



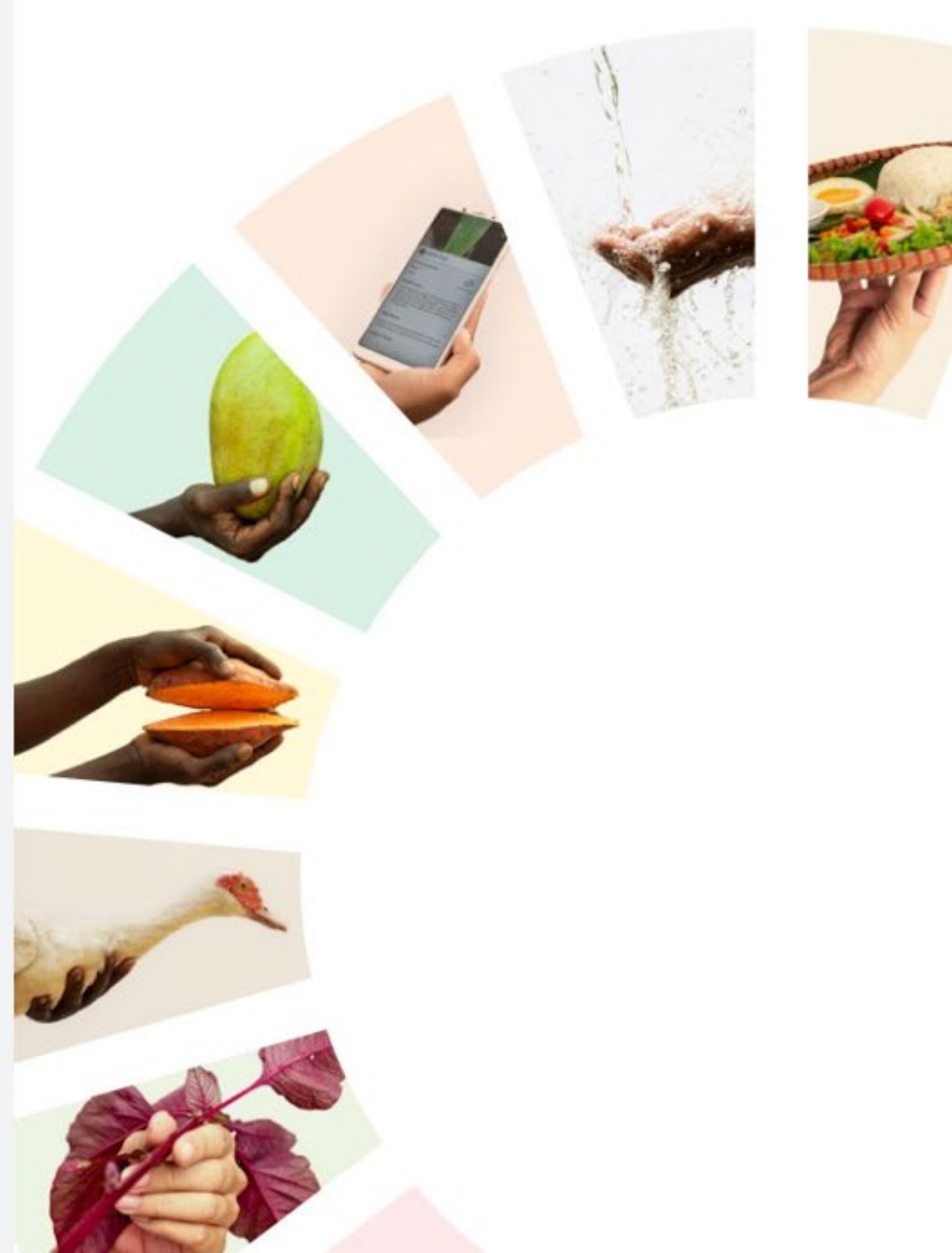
Agenda Item 14
Document SC21-14b
For strategic input
Issued: 27 November 2024

Update on the Study of CGIAR Center Assets

*Phase II Focus: Aligning Assets to
the 2025-2030 Science Portfolio*

Purpose: For strategic input

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in collaboration with the Asset Study Steering Group



Assets Underpin CGIAR's Research & Innovation



Assets are fundamental to CGIAR's 2030 research and innovation strategy, serving as the essential foundation that drives groundbreaking advancements in agriculture and food security.

49 Knowledge Repositories

168 Facilities in **55** Countries

166 Specialized databases & analytical systems (Data Models)

72 Germplasm Collections

110 Intellectual Properties +37 in progress

191 Laboratories

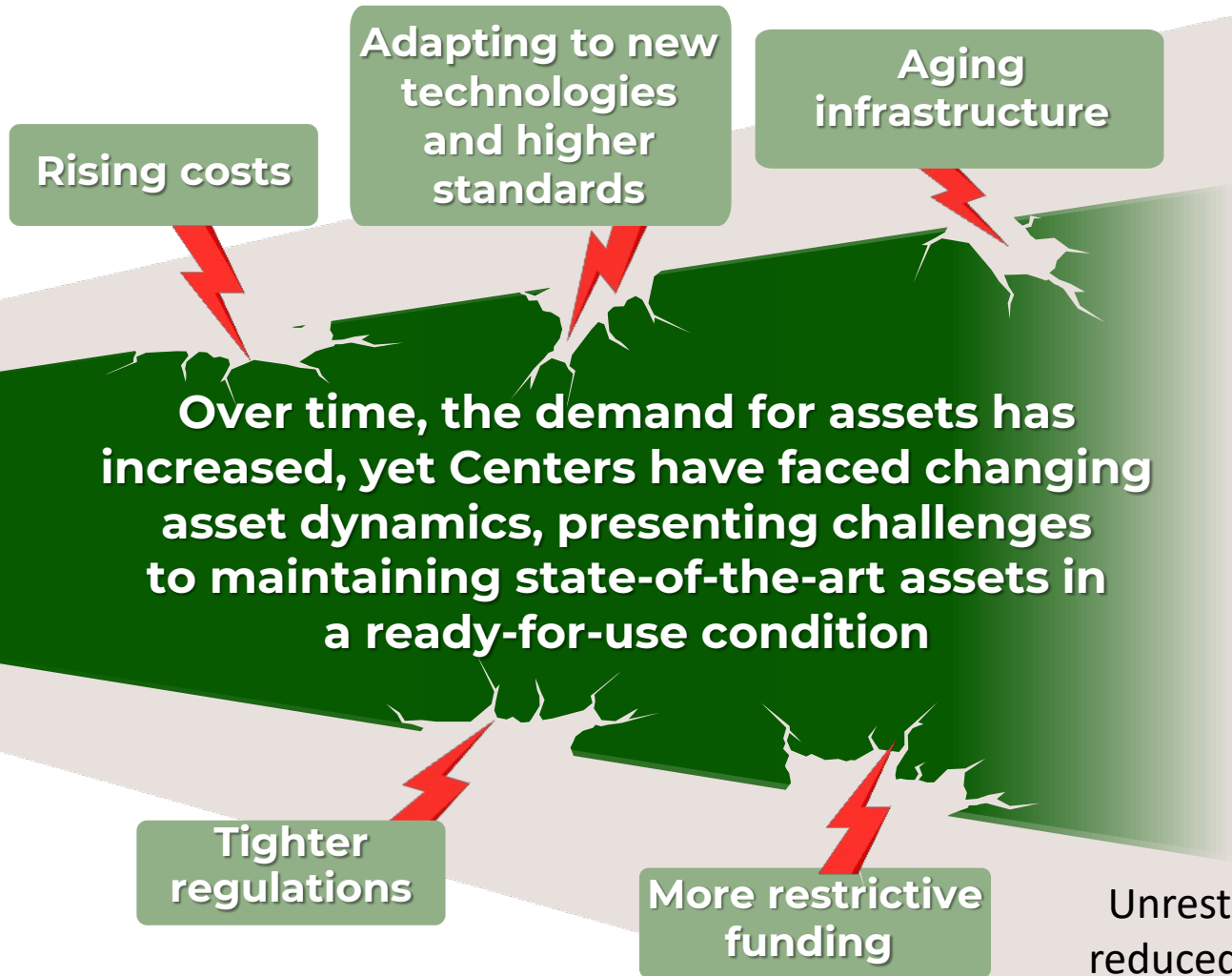
88 Datasets

58 Long-term Experiments

15 Novel Inventions

The Asset Conundrum

→ WIDENING FUNDING GAP



Over time, the demand for assets has increased, yet Centers have faced changing asset dynamics, presenting challenges to maintaining state-of-the-art assets in a ready-for-use condition

\$265M Total Priority Asset Investment Need

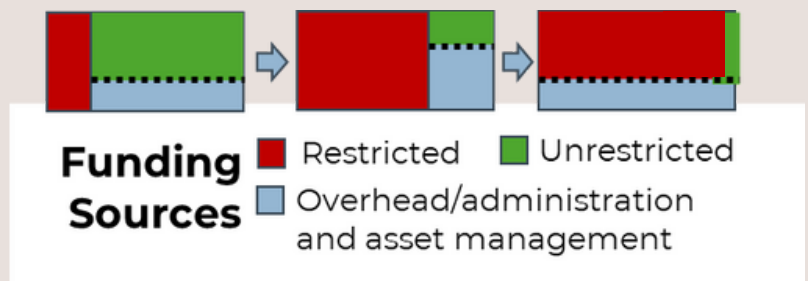
Approximately **\$70–80 Million** annual shortfall for asset sustainability

Reasons cited for shortfall

54% Grants unable to accept charges

52% Full-cost-recovery not fully implemented

Unrestricted funding reduced from approx. 85% to 15% over history of the CGIAR



Assets Requiring Special Consideration for Long-Term, Uninterrupted Funding



CGIAR's vast data reservoir:

Leveraging AI and machine learning, the collective power of CGIAR's data has the potential to revolutionize agricultural research and innovation for the world.

Long-Term Experiments

Crucial for understanding gradual agricultural processes, adapting to climate change, and developing sustainable farming practices that short-term studies cannot adequately capture.

Germplasm outside of endowment supported Genebanks

- Disease vectors
- Aquatic & Invertebrate
- Tree Seed, Banana & Cassava
- Developed under project

Assets are fundamental to CGIAR's research and innovation strategy, serving as the essential foundation that drives groundbreaking advancements in agriculture and food security.

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ASSET COSTS

INTANGIBLE RESEARCH ASSETS

TANGIBLE RESEARCH ASSETS

LABS

FACILITIES

TANGIBLE SUPPORT ASSETS

ASSET BUNDLE

CENTER

All

COUNTRY

All

ASSET CATEGORY

All

LINKAGES

All

REGION

All

FACILITY

All

ASSET TYPE

All

CONDITION

All

PHASE I COMPLETION RATE PER CENTER



Clear Filter

TOTAL NUMBER OF ASSETS

3070

OF TANGIBLE RESEARCH ASSETS

1436

OF INTANGIBLE RESEARCH ASSETS

662

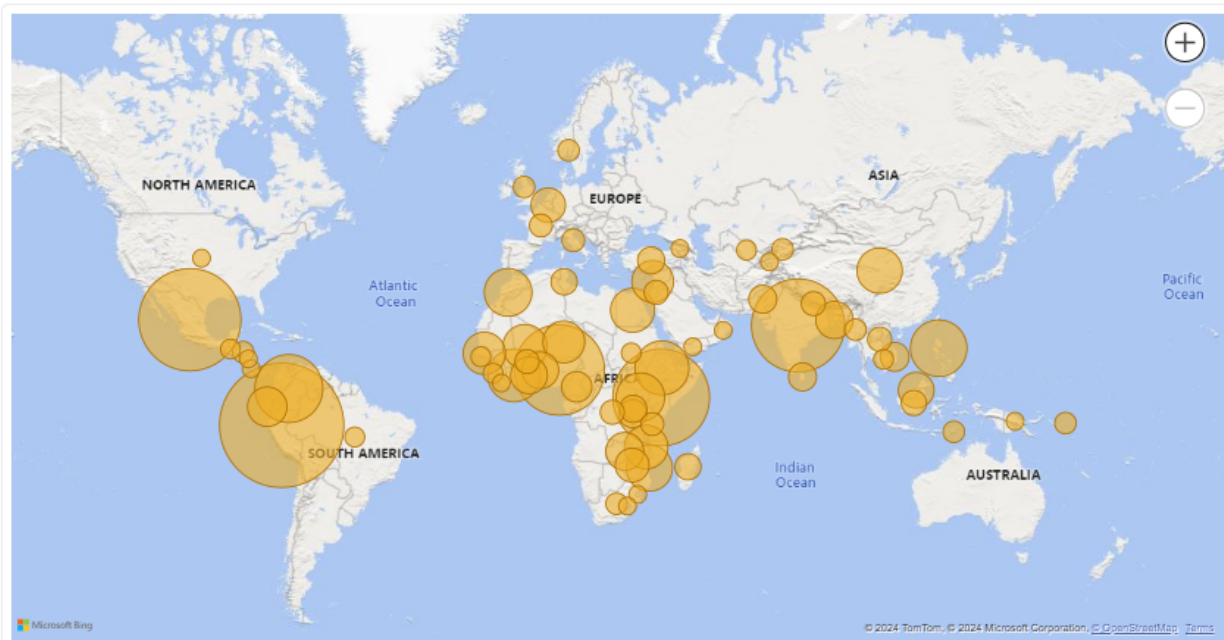
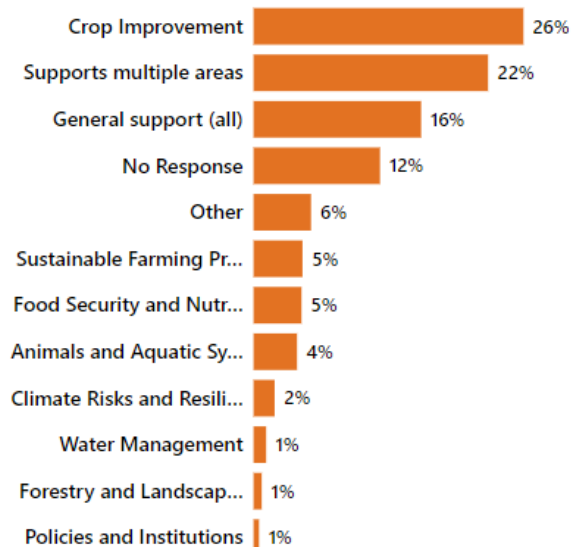
OF FACILITIES

239

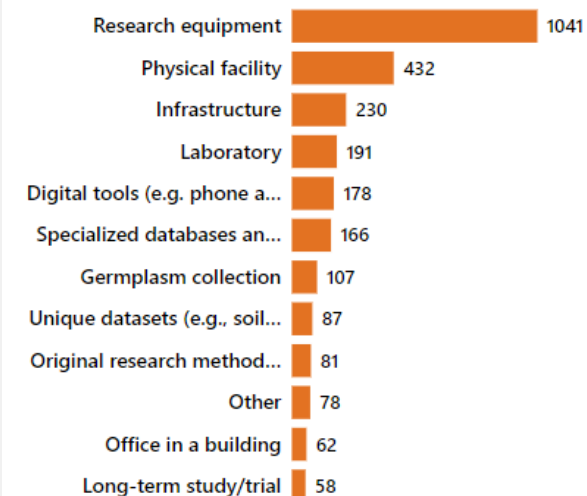
OF TANGIBLE SUPPORT ASSETS

733

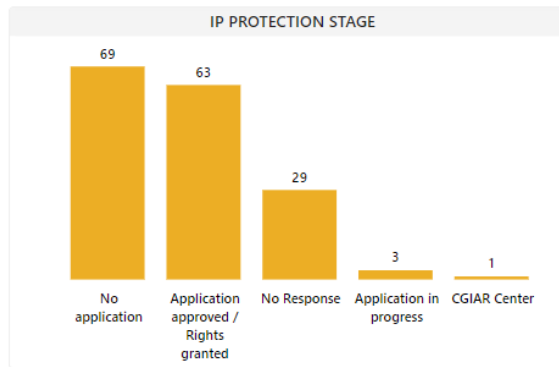
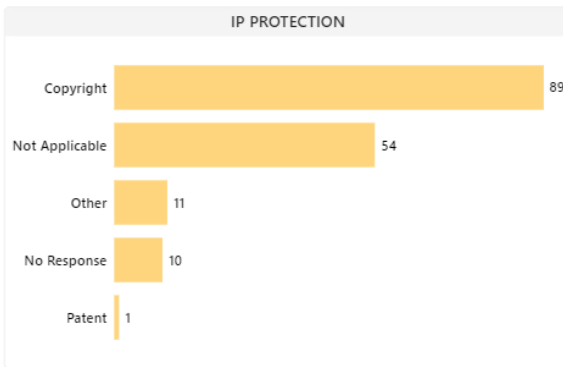
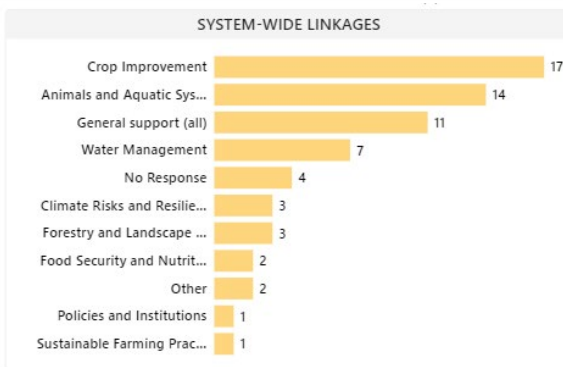
SYSTEM-WIDE LINKAGES



ASSET TYPES



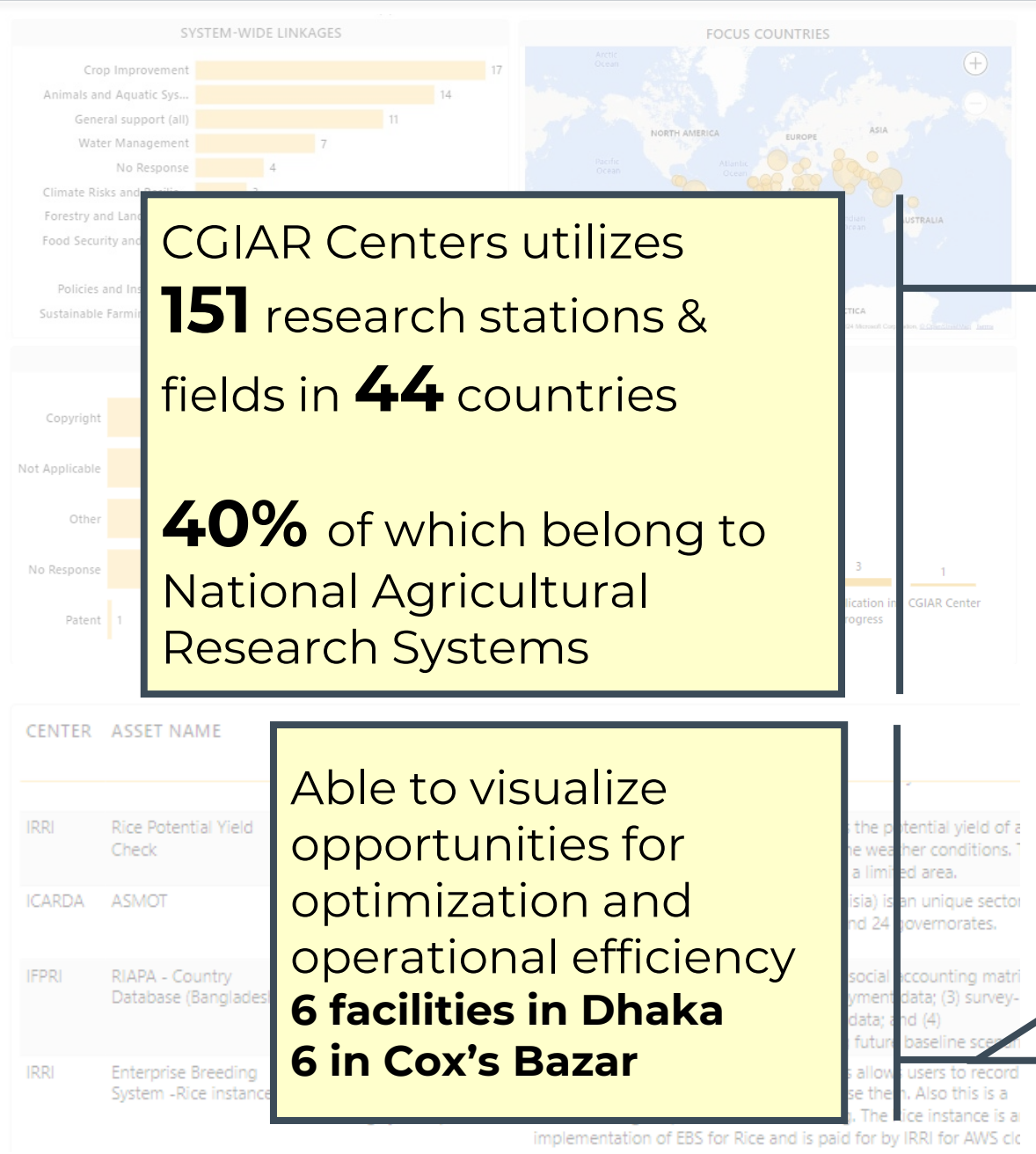
Current Capabilities



CENTER	ASSET NAME	ASSET TYPE	ASSET DESCRIPTION
IRRI	Rice Potential Yield Check	Specialized databases and analytical systems (e.g., modeling systems)	the use of LLMs An online web application that determines the potential yield of a variety planted at a certain location with the weather conditions. beta version is updated only until 2015 on a limited area.
ICARDA	ASMOT	Specialized databases and analytical systems (e.g., modeling systems)	ASMOT (Agricultural Supply Model Of Tunisia) is an unique sector model for Tunisia, representing 21 crops and 24 governorates.
IFPRI	RIAPA - Country Database (Bangladesh)	Specialized databases and analytical systems (e.g., modeling systems)	Bangladesh database including (1) annual social accounting matrix (SAMs); (2) sectoral production and employment data; (3) survey-poverty and malnutrition microsimulation data; and (4) population/growth diagnostic establishing future baseline scenario
IRRI	Enterprise Breeding System -Rice Instance	Specialized databases and analytical systems (e.g., modeling systems)	Breeding system endorsed by the CGI. This allows users to record experiment, record phenotypic data, analyse them. Also this is a database for germplasm and seed tracking. The Rice instance is a implementation of EBS for Rice and is paid for by IRRI for AWS clc

- Thematic focus
- Geographic focus
- Intellectual Properties
- Status of IP applications

Current Capabilities



CGIAR Centers utilizes **151** research stations & fields in **44** countries

40% of which belong to National Agricultural Research Systems

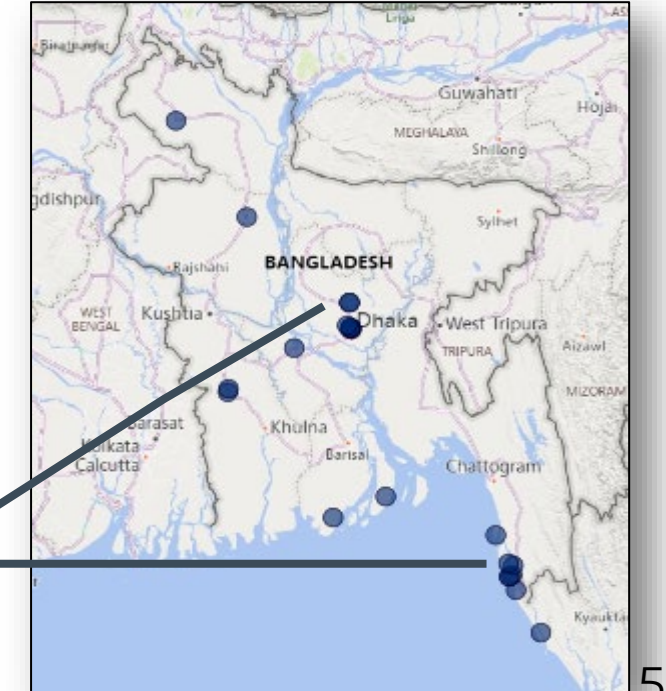
Able to visualize opportunities for optimization and operational efficiency

6 facilities in Dhaka
6 in Cox's Bazar

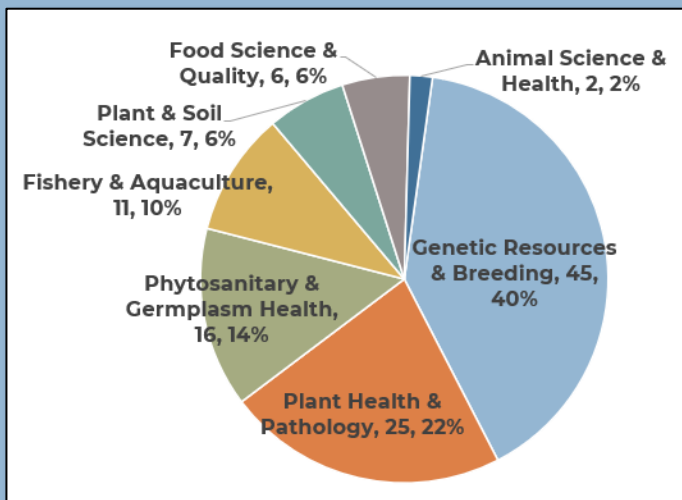
Research Stations



Facilities used by CGIAR Centers in Bangladesh

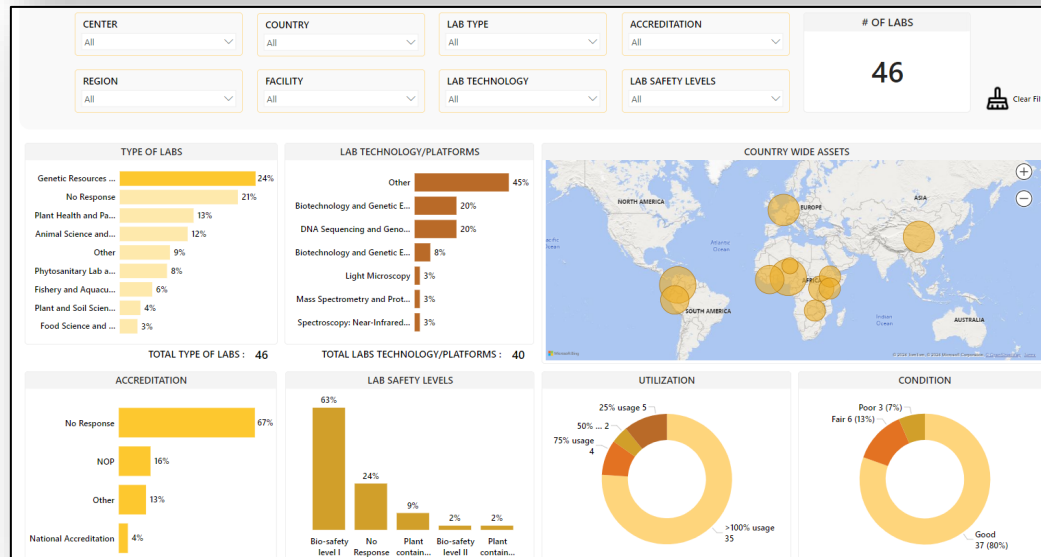
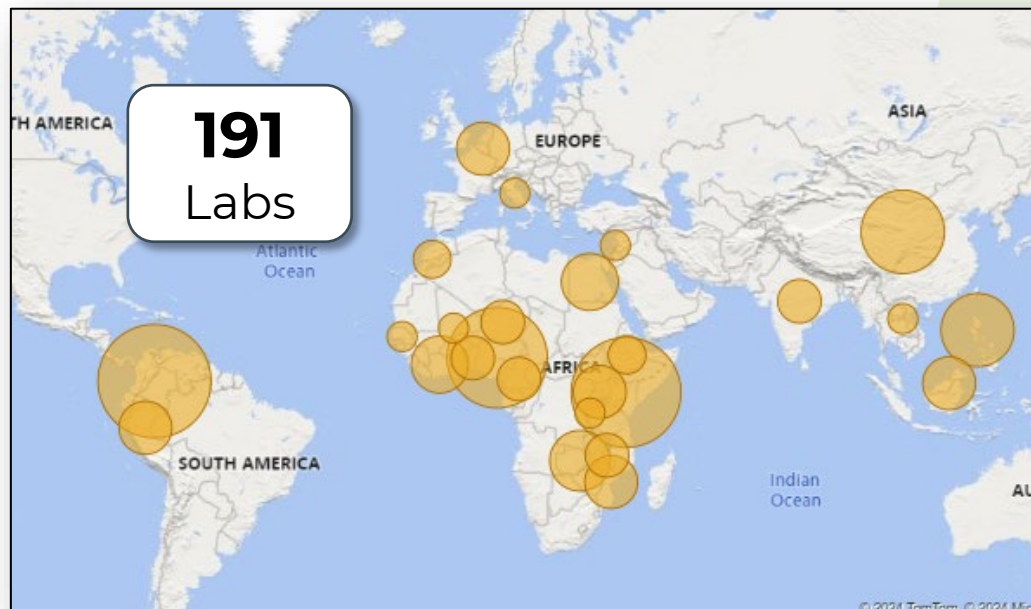


Lab Types



Lab Technologies/Platforms

Molecular Diagnostics	15
Microbiology	14
Biotechnology and Genetic Engineering	12
DNA Sequencing and Genomics	11
Biotechnology and Genetic Engineering	3
Light Microscopy	3
Soil Analysis	3
Spectroscopy	3
Gas Chromatography	2
Biological Nitrogen Fixation	1
Mass Spectrometry and Proteomics	1
Remote Sensing	1
Water Analysis	1



Genetic Resources & Breeding Laboratories

- Condition
- Utilization
- Lab Safety Levels
- Accreditation



Phase II: Research Portfolio Alignment & Readiness



Asset Bundles Rated Critical by Centers to the Portfolio



Phase II Asset Study Objectives

- What critical assets are required to deliver on the 2030 Research and Innovation Strategy?
- What is the condition of these strategic assets?
- What would it take to get them in readiness condition to support the strategy?

Ultimately, the aim is to allocate the true costs of required assets to the relevant Science Programs and Accelerators.

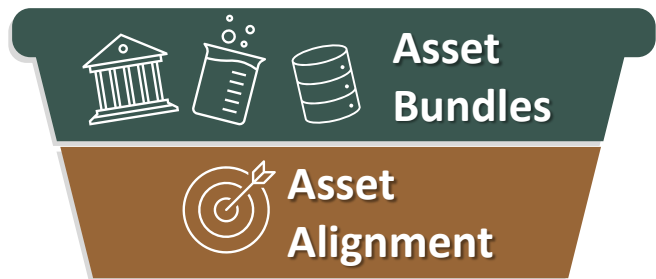


Phase II: Research Portfolio Alignment & Readiness

3,071

Individual assets

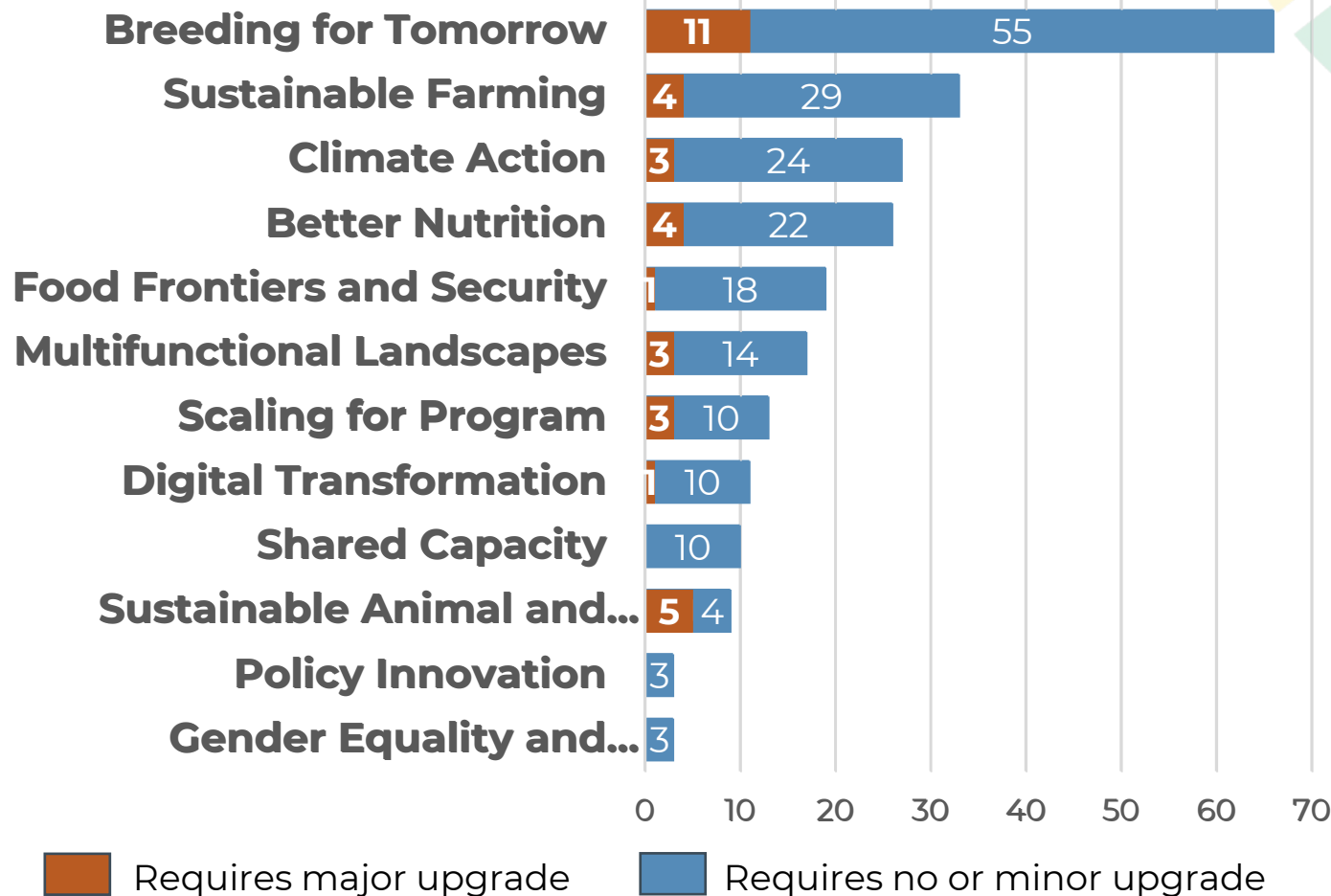
Funnel Analysis



231

Asset bundles

Asset Bundles Rated Important by Centers to the Portfolio



155

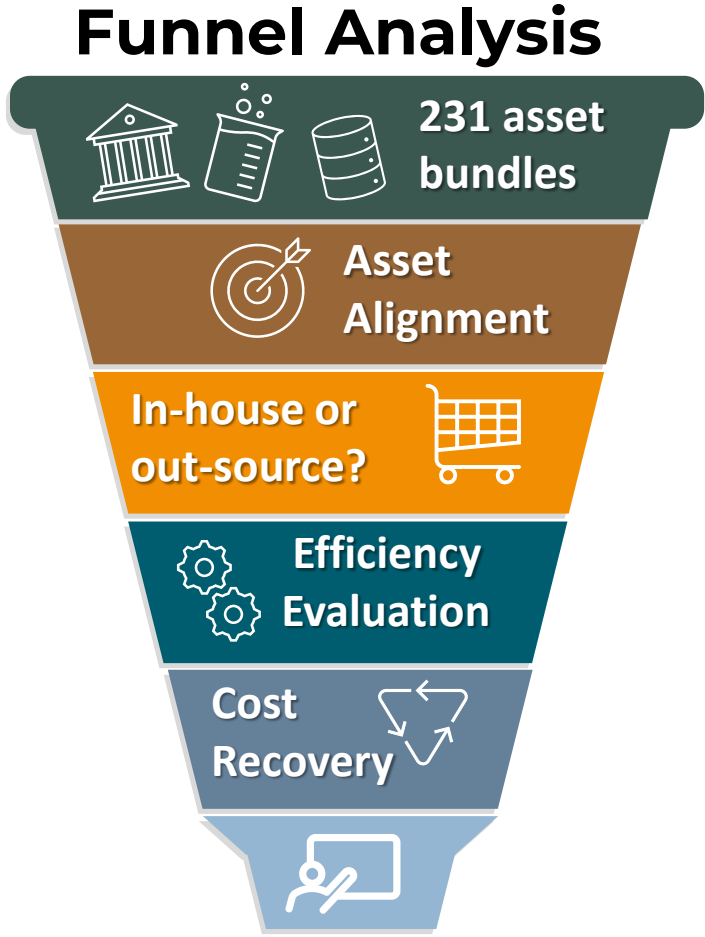
Rated important to Portfolio by Center

23%

of important, major improvement needed



Prioritizing Investment Needs with Funnel Analysis



65 Investment requirements identified in Phase I, valued at **\$265M**

38 Total investment case concept notes valued at **\$199M**

30 Investment cases rated critical* by Science Programs/Accelerators valued at **\$163M**

18 Top Priority** Investment Cases valued at **\$101M**

\$62M Upgrades
\$29M New
\$10M Funding Gaps

*Where at least one member of the program/accelerator writing team rated concept note as "Priority 1: Critical Investment Priority" to their portfolio

**Where portfolio leadership / writing team members indicated consensus that investment case concept note aligned with their program/accelerator as "Priority 1: Critical Investment Priority"

Investment Case Examples



Upgrade/New/Gap

Sustainable Network of Long-Term Experiments (\$3.5m)

- Laboratory Modernization
- Environmental Monitoring Systems
- Digital Data Integration
- New LTE Infrastructure

Why? To enhance capacity for long-term agricultural research, ensuring quality data, improved environmental monitoring, and expanded research coverage, supporting sustainable farming and climate resilience.

Strong Alignment: **Climate Action;** **Sustainable Farming;** Multi-functional landscapes; Scaling for Impact, Breeding for Tomorrow, Digital Transformation



AfricaRice

Upgrade

Improve and upgrade Agronomy and Soil Laboratory (\$2.5M)

- Modernization of Equipment
- Data Management Systems
- Environmental Control Chambers
- Capacity for Soil Health and Pest Research
- Safety and Compliance Upgrades

Why? to modernize the Agronomy lab, enabling advanced, sustainable agricultural research that addresses current limitations, fosters collaboration, and supports global food security and environmental goals.

Strong Alignment: **Sustainable Farming,** **Breeding for Tomorrow,** **Climate Action,** **Digital Transformation**



Funding Gap

System for Causal Impact Evaluation (SCIE) (\$2M)

- To upgrade and maintain seven interconnected components designed to enhance and support impact evaluation and analysis across CGIAR research programs including a questionnaire bank, software code, guidance documentation, measurement guidance, field experiment guide, replication guidance, and impact evaluation methodology tools
- **Why?** SCIE is critical for CGIAR to meet expectations by providing a centralized resource ensuring impact evaluations are conducted rigorously, efficiently, and systematically, enabling CGIAR to measure and scale its innovations effectively.

Strong Alignment: **Policy Innovation**

Investment Case Examples



Upgrade/New/Gap

Sustainable Network of Long-Term Experiments (\$3.5m)

- Laboratory Modernization
- Environmental Monitoring
- Digital Data Integration
- New LTE Infrastructure

Why? To enhance capacity for agricultural research, ensure improved environmental sustainability, expanded research coverage, and sustainable farming and

Strong Alignment: Climate Change, Sustainable Farming; Multiple Landscapes; Scaling for Impact Tomorrow, Digital Transformation



AfricaRice

Upgrade

Improvement and upgrading Agronomy and Soil Laboratory (\$2.5M)

- Modernization of Equipment



Funding Gap

System for Causal Impact Evaluation (SCIE) (\$2M)

- To upgrade and maintain seven components designed to support impact evaluation and CGIAR research programs: questionnaire bank, software documentation, guidance, field experiment design guidance, and impact methodology tools
- Critical for CGIAR to meet the goal of providing a centralized system for impact evaluations are being done more robustly, efficiently, and effectively, enabling CGIAR to measure innovations effectively.

Strong Alignment: Policy Innovation

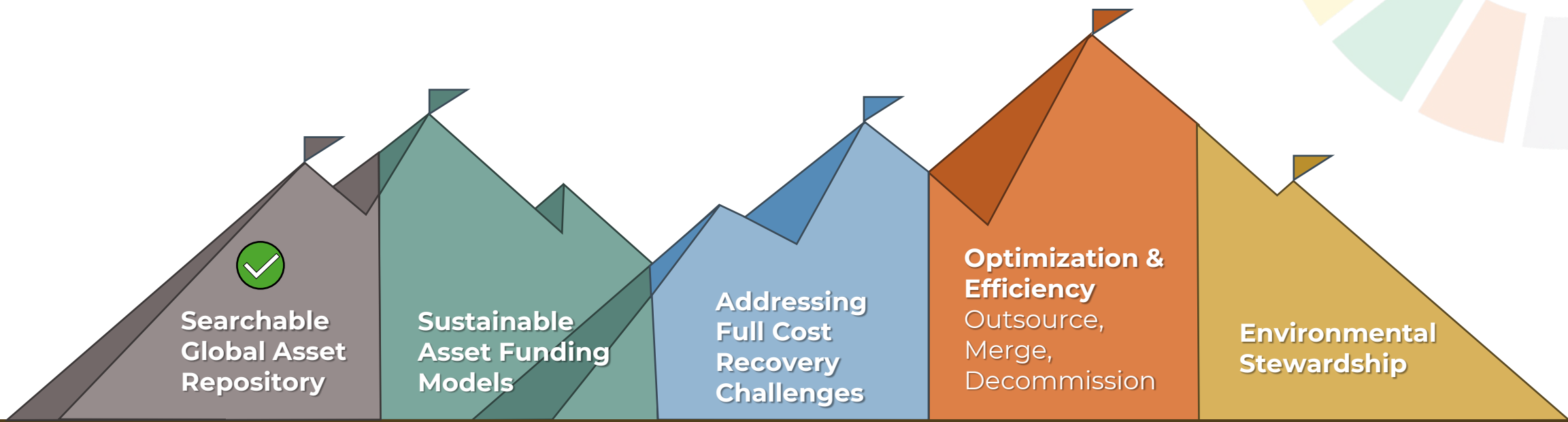
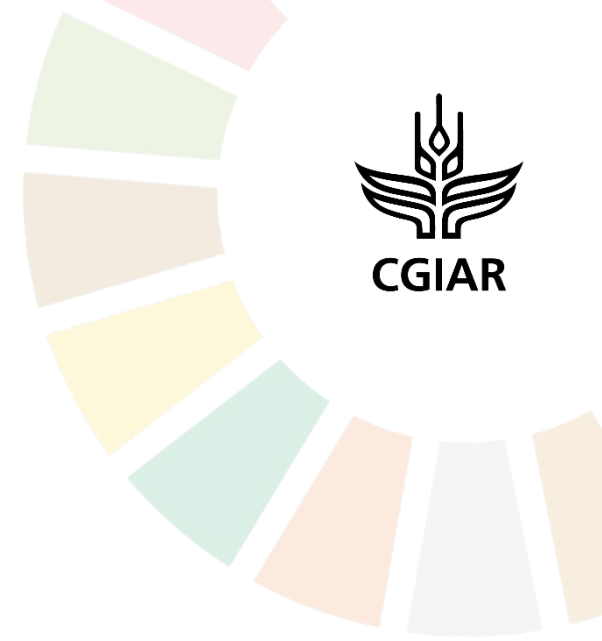
What's Next in this Phase?

Work with Centers and Science Programs to ensure relevant asset needs are budgeted in the Science Programs and Accelerators.

What is the remaining funding gap?

What are alternative funding sources that can be used to fill critical gaps?

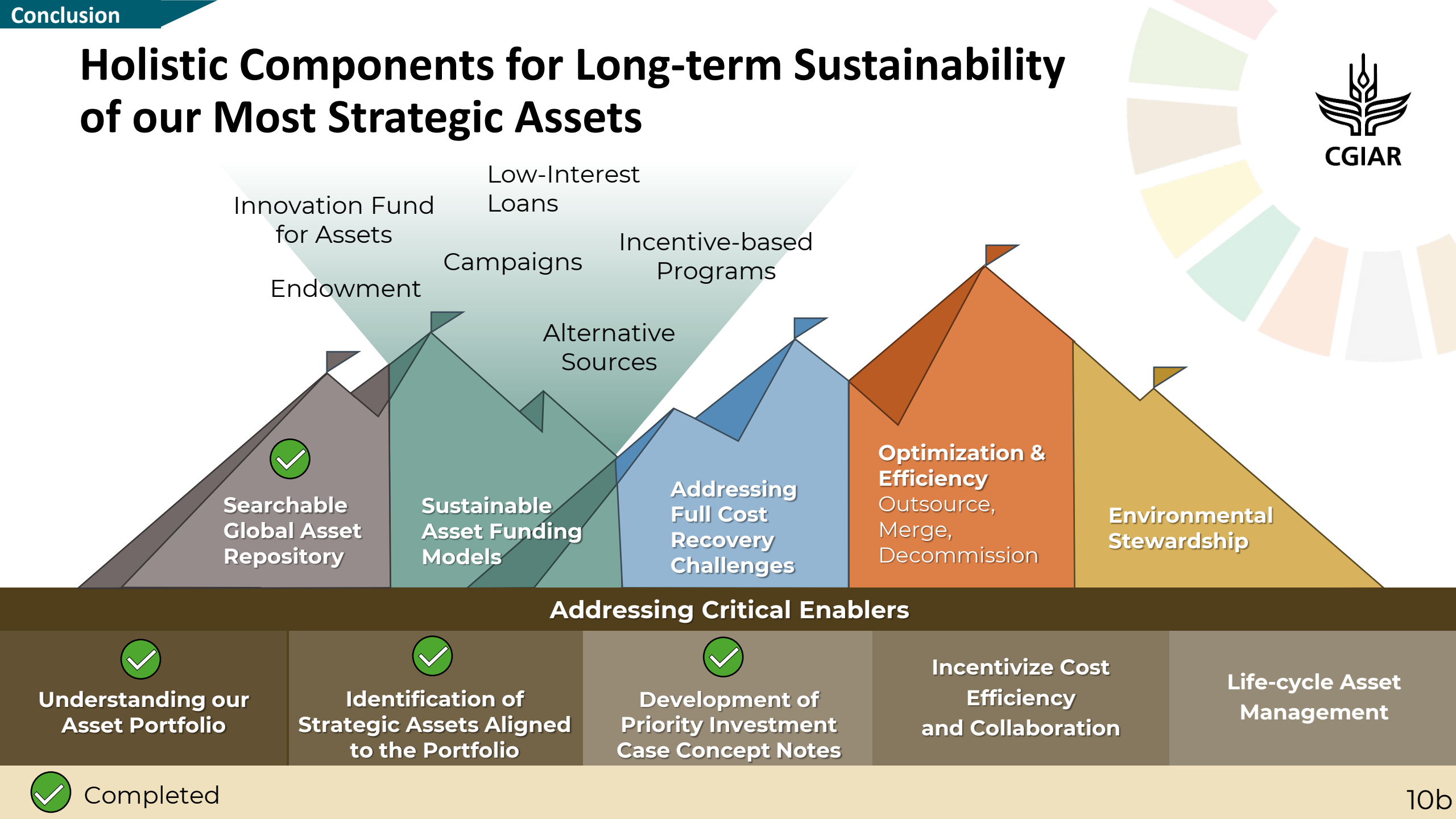
Holistic Components for Long-term Sustainability of our Most Strategic Assets



Addressing Critical Enablers



Completed



Holistic Components for Long-term Sustainability of our Most Strategic Assets



Innovation Fund for Assets
 Endowment
 Campaigns
 Alternative Sources
 Incentive-based Programs
 Low-Interest Loans


Searchable Global Asset Repository

Sustainable Asset Funding Models

Addressing Full Cost Recovery Challenges

Optimization & Efficiency
 Outsource, Merge, Decommission

Environmental Stewardship

Addressing Critical Enablers



Understanding our Asset Portfolio


Identification of Strategic Assets Aligned to the Portfolio


Development of Priority Investment Case Concept Notes

Incentivize Cost Efficiency and Collaboration

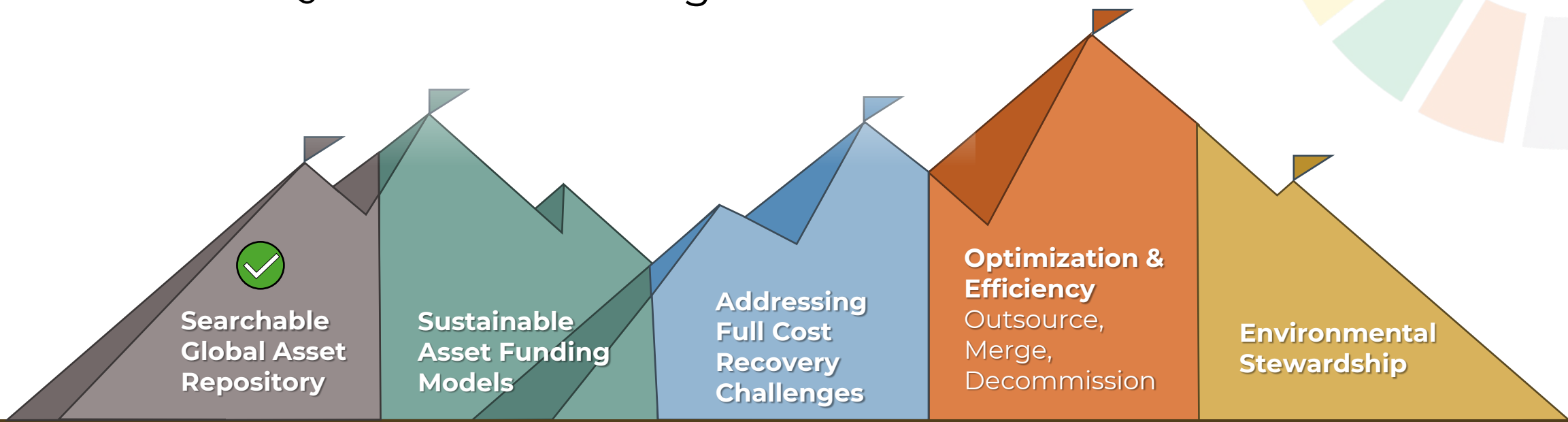
Life-cycle Asset Management

 Completed

Holistic Components for Long-term Sustainability of our Most Strategic Assets



Questions and Insights



Addressing Critical Enablers



✓ Completed



Thank You

Backup



18 Concept Notes Most Critical to Programs/Accelerators

Where portfolio leadership / writing team members indicated consensus that investment case concept note aligned with their program/accelerator as “Priority 1: Critical Investment Priority” (page 1 of 2)

No.	Concept Note	Center	Investment Type	USD in Millions	Program/Accelerator
1	Dryland agri-food systems innovation hub	ICARDA	Upgrade	\$6	Multifunctional Landscapes
2	Enhancing IITA's Plant Health Lab Assets for Fostering Innovations and Sustainable Biotic Threat Management in Sub-Saharan Africa	IITA	Upgrade	\$6	Sustainable Farming
3	Evolving Databases and Advancing AI-Driven Knowledge Development for Sustainable Aquatic Food Systems	World Fish	Upgrade	\$8	Multifunctional Landscapes
4	Genetic and Breeding Resources	World Fish	Upgrade	\$21	Sustainable animal and aquatic foods
5	Improvement and upgrading Agronomy Laboratory	Africa Rice	Upgrade	\$3	Sustainable Farming; Breeding for Tomorrow
6	Modeling and Data Systems	IFPRI	Upgrade	\$3	Policy Innovation
7	Sustainable Network of Long-Term Experiments (LTE)	CIMMYT	Upgrade	\$3	Climate action; Sustainable Farming
8	Upgrading Mazingira’s Research and Laboratory Facility	ILRI	Upgrade	\$1	Multifunctional Landscapes; Sustainable animal and aquatic foods
9	Infrastructure for Science and Sustainability	CIP	Upgrade	\$9	Sustainable Farming
10	Research Farm Infrastructure Advancement	Africa Rice	Upgrade	\$2	Breeding for Tomorrow
Upgrade Sub Total				\$62M	

Concept note values are indicative, as reported by Centers

18 Concept Notes Most Critical to Programs/Accelerators

Where portfolio leadership / writing team members indicated consensus that investment case concept note aligned with their program/accelerator as “Priority 1: Critical Investment Priority” (page 2 of 2)

No.	Concept Note	Center	Investment Type	USD in Millions	Program/Accelerator
11	Breeding and Agronomic Data Systems and Products for Accelerated Science Impact	CIMMYT	New	\$8	Digital Transformation
12	Data Plaza: An interoperable platform for combining, analyzing, and visualizing research open data	Alliance Bioversity-CIAT	New	\$1	Digital Transformation
13	Digital Water Assets for Catalysing Agricultural Research Transformation (Water-CART)	IWMI	New	\$5	Digital Transformation
14	Empowering Agricultural Innovation through Digital Transformation: CIP’s Strategic Investment for a Sustainable 2030	CIP	New	\$8	Digital Transformation
15	Water Data Portal	IWMI	New	\$5	Digital Transformation
16	Integrated High throughput phenotyping platform at ILRI forage Genebank	ILRI	New	\$2	Breeding for Tomorrow
	New Sub Total			\$29M	
17	System for Causal Impact Evaluation	IFPRI	Gap	\$2	Policy Innovation
18	Women’s Empowerment Measurement Resources (WEMR)	IFPRI	Gap	\$8	Policy Innovation, Gender Quality and Inclusion, Digital Transformation
	Funding Gap Sub Total			\$10M	
	Grand Total			\$101M	

Concept note values are indicative, as reported by Centers

All Concept Notes Submitted by Centers (1 of 5)



Center	Center Priority	Concept Note Title	Investment Type	USD in Millions	Center Identified alignment to Science Program/Accelerator(s)
Africa Rice	1	Improvement and upgrading Agronomy Laboratory	Upgrade	\$3	Sustainable Farming; Breeding for Tomorrow, Climate Action; Digital Transformation, Sustainable Farming
	2	Research Farm Infrastructure Advancement	Upgrade	\$2	Sustainable Farming; Breeding for Tomorrow; Climate Action; Food Frontiers and Security; Shared Capacity
	3	Improvement and Update of Grain quality and Post-harvest Laboratory	Upgrade	\$3	Better Nutrition; Breeding for Tomorrow; Climate Action; Scaling for Impact; Shared Capacity
Total - Africa Rice				\$7M	
Alliance Bioversity-CIAT	1	Optimizing Breeding Efficiency: Improving Phenotyping and Overcoming Resource Constraints in Agricultural Innovation	Upgrade	\$2	Breeding for Tomorrow
	2	Data Plaza: An interoperable platform for combining, analyzing, and visualizing research open data	New	\$1	Digital Transformation
	3	Advancing Gene Editing: Expanding Capabilities to Drive Agricultural Innovation	Upgrade	\$1	Breeding for Tomorrow
Total - Alliance Bioversity-CIAT				\$4M	
CIFOR-ICRAF	1	Maintenance of the Genetic Resources Unit facility and equipment	Upgrade	\$23	Breeding for Tomorrow; Multifunctional Landscapes; Sustainable Farming; Food Frontiers and Security
	2	Soil and Land Health Asset Bundle	Upgrade	\$1	Sustainable Farming; Multifunctional Landscapes; Climate Action
	3	Advancing an AI-enabled ecosystem for research on forestry and agroforestry systems and landscapes	Funding Gap	\$1	Digital Transformation
Total - CIFOR-ICRAF				\$25M	

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BOLD = HIGH PRIORITY Indicates that at least one member of the program/accelerator writing team cited concept note as "HIGH PRIORITY"

All Concept Notes Submitted by Centers (2 of 5)

Center	Center Priority	Concept Note Title	Investment Type	USD in Millions	Center Identified alignment to Science Program/Accelerator(s)
CIMMYT	1	Sustainable Network of Long-Term Experiments (LTE)	Upgrade	\$3	Breeding for Tomorrow; Sustainable Farming; Climate Action; Digital Transformation; Multifunctional Landscapes; Scaling for Impact; Better Nutrition; Food Frontiers and Security
	2	Breeding and Agronomic Data Systems and Products for Accelerated Science Impact	New	\$8	Digital Transformation; Breeding for Tomorrow; Sustainable Farming
	3	Eco-friendly Scaling of Cost-Efficient CGIAR/NARES/SME Crop Breeding Operations in Sub-Saharan Africa	Upgrade	\$3	Breeding for Tomorrow
Total - CIMMYT				\$15M	
CIP	1	Infrastructure for Science and Sustainability	Upgrade	\$9	Breeding for Tomorrow; Sustainable Farming
	2	Critical Upgrade: Revamping Assets for Research and Innovation	Upgrade	\$3	Breeding for Tomorrow; Sustainable Farming
	3	Empowering Agricultural Innovation through Digital Transformation: CIP's Strategic Investment for a Sustainable 2030	New	\$8	Digital Transformation
Total - CIP				\$20M	
ICARDA	1	Dryland agri-food systems innovation hub	Upgrade	\$6	All Science Program/Accelerator(s) Breeding for Tomorrow; Multifunctional Landscapes; Digital Transformation; Policy Innovation; Shared Capacity; Sustainable Animal and Aquatic Foods; Sustainable Farms
	2	Establishing ICARDA International Nurseries Platform in Morocco for Improved Germplasm Distribution as International Public Good for Impact	New	\$4	Breeding for Tomorrow; Sustainable Farming; Scaling for Impact; Gender Equality and Inclusion
Total - ICARDA				\$9M	

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All Concept Notes Submitted by Centers (3 of 5)



Center	Center Priority	Concept Note Title	Investment Type	USD in Millions	Center Identified alignment to Science Program/Accelerator(s)
ICRISAT	1	Speed Breeding Infrastructure Available to All Mandate Crops	New	\$1	Breeding for Tomorrow ; Climate Action
	2	Agribusiness and Innovation Platform Enhancement	Upgrade	\$1	Scaling for Impact ; Better Nutrition
	3	Irrigation Installation and Upgrade	Upgrade	\$1	Sustainable Farming ; Breeding for Tomorrow; Climate Action
Total - ICRISAT				\$3M	
IFPRI	1	Modelling and Data Systems	Upgrade	\$3	Policy Innovation ; Breeding for Tomorrow; Food Frontiers and Security;
	2	System for Causal Impact Evaluation	Funding Gap	\$3	Breeding for Tomorrow; Policy Innovation; Better Nutrition; Scaling for Impact; Gender Equality and Inclusion;
	3	Women's Empowerment Measurement Resources (WEMR)	Funding Gap	\$8	All Science Program/Accelerator(s) Policy Innovation; Digital Transformation; Gender Equality and Inclusion; Multifunctional Landscapes; Sustainable Animal and Aquatic Foods; Better Nutrition; Climate Action
Total - IFPRI				\$14M	

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All Concept Notes Submitted by Centers (4 of 5)

Center	Center Priority	Concept Note Title	Investment Type	USD in Millions	Center Identified alignment to Science Program/Accelerator(s)
IITA	1	Revitalizing IITA's Research Farm Systems: Enhancing Mechanization, Post-Harvest Processing, and Climate Resilience	Upgrade	\$9	Breeding for Tomorrow; Sustainable Farming; Climate Action ; Better Nutrition; Scaling for Impact; Gender Equality and Inclusion
	2	Enhancing IITA's Plant Health Lab Assets for Fostering Innovations and Sustainable Biotic Threat Management in Sub-Saharan Africa	Upgrade	\$6	Sustainable Farming; Breeding for Tomorrow ; Genebanks and Knowledge; Climate Action; Scaling for Impact; Shared Capacity
	3	Upgrading IITA Agronomy Laboratories Infrastructure	Funding Gap	\$4	Sustainable Farming ; Multifunctional Landscapes; Breeding for Tomorrow; Better Nutrition; Climate Action
				\$18M	
ILRI	1	Upgrading Mazingira's Research and Laboratory Facility	Upgrade	\$1	Sustainable Animal and Aquatic Foods; Multifunctional Landscapes; Climate Action
	2	Integrated High throughput phenotyping platform at ILRI forage Genebank	New	\$2	Breeding for Tomorrow; Sustainable Animal and Aquatic Foods; Digital Transformation ; Better Nutrition; Climate Action; Genebanks and Knowledge; Food Frontiers and Security
	3	AI-Ready Regional Scientific Computing Capacity	Upgrade	\$1	Breeding for Tomorrow; Digital Transformation ; Sustainable Farming
Total - ILRI				\$4M	

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All Concept Notes Submitted by Centers (5 of 5)

Center	Center Priority	Concept Note Title	Investment Type	USD in Millions	Center Identified alignment to Science Program/Accelerator(s)
IRRI	1	Upgrading Research Facilities (Laboratory and Offices)	Upgrade	\$15	Breeding for Tomorrow; Sustainable Farming; Climate Action ; Better Nutrition; Shared Capacity
	2	Interoperability of Database Tools	Funding Gap	\$10	Climate Action; Digital Transformation ; Scaling for Impact
	3	Enhancements to Regional/Country Office Assets	Upgrade	\$15	Sustainable Farming; Climate Action ; Scaling for Impact; Shared Capacity; Gender Equality and Inclusion; Breeding for Tomorrow; Better Nutrition
Total - IRRI				\$40M	
IWMI	1	Digital Water Assets for Catalysing Agricultural Research Transformation (Water-CART)	New	\$5	Digital Transformation
	2	Water Data Portal	New	\$5	Digital Transformation; Climate Action
	3	New Enterprise Resource Planning (ERP) System	New	\$2	Digital Transformation
Total - IWMI				\$12M	
World Fish	1	Genetic and Breeding Resources	Upgrade	\$21	Sustainable Animal and Aquatic Foods; Breeding for Tomorrow; Multifunctional Landscapes
	2	New Enterprise Resource Planning (ERP) System	Upgrade	\$2	Digital Transformation
	3	Evolving Databases and Advancing AI-Driven Knowledge Development for Sustainable Aquatic Food Systems	Upgrade	\$8	Multifunctional Landscapes; Sustainable Animal and Aquatic Foods; Digital Transformation
Total - World Fish				\$31M	
GRAND TOTAL				\$199M	

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