Scaling Technologies

Remarks by Administrator Rajiv Shah to the CGIAR Board of Directors
Friday, December 7, 2012

Nearly fifty years ago, when USAID Administrator William Gaud coined the term Green Revolution, he was speaking not just about t he new varieties of wheat and rice, but about the vast potential of agricultural technology to open new frontiers in development.

It wasn't long before the Consultative Group on International Agricultural Research (CGIAR) was formed. The CGIAR was a response to a growing recognition that a worldwide network of agricultural research centers was needed to carry on the ideals of the Green Revolution.

Within a decade, the CGIAR had grown to include over a dozen centers—from Mexico to Nigeria.

But the ultimate test of an international research system is not the glamor of the inventions, but the impact of its results.

Today, we have technologies that can help farmers grow more productive crops and improve water management. The evidence base is growing around a select number of technologies that—if taken to scale—can impact tens of millions of lives.

But those technologies are not reaching nearly enough farmers.

Scaling Technologies

Challenge: Bringing Promising Agricultural Technologies to Scale

A set of global opportunities and country-based actions

Partners: Country governments, FARA/SROs, AU-CAADP, CGIAR, Innovation Labs (US Universities), Private Sector, Implementing Partners

Solutions:
New Alliance Technology Platform
Mission Scaling Plans, addressing constraints to policy and technology adoption
Alignment of research priorities, including CGIAR and University partners

Learning Agenda: Technology Matrix (wiki); private sector pathways for dissemination of publicly funded technologies; regional technology spillovers; sustainable intensification model; and, “fitness” or favorable conditions for technology and policy adoption.

Technology & Innovation Commitments

New Alliance communique (May 18, 2012) called for enabling actions to take innovation to scale by;

- Determining **10 year targets** for sustainable yields and adoption of new technologies that will increase food security, resilience, and nutrition outcomes
- Launching a **Technology Platform** to assess availability of and share knowledge about improved technologies and practices
- Identifying current **constraints to adoption**
- Launching a **technology scaling** initiative with AGRA
- **Share data** with G8 and African partners and launch ICT innovation challenge

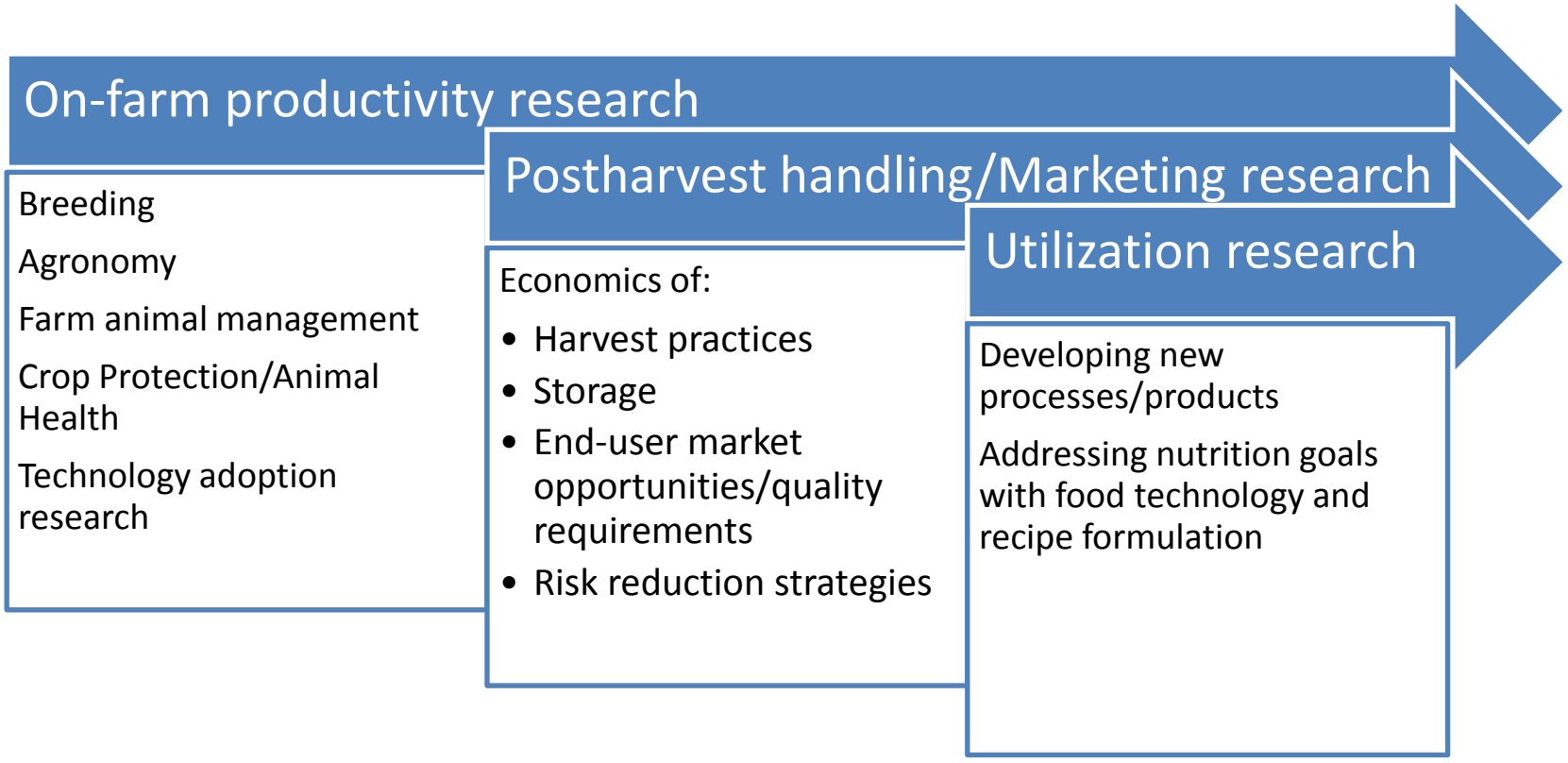
Food Security Innovation Center

3 Major Research Programs

Program anchoring research in key farming systems

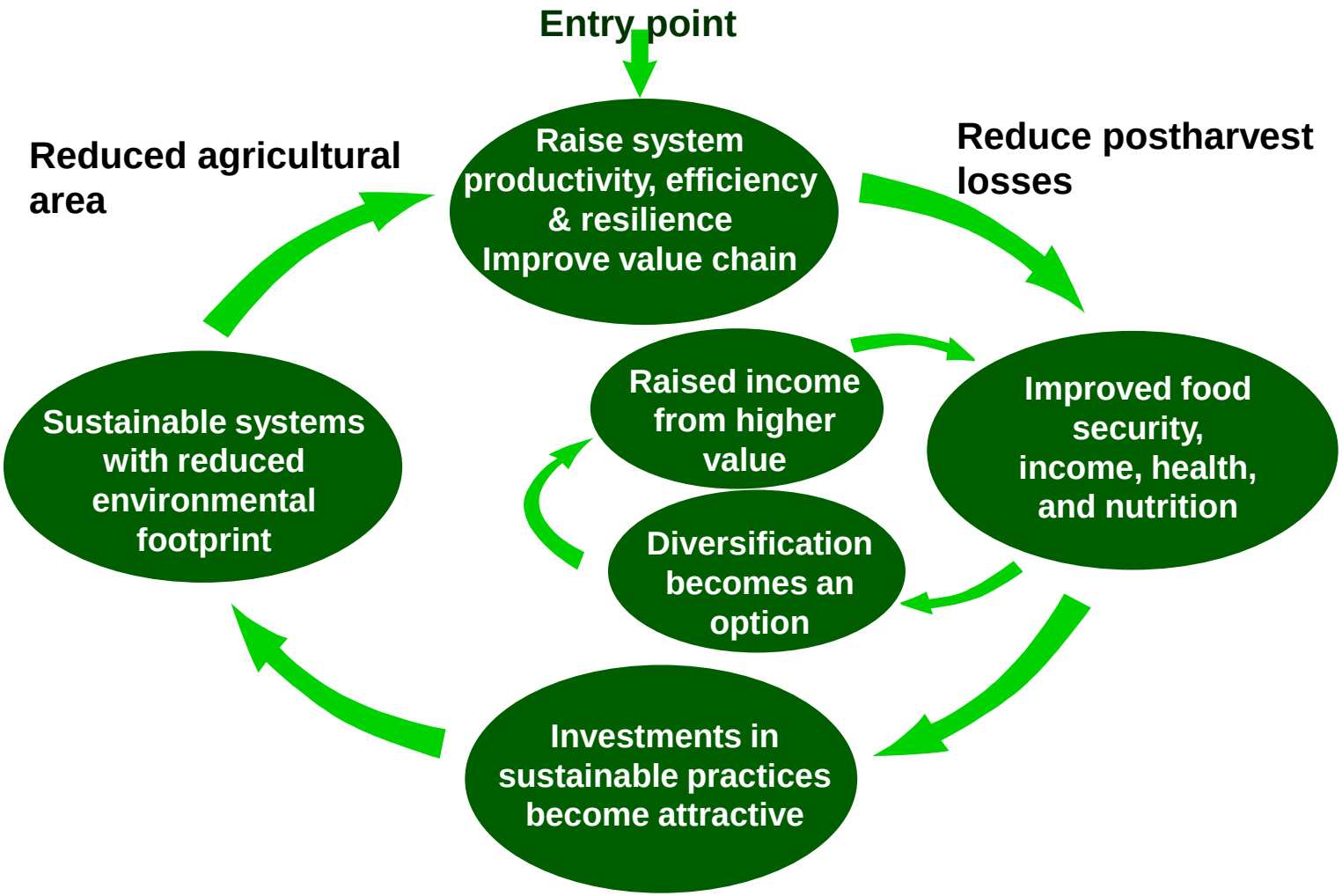
Integrated Cross-Cutting Programs

Research along the value chain



Partner outreach in each area facilitates technology uptake

Sustainable Intensification



Program for Sustainable Intensification

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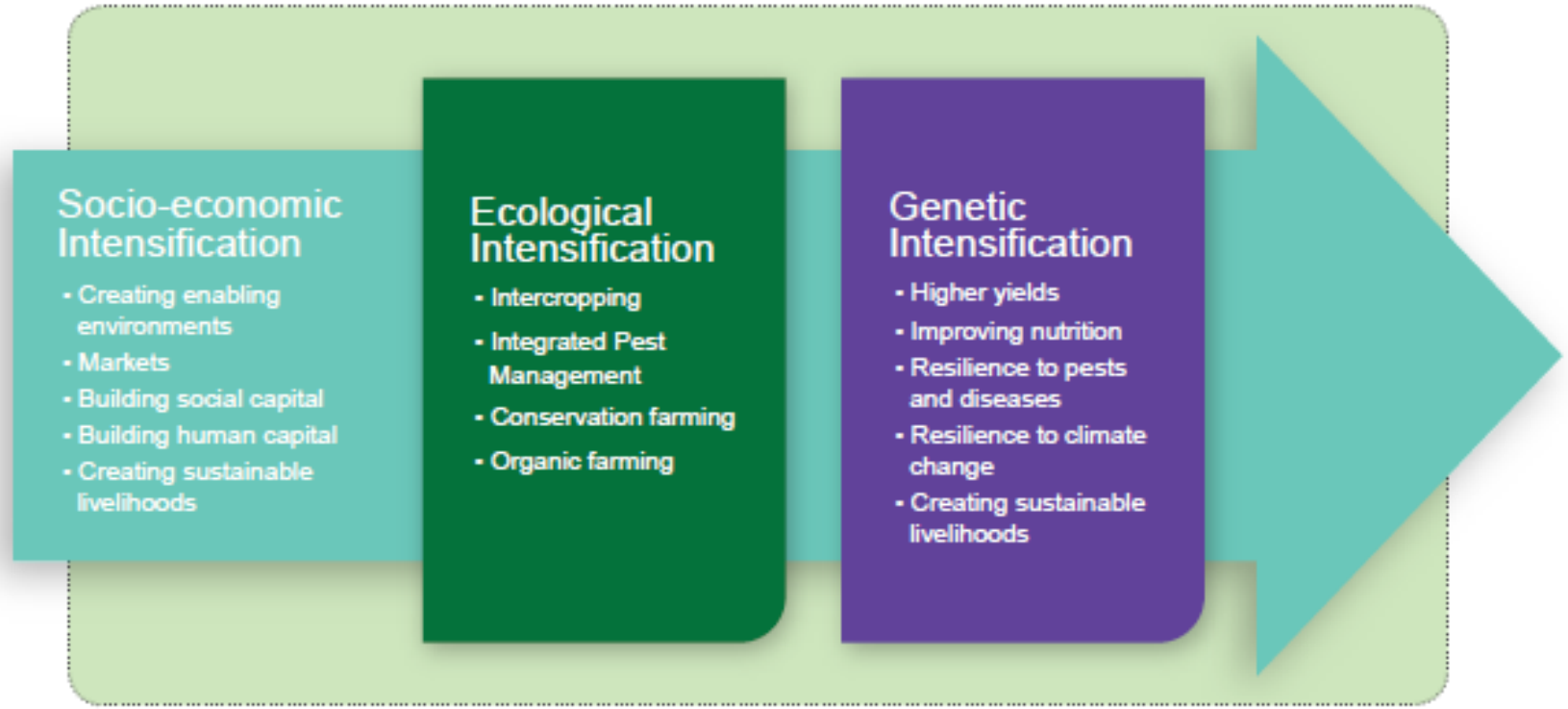
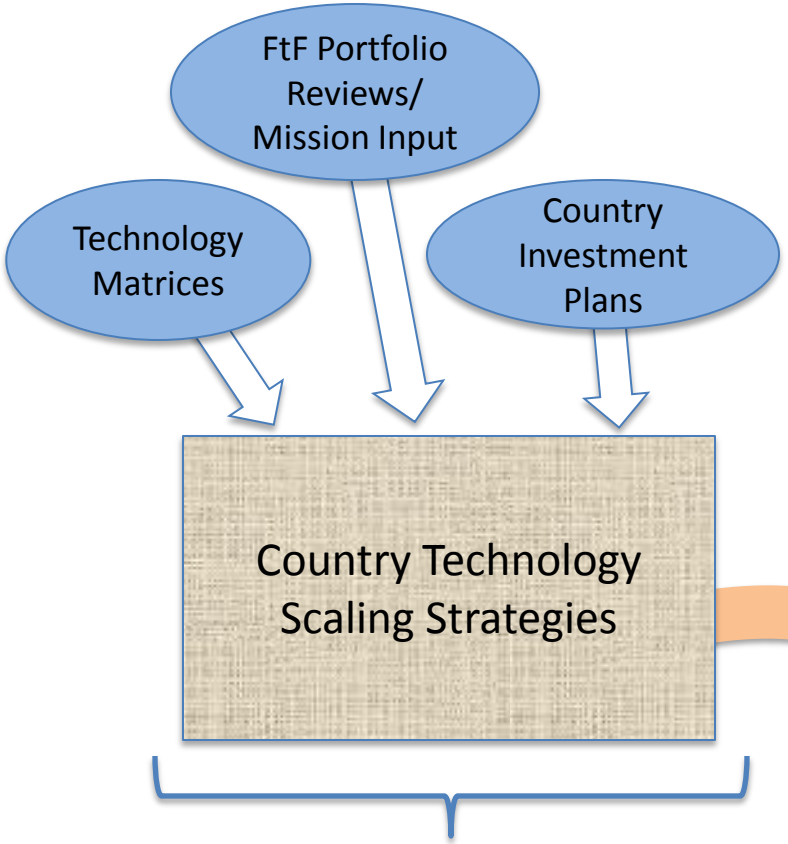
Practical Approaches to Sustainable Intensification



Cited from:
The Montpellier Panel, 2013, *Sustainable Intensification: A New Paradigm for African Agriculture*, London

AGRICULTURE FOR IMPACT
Imperial College London

Scaling Up Plans



Scaling strategies defined

(1) Key "scalable" technologies
(2) Constraints to adoption
(3) Gender aspects of technology

Policy?
Existing Programs?
Partnership Opportunities?

Action Plans defined

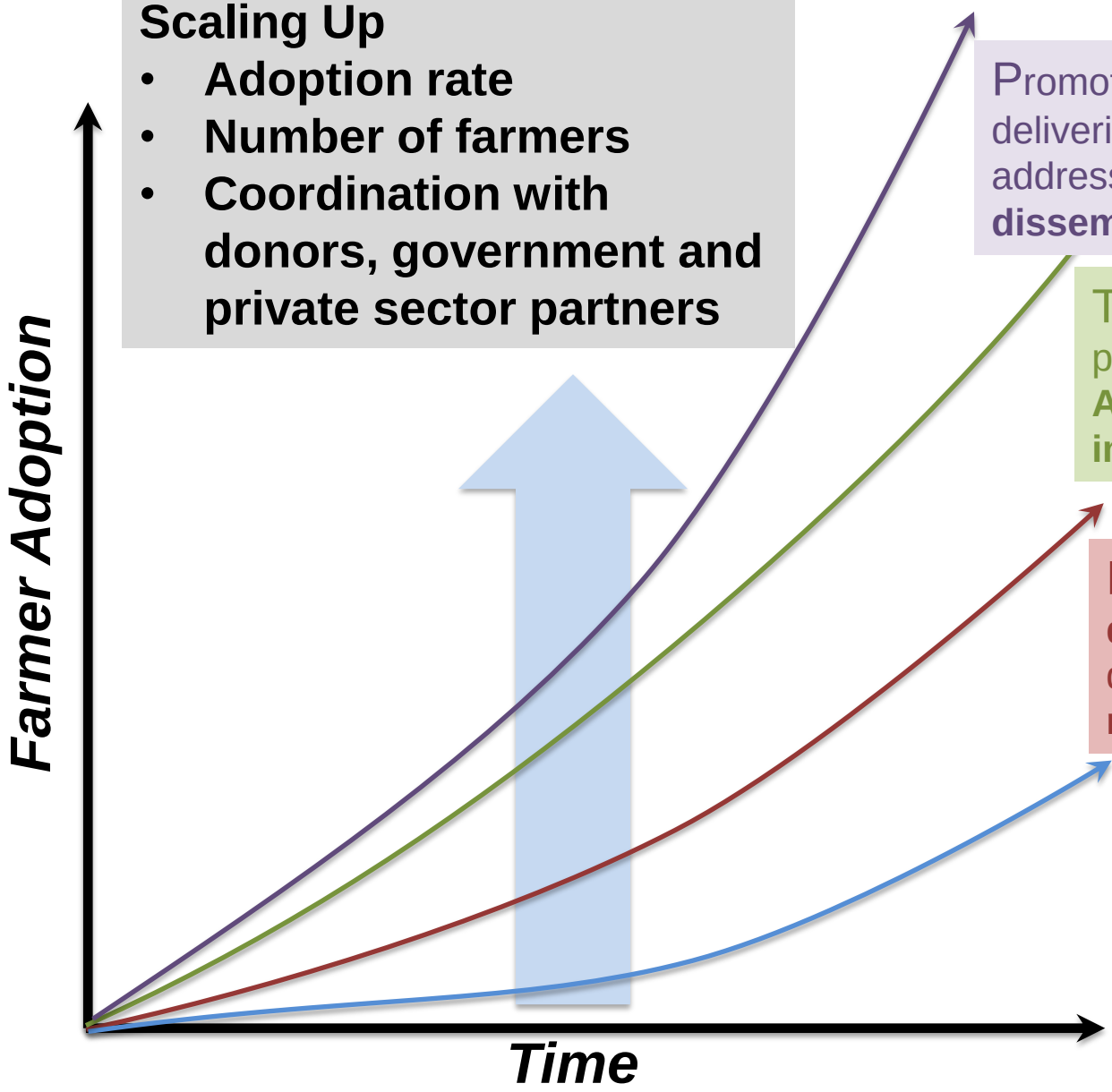
(1) Pathway/steps in scaling
(2) Key agents
(3) Targets and timeline for scaling
(4) Results on income/food security

Scaling Action Plans

Levels of Scaling Up

Scaling Up

- **Adoption rate**
- **Number of farmers**
- **Coordination with donors, government and private sector partners**



Promote **private** sector role in delivering improved technologies and addressing policy constraints**: Increase dissemination pathways**

Target scaling activities with **G8** platform and new FtF investment in **AGRA: Increase access to improved seed and inputs**

Promote **coordination between donors, government and others** delivering technology: **Increase number of adopters**

Strengthen connection of FtF funded research outputs to mission programs and enhanced role of ICT: **Increase adoption rates**

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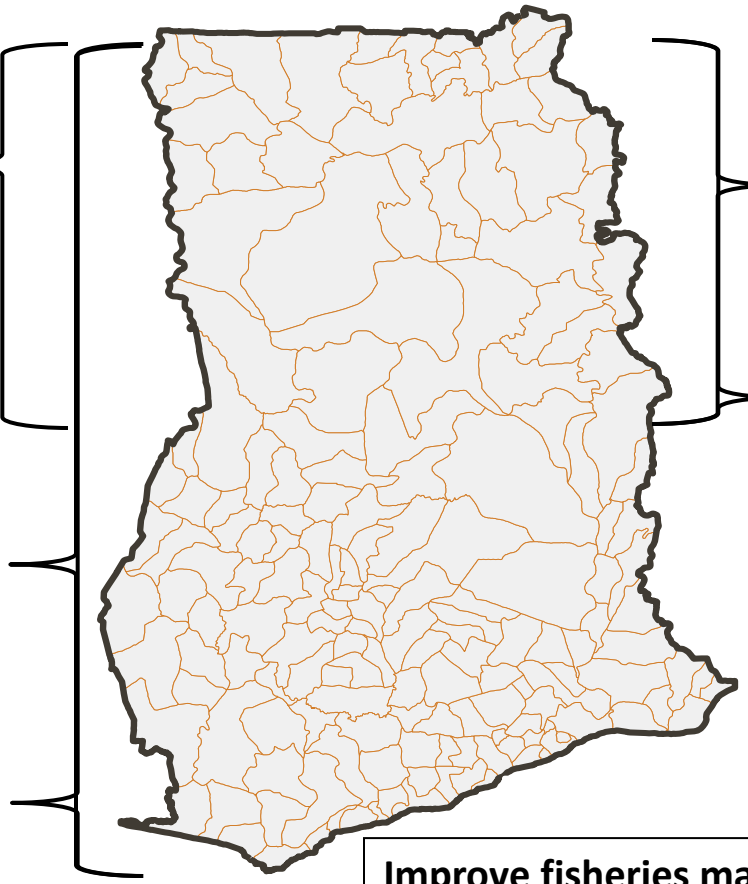
Ghana - Opportunities for Scaling

Aflatoxin mitigation technologies
Deployment of aflasafe biocontrol for maize to support human and animal health. (Partners – IITA, PACA, PMIL)

Livestock Vaccines
Newcastle disease vaccine (poultry) ready to be scaled up (Partners – Galvmed, ILRI)

Improved cowpea & groundnut varieties
Elite, drought tolerant, high yielding varieties of cowpea and groundnut (IITA, GLIL, PMIL, ICRISAT)



Improved maize variety/ hybrids
Deployment of HY, drought tolerant, hybrids and OPV's to increase productivity (CIMMYT, private seed companies).

Improved soy varieties, inoculant, dibblers
Deployment of elite soy varieties, inoculant to enhance nitrogen fixation, and dibblers for planting
(IITA, SOYIL, private sector)

Improve fisheries management:
Potential contributions of technology, socio-economis analysis, best practices and SPS (AquaFish, WorldFish)

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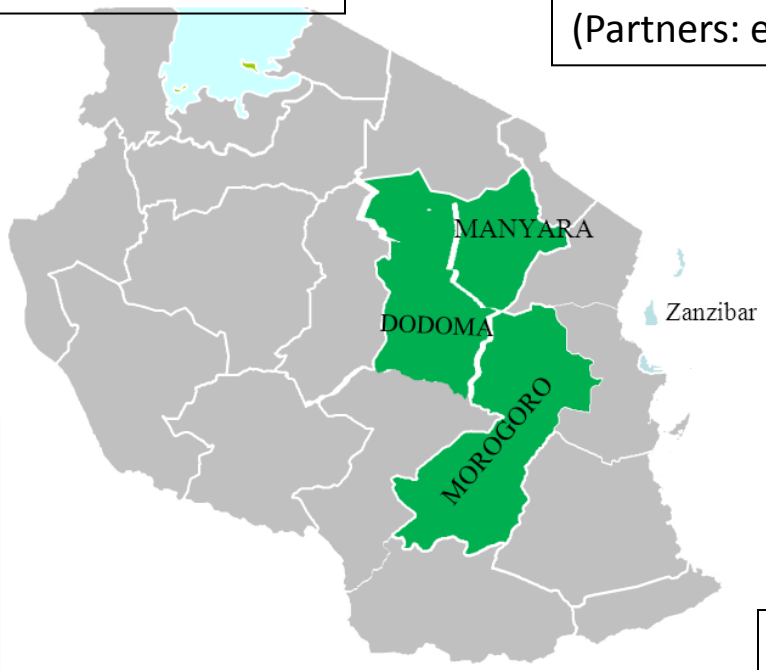
DRAFT Tanzania: Opportunities for Scaling Up

Common Bean Improvement
High-yielding, drought tolerant common beans (Partners – CIAT, GLIL)

Crop Insurance Products
Complementary to biophysical interventions to reduce producer risk (Partners: e.g., AMAIL)

Pigeonpea Improvement
High-yielding, medium-duration, large-seeded pigeonpea (Partners – ICRISAT)



Improved maize variety/ hybrids
Deployment of HY, drought tolerant, hybrids and OPV's to increase maize productivity (CIMMYT, private seed companies).

African Indigenous Vegetables
Deployment of seed and agronomic knowledge for African Indigenous Vegetable production (Partners – AVRDC, HortIL)

Livestock Vaccines
East Coast Fever (livestock) and PPR (goats) ready to be scaled up (Partners – Galvmed, ILRI)

"3G" Potato Seed
Methodology for buling and disseminating improved irish potato seed (Partner – CIP)

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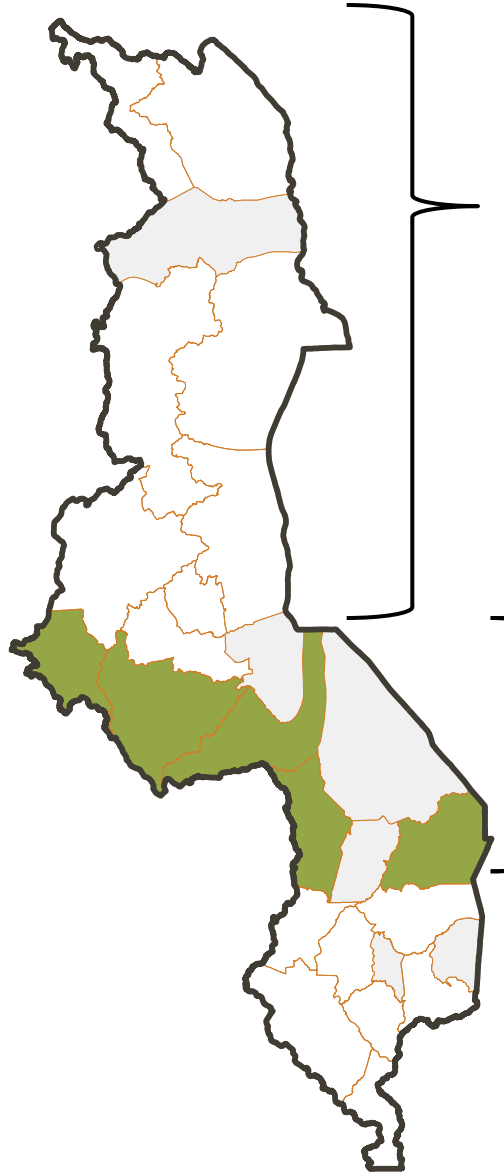
DRAFT Malawi: Opportunities for Immediate Scaling

"Doubled-up"Legume
Intercropped legumes with maize rotations for increased productivity, soil health and nutrition. (Partners – IITA, SoyIL, GLIL-CIAT, ICRISAT, private seed companies, agrodealers)

Aflatoxin mitigation technologies
Deployment of aflasafe biocontrol for maize/ groundnut to support human and animal health. (Partners – IITA, PACA)

Livestock Vaccines
East Coast Fever (livestock) and PPR (goats) ready to be scaled up (Partners – Galvmed, ILRI)



Improved maize variety/ hybrids
Deployment of HY, drought tolerant, hybrids and OPV's to increase availability of fodder / feed (CIMMYT, private seed companies). Associated technology to improve fodder quality

Improved *biofortified* maize variety/ hybrids
HY, drought tolerant hybrids and OPV's also with increased vitamin A (CIMMYT, private seed companies)

Orange Fleshed Sweet Potato
Biofortified Sweet Potato (Partner – CIP)

Ethiopia

Opportunities to scale technologies in the Bale-Arsi Wheat-Barley Livelihood Zone to increase incomes and increase food security

Technology #1: High yielding Rust-resistant WHEAT varieties

Technology #2: High yielding disease and drought resistant CHICK PEA (or other LEGUME) varieties

Technology #3: High yielding disease resistant MALT BARLEY varieties meeting market demand

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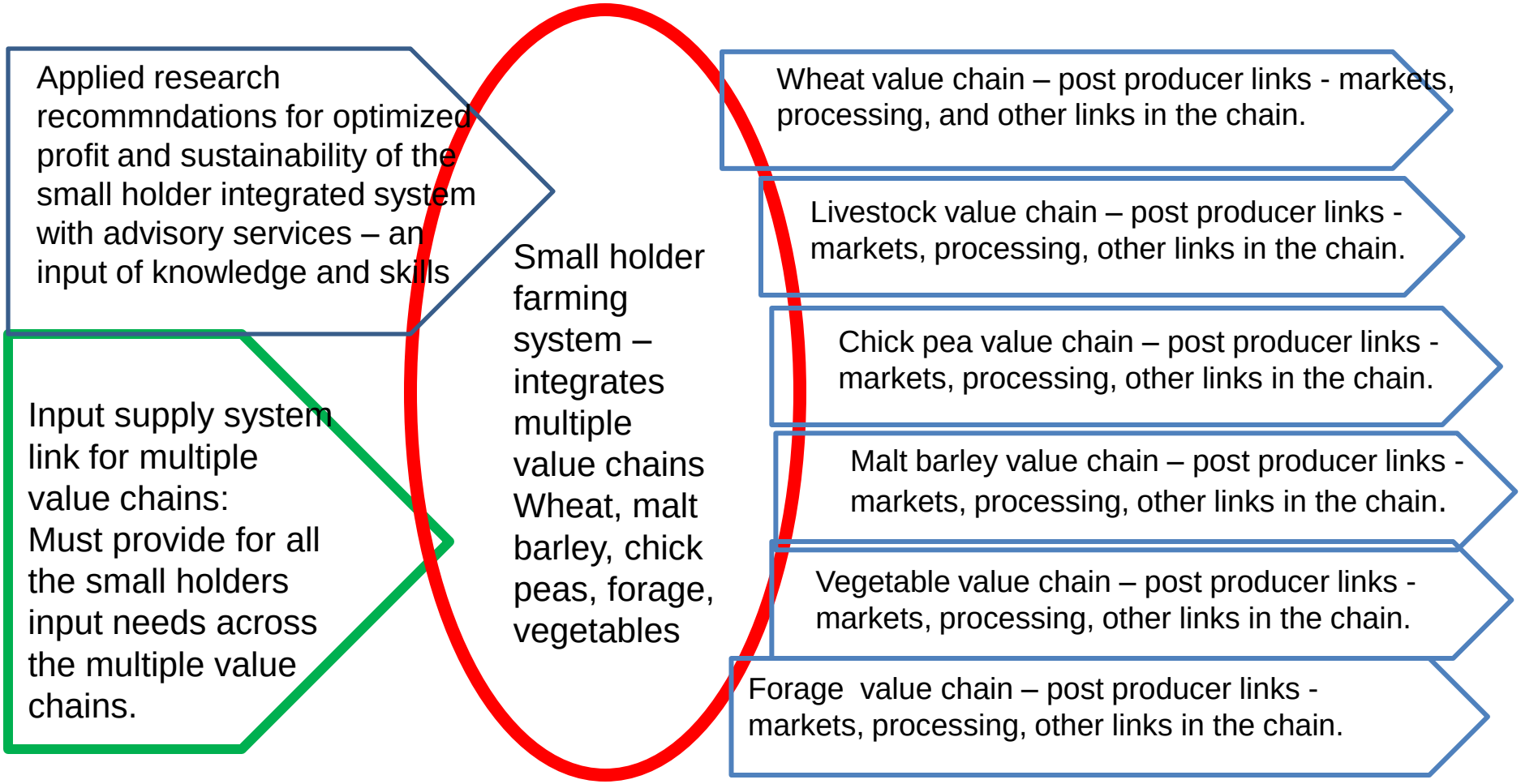
Ethiopia - Opportunities for Immediate Scaling in Arsi-Bale

- Build on Mission/Diageo Investment in malting barley and Mission investment in high-yielding rust resistant wheat and in investments in livelihood zone analysis and value chain
- Scale up a sustainably intensified rotation system with multiple value chains
  - Malt barley
  - Chickpea
  - Wheat
  - Faba bean - Potato?
  - Livestock

Value Chain Anchor link concept - Ethiopia



ANCHOR LINK

Small holder system is not treated as a link in each of the multiple separate value chains but as one big link that integrates the multiple and diversified value chains.

Technology Potential to Scale

Scaling a sustainably intensified rotation system with multiple value chains and multiple technologies 2010 – 2015 and beyond

FTF seasons: ***FY10 B FY10 M FY11 B FY11 M FY12 Belg FY12 Meher FY13 Belg FY13 Meher FY14 Belg FY14 Meher FY15 Belg FY15 Meher***

Scaling tech #1 WHEAT VC	**Scaling technology #2 CHICKPEA VC**	**Scaling technology #3 MALT BARLEY VC**	
- Part 1: Scale up availability of technology – seed multiplcation Scaling up availability of the technologies Scaling up adoption of the technologies by farmers Scaling up the market growth opportunities (policies and ease of doing business and infrastructure) - *or maybe this is Scaling up enabling environment?* *Target number of hectares determines scaling need for seed* *2 seasons per year: BELG & MEHER* - 2010 100,000 Ha - 2013 700,000 Ha - 2015 1,000,000 Ha	Scaling up availability of the technologies Scaling up adoption of the technologies by farmers Scaling up the market growth opportunities (policies and ease of doing business and infrastructure) - *or maybe this is Scaling up enabling environment?* - **Since the chickpea is rotation crop the same number of farmer family members will benefit from/adopt as for the plan for wheat** - **2010 500,000** - **2013 2,800,000** - **2015 4,000,000**	Scaling up availability of the technologies Scaling up adoption of the technologies by farmers Scaling up the market growth opportunities (policies and ease of doing business and infrastructure) - *or maybe this is Scaling up enabling environment?* - **The market demand from the malt processing facility in Bale will be strong market for the malt barley**	

USAID Mission Scaling Plans

- Identifies a technology (or bundle of technologies) for a specific value chain.
- Provides baseline indicators and targets for FY12-15, including number of smallholders that have adopted and area under improved technologies/practices, as appropriate (by sex).
- Describes the constraints to commercialization or increasing sustainable adoption.
- Scaling Up plans take into account the potential gender impact of specific technologies, including reduction of drudgery, income and other direct benefits.

Scaling Plan Questions

We need to answer the following key questions:

1) Country/local ownership: how to ensure this?
2) Value Chain/Commercial linkages: How are markets, private sector partners/pathways leveraged?
3) Technologies: What is best source(s)? NARS/IARCs/FTF ILs/Priv Sect—Building partnerships
4) AGRA in New Alliance Countries: How to Connect?
5) Gender: Are we actively integrating in analysis and design?
6) Nutrition: How can we strengthen nutritional outcomes?
7) Resilience: How do we engage the NGO-led resilience efforts as partners?
8) Climate change and environment: Are we actively addressing?
9) Policy: Are there key regulatory or other policy constraints that limit adoption?