Scaling models

Purpose:
Science Highlight 1 – Bridging the last mile to impact

Prepared by:
Introduced by the Executive Managing Director
Presented by Bram Govaerts, DG, CIMMYT
Conclusion

It is about the Delta towards the 5 impact areas

• Potential impact scope of an innovation

• Capability of the System to move the Delta by incorporating and actioning on the innovations and technologies generated (Enabling Environment, Delivery set up, Policy, Markets, Consumers, ....) (influenced from our action)

It is not about CGIAR becoming a delivery agency

It is about

• Turning data into information, information into decision making and decision making into decision taking

• Allowing stakeholders to do better what they already do good or know best

• Allowing impact to happen on the 5 impact areas

• Strong methodological and conceptual underpinning that per se is an institutional experiment to document

• MP on Scaling and Integrated Programs
Context: CGIAR 2030 Research & Innovation Strategy

CGIAR research and innovation will:

- Achieve positive measurable benefits across 5 Impact Areas...
- ...by scaling research and innovation...
- ...delivered through regional and global CGIAR Initiatives...
- ...that draw on global, best in class, capabilities and ways of working...
- ...collaborating closely with partners in all research and innovation for impact.

Impact Areas:
- Nutrition, Health and Food Security
- Poverty Reduction, Livelihoods and Jobs
- Gender Equality, Youth and Social Inclusion
- Climate Adaptation and Mitigation
- Environmental Health and Biodiversity

Impact Pathways:
- Performance and Results Management Framework
- Country and regional engagement
- 3 Science Groups that deliver Action Areas

Action Areas:
- Systems Transformation
- Resilient Agrifood Systems
- Genetic Innovation
- Systems Transformation Strategic Alliances
- Multiple Pathways
- Risk and Resilience
- Innovative Finance
- Digital Revolution

Partners
Context: P25 Priority Setting through The Theory of Change

Prioritization will be achieved based on

1. Impact of the trends on the systems (Given)
2. CGIAR contribution → Potential of innovations to address the Delta
   a. Potential impact scope of an innovation
   b. Capability of the System to move the Delta by incorporating and actioning on the innovations and technologies generated (Enabling Environment, Delivery set up, Policy, Markets, Consumers, ....) (influenced from our action)
3. Our comparative advantage to deliver the innovation within the appropriate system
Method and Conceptual Underpinning: Delta through Enabling Environment

MegaTrends create Crisis or Need in Region

Need in the selected Agri-Food System

Value proposition

Sub-Region/Farming System implications

Trajectory

Activity 1

Activity 2

Activity 3

Specific indicators by activity

Traditional partners

Partners

New partners

In-kind capability

CGIAR Impact Areas
Method and Conceptual Underpinning: MultiScale Data Systems

Sustainability Indicators (Field & Landscape Level)

- Sustainable technologies
- Network & Hub model
- Capacity development

- Health & nutrition
- Inclusion & equity
- Food accessibility

- Yield
- Profit
- Access to markets

- Air quality
- Water-use efficiency
- Soil quality
- Biodiversity

- Natural Resources Conservation

- Livelihoods & Food Security

- Poverty Reduction

Robust open-source data collection system (field + remote)

Gardeazabal et al., 2021

✔ SUSTAINABILITY SCORECARD PER PLOT/CYCLE
✔ AGRONOMIC RECOMMENDATIONS PER PLOT/CYCLE
✔ SUSTAINABILITY DASHBOARD PER PROJECT
✔ INPUTS FOR AGRI-FOOD SYSTEMS MODELLING
Method and Conceptual Underpinning: Policy Processes Differ from Innovation Scaling Processes

A policy scaling approach would involve:

1. High quality, consistent, globally aware, and demand-driven engagement (within the existing political economy paradigm). Much of the policy work of the CGIAR fits here.

2. Agile and sufficiently scaled response to opportunities for major reforms (in response to a new paradigm or to create a new paradigm). Offers the opportunity to achieve substantial impact in a short period of time.

3. Strong partnerships with key actors in policy shaping processes (e.g. IFIs, regional economic communities) who can facilitate the use of best tools, practice and evidence in policies & programs.

4. Plans for overcoming barriers to operationalizing scaling: capacity, financing, etc.
Method and Conceptual Underpinning: Multi-level Integration with Last Mile Delivery

**Integrated Agri-food System Initiative (IASI)**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Process</th>
<th>Focus Group</th>
<th>Product</th>
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</thead>
<tbody>
<tr>
<td>Where we are?</td>
<td>Analysis</td>
<td>Experts panel</td>
<td>Diagnosis and Identification of Change Drivers</td>
</tr>
<tr>
<td>Where are we going?</td>
<td>Research</td>
<td>Scientific team</td>
<td>2030 Scenario Projection Status quo</td>
</tr>
<tr>
<td>How to achieve a better future?</td>
<td>Participatory Consultation</td>
<td>Key actors</td>
<td>2030 scenarios workshop</td>
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*Scenario analyses for systemic change*
Method and Conceptual Underpinning: (Gender-) Responsible Innovation and Scaling

• Identify relevant diversity among innovation clients
• Tailor scaling strategies to those clients
• Avoid or mitigate unintended consequences of scaling innovation (risk management)
• ~50 CGIAR colleagues trained
An export ban on rice by India, the world’s largest rice exporter, in August 2023 in response to El Niño provoked a rethink of food security strategies by rice importers. This is a propitious moment for:

- **Analytics and South-South dialog** on the global rice market (rice production, consumption, and trade is dominated by the global south)

- **Constructive evaluation** of self-sufficiency policies

- **Examination of opportunities** to put in place growing practices that emit much lower volumes of methane
Through One Innovation Lens
Case: Deliver Poultry Solutions

<table>
<thead>
<tr>
<th>Impact opportunity identification</th>
<th>Research execution</th>
<th>Solution/product development</th>
<th>Scaling &amp; uptake</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Identification of opportunity in poultry within national plans and investment policies of Ethiopia, Nigeria and Tanzania, as well as agendas of bilateral development projects</td>
<td>• Build database for tropically relevant poultry phenotypes &amp; genotypes, and develop and use genomic breeding tools for Long Term Genetic Gains</td>
<td>• Coordinate and support evaluation, approval, registration and deployment of new technologies • Develop and test business models</td>
<td>• Evaluate effectiveness of business models • Identify brooders’ needs • Develop feedback system</td>
</tr>
</tbody>
</table>

**ILRI role**

**Demand partners**

- Ministries of agriculture...
  - Tanzania
  - Nigeria
  - Ethiopia

- ...as well as local NGOs working with poultry farmers on the ground in these countries

**Research partnerships**

**Global breeding companies**

- FOL-HOPE
- Tanzania
- Nigeria
- Ethiopia

**NARES and in-country poultry companies**

- In-country brooding units and NARES
- Smallholder farmers, NGOs and NARES

**Scaling & uptake**

- Facilitate partnerships
- Test business models
- Develop feedback systems
Enhancing the sustainable production of Genetically Improved Farmed Tilapia (GIFT) in Nigeria & Timor-Leste.

Through One Innovation Lens
Case: Improved Tilapia Distinct but Complementary Scaling Approaches

Critical success factors:

- Establishment of a robust relationship with the private sector to scale the production of GIFT.
- Comprehensive learning materials and a training curriculum on best management practices for raising Nile tilapia applied to train around 200 farmers, including a significant proportion of women.

- The Public-Private Partnership model, expanded under the Partnership for Aquaculture Development In Timor-Leste (PADTL) Phase 2, focused on improving access to and availability of quality GIFT seed.
- The establishment of an additional PPP hatchery was key given the disruptions to Timor-Leste’s food supply chain caused by the COVID-19 pandemic.

Both approaches highlight the importance of partnerships in achieving sustainable aquaculture development.

- In Nigeria, it allowed the rapid adaptation & implementation of advanced aquaculture practices.
- In Timor-Leste, it underscores the role of governmental support and public investment in establishing foundational infrastructure and ensuring the genetic integrity of GIFT broodstock.
Over the past decade, CGIAR has actively (re-) engaged in partnerships with international aid agencies and governments across Latin America, Africa and Asia.

Through One Innovation Lens
Case: Mechanization Supporting Last-Mile Providers

The “best performing technology” is not always the “most scalable”

Strong USAID partnership in South Asia boosts machine service and small-scale irrigation rollout.

MasAgro in Mexico: 40+ machine prototypes streamline farming from land prep to harvest.

ACIAR-backed study assesses two-wheel tractor bundles in East Africa.

GIZ, FAO, CIMMYT and collaborators back 15-country network to advance mechanization efforts in Africa and Asia.

What does impact look like?

Scale appropriate
Efficient energy/labor
Agronomic precision
Versatile & multipurpose
Low fuel consumption
Rural employment
Profits for all
Knowledge sharing
Risk for job displacement
Risk for monopolies
Waste management
Through a Multi-Innovation Integrated Lens
Content Specific Intervention through Hub Model & System Approaches

MASAGRO HUB MODEL
MasAgro 2009 – 2019
PROAGRO Productivo 2018-2019
MasAgro-Crops For Mexico 2019-2021
MasAgro-Crops for Mexico 2021-2023
MasAgro-Crops for Mexico 2024

Offering support to cross-regional initiatives e.g.
Agronomy Science Scaling and Acceleration Platform (ASSAP)

AFRICA (EAST & SOUTH)

INNOVATION HUB MODELS & SYSTEMS APPROACH
SIMLESA 1996–2017
- Africa RISING 2012-2020
- TAMASA/GAIA 2018-2024
- AIDI & SASAS 2021-2024

LATAM

SOUTH ASIA

SYSTEMS APPROACH CSISA
- Phase I, 2009-2012
- Phase II, 2012-2015
- Phase III, 2015-2020
- Phase 4.0, 2021-2025

MASAGRO - Crops For Mexico 2019 - 2021
MASAGRO - Crops for Mexico 2021 - 2023
MASAGRO - Crops for Mexico 2024

PROAGRO Productivo 2018-2019
MasAgro-Crops For Mexico 2019-2021
MasAgro-Crops for Mexico 2021-2023
MasAgro-Crops for Mexico 2024

Agrilac Resiliente: Sistemas de Innovación Agroalimentaria Resilientes en América Latina y el Caribe

Transforming Agrifood Systems in South Asia

Agricultura

CGIAR

CGIAR
Through a Multi-Innovation Integrated Lens
Case: Integrated Set Up – Example MasAgro Mexico

Leaders Validate and adopt Multiplier effect

Note: CIMMYT’s infrastructure network is made up of more than 150 collaborators, including local bureaus, community technicians, INIFAP scientists, local universities, farmers’ groups, among others.

Around 300,000 farmers integrated into the Hub model 1.3 million ha.

Since 2010

Network is made up of more than 150 collaborators, including local offices, producers’ organizations, national research institutes, and local universities, among others.
PPP Projects: Sustainable Production as Added Value: Building Farmer Market Linkages Responding to Consumer Demands

- Increase of approx. 20% in utility for farmers
- Broker trustworthy relationships between agroindustry and farmer associations

Results:
- + 80,000 ha (maize & wheat)
- Maize: + 600,000 ton
- Wheat: + 200,000 ton
- Barley and sorghum: + 25,000 ton

Projects Focus:
- Regenerative agriculture
- Water footprint
- Carbon footprint
- Community resilience
- Plant Health

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Hubs to Scale Innovation Networks: Learning Together and Catalyzing Exchange

Southern Africa Accelerated Innovation Delivery Initiative (AID-I) Rapid Hub
MasAgro Africa

InnovaHubs in Honduras and Guatemala
Scaling partnerships for impact and sustainability

Using a market-driven approach, AID-I engaged more than 60 delivery and scaling partners including:

- **33** Private seed companies
- **7** public sector institutes
- **7** CGIAR centers
- **15** NGOs across 3 countries: Malawi, Tanzania and Zambia
- More than **2.5 million** individuals participating in food security programs
- More than **US $672,000** private sector investments leveraged
Maize Seed Systems

Innovations and technologies promoted under maize:

- **66** multiple stress-tolerant maize hybrids promoted through demonstrations
  (~40% hosted by women farmers)
- **6,000** Tons of seed sold to farmers in 2023/24 farming season
- **19,000** Farmers trained in seed production and good agronomic practices
- **600** field days conducted in 2023/24 in Zambia, Tanzania, and Malawi
- **1,625** Village based advisors recruited and trained
- **4,637** Hectares under certified seed production
- **100 Ha** under production for early Generation Seed for 3 FAWTH (Fall Army Worm Tolerant Hybrids)
- **9,641** demonstrations of Stress Tolerant hybrids planted
Legume Seed Systems

56
Promotion and seed multiplication of 56 unique varieties of pigeon pea, common beans, groundnuts, and cowpea in Malawi, Tanzania and Zambia

600
Roadside demonstrations held with 5,000 farmers attending field days

8,000MT
of commodity sold through structured markets

800
Mega demonstrations have been established in Malawi and Zambia to promote new varieties and soil health.

15
Seed companies linked to Agro dealers

2,000
Farmers linked to markets and over 19,000 trained in maize and legume production
Through a Multi-Innovation Integrated Lens

Case: Technologies for African Agricultural Transformation

TAAT is implemented in **4 Components** and works with **11 commodity compacts** and **3 enabler compacts** in Sub-Saharan African countries.

### 4 Program Components

1. Creating an Enabling Environment
2. Deploying a Regional Technology Delivery Infrastructure (RTDI)
3. Deployment of technologies
4. Program Management

### 11 Commodity compacts

- Rice
- Maize
- Sorghum/Millet
- Wheat
- High-iron beans
- Cassava
- OFSP
- Vegetables
- Soybean
- Livestock
- Fish

### 3 Enabler compacts

- Youth
- Policy
- Capacity Development

### Private sector

- Farmers
- Seed Companies
- Fertilizer Companies
- Agro dealers
- Machinery Companies
- Processors
- Etc.
‘Connect-the-dots’ to link science, policy, and action.

Get CGIAR innovations into the hands of farmers.

AICCRA has a vision for scaling CGIAR science on four areas: Partnership; Innovation; Science-based approaches; Action research on scaling.

Project Development Objective | To strengthen the capacity of governments, regional organizations, farmers and other relevant stakeholders and enhance access to— and use of— climate information services and validated climate-smart agriculture technologies in IDA-eligible countries in Africa.

- Six focus countries: Senegal, Mali, Ghana, Ethiopia, Kenya and Zambia.
- Four thematic teams: Policy, CSA, Climate Services and Gender.
- Two regional teams’ spillover’ impact to 41 countries.
- AICCRA is led by The Alliance Bioversity International – CIAT but activities involve all CGIAR centers (except CIP) to scale CGIAR science.
- CGIAR innovations, having forged 91 partnerships with institutions, NGOs, farmer groups and private sector.

Number reached 2021-2023
Achieved 5m
Target 1.5m

Recent stories

Additional finance

World Bank commits $100 million to COP28 to CGIAR “climate-smart” agriculture project in Africa

WorldFish

ICRISAT

CIMMYT

WorldFish

IRRI

IWM

ILRI

International Food Policy Research Institute

Alliance Bioversity & CIAT
Through a Multi-Innovation Integrated Lens
Case: Sudan – Pivot from Fragile State to Crisis
Through a Multi-Innovation Integrated Lens Case: Cutting edge of CGIAR in Bangladesh

Strong in-country and long-term science teams collaborating deeply with partners

Boosting impact: Assuring synergies between initiatives and bilateral projects

Genetic innovations
- Initiative on Accelerated Breeding
- Initiative on Breeding Resources

Regional integrated initiatives
- Transforming Agrifood Systems in South Asia
- Initiative on Asian Mega-Deltas
- Initiative on Plant Health

Resilient agrifood systems
- Sustainable Intensification of Mixed Farming Systems
- Initiative on Excellence in Agronomy

Ongoing bilaterals
- Additive intercropping
- CSISA-MEA
- Disease early warning systems
- IPM Activity
- PARIBARTAN
- RUPANTAR
- Wheat blast phenotyping

Delivering tangible value from research: some 2023 impacts
- Deep collaborations with 135 partners across Bangladesh
- Major advances in district-level integrated agrifood data systems and stakeholder engagement
- Novel socio-technological crop diversification innovation bundling testing with >700 farmers (Rajshahi, Rangpur)
- > 0.7 m farmers (19% women) applying climate adaptation, mechanization, agronomy innovations
- Value chain research & capacity development support to 722 agriculturally-oriented businesses
Through a Multi-Innovation Integrated Lens
Case: Climate Smart Agriculture Telangana State, India
1. **Stakeholder engagement:** Contextualize data-based, priority setting at different scales.

2. **Participatory action research cycle:** generate and test options through co-design. Plan together, Act together, iteratively learn and develop updated options.

3. **Innovation systems through hub models:** enhance learning, agency and scaling of options, with improved policy and institutions. MEIL to understand what scales, where.
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