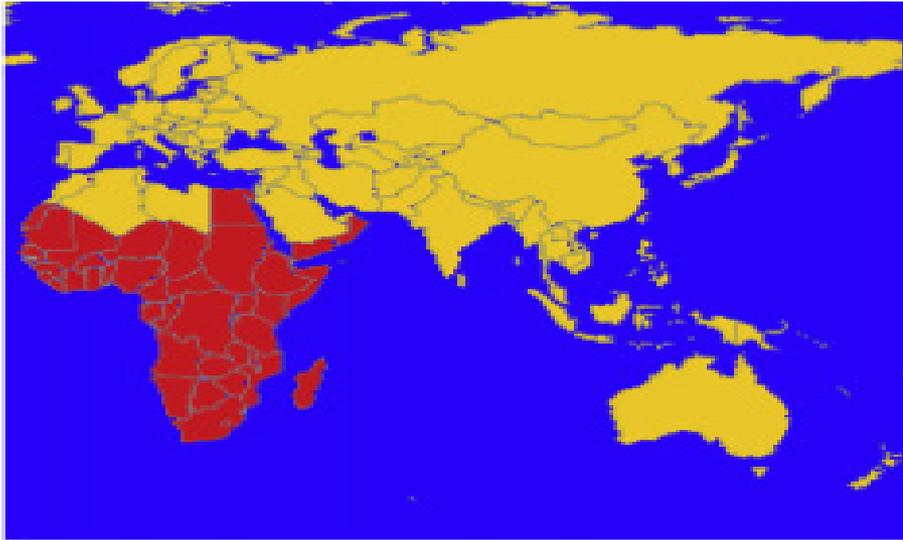


Safe, cheap, easy to use and non-perishable vaccines to reduce livestock losses

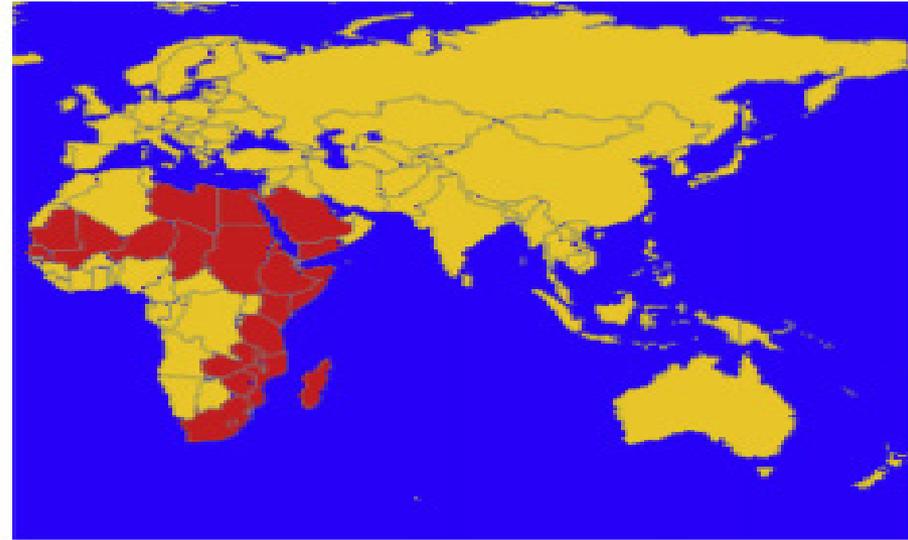
- Livestock production is a critical industry in Africa, providing food and animal products for local use and export.
- Livestock disease single largest cause of low productivity in developing regions → existing tools have low efficacy; cause side effects; are expensive to manufacture; require refrigeration and careful handling
- Targeting 3 different types of vaccines



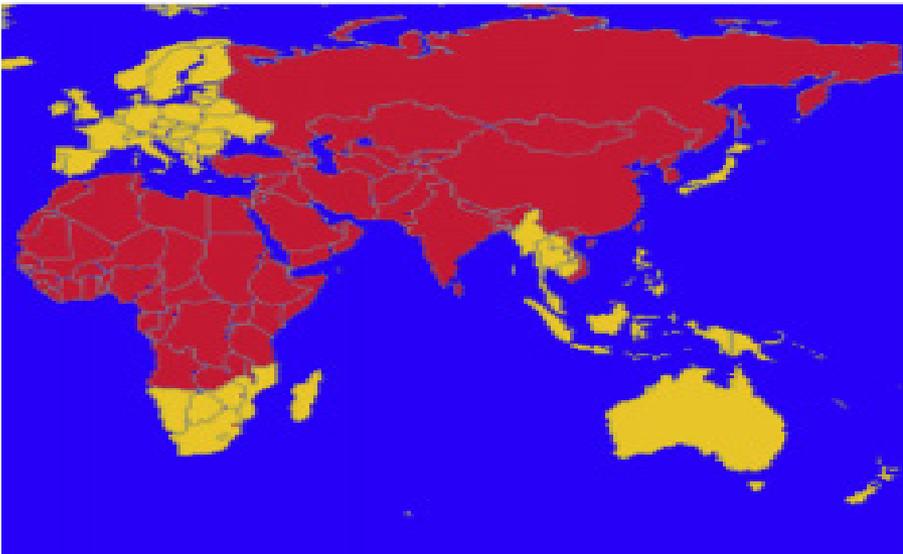
Multivalent vaccine development



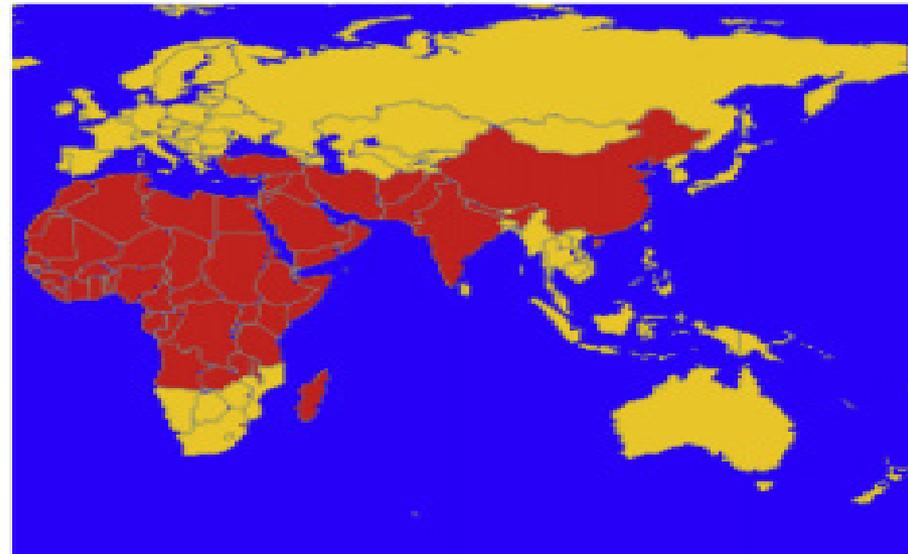
lumpy skin disease



Rift Valley fever



sheep and goat pox



peste de petits ruminants

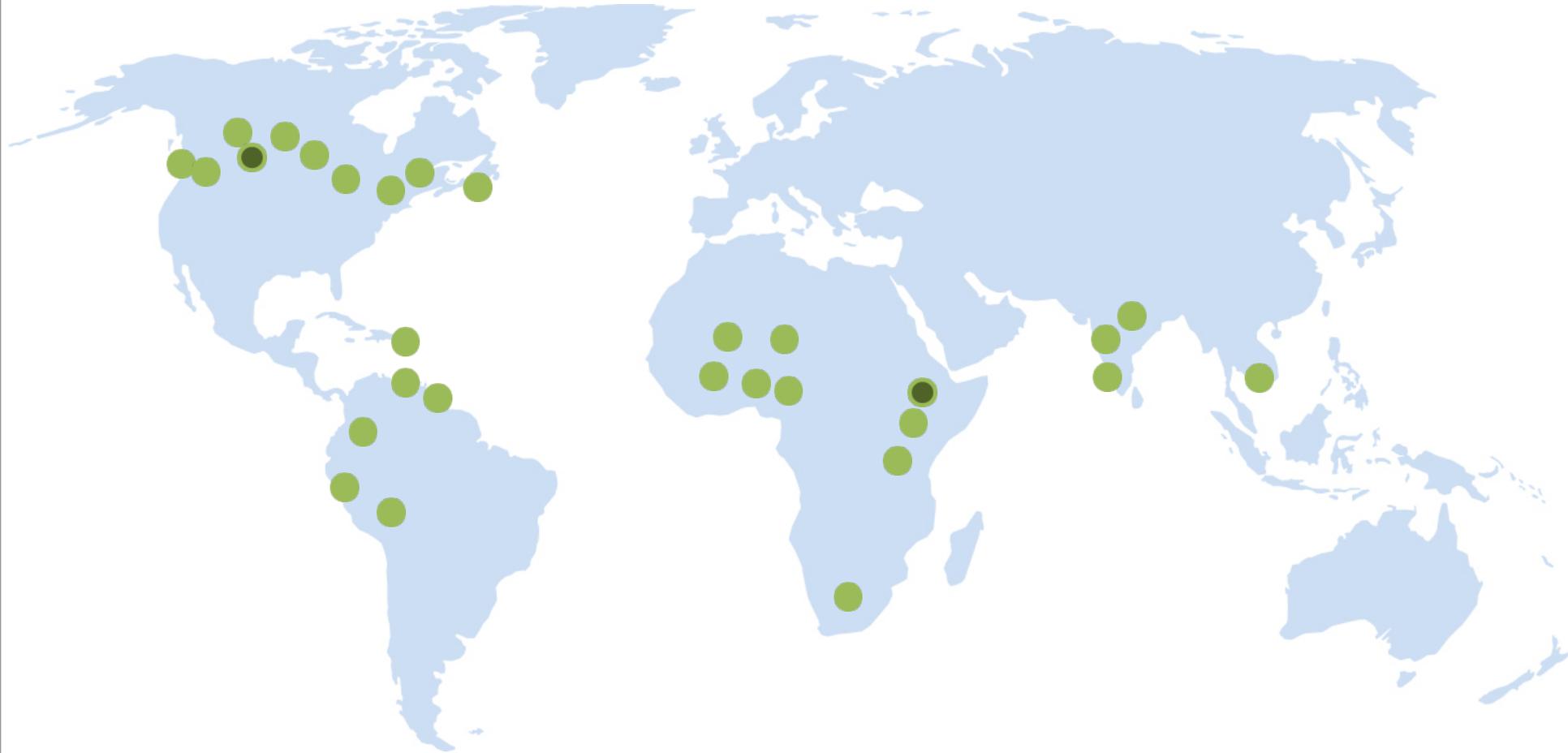
- Refinement of the Phase 1 vaccine constructs
- Conduct field trials in Kenya and South Africa
- Prepare dossier and master seed-stock batch of the vaccines
- Develop strategies for vaccine uptake and use



What are the opportunities?

1. To move from subsistence to commercial farming depends on what resources are available:
 - Blending cutting edge science with farmers' know-how
 - **“Use-inspired”** research that meet needs of intended users
2. Scalable technologies involve bundles with vaccines, fertilizer, seeds, mechanization, soil and water management, training, extension, etc.
 - identifying what bundles are implemented and which parts can be scaled
3. Focus explicitly on the business case, value chains, and partnering

Canadian International Food Security Research Fund ●
Improving Crops and Nutrition in Ethiopia ●



Smart Solutions to Ethiopian Food Challenge

- Widespread rural malnutrition
- Low agricultural productivity, poor soil fertility
- Promote adoption of high-protein crops
- Cost-effective method to increase nutritional value
- Focus on women and children

Results

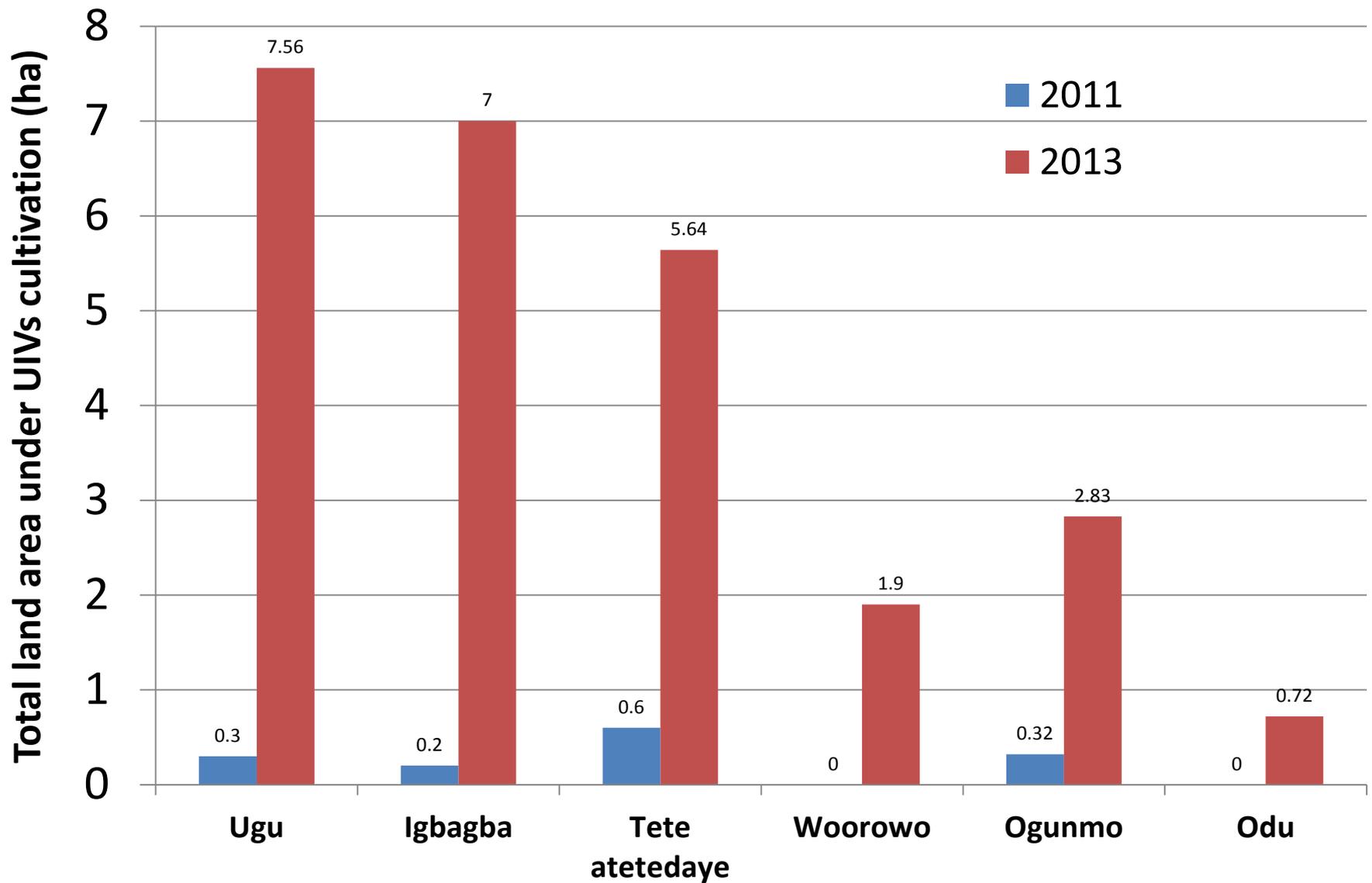
- Bacteria identified can increase crop yields by 60%
- Viable and cost-effective alternative to expensive fertilizers
- New, more diverse crops increase agricultural productivity and improve diets
- Ensure an adequate supply of both bacteria and seed to meet farmers' needs
- New sources of economic growth

Results for Farmers and Potential to Scale

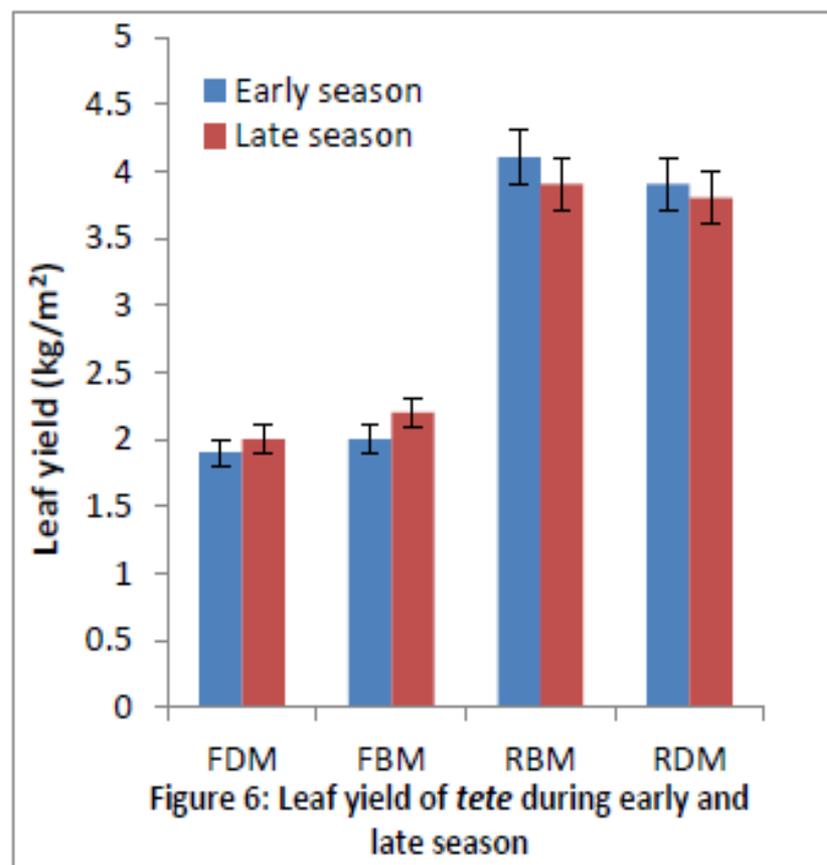
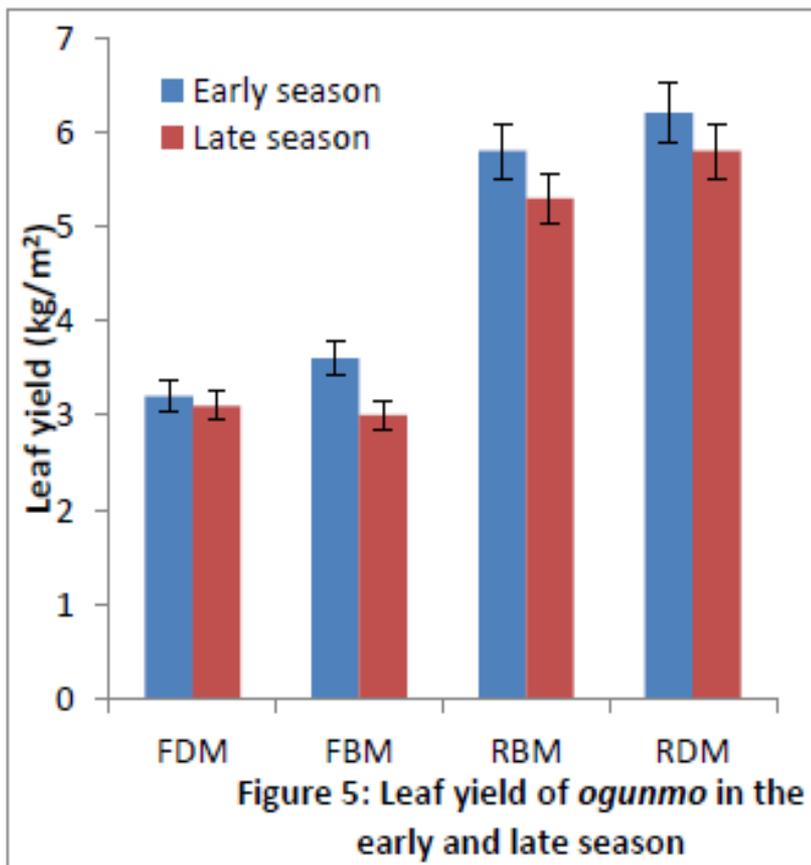


Canadian International Food Security Research Fund ●
Sustainable Production and Utilization of Underutilized Nigerian Vegetables
to Enhance Rural Food Security (CIFSRF) ●

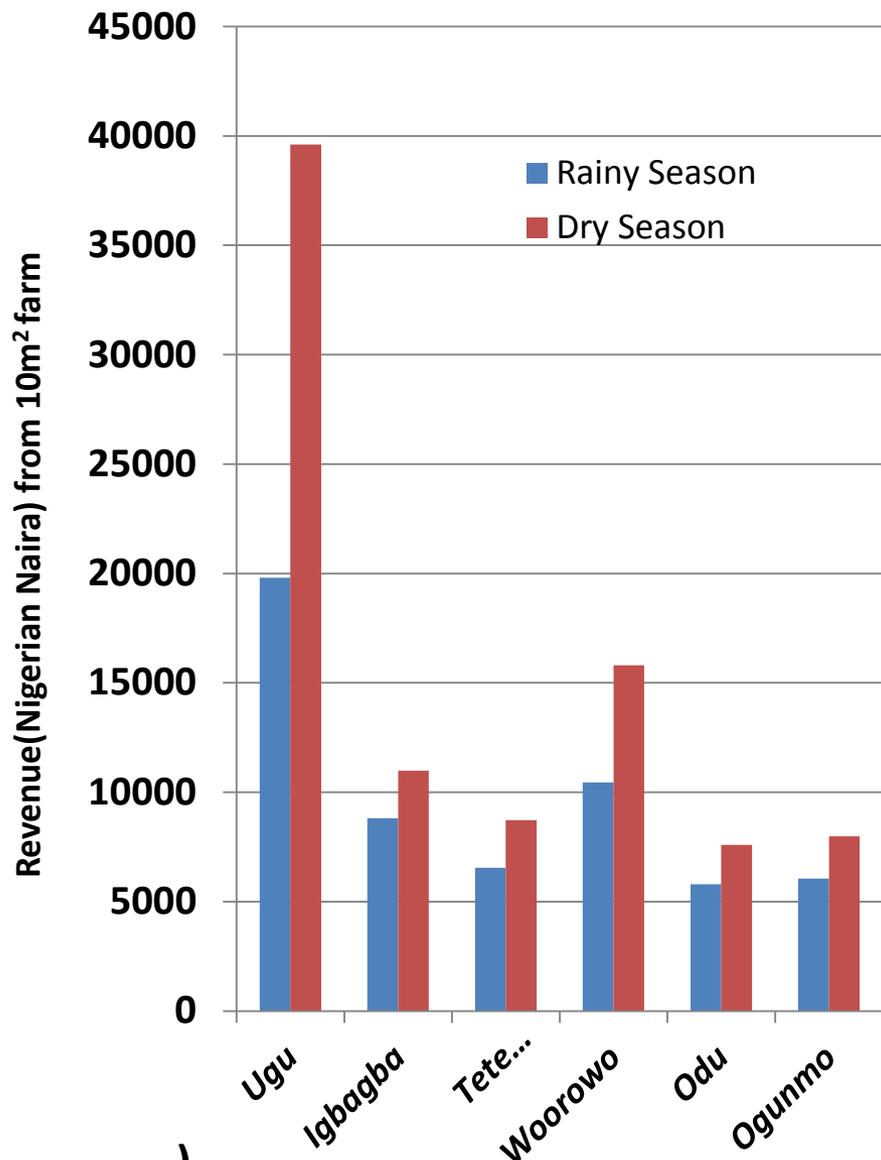




Total land area under indigenous vegetables cultivation at project commencement (March 2011) and present (December 2013)



The notations used in the Figures are FBM=Farmers seed rate planted by broadcasting, FDM=Farmers seed rate planted by drilling, RBM=Researcher seed rate planted by broadcasting and RDM=Researchers seed rate planted by drilling.

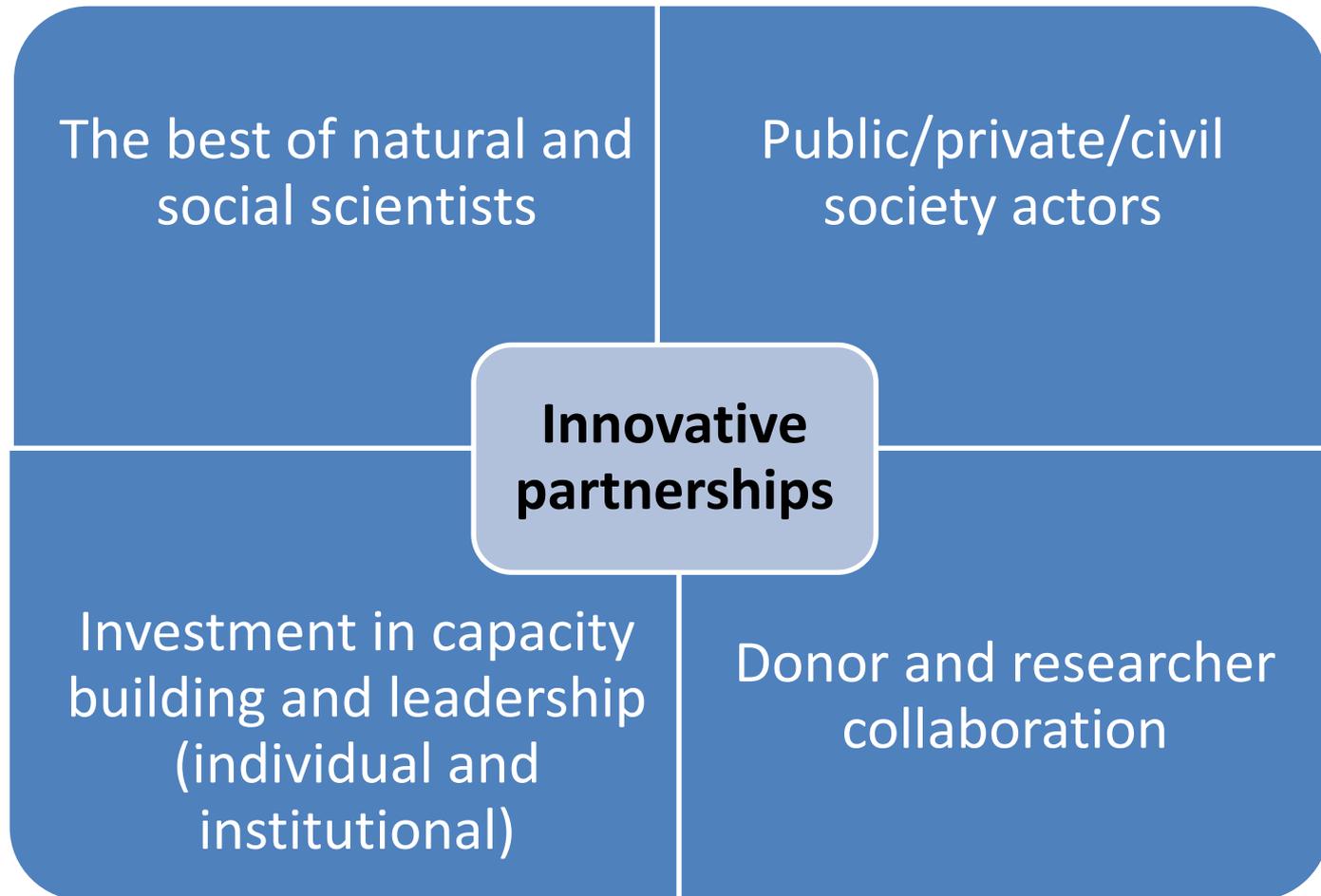


Igbagba, Ugu and tete atetedaye are the most popular and most cherished at our 22 study sites. *Igbagba, Ugu* and *woorowo* are the most expensive (price/unit) across SW Nigeria. Dry season vegetable farming is more profitable than rainy season's.

Some summative remarks:

- the productivity of processing, storage, and distribution merits nearly equal weight with the productivity of farms in food security debates
- the most effective government interventions occur with activities that support various parts of the value chains in integrated ways
- coordination is a growing problem holding up dynamic transformations
- the transformation and successes of governments and the private sector feeding major cities provide lessons for less dynamic regions
- growth, market modernization, and agribusiness and food industry debates are too often at arm's length from policy discussions on poverty reduction and food security

Research that builds partnerships and leadership





Merci

Rapid but Differentiated Transformation in Asia

Transformation of rice and potato value chains

- increase in scale and change in technology of rice milling and potato storage.

Surge in the demand for potatoes and other vegetables with increases in incomes and in megacities' populations

- Surge in demand for off-season supply of potatoes and higher-quality rice

Rapid increase in medium–large mills with modernized technologies and of modern Cold storage

Upstream segments of the value chains

- Great heterogeneity in farm sizes and distribution of nonland assets
- But all farmers, regardless of how small their plots are, are commercializing as they engage in nonfarm labor markets and use more external inputs per hectare.
- Factor markets for farm machines, water, and land rental are vibrant.
- Armed with mobile phones, farmers are more informed of what, how, and for whom to produce.

Midstream segments.

- Rice mills are modernizing and consolidating. The number of small village mills has declined rapidly, particularly in the PRC and India.
- Mills are buying directly from farmers, selling directly to agents in wholesale markets, and branding and packaging the rice
- Village traders roles, linking farmers and rural wholesale markets or mills, and of semi-wholesalers linking rural mills and urban wholesale markets or supermarket chains, have diminished greatly.
- Traders in wholesale markets have made important investments in warehouses and trucks and increased scale
- Modern potato cold storage has spread rapidly and consolidation is occurring
- Most trading has shifted to the CSFs from the government-mandated wholesale markets
- Farmers, even small-scale ones, ubiquitously use the CSFs, and have gained significant price advantages from storing
- Two-thirds of the potatoes sold in Delhi and Dhaka had been cold stored

Downstream segments:

- Supermarkets have penetrated urban rice retail and this is accelerating
- Supermarkets have been slower to penetrate the urban market for potatoes as well as for other fresh produce
- Supermarkets and traditional rice shops and stalls have been shifting from loose, unbranded rice to packaged, branded rice.
- Traditional retailers in Beijing tend to buy rice from wholesale markets
- Wholesalers sell rice packaged with mill brands
- Supermarket chains buy some rice from the wholesale markets, and some directly from large mills
- Governments in Bangladesh and the PRC no longer directly engage in rice retail
- Fair Price Shops' share of retail sales was only 15% in Delhi