



Development, transfer and dissemination of agriculture related technologies

CGIAR is a global research partnership for a food secure future

Frank Rijsberman, CEO CGIAR Consortium
UN General Assembly Structured Dialogues
29 April 2014

CGIAR: the world's leading agricultural research partnership, working towards a food secure future.



CGIAR

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A strategic partnership dedicated to advancing science to address the central development challenges of our time:

- **Reducing rural poverty**
- **Improving food security**
- **Improving nutrition and health**
- **Sustainably managing natural resources**

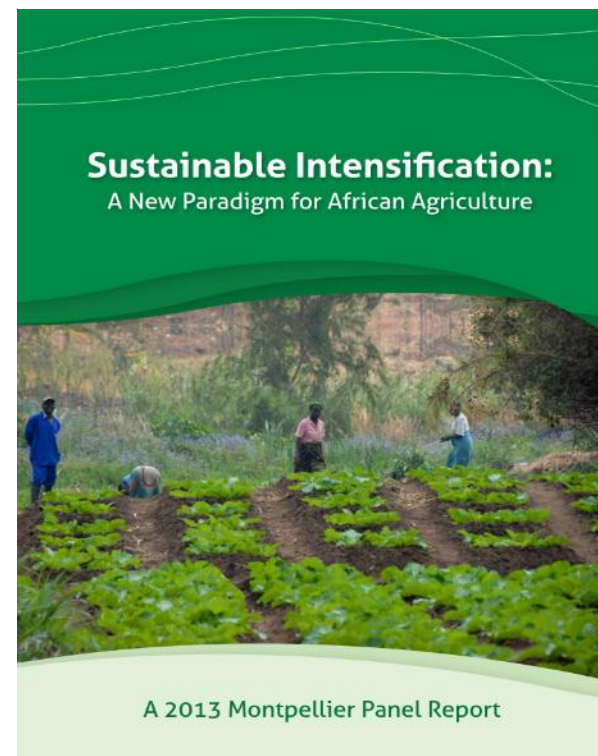
Its research is carried out by 15 International Agricultural Research Centers, working in close collaboration with hundreds of partners worldwide.

CGIAR is a global research partnership for a food secure future



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Connect needs, scientific excellence, impact



CGIAR's global research Centers



Number of CGIAR Research Centers

15

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CGIAR Research Programs (CRPs) portfolio

- **Maize**
- **Wheat**
- **Rice**
- **Roots, Tubers & Bananas**
- **Dryland Cereals**
- **Grain Legumes**
- **Livestock and Fish**

- **CRP for Managing & Sustaining Crop Collections**

- **Policies, Institutions & Market**

- **Agriculture for Nutrition & Health**

- **Humid Tropics**
- **Aquatic Agricultural Systems**
- **Dryland Systems**

- **Climate Change, Agriculture and Food Security (CCAFS)**
- **Forests, Trees and Agroforestry (FTA)**
- **Water, Land and Ecosystems (WLE)**

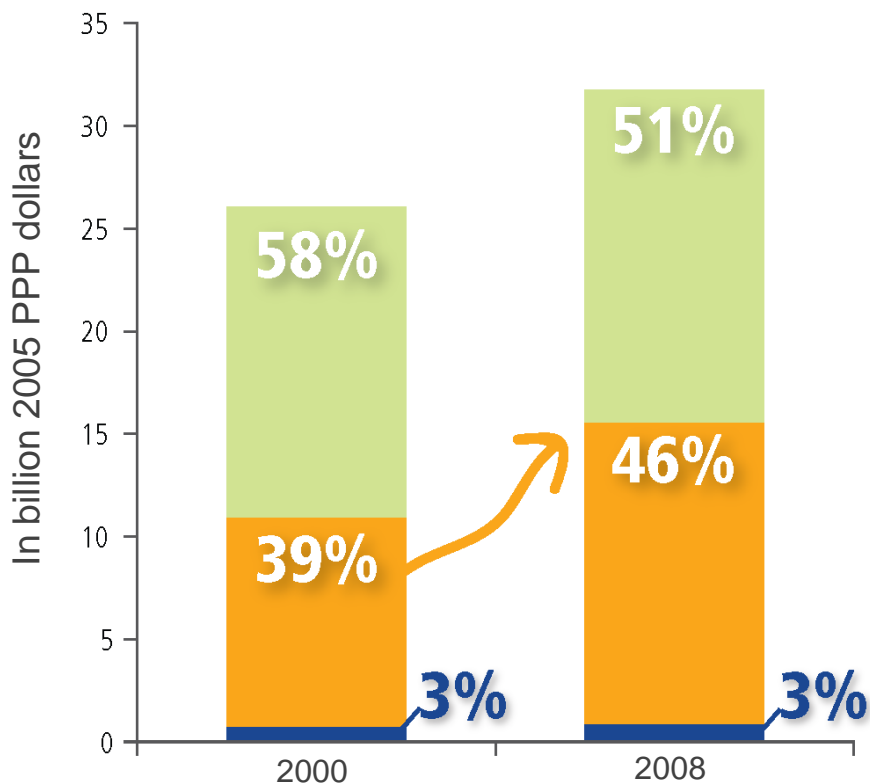
Agriculture Research for Development: the engine that drives technology development & adoption



Following a period of decline, public agricultural R&D spending increased globally by 22% from 2000-2008

Source:
ASTI program
led by IFPRI

Developing countries drive public spending growth

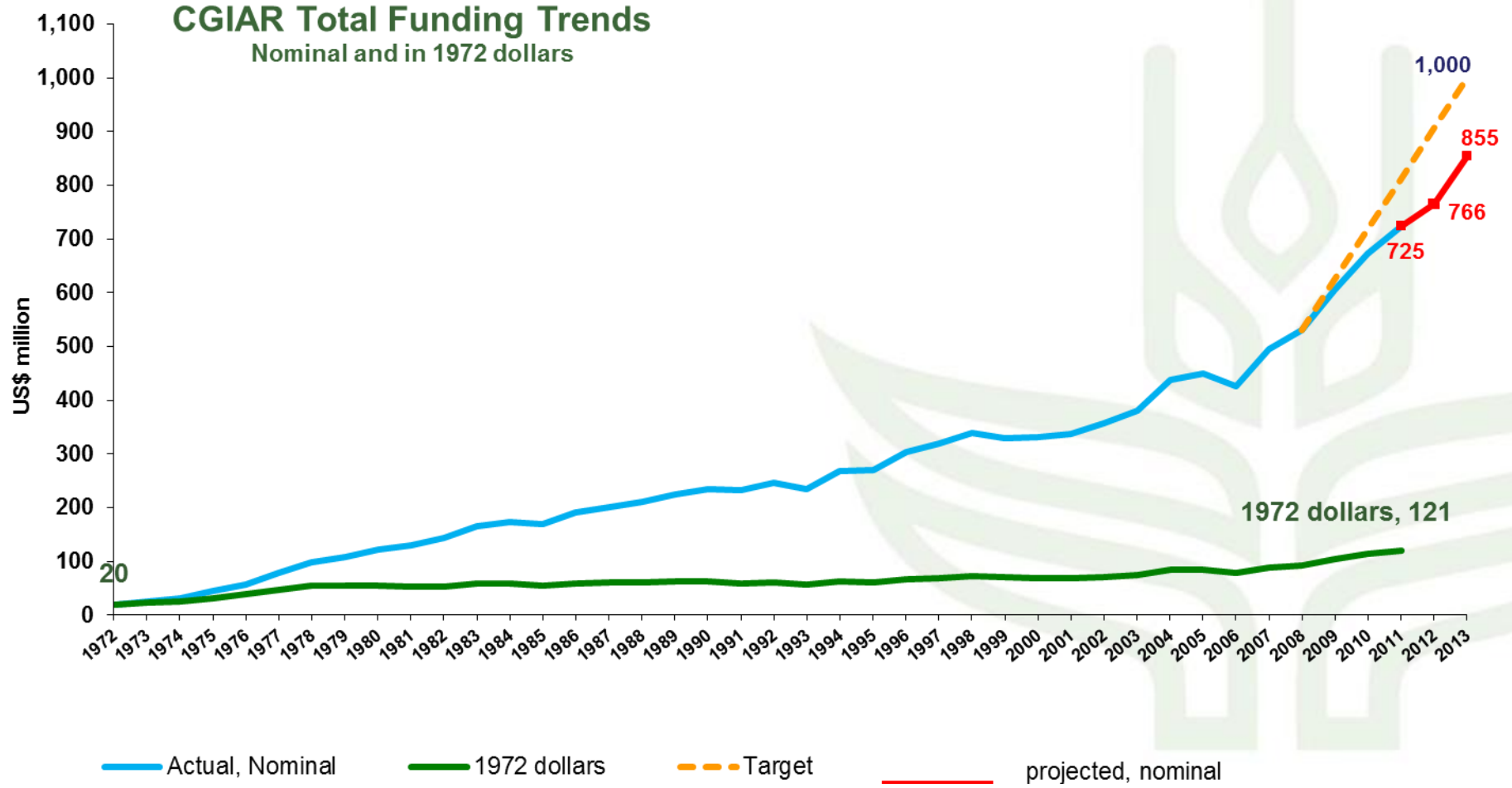


Main drivers of \$5.6 billion growth (2005 PPP \$)

| | |
|------------------------|---|
| \$2.1 billion | China |
| \$0.6 billion | India |
| \$0.5 billion | United States |
| +/- \$0.2 billion each | Brazil, Argentina, Iran, Japan, Nigeria, Russia |

- High-income countries
- Middle-income countries
- Low-income countries

Increased and Sustained Investment: Doubling of CGIAR funding in five years (2008-2013) to \$1 billion in 2013

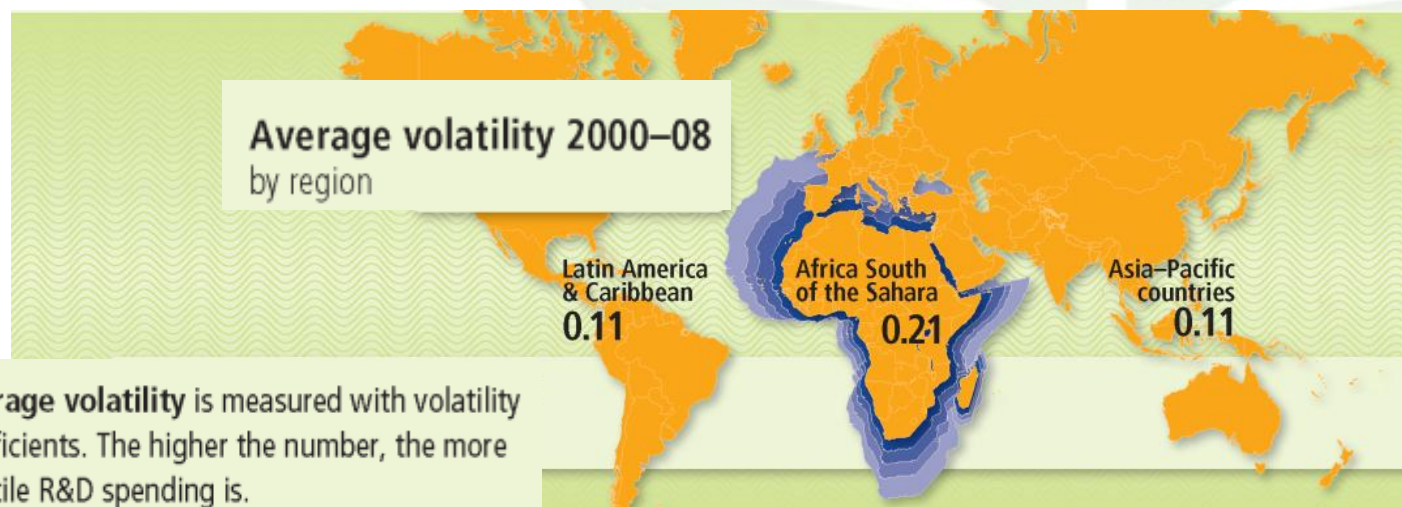
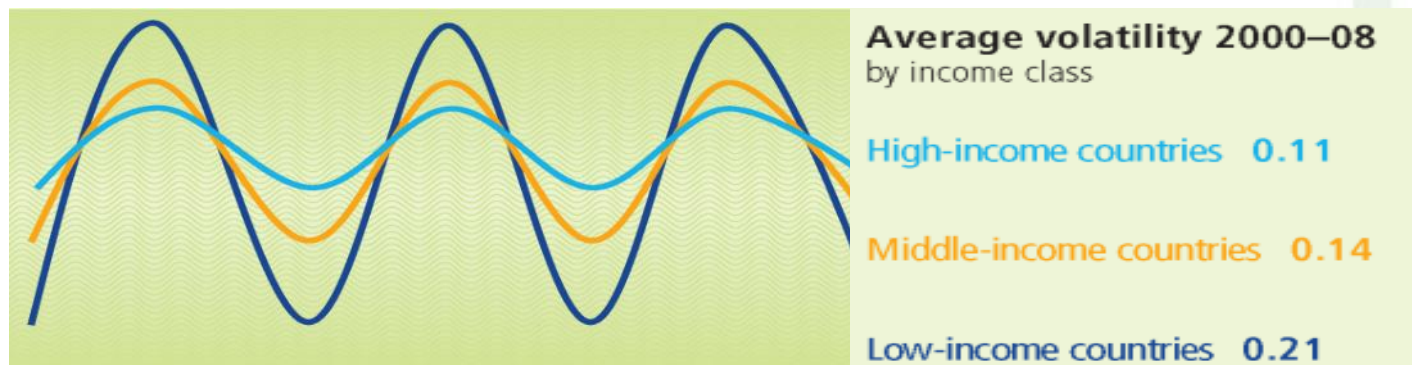


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But world's poorest countries lag behind

Source:
ASTI program
led by IFPRI

More attention should be given to the poorest countries that have low, often declining or stagnating investment levels that are highly volatile



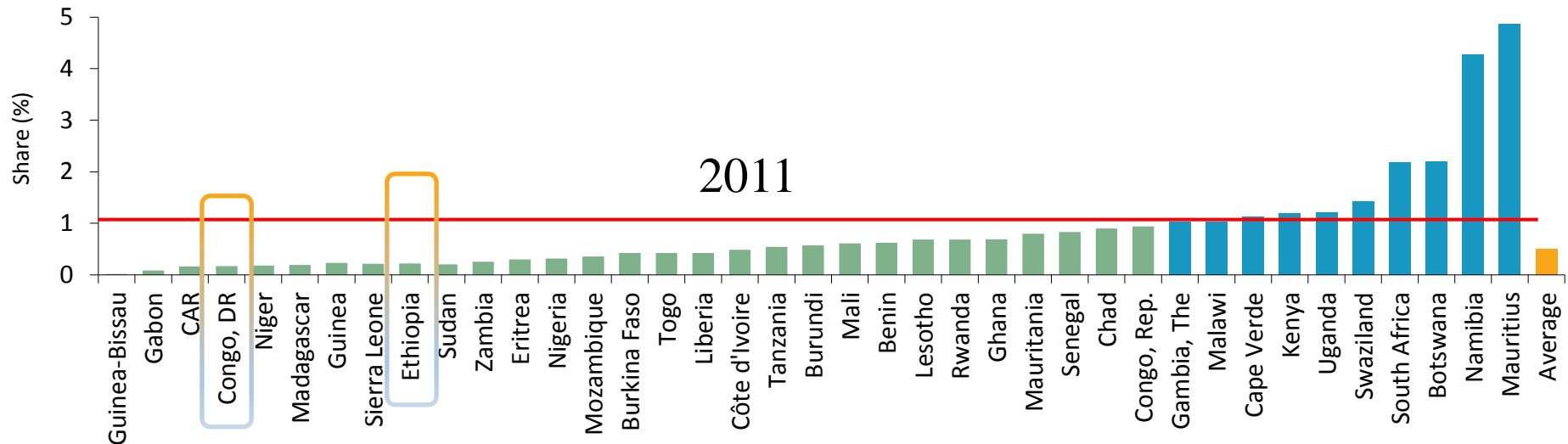
Average volatility is measured with volatility coefficients. The higher the number, the more volatile R&D spending is.

Most African countries fail to meet investment targets

Source:
ASTI program
led by IFPRI

Target (UN/NEPAD): Allocation of at least 1% of AgGDP to R&D

- On average, 0.51% of AgGDP in SSA was spent on public agricultural R&D in 2011
- SSA's intensity ratio has declined since 2008 due to relatively stronger growth in AgGDP than in agricultural R&D spending



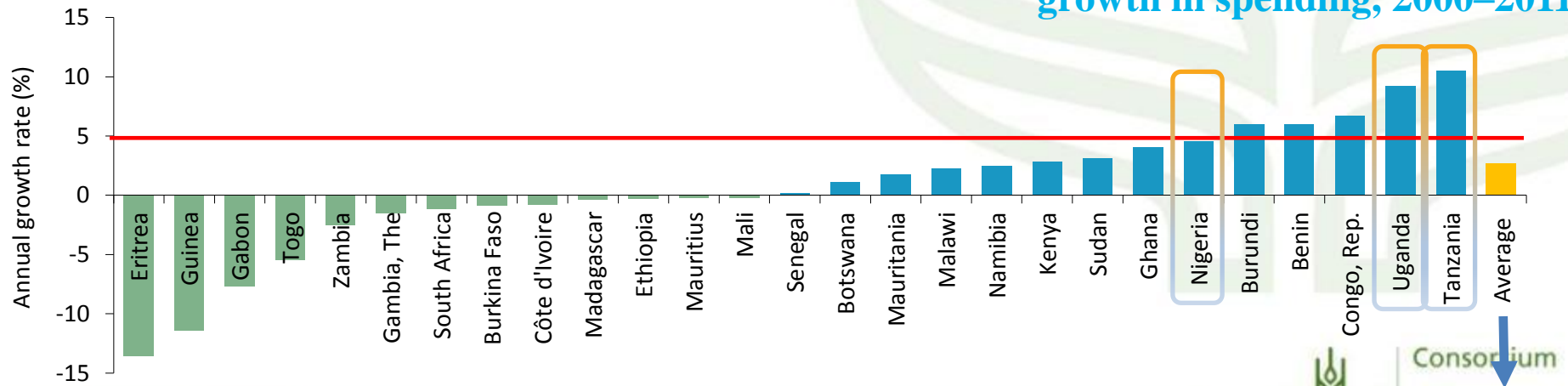
Source:
ASTI program
led by IFPRI

Spending growth: not everywhere and not fast enough

Target (UN expert group): 5% annual spending growth over the next decade

- 2000–2011 marked by spending decline or stagnation in about half of the 30 countries with time series data
- Since 2008, however, more and more countries have experienced positive growth.

Main drivers of region-wide growth in spending, 2000–2011



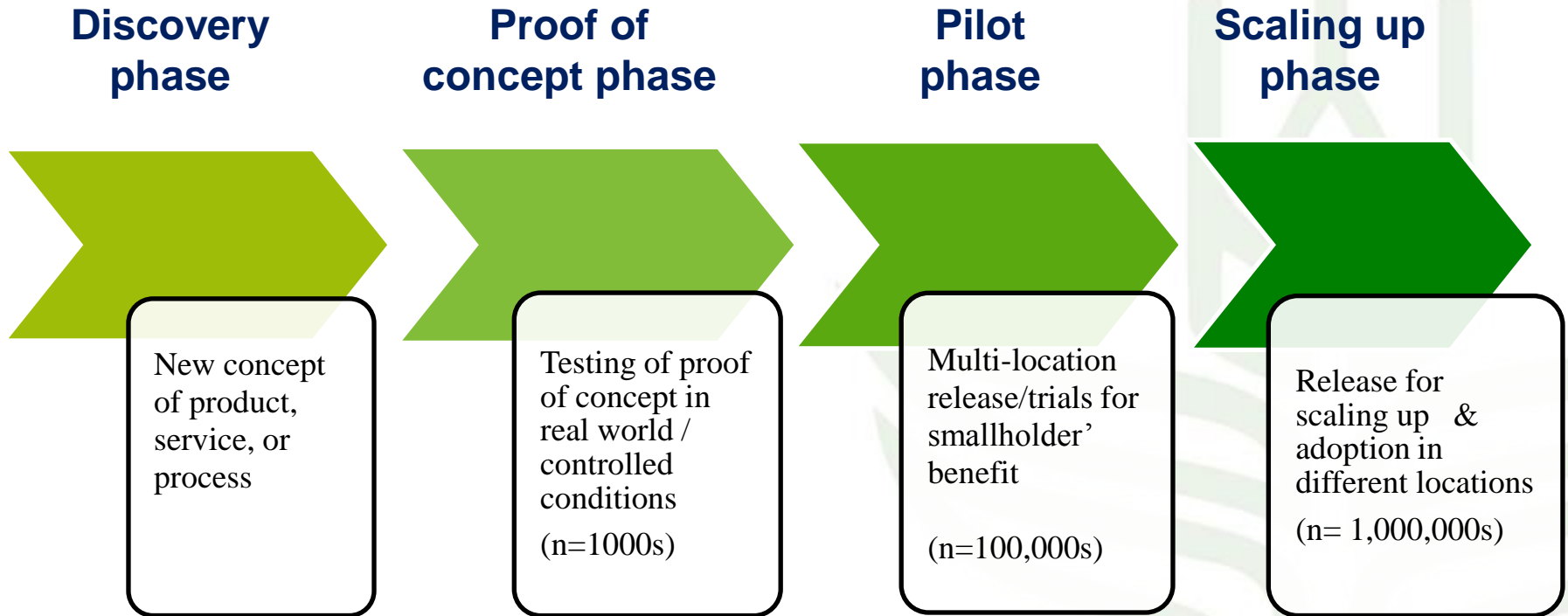
Consortium
+2.7%

Conclusion on unfulfilled need

After period of decline, overall investment levels in agriculture R&D have increased globally – particularly since the food price spikes of 2007-8 and the sustained higher food ever since – particularly in middle income countries, the international system, bilateral donor support, and some low-income developing countries.

In Sub-Saharan Africa, however, national investments in AR4D is only about 0.5% of AgGDP – well behind the target of 1%.

CGIAR R4D pipeline & partnership



Science partnerships

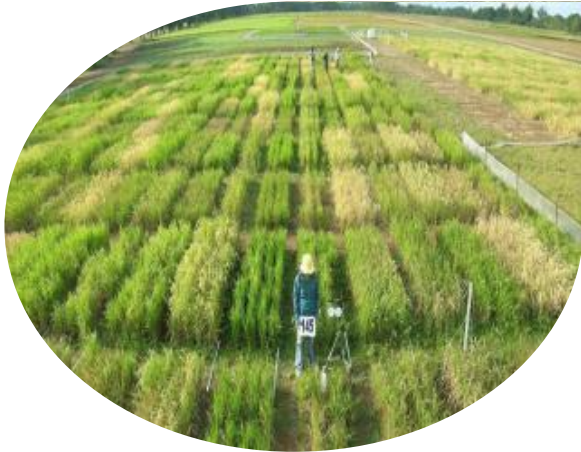
Development partnerships

CGIAR Centers developed high yielding varieties for staple cereals that were the engine of the Green Revolution



Organizational structure of GRiSP

Genes



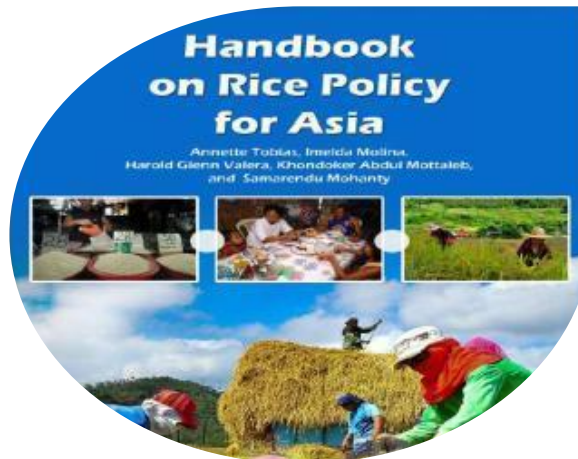
Varieties



Management



Value adding

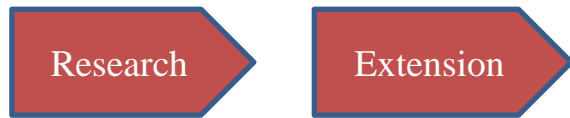


Assessment Policy

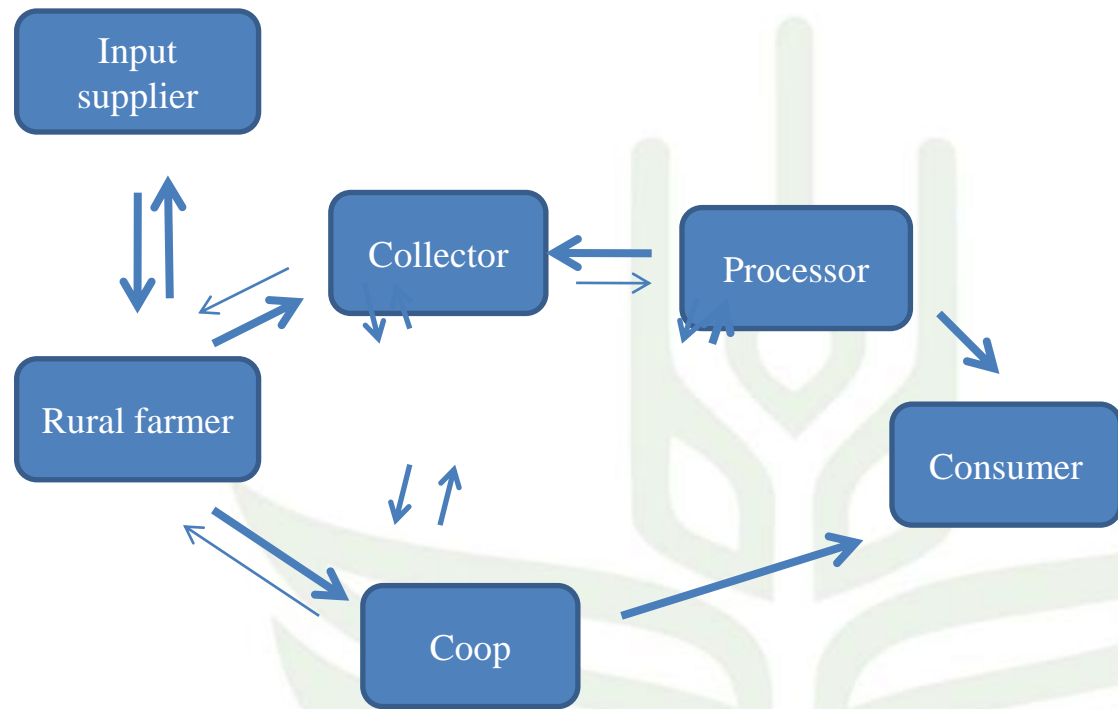


Last-mile delivery

CGIAR: From technology push to Innovation Platforms



Conventional approach: research to farmer



Innovation Systems Approach: research inside

Why Innovation Platforms?

Push RWM interventions & technologies

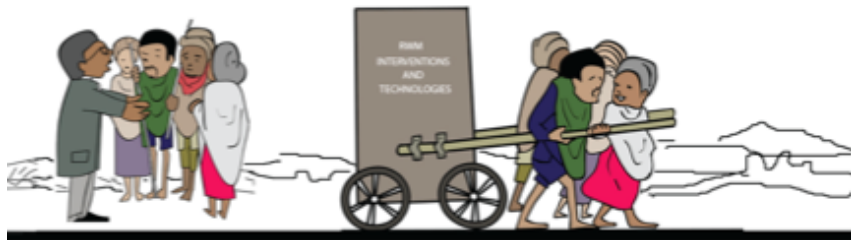
→ Achieve short term quotas



Or...

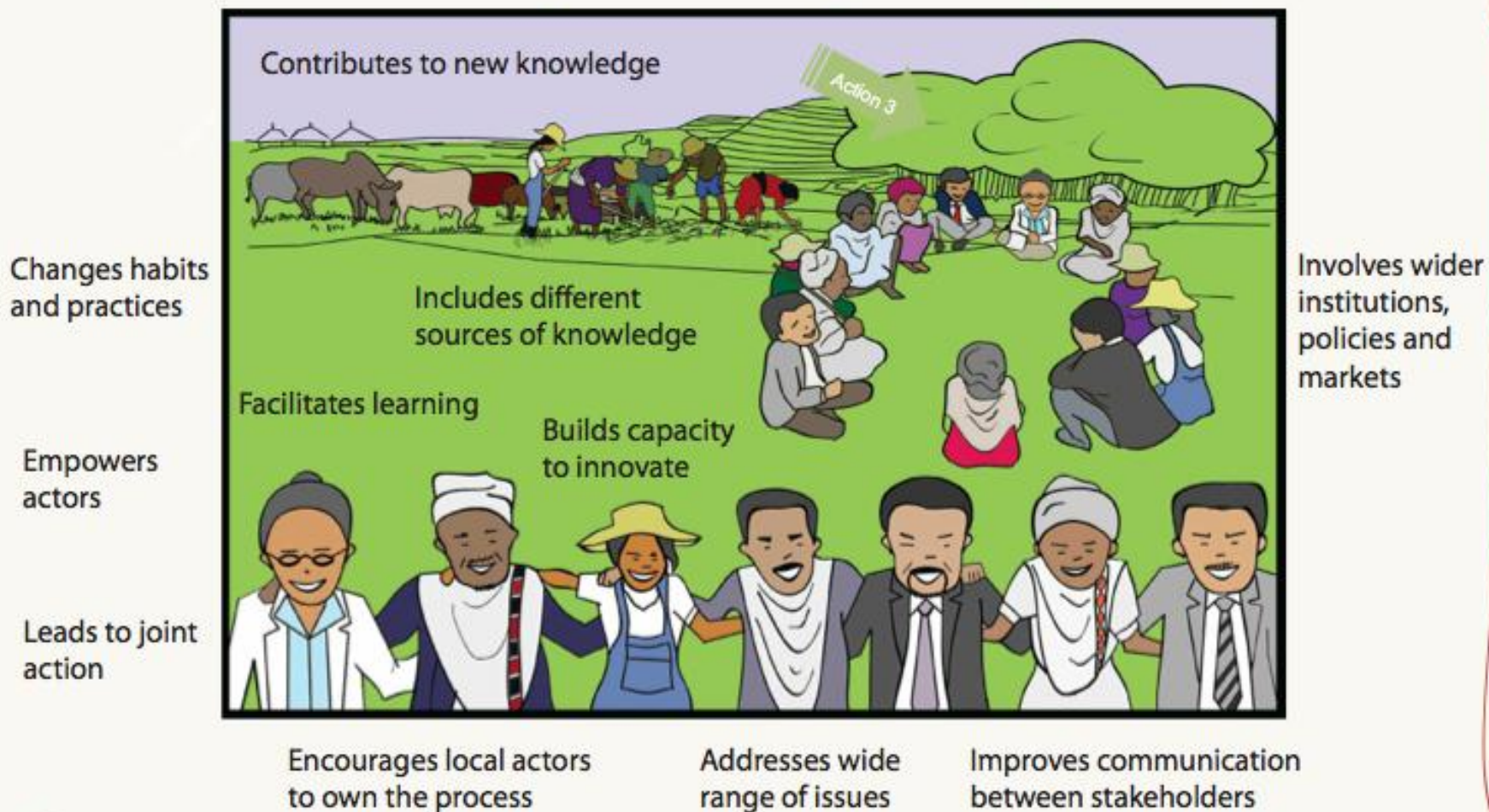
Empower & engage actors in RWM strategies

→ Achieve sustainable landscapes & improved livelihoods



From Cullen and Ergano 2011

But how do innovation platforms change how things are done?



From Cullen and Ergano 2011

Livestock Value Chain Analysis thru Innovation Platforms

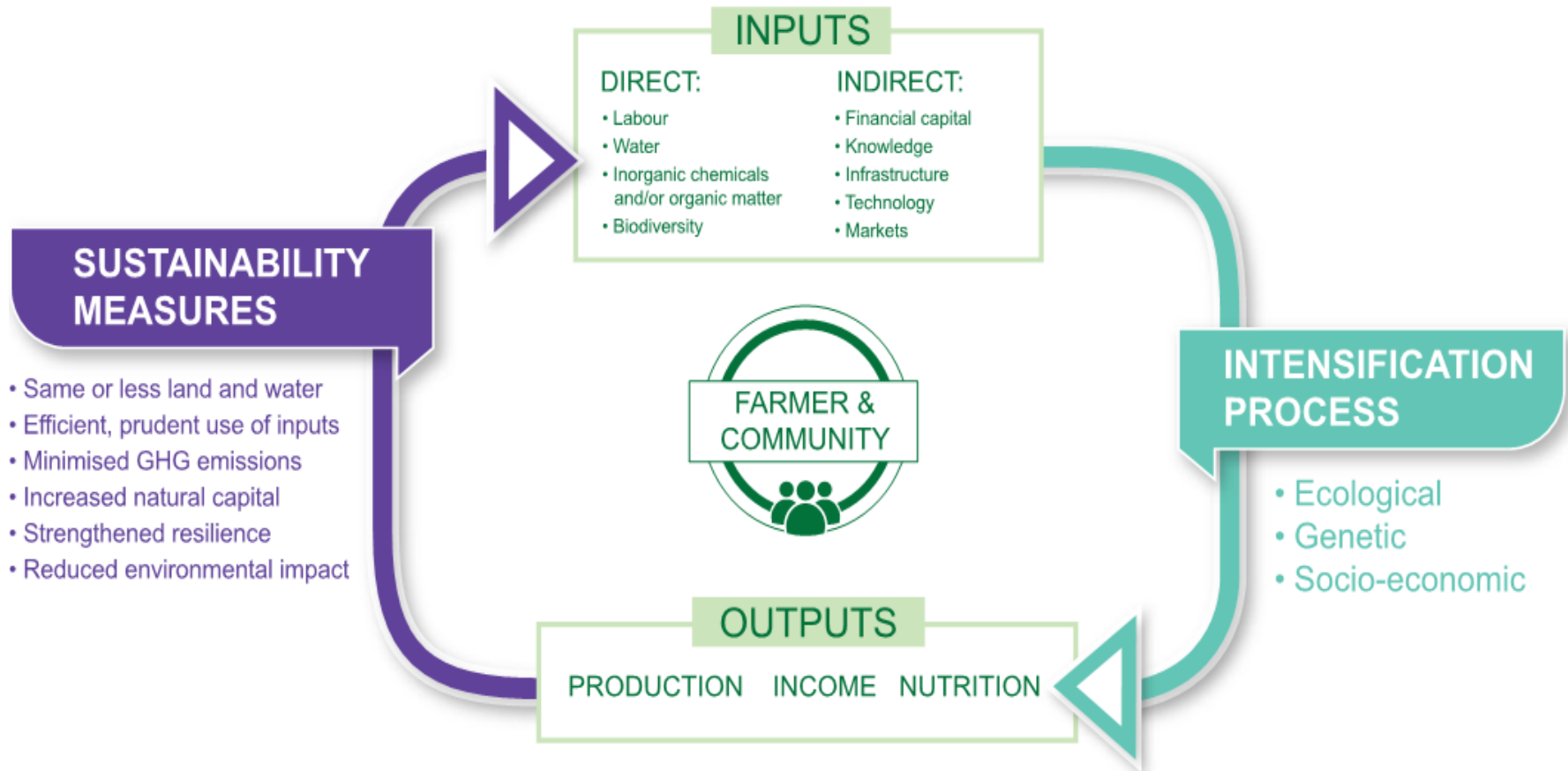


Action Area Platforms: CGIAR Humid Tropics Farming System Research Program



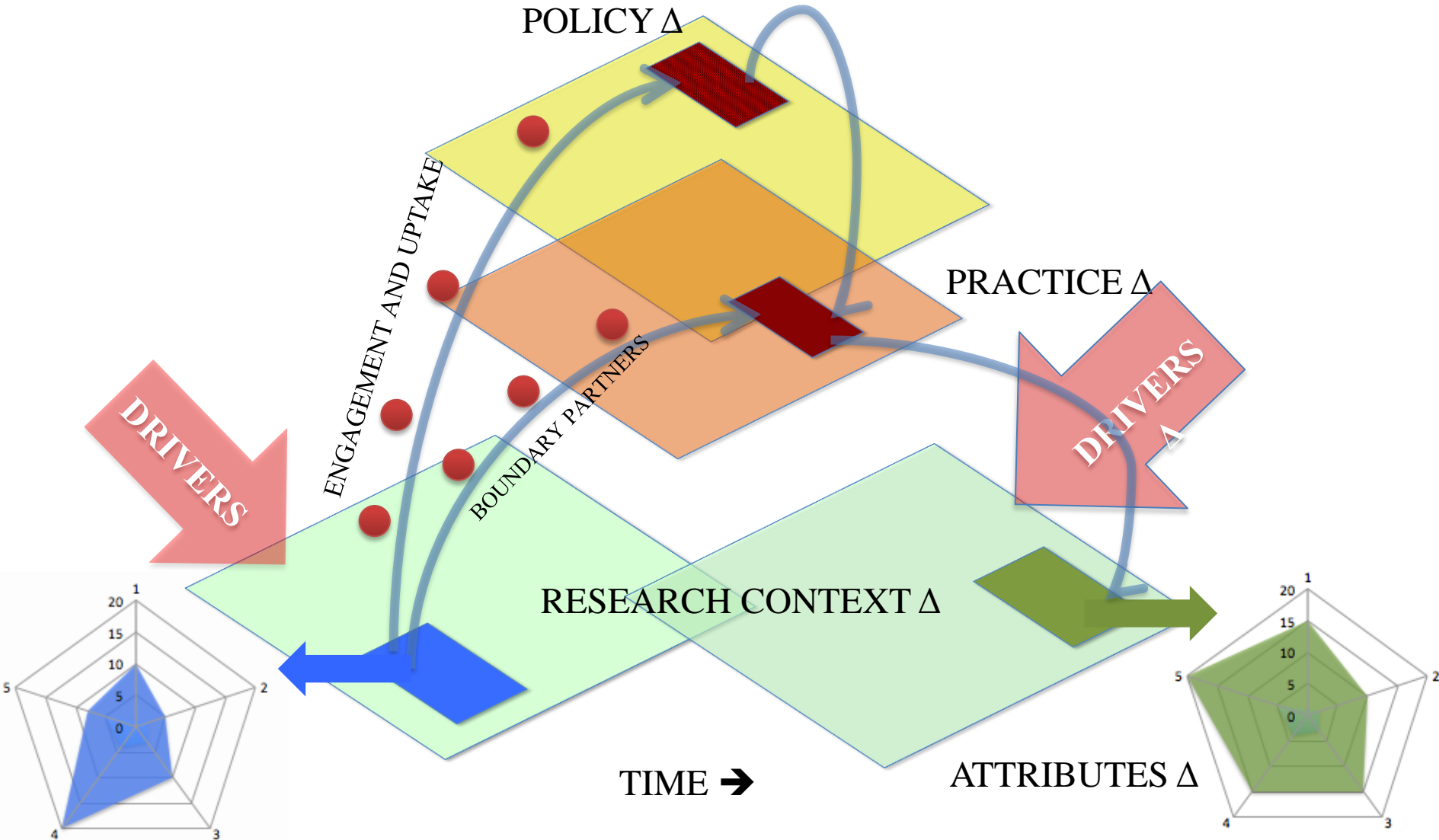
Action Area meeting, Bukavu, May 2013

Sustainable Intensification of Agriculture

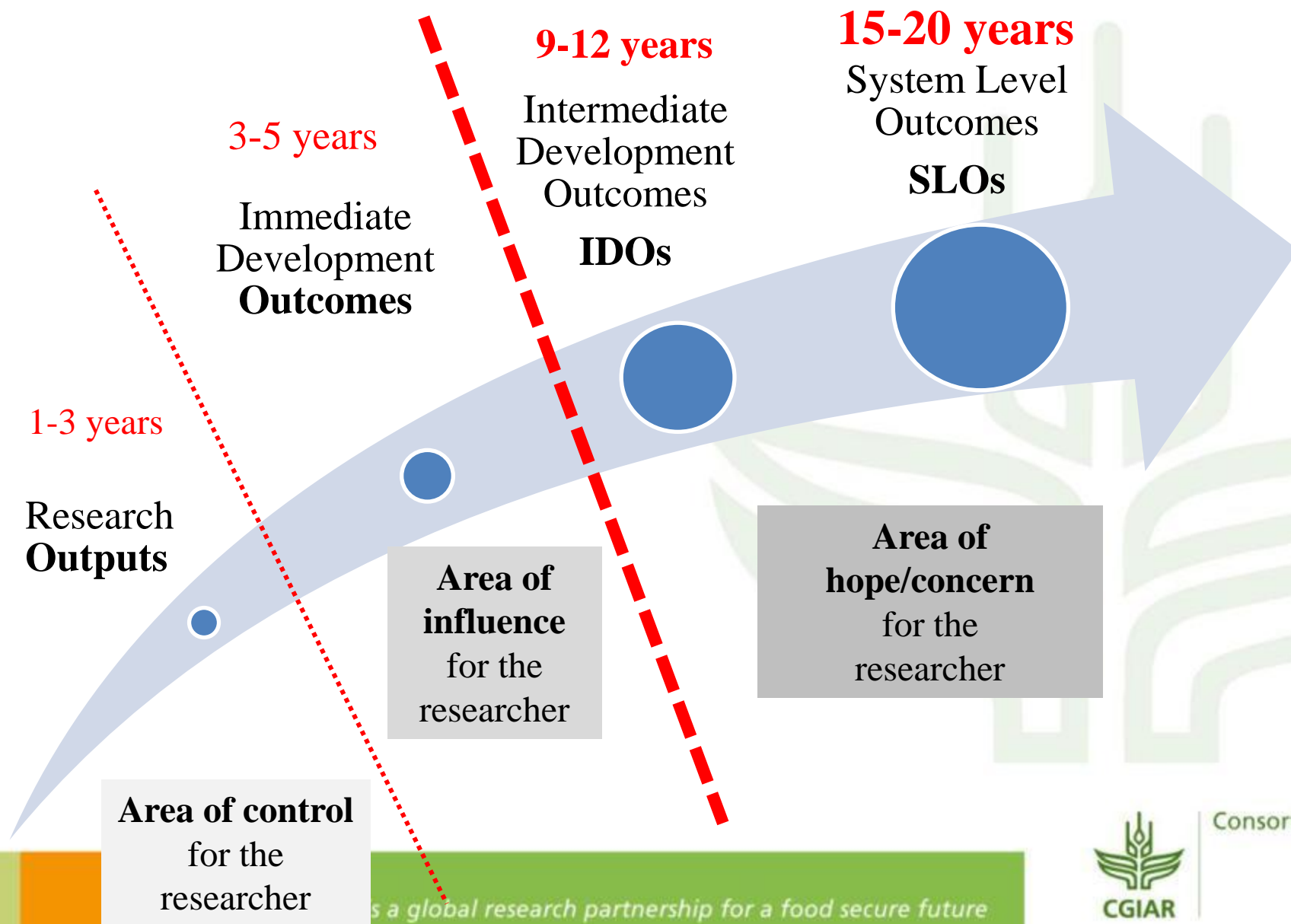


From The Montpellier Panel Report (2013)

Non-pipeline approach & impact



Outputs, outcomes, timescale & impact



Drought Tolerant Maize for Africa

Nairobi meeting, September 2013



Drought Tolerant Maize for Africa (DTMA)

| DTMA Project indicators | 2013 |
|--|---------------|
| Number of new varieties released (2007-2013) | 140 |
| Seed production in 2013 (new varieties) | 30,000 t |
| Number of NARs - or companies - involved in seed production | 13 |
| Number of stakeholders adopting the new varieties: cooperatives; regional, national, small & medium enterprises (SMEs); international enterprises; large companies | 118 |
| Hectares planted with the new varieties | 1,230,000 has |
| Number of households reached | 2,900,000 |
| Number of consumers benefiting these adoptions (Millions) | 20 M |

<http://www.cgiar.org/consortium-news/partnerships-lead-to-measurable-impacts-for-drought-tolerant-maize-for-africa/>

Private sector linkages: To strengthen the collaboration between the public and private sectors and to enhance the dissemination of hybrid rice technology, **Hybrid Rice Development Consortium (HRDC)** was established at the International Rice Research Institute (IRRI) in 2008 with 38 public and private organizations. By Q1 2014, the HRDC has been expanded to 69 members.



Re-greening desolate landscapes and delivering results to millions of farmers – Faidherbia fertilizer tree & Maize multi-cropping systems (Mali, Malawi)



e: CIFOR flickr collection.

Breeding data management

The screenshot shows the homepage of the Integrated Breeding Platform (IBP). At the top left is the IBP logo, a stylized 'iB' with a green leaf. To its right is the text 'INTEGRATED BREEDING PLATFORM' and 'A ACCESSIBLE, LEADING-EDGE CROP BREEDING TOOLS AND SERVICES'. Further right are social media links for Twitter and Facebook, and a search bar with the text 'Search IBP'. Below this is a navigation menu with links for HOME, BREEDING ACTIVITIES, CROP INFORMATION, GENOMICS, CAPACITY BUILDING, COMMUNITY, NEWS & EVENTS, and HELP. The main content area features four large circular icons representing different services: BREEDING ACTIVITIES (Improved Germplasm Tools Services), CROP INFORMATION (Access to Data, Data Management, Trait Dictionaries), CAPACITY BUILDING (Learning & Development, Support Services, Information & Resources), and CROP COMMUNITIES (Shared Solutions, Communities of Practice, Knowledge Sharing). Below these icons is a banner with the text 'Design. Manage. Collect. Store. Get the new Breeding Management System!' and a 'Get the Software' button. At the bottom, there is a section titled 'Providing resources and building professional networks for plant breeding' with a 'Register for an account' button. The background of the main content area features an illustration of a rural landscape with people, crops, and cacti.

INTEGRATED BREEDING PLATFORM
A ACCESSIBLE, LEADING-EDGE CROP BREEDING TOOLS AND SERVICES

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HOME BREEDING ACTIVITIES CROP INFORMATION GENOMICS CAPACITY BUILDING COMMUNITY NEWS & EVENTS HELP

BREEDING ACTIVITIES
IMPROVED GERmplasm
TOOLS
SERVICES

CROP INFORMATION
ACCESS TO DATA
DATA MANAGEMENT
TRAIT DICTIONARIES

CAPACITY BUILDING
LEARNING & DEVELOPMENT
SUPPORT SERVICES
INFORMATION & RESOURCES

CROP COMMUNITIES
SHARED SOLUTIONS
COMMUNITIES OF PRACTICE
KNOWLEDGE SHARING

Design. Manage. Collect. Store.
Get the new Breeding Management System!

Get the Software

Providing resources and building professional networks for plant breeding

Get started today by registering for a free account.

The **Integrated Breeding Platform (IBP)** is a web-based one-stop-shop where crop breeders can access purpose-built tools to manage plant breeding projects, obtain essential **services**, find new knowledge, access **training resources** and discuss pertinent issues with their peers in various

Register for an account

Source: <https://www.integratedbreeding.net/>

CGIAR Open Access & Data Management



The screenshot shows the top navigation bar of the CGIAR website with links for Home, How We Do Research, What's New in Research, Consortium News, Media, Events, Resources, and Who We Are. The main article title is "Data standards; making CGIAR data available and accessible", dated January 3, 2014, by the Consortium. A sidebar on the right lists categories like "News from the CGIAR Consortium", "Opinions", "Stories of Change", and "Vacancy Announcements", as well as "Topics" and "Archives". The article features a photograph of a person in a wide-brimmed hat holding a document in a field.

Home HOW WE DO RESEARCH WHAT'S NEW IN RESEARCH CONSORTIUM NEWS MEDIA EVENTS RESOURCES WHO WE ARE

Data standards; making CGIAR data available and accessible

JANUARY 3, 2014 BY CONSORTIUM *News from the CGIAR Consortium, Open Access*

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Publicly available doesn't always mean publicly accessible. CGIAR focus now on the way in which that data and related information is released. Photo: Neil Palmer/CIAT

Source: <http://www.cgiar.org/consortium-news/>

Agriculture trials & data management



The Global Agricultural Trial Repository and Database



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A Billion New Data Points Every Day

for hyper-local climate smart recommendations and alerts delivered directly to farmers, and evidence-based decisions for policy makers

Increase productivity
Adapt to weather variability
Strengthen value chains

Climate Smart Agriculture

aWhere Platform 2.0

Monitoring and Evaluation

Data Management

<http://www.awhere.com>

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Extension 2.0: Adapting mobile ICT technologies to the needs of low income farmers



Conclusion on Technology Facilitation:

1. AR4D develops and facilitates adoption of clean and sustainable technologies to 500 million smallholder farmers, improving poverty, food-insecurity and malnutrition – and improving the sustainable management of the natural resource base.
2. The AR4D adoption model now makes extensive use of innovation platforms and value chain analysis – a participatory model that emphasizes demand.
3. The international AR4D partnership – the CGIAR – still works extensively with national AR4D partners, but also with private SME seed companies.
4. CGIAR manages its data and makes innovations available through Open Access, mobile technologies and technology platforms – to researchers, private sector, NGOs and to farmers.
5. ***Agriculture, forestry, fisheries, landscapes and food systems are critical for achieving all the future SDGs focus areas – a new technology facilitation mechanism should increase the focus on AR4D.***



THANK YOU

CGIAR is a global research partnership for a food secure future

www.cgiar.org