



Growing resilience for a better future

ANNUAL PERFORMANCE REPORT 2020

SUMMARIZED REPORT

Message from the Executive Management Team

Welcome to the CGIAR Annual Performance Report for 2020 –

a year in which people across the world faced significant challenges as the devastating effects of the COVID-19 pandemic spread globally. Yet, 2020 was also a year of great renewal for CGIAR, particularly as we took important steps toward our transition to One CGIAR.

This year's report shares CGIAR's accomplishments for 2020, showcasing and summarizing an impressive year for research and results. Despite the exceptional strain of 2020, CGIAR continued to make strong contributions to the United Nations' Sustainable Development Goals (SDGs), with CGIAR's Research Programs reporting 92 cases of high-level impact aligned to the SDGs.

CGIAR made a strong commitment to ensuring a research response to the COVID-19 pandemic by establishing a **COVID-19 Hub** in collaboration with the London School of Hygiene &

Tropical Medicine. CGIAR Centers across the globe reoriented their research and resources to respond to the health, social, and economic crisis posed by COVID-19 to help the estimated **100 million people pushed into extreme poverty and food insecurity** by the pandemic.

CGIAR worked in partnerships during the year to understand and address the links across health, nutrition, and environmental protection. One key partnership, the Lancet Countdown initiative, stressed the importance of **aligning COVID-19 recovery efforts with responses to climate change** to protect health, promote a sustainable economy, and preserve the planet.

During the year, scientists within the CGIAR Research Program (CRP) on Livestock worked with national partners in Ethiopia to support the Ethiopian government by optimizing and validating **pooled testing**. They also proposed a method using geospatial analysis to map and identify hotspot areas where COVID-19 mass testing should be prioritized.

“With poverty and hunger expected to rise, the fragility of food systems being ever more obvious and an urgent need for transformation in them, the need for CGIAR to be more impactful than the sum of its parts is more compelling than ever before.

– Juergen Voegelé, Chair
System Council

SC11 CHAIR'S SUMMARY



The transition to **One CGIAR** advanced rapidly in 2020, building on the progress and **strategic decisions** made in earlier years. CGIAR established a Transition Consultation Forum, which allows for multistakeholder input and advice on the transition to One CGIAR.

In September, CGIAR appointed the members of the **System Board**, and we as CGIAR's Executive Management Team (EMT) began our term, receiving the mandate to further lead and deliver the transition to One CGIAR.

Embedding gender equity, diversity and inclusion (GDI) is critical to the One CGIAR transition. In 2020, CGIAR established a new **GDI Function** to support the implementation of the **Framework** for GDI in CGIAR workplaces as part of a two-year **Action Plan**. Also in the year, CGIAR reached its Action Plan target of 35% women in professional roles, and was close to achieving the 2021 target of 40%.

Transitioning to One CGIAR also presented the opportunity to develop a fresh strategy to shape a stronger, more relevant, and integrated

science agenda. After a year of participatory design, including consultation with hundreds of regional partners, the System Council approved the System Board-recommended **CGIAR 2030 Research and Innovation Strategy** in December 2020 and its accompanying **CGIAR Performance and Results Management Framework**. A new unified **CGIAR Research Ethics Code** was also developed to underpin good practice globally.

We hope you enjoy reading our 2020 Annual Performance Report and the summary of results, reach, and impact for the year. Building on what we have achieved in 2020, we look forward to continuing to work with our partners toward a more resilient, sustainable, and equitable food system in the future.



**READ THE 2020 ANNUAL PERFORMANCE
REPORT ONLINE**

READ THE FULL MESSAGE FROM EMT

Highlights of 2020



Cases of **high-level, long-term, at-scale impact for sustainable development:**



66% targeted reducing poverty
18% targeted improving food and nutrition security for health
15% targeted improving natural resources and ecosystem services



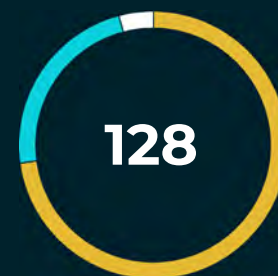
Reports on **the outcomes and impact of CGIAR research:**



52% demonstrated changes in discourse or behavior as a result of CGIAR research
36% reported changes in policy or practice informed by CGIAR findings
12% provided evidence of adoption, or impact at scale, of CGIAR innovations



Policies, **legal instruments, investments or curricula** informed by CGIAR research:



73% related to research that had been taken up by next users
23% related to a policy or law that had been enacted
4% showed evidence of impact



Highlighted **partnerships**



39% on research
22% on capacity development
22% on delivery
14% on policy
3% other



Innovations



78% were genetic innovations
8% were research and communication methodologies and tools
8% were production systems and management practices
4% were significant social science findings and evidence
2% were related to biophysical research
1% other

104

had been taken up by next users
+79% from 2019

265

were available for uptake



1,180,222

people trained by
CGIAR

53% women

47% men



2,193

peer-reviewed
publications

80% open access

91% published in ISI
journals



736,210

**crop, forage and tree
accessions managed by
CGIAR genebanks**

Including **26,224** in vitro accessions
and **32,930** accessions held as trees
or plants in screenhouses or fields



183

monitoring, evaluation, learning
and impact assessment (MELIA)
activities



43,530

germplasm samples (36,661 accessions) were
distributed by CGIAR genebanks to users

75% of germplasm
distributions went
outside CGIAR to
recipients in **79**
countries

49% (the largest proportion)
went to lower-middle-
income countries.



CGIAR Results Dashboard

The CGIAR Results Dashboard provides an overview of results achieved by CGIAR's Research Programs and Platforms. It allows users to search data related to our results indicators, as well as information on monitoring, evaluation, learning, and impact assessment (MELIA) activities and key data related to our genebanks.

Figures and maps are clickable and link to offer additional levels of detail. We have quality assessed all data and information contained in the Dashboard, which aligns with **CGIAR's Annual Performance Reports**.

VISIT THE CGIAR RESULTS DASHBOARD



The data can be categorized by location, partner and SDG depending on what the user is searching for.

CGIAR has three goals, known as System-Level Outcomes (SLOs): reduce poverty; improve food and nutrition security; improve natural resources and ecosystem services.

The dashboard allows users to see data for specific CRPs and years dating back to 2017.



Welcome to the CGIAR Results Dashboard

This dashboard provides an overview of results achieved by the CGIAR Research Programs and Platforms. We track a number of key metrics across CGIAR to help paint a picture of our research for development achievements. Figures and maps are clickable and link to additional levels of detail. All data contained in the dashboard has been quality assessed and aligns with [Annual Performance Reports](#). To access CGIAR's Strategy and Results Framework 2016-30 click [here](#).

1. Contribution to System Level Outcomes (SLOs)

SLOs are CGIAR's highest level goals, aligned with the United Nations Sustainable Development Goals (SDGs).

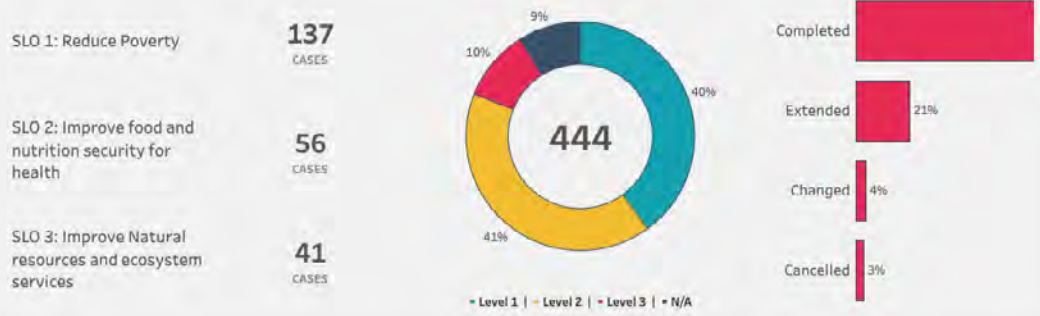
Hover over the numbers to view the SDG's

2. Outcome Impact Case Reports (OICRs)

Short reports describing the contribution of CGIAR research to development outcomes and impact.

3. Progress Towards Milestones

Milestones are a specific point of progress, expected to be reached in reporting year.



4. Results

Quantitative indicators are used by all CGIAR Research Programs and Platforms to track progress towards impact.

TOTAL SDG CONTRIBUTIONS	TOTAL INNOVATIONS	TOTAL MILESTONES	TOTAL PARTNERSHIPS	TOTAL POLICIES	TOTAL TRAINEES	TOTAL PEER REVIEW PAPERS
234	4,154	1,440	842	501	3.34M	8,198

To report bugs or suggest improvements please click [here](#).

Explore 2020 results by indicators.

Click through to find more verified information on each of the CGIAR quantitative indicators.

Our response to the COVID-19 pandemic

In response to the global COVID-19 pandemic in 2020, CGIAR drew on its resources, assets, and tools to conduct COVID-19-relevant research as part of a rapid and impactful response plan. In 2020, this rapid response addressed the immediate crisis and identified actions that would help transform the world's food systems to "build back better."

CGIAR made publicly available its analyses of the impact of COVID-19 and research-based solutions to enable informed decisions and guide public sector programs that sought to improve food system responses and social protection. At the global level, CGIAR worked together with United Nations agencies and other development partners to understand the multifaceted impacts of the pandemic and form an effective and evidence-based response.

Importantly, CGIAR established a **COVID-19 Hub** in 2020, which did the following:

1. Articulated a set of prioritized areas of work on COVID-19 response, recovery, and long-term resilience.
2. Provided a systemwide entry point on COVID-19 for partners and Funders.
3. Delivered an active intelligence service to the CGIAR System Board on COVID-19 impacts and priority responses.

The pandemic has highlighted how the global food system is creating and multiplying health, environmental, social, and economic risks. CGIAR's role in helping to transform the food system is now more critical and urgent than ever.

Adapting agricultural expertise to fight the pandemic in Ethiopia

During the pandemic, Ethiopia, like many nations in Africa, faced challenges in deploying COVID-19 testing at scale, which global health professionals consider key to managing, tracking, and containing the spread of the virus.

LIVESTOCK scientists, in collaboration with various institutions and experts from national partners, supported the Ethiopian government in its effort to contain the spread of COVID-19 through optimizing and validating **pooled testing** to increase efficiency. To best identify areas where mass sampling and other priorities could be channeled, another group of scientists with support from CGIAR Research Program on Water, Land and Ecosystems (WLE) and

the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) used their expertise in geospatial planning and analysis to locate COVID-19 hotspots that would help streamline responses to localized outbreaks.

This timely work advised **the government on where to focus** to contain the **spread of the disease**, while exploring options to predict its future spread. It also mapped the distribution of health facilities, stores, marketing centers, and transport lines to define the optimal route of communication for **emergency management** and developed a **digital platform** to store, update, and share information related to COVID-19 in Ethiopia.



READ MORE ABOUT OUR RESPONSE TO THE COVID-19 PANDEMIC & THE WORK OF THE COVID-19 HUB

Contribution to the SDGs

CGIAR's three System-level Outcomes (SLOs) — reduced poverty, improved food and nutrition security for health, and improved natural resources and ecosystems services — are matched to specific SDGs.

In 2020, CGIAR reported 92 contributions to the SLOs. Sixty-six percent of the 2020 contributions to the SLOs were linked to poverty reduction (SLO1), 18% to improved food and nutrition

security (SLO2), and 15% to improved natural resources and ecosystem services (SLO3). Examples of at-scale contributions to the SLOs in 2020 are presented below.



READ MORE ABOUT CGIAR'S CONTRIBUTIONS TO THE SLOS AND SDGS

Economic impacts of climate-resilient maize in South Asia and Africa

CRP: CGIAR Research Program on Maize (MAIZE)

GEOGRAPHIC SCOPE: South Asia, East and Southern Africa, West and Central Africa

SDGs: 1 2 12 14 17

SLO TARGET: 1.1 Have 100 million more farm households adopt improved varieties, breeds, trees, and/or management practices.

A 2020 MAIZE study on the impacts of CGIAR maize improvements analyzed the adoption and impacts of CGIAR-related maize varieties in 18 major maize-producing countries in sub-Saharan Africa for 1995-2015, including drought-tolerant, pest- and disease-resistant, and more nutritious (Vitamin A and Quality Protein Maize) varieties. Of 1,345 maize varieties released in the study countries, approximately 60% had a known or reported CGIAR parentage. In 2015, about 34% of total maize area in those countries (9.5 million hectares) was cultivated with CGIAR-related maize varieties released between 1995-2015. Another 13% of the total maize area was cultivated with CGIAR-related maize varieties released before 1995. In 2015, aggregate yearly economic benefits of using newer CGIAR-related maize varieties (released after 1994) were estimated to be between US\$0.66 to US\$1.05 billion, while global investment in **CGIAR maize improvement** was modest — about US\$30 million per annum. The additional potential economic impacts of CGIAR investment on risk reduction (for example, losses avoided) and nutritional enhancement in maize are not accounted for.

Improved wheat yields from over 50 years of spring wheat breeding

CRP: CGIAR Research Program on Wheat (WHEAT)

GEOGRAPHIC SCOPE: Global

SDGs: 12 17

SLO TARGET: 2.1 Improve the rate of yield increase for major food staples from the current <1% to 1.2-1.5% per year

WHEAT research revealed a continuous upward trend in the breeding progress of the International Maize and Wheat Improvement Center (CIMMYT)/CGIAR wheat breeding program in a range of environments and management conditions. **Grain yield progress** over 50 years of spring wheat breeding at CIMMYT was determined in field trials conducted in 2013-17. Trials included 30 varieties (24 bread wheat and six durum wheat varieties) released between 1965-2014 and sown under managed optimum, drought, and heat stress conditions. Grain yield improvements per year for bread wheat ranged from 24.7 to 35.3 kilograms per hectare (kg/ha), in optimum conditions with different irrigation. In drought and heat stress environments, bread wheat grain yield progress was estimated at between 17.7 kg/ha, and 25.6 kg/ha per year. There were similar results for durum wheat. A 2020 study found that drip irrigation systems make judicious use of water resources, while increasing yield potential.

Improved diets and increased consumption of fish in India

CRP: CGIAR Research Program on Fish Agri-food Systems (FISH)

GEOGRAPHIC SCOPE: India **SDGs:** 2 5 12 17

SLO TARGET: 2.3 Have 150 million more people, of which 50% are women, without deficiencies of one or more of the following essential micronutrients: iron, zinc, iodine, vitamin A, folate, and vitamin B12

More than 200,000 vulnerable women, men, and children have increased fish consumption in India, thereby improving their nutrition and diets. FISH **projects** have resulted in **212,142 people** consuming more **fish** through **fish farming** activities in Odisha, India. Also in Odisha, **11,865 people** are consuming more fish thanks to **carp-based polyculture**.

Benefits of conservation agriculture in South Asia

CRPs: CGIAR Research Program on Wheat (WHEAT) and the CRP on Climate Change, Agriculture and Food Security (CCAFS)

GEOGRAPHIC SCOPE: South Asia

SDGs: 13 15 17

SLO TARGET: 3.2 Reduce agriculturally related greenhouse gas emissions by 0.2 gigatons of carbon dioxide equivalent per year (Gt CO₂-e/yr) (5%) compared with business-as-usual scenario in 2022

A 2020 meta-analysis of 9,686 paired comparisons between conservation agricultural practice and existing farmers' practice in South Asia showed that zero tillage and residue retention offer a 5.8% yield advantage and a 25.9% economic advantage, with **12% to 33% less greenhouse gas (GHG) emissions** compared to existing tillage-based practice. Similarly, comparisons in rice and wheat fields across the Indo-Gangetic Plains of India show that Nutrient Expert-based fertilizer management **lowered global warming potential by 12% to 20% in wheat**, in addition to increasing crop yield and incomes. Bottom-up analyses in India and Bangladesh suggest that zero tillage and residue management, as well as precision nutrient management, could reduce country-level GHG emission by **17 and 17.5 million tons of CO₂** per year in India and by 0.55 and 7.98 million tons of CO₂ per year in Bangladesh.

Forests saved from deforestation in Indonesia

CRP: CGIAR Research Program on Forests, Trees and Agroforestry (FTA)

GEOGRAPHIC SCOPE: Indonesia

SDGs: 13 15 17

SLO TARGET: 3.4 Save 2.5 million hectares of forest from deforestation

Research by FTA/the Center for International Forestry Research (CIFOR), and support to the Government of Indonesia, contributed to 166,700 hectares **saved from deforestation** between 2015 and 2019.



CGIAR in Ethiopia

CGIAR continues to play a critical role in agricultural research in Ethiopia, with the country being a key location for CGIAR collaborative research with partners. Since establishing the International Livestock Centre for Africa (ILCA) 40 years ago (now the International Livestock Research Institute [ILRI]), the country has hosted offices and researchers from across CGIAR, and 12 CRPs work in Ethiopia.

In 2020, the importance of CGIAR presence in the country was evident, with Ethiopia, along with other countries in East Africa, experiencing a devastating **desert locust outbreak**. Crops and pastures were destroyed, leading to a potential food security crisis. As an example of CGIAR efforts to mitigate the crisis, a project part of the Big Data Platform's Inspire Challenge — PlantVillage Nuru — developed a **smartphone application to monitor locusts in the region**, which enabled countries to control swarms, and saved an estimated US\$1.5 billion in commercial agricultural products.

Ethiopia became a focal country for CGIAR's newly formed **COVID-19 Hub** in 2020. Since



the beginning of the pandemic, CGIAR scientists have been working with partners to assist the Government of Ethiopia's efforts to assess the effects of COVID-19, supporting the national, multisectoral response plans that were put in place at the onset of the pandemic.

Recognizing CGIAR's long history of engagement in the country, CGIAR's **Standing Panel on Impact Assessment (SPIA)** published a **report** in 2020 documenting the reach of CGIAR-related agricultural innovations in Ethiopia across the core domains of CGIAR research activity: animal agriculture; crop germplasm improvement; natural resource management; and policy research.

The study represents the culmination of years of work by SPIA, together with the Ethiopian Central Statistics Agency (CSA) and the World Bank Living Standards Measurement Study (LSMS) team, to develop and test a country-level approach to assessing adoption and diffusion of agricultural innovations using national surveys, and by integrating new data collection approaches. Consultations with CGIAR and national stakeholders took stock of innovations disseminated at scale in Ethiopia between 1999 and 2019. These consultations revealed 52 different innovations related to animal agriculture, crop germplasm improvement, and natural resource management, along with 26 instances of policy influence.

The study found that agricultural innovations linked to CGIAR research have reached between 4.1 and 11 million Ethiopian households. The upper-bound figure of 11 million, representing 79% of all rural households in Ethiopia, should be interpreted as the potential reach of CGIAR in the country — with substantial adoption among poor smallholders, women and youth.



READ MORE ABOUT CGIAR'S WORK IN ETHIOPIA AND THE SPIA REPORT

Assessing CGIAR's return on investment

In 2020, an external assessment of CGIAR found that over the past 50 years there had been a 10-dollar return on every dollar invested in CGIAR research and development (R&D).

A report commissioned by the **Supporters of Agricultural Research (SoAR) Foundation**, "**The Payoff to Investing in CGIAR Research**," outlined the long-term value of investing in CGIAR research activities. The authors argued that investment in agricultural research must be strengthened to create a more resilient and sustainable future and to meet global goals, such as those set out in the SDGs.

In a context of declining financial support for CGIAR research, and agricultural R&D more broadly, the report revealed that governments and development partners have been consistently underinvesting in agricultural R&D — a sector that is economically more profitable than almost any other government investment.

With such a strong return on investment, there is a solid case for investing in agricultural R&D that takes place near farms, markets, and governments, to develop the innovations and technologies that will protect the world's food poor and mitigate threats to global food supplies and farmer livelihoods caused by climate change, pests, political unrest, and policy and market risk.

To reinvigorate investments in agricultural R&D, the authors called for the following, at a minimum:

- A doubling of the total public investment in agricultural R&D performed by national and international agencies.
- The allowance of suitable timeframes for research outcomes to arise.
- An increase in investments from many agriculturally significant, middle-income countries.

With the report finding that past benefits have significantly outweighed the investments that generated them, CGIAR is well positioned to continue its role in agricultural research and development, and CGIAR can help develop and share the innovations that deliver real impact aligned with the SDGs.



READ MORE ABOUT CGIAR'S RETURN ON INVESTMENT AND THE SoAR REPORT

"Agricultural research is slow magic. Returns accrue over long periods — decades — and realizing the full potential from agricultural R&D requires far-sighted investments. It is also a cumulative endeavor, best done with steady and sustained investments."

— SoAR Report



Recent achievements

CGIAR's recent achievements are detailed in Outcome Impact Case Reports (OICRs) — short reports describing the contribution of CGIAR research to outcomes and impact. In 2020, CGIAR reported 149 OICRs. Below is a selection of recent achievements from our research and innovation with partners around the world in 2020.



[VIEW CGIAR'S OICRS FOR 2020](#)



[Read the full story >](#)

Rice farming technologies improve access to credit in Senegal

CGIAR Research Program on Rice (RICE)

In 2020, RICE found that a **rice threshing technology** developed and promoted by AfricaRice, a RICE partner, has positively affected the access of Senegalese rice farmers to credit and their creditworthiness.

Manual rice threshing, which women farmers in many parts of Africa mainly carry out, is labor-intensive work. It also causes post-harvest losses of up to 35%. In response to these challenges, AfricaRice and its partners developed an improved rice thresher — the ASI thresher.

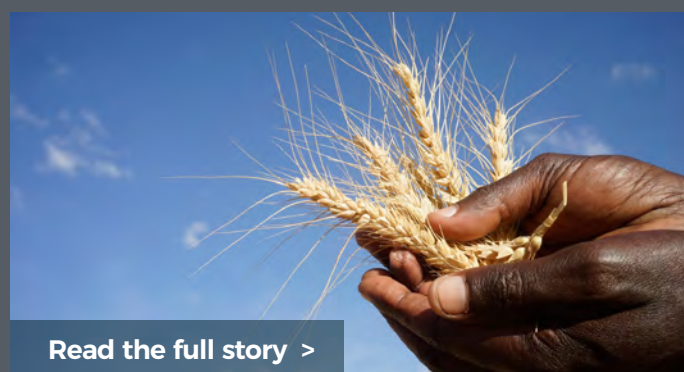
Breeding research delivers genetic gains in wheat to NARS across the globe

CGIAR Research Program on Wheat (WHEAT)

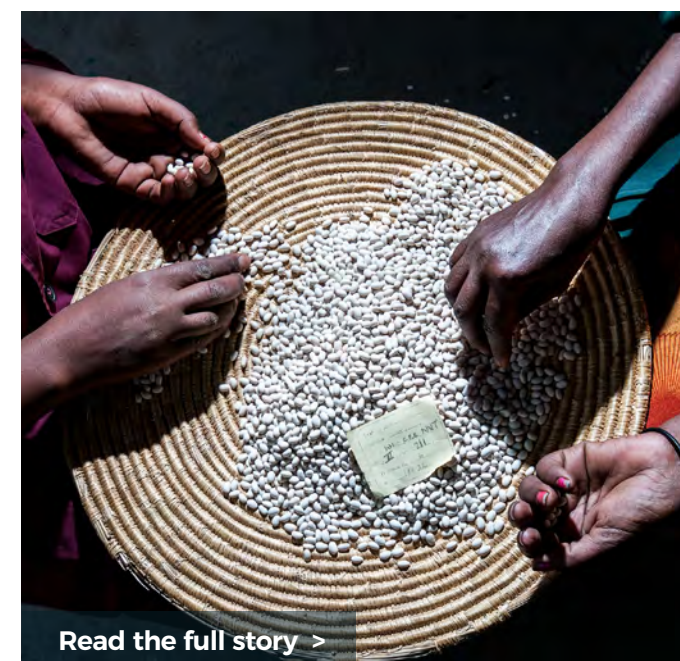
WHEAT's Global Wheat (Breeding) Program (the International Maize and Wheat Improvement Center [CIMMYT] and the International Center for Agricultural Research in the Dry Areas [ICARDA]) has delivered significant **genetic gains** to National Agricultural Research System (NARS) partners by developing high-yielding, climate-resilient, and disease-resistant wheat germplasm.

Using a set of previous studies, the performance of bread wheat breeding germplasm developed by the Global Wheat Program (GWP) at CIMMYT

was assessed through the extensive analysis of international data sets in 2020. The results indicated that genetic gains range from 0.5% to 1% per annum, which, on average, represents 46.6 kilograms per hectare per year (kg/ha/year).



[Read the full story >](#)



[Read the full story >](#)

Common bean improvement reduces poverty in Ethiopia

CGIAR Research Program on Grain Legumes and Dryland Cereals (GLDC)

GLDC partner, the Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), has positively impacted **Ethiopia's bean sector**, including breeding, seed systems, varieties grown, and farmer welfare.

GLDC research has contributed to the release of more than 60 improved bean varieties in Ethiopia since 1970, including a biofortified variety released in 2019. Thirty-six of these high-yielding, resilient varieties are either lines or crosses with CIAT materials.

Low-emission technologies transform Vietnam's rice sector

CGIAR Research Program on Climate Change, Agriculture and Food Security (CCFAS)

Rice farming technologies developed by CCAFS partner, the International Rice Research Institute (IRRI), have contributed to **reducing CO2 emissions connected to rice production** in Vietnam.

In 2020, Vietnam increased its Nationally Determined Contribution target for the agriculture sector for 2030 by 16MtCO₂-eq. One hundred percent of the unconditional target will come from rice production, mainly as a result from a shift in irrigation water management.



[Read the full story >](#)

Water technologies shift energy policies in Uzbekistan

CGIAR Research Program on Water, Land and Ecosystems (WLE)

Scientists at WLE lead center, the International Water Management Institute (IWMI), recommended that the Uzbek government **shift subsidies from energy to water saving technologies**. This recommendation was adopted in 2020 in a state program on water saving technologies that will cover 450,000 hectares by 2022.

In Uzbekistan, most agricultural land is irrigated with water pumped from two rivers, the Amu Darya and Syr Darya — the two rivers that feed the shrinking Aral Sea. This pumping consumes 20% of the country's power. To keep power affordable

for farmers and other users, the government puts US\$450 million into energy subsidies every year. Research by WLE/IWMI has demonstrated an alternative, which has led the government to redirect some subsidies toward more efficient irrigation that saves water and energy.



[Read the full story >](#)


[Read the full story >](#)

Rice irrigation strategies to protect public health in Africa

CGIAR Research Program on Agriculture for Nutrition and Health (A4NH)

A4NH scientists are examining the interlinkages between agricultural development proposals to expand rice cultivation and public health plans to **eliminate malaria**.

Africa suffers 85% of the world's mortality because of malaria — an African child dies of malaria every two minutes. A4NH researchers are determining how agricultural development can become part of the public health solution, and not part of the problem.

Dialogue toolkit promotes cross-border cooperation on biodiversity in Kenya and Somalia

CGIAR Research Program on Policies, Institutions, and Markets (PIM)

A **multistakeholder policy dialogue platform** (MSP) toolkit developed by PIM has facilitated the development of new conservation plans and biodiversity-based value chains at the Kenya-Somalia border.

The Tana-Kipini Laga Badana bushland and seascape area at the Kenya-Somalia border is prone to instability and conflicts related to natural resources. The MSP toolkit led to improved understanding of local knowledge and socio-cultural links between people and nature. It highlighted the need for an inclusive spatial Lamu County land and seascape management plan. It also led to a mutually agreed cross-border governance mechanism.


[Read the full story >](#)

[Read the full story >](#)

iShamba provides farming and climate services in Kenya

CGIAR Platform for Big Data in Agriculture

A national competition enabled 25,312 farmers across Kenya to sign up to the **iShamba farmer mobile service** to receive information on selected crops, livestock, weather, and market prices. The competition was developed in collaboration with the Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), Mediae, iShamba, and Usiku Games.

The “Let it rain” competition encouraged viewers of the television program, “Shamba Shape Up,” which has 7 million weekly viewers in Kenya, to guess the onset of the March to May 2020 “long rains” in their area.

ShadeMotion software improves crop yields in Latin America

CGIAR Research Program on Forests, Trees and Agroforestry (FTA)

For over 13 years, FTA partner, the Tropical Agricultural Research and Higher Education Center (CATIE), has developed and improved **ShadeMotion**, an open-source software application that models tree shade. The year 2020 marks a significant milestone in the scaling of the application.

ShadeMotion informs tree-planting practices to improve crop quality and yields and supports climate adaptation of both farm and agro-ecosystems. It has been applied on demonstration farms throughout Latin America to support capacity development and more sustainable agroforestry practices.


[Read the full story >](#)


[Read the full story >](#)

Improved aquaculture reduces undernutrition in women and children in Bangladesh

CGIAR Research Program on Fish Agri-food Systems (FISH)

FISH lead center, WorldFish, is contributing to the “Suchana: Ending the Cycle of Under nutrition in Bangladesh” program, where more than 109,153 new people have received support on **nutrition-sensitive aquaculture and fisheries** in 2020 and 107,290 people are consuming more fish through fish polyculture. Cumulatively, 64,681 households (355,746 people) received interventions as part of the program between 2016 and December 2020.


[Read the full story >](#)

Farmer Business Schools create livelihood opportunities in Asia and beyond

CGIAR Research Program on Roots, Tubers and Bananas (RTB)

Farmer Business Schools (FBSs), developed by RTB, have been implemented across Southeast and South Asia, starting in Indonesia, and expanding to Southeast Asia, South Asia, and Latin America.

Developed in the late 2000s by RTB’s lead center, the International Potato Center (CIP), FBSs build on the **Participatory Market Chain Approach** (PMCA) and on **Farmer Field Schools**. National development programs, supported by investments from the International Fund for Agricultural Development (IFAD), have adopted the FBS approach in four Asian countries: India, Indonesia, the Philippines, and Vietnam.

Communities engage in participatory rangeland management across East and Southern Africa

CGIAR Research Program on Livestock (LIVESTOCK)

The practice of **participatory rangeland management** (PRM), developed by the International Livestock Research Institute (ILRI), LIVESTOCK’s lead center, is expanding across East and Southern Africa. It is giving a voice to pastoral and agro-pastoral communities — historically some of the most marginalized people in the world — and including them in land-use decision-making processes.

Introduced and piloted in Ethiopia in 2010, PRM (a process of community-led planning and management of rangelands) was developed as a tool to help secure the rights of pastoral and agro-pastoral communities to rangelands in the

absence, at the time, of a formalized land tenure system for pastoral areas in Ethiopia. It was later included in Ethiopia’s Country Programming Paper to End Drought Emergencies, as part of the World Bank-funded Regional Pastoralist Livelihoods Resilience project.


[Read the full story >](#)

Conservation agriculture reduces climate risks throughout Southern Africa

CGIAR Research Program on Maize (MAIZE)

Conservation agriculture research in Malawi, Zambia, and Zimbabwe by MAIZE has generated scientific evidence on the productivity, profitability, and environmental, social, and human impacts of conservation agriculture. All the target countries have used this research to inform policies toward more climate-smart agriculture adaptation interventions.

Farmer adoption of conservation agriculture practices (defined by minimum soil disturbance, maintaining soil cover, and crop diversification through rotations or intercropping) covers more than 627,000 hectares in Malawi, Zambia and Zimbabwe, with yield benefits of 30% to 50% (up to 140%) under drought conditions.


[Read the full story >](#)

Cross-cutting Platforms

Big Data in Agriculture

The CGIAR Platform for Big Data in Agriculture uses big data to solve agricultural development problems faster, better, and at greater scale.

In 2020, the Platform completed its fourth year of building CGIAR’s crosscutting digital capabilities, partnerships, and innovation strategy in digital agriculture. The team formed 72 external partnerships to drive digital innovation in research and data sharing, and it delivered 22 innovations and policies to build new digital impact pathways for CGIAR research.

Through its program, partnerships, and wide-ranging strategic research in 2020, the Platform demonstrated that mission-driven “earth shots” (which involve building close

cooperation across stakeholders to solve complex challenges) in food security are realizable through digitally enabled innovation and collective actions. The Platform also showed that a unified CGIAR can play a key role in achieving these actions.



[READ MORE ABOUT THE BIG DATA PLATFORM](#)



[READ MORE ABOUT THE EIB PLATFORM](#)

Excellence in Breeding

The CGIAR Excellence in Breeding Platform (EiB) contributes to the modernization of crop breeding programs that target the Global South.

In 2020, the Platform made important progress toward enabling transformational change across CGIAR and national agricultural research system (NARS) breeding, realizing the full potential of investment in **Crops to End Hunger** (CtEH), a project that aims to enhance the performance of crop breeding programs through crop-specific and crosscutting improvement plans.

To support this work, the **EiB team** underwent significant expansion, increasing both direct engagement with breeding programs and taking on a strategic planning role for cross-CGIAR investment in centralized breeding capacities and services.

GENDER

The new CGIAR Generating Evidence and New Directions for Equitable Results (GENDER) Platform aims to put gender equality at the forefront of global agricultural research for development and transform the way gender research is done, both within and beyond CGIAR.

2020 was an inception year for the CGIAR GENDER Platform. The Platform established a team (headed by a **Platform Director**), partnerships, and solid foundations for future research, along with capacity and engagement efforts.

The Platform supported each CGIAR Center through grants to complete gender-focused outputs for the new GENDER resource hub. Building on CGIAR’s history of **gender research**, the Platform identified seven priority areas within which it began efforts to synthesize and develop evidence, methods, and tools.



[READ MORE ABOUT THE GENDER PLATFORM](#)

Genebank

The CGIAR Genebank Platform supports the activities of the CGIAR genebanks and germplasm health units (GHUs) to conserve and make available crop, forage, and tree genetic resources, contributing to the SDGs (specifically Target 2.5).

The year 2020 was an extraordinary year, with lockdown measures affecting genebank operations and demand for germplasm, as well as other areas of research and delivery. All genebanks and regions were impacted to some degree, with those located in Latin American countries being significantly disrupted because of their long and strict lockdown conditions.

Despite these conditions, CGIAR genebanks distributed a total of 43,530 germplasm samples (36,661 accessions) to users by the end of the year (see Figure 1), which represents

around half the amount of germplasm distributed in a normal year.

The total number of requests from external users was reduced by more than a quarter compared to 2019, reaching 889 requests in 2020, of which 91% were successfully concluded during the year.



[READ MORE ABOUT THE GENE BANK PLATFORM](#)

Gender research

In 2020, CGIAR's CRPs and Platforms further developed their gender research, policy, and capacity development contributions. Progress covered gender-transformative approaches, women's empowerment, the effects of men's outmigration, the feminization of agriculture, and gender integration in breeding programs.

The effects of women's empowerment in agriculture

The project-level **Women's Empowerment in Agriculture Index** (pro-WEAI), developed as part of A4NH's second-phase **Gender, Agriculture and Assets Project** (GAAP2), was promoted in 2020 through the launch of the pro-WEAI Foundations Module. This first module of the **pro-WEAI Distance Learning Course** provides technical support through the **WEAI Resource Center**.

Since the original WEAI — co-developed by A4NH and PIM with external partners — launched in 2012, more than 113 organizations in 56 countries have fielded and adapted versions of the index. Through an application of the WEAI in **Bangladesh**, CCAFS found that women's empowerment had led to a more

diversified use of farmland away from cereal production to vegetables and fruits, improving dietary diversity.

Other CRPs developed indices that draw on the WEAI in 2020. PIM and A4NH developed and piloted the project-level **Women's Empowerment in Agriculture Index for Market Inclusion** (pro-WEAI+MI) — which uses the core pro-WEAI module and complementary indicators to investigate barriers to market access and inclusion for different value chain actors. LIVESTOCK developed a Women's Empowerment in Livestock Business Index (WELBI) tool to assess changes in the empowerment of women involved in livestock business.



[READ MORE ABOUT CGIAR'S GENDER RESEARCH](#)

Youth and equity research

CGIAR research and outreach on intersectionality (which relates to intersecting and interacting identities, youth, and equity) developed significantly in 2020. CRPs and Platforms engaged in a range of issues, such as the following: supporting farmers in remote, marginalized, and conflict-prone areas; youth migration

and employment; capacity development and community engagement; and strategies for attracting young people to farming.

Supporting indigenous communities and preserving the cultural heritage of rice in the Philippines

To support indigenous communities in the Cordillera Autonomous Region in the Philippines and preserve the cultural heritage of rice, RICE conducted a consumer survey in **Metro Manila** to develop a segmented marketing strategy for heritage-rice farming.

Findings indicated that women, business owners, and consumers who buy packaged rice and eat pigmented rice are willing to pay more for heritage rice produced by indigenous communities.

The study suggests that policymakers and value chain actors should invest in information campaigns to educate and inform consumers about the social, cultural, environmental, and nutritional value of heritage rice to create demand, preserve national heritage, and protect the biodiversity of rice landraces in the Philippines.



[READ MORE ABOUT CGIAR'S YOUTH AND EQUITY RESEARCH](#)

Working together

Milestone achievements

In 2020, CRPs and Platforms reported progress against annual planned milestones. A total of 514 milestones were reported for the year. Sixty-eight percent of these were reported as complete. Twenty-three percent were extended, 5% were changed, and 4% were cancelled. In 2020, 76% of milestones had principal or significant gender relevance.



[READ MORE ABOUT CGIAR'S MILESTONE ACHIEVEMENTS](#)

[VIEW THE MILESTONES DASHBOARD](#)

Gender, diversity and inclusion in CGIAR workplaces

In January 2020, a new cross-CGIAR **Function** was established to support the implementation of the **Framework** for Gender, Diversity and Inclusion (GDI) in CGIAR workplaces, through an ambitious two-year **Action Plan**. The new GDI Function provides expert support, guidance, training, and tools, working collaboratively to build on progressive efforts undertaken across CGIAR, as well as on past evaluations.



[READ MORE ABOUT GDI IN CGIAR WORKPLACES](#)

CGIAR digital strategy

Agricultural research for development is changing because of the rapid evolution and diffusion of digital technologies worldwide. In support of the development of the CGIAR **2030 Research and Innovation Strategy**, which was approved in 2020, the CGIAR Platform for Big Data in Agriculture conducted a wide-ranging strategic analysis. This work consisted of understanding how trends in the access to and use of digital technologies may affect global food security, the roles public-interest actors should play in leveraging and shaping these trends, and the unified capabilities CGIAR must cultivate to fully leverage digital technology.



[READ MORE ABOUT CGIAR DIGITAL STRATEGY](#)

Use of pooled funding

In 2020, the CGIAR Trust Fund provided pooled funding, received via Funding Windows 1 and 2 (W1/2), for programming carried out by CRPs and Platforms.

CRPs use W1/2 funding to provide approved budgeted programmatic funding for research and pathways to scale and impact. Activities funded by W1/2 during 2020 included the following: enhancing partnerships; establishing capacity development activities; running MELIA studies; developing and piloting innovations; promoting policy support and engagement; generating innovative research outputs; setting up gender, youth, and inclusion research and engagement; and updating public goods, such as tools and websites.

CRPs and Platforms also revised funding allocations to ensure sufficient resources were directed to COVID-19-related research and activities.



[READ MORE ABOUT USE OF POOLED FUNDING](#)

Monitoring, evaluation, learning and impact assessment

In 2020, 12 CGIAR Research Programs and four Platforms reported 183 MELIA activities. MELIA studies are principally used to inform learning and adaptive management, meet accountability requirements, and inform the design of new initiatives.



[READ MORE ABOUT MELIA](#)

[VIEW THE MELIA DASHBOARD](#)



Ongoing reviews of the CGIAR genebanks *CGIAR Genebank Platform*

Genebanks play a vital role in the long-term conservation of crop diversity. To fulfill that role effectively, they must have adequate facilities, capacity, and operating mechanisms to reach and maintain scientific and technical standards.

Since 2012, the Crop Trust, with support of the Genebank Platform, has coordinated external reviews of the CGIAR genebanks.

In 2020, **four technical reviews** of CGIAR genebanks were completed by AfricaRice, Bioversity International, World Agroforestry, and the International Crops Research Institute for the Semi-Arid Tropics, concluding the latest phase of technical review. The results fed into the **System Level Review of Genebank Costs and Operations**.

Intellectual assets

CGIAR Centers reported entering into a total of 35 Limited Exclusivity Agreements in 2020. A total of four patent applications and one plant variety protection (PVP) application were reported for 2020. All four patent applications were made on a provisional basis and, as such, require further filings to secure patent protection. No Restricted Use Agreements or plant variety protection applications were reported in 2020.



[READ MORE ABOUT INTELLECTUAL ASSETS](#)



Open and FAIR data assets

Agricultural research is no longer driven only by hypothesis-based science. With the advent of powerful data capabilities, agricultural research now also encompasses a predictive, empirical method that operates over large data pools to discern patterns rapidly and with agility. To take advantage of these approaches, CGIAR is committed to well-described, machine-interpretable, openly available data that are highly findable, accessible, interoperable, and reusable (FAIR). CGIAR Centers are committed to making their datasets available on institutional repositories that are FAIR-compliant. Through the work of the Big Data Platform, CGIAR made significant progress toward making its data assets open and FAIR in 2020.



[READ MORE ABOUT OPEN AND FAIR DATA ASSETS](#)

CGIAR Advisory Services

In 2020, the Independent Science for Development Council (ISDC), the Standing Panel on Impact Assessment (SPIA), and the Evaluation Function coordinated by the CGIAR Advisory Services Shared Secretariat (CAS Secretariat), collectively termed as Advisory Services functions, provided a broad range of externally driven evidence and evidence-based advice to CGIAR. The work of Advisory Services furthers the System's effectiveness, its culture of continual learning, and its transition to One CGIAR.



[READ MORE ABOUT CAS](#)

Internal audit



In 2020, CGIAR faced challenges related to COVID-19, and continued to undertake unprecedented transformational change as part of its One CGIAR transition. The CGIAR **System Internal Audit Function** remained agile and responsive to the priorities and needs of CGIAR in achieving its goals in an effective and efficient way.

Across CGIAR's entities, internal audit functions delivered over 80 assurance and advisory engagements, covering a wide range of operational areas responding to key risks.



[READ MORE ABOUT INTERNAL AUDIT](#)

Governance

Momentum increased in 2020 in making the vision of **One CGIAR** a reality, with key milestones achieved in CGIAR's governance and leadership arrangements. Membership of CGIAR's governing and independent advisory bodies came together during 2020 as part of the Transition Consultation Forum, providing multistakeholder input and advice on the transition to One CGIAR.

A key milestone was the 1 September, 2020 appointment of CGIAR's inaugural **Executive Management Team**, comprised of three Managing Directors. On the same date, the **CGIAR System Board's membership** was reconstituted, with further decisions taken by a majority of CGIAR's Centers and Alliances to appoint those same eight members to their own reconstituted boards from October 2020. Through dedicated work of the Transition



Advisory Groups, extensive consultations with CGIAR's leaders and partners, and deliberations through governance meetings during 2020, the **System Council** approved the System Board-recommended **CGIAR 2030 Research and Innovation Strategy** in December 2020.



[READ MORE ABOUT CGIAR GOVERNANCE](#)

Financial highlights

In 2020, CGIAR research revenue was US\$736 million, an 11% decrease from the previous year (US\$828 million in 2019). The system, however, improved from a net deficit of US\$7.5 million in 2019 to a net deficit of US\$0.6 million in 2020.

Figure 1. CGIAR revenue by source of funding, 2020 and 2019

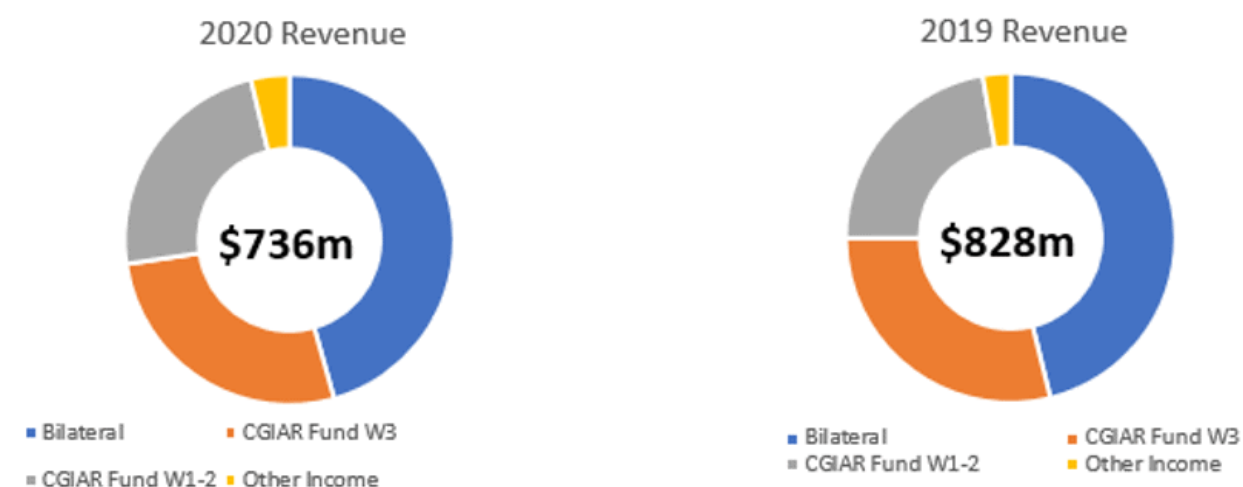
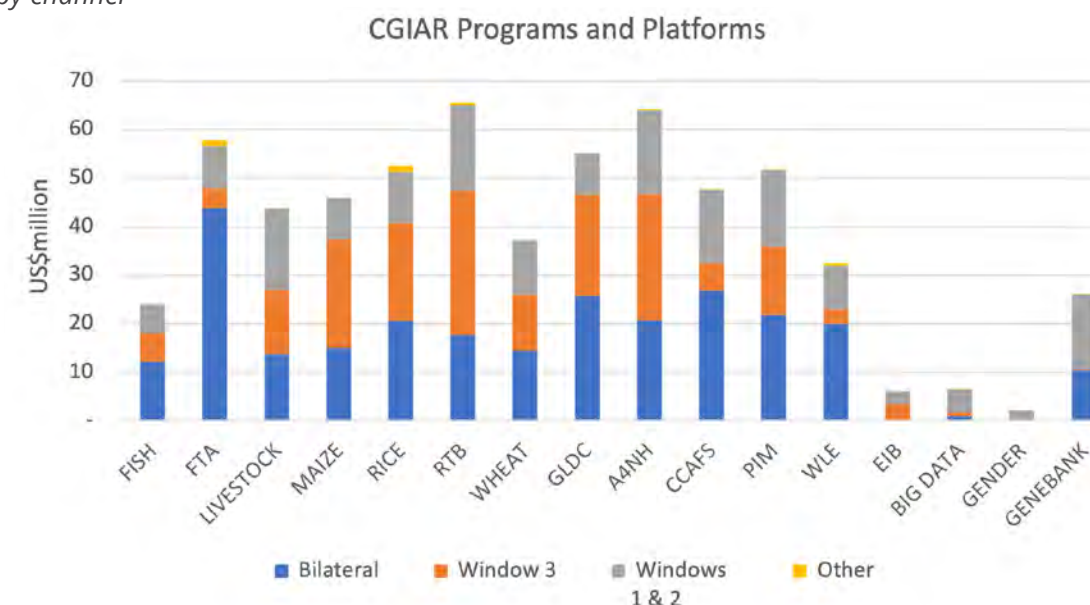


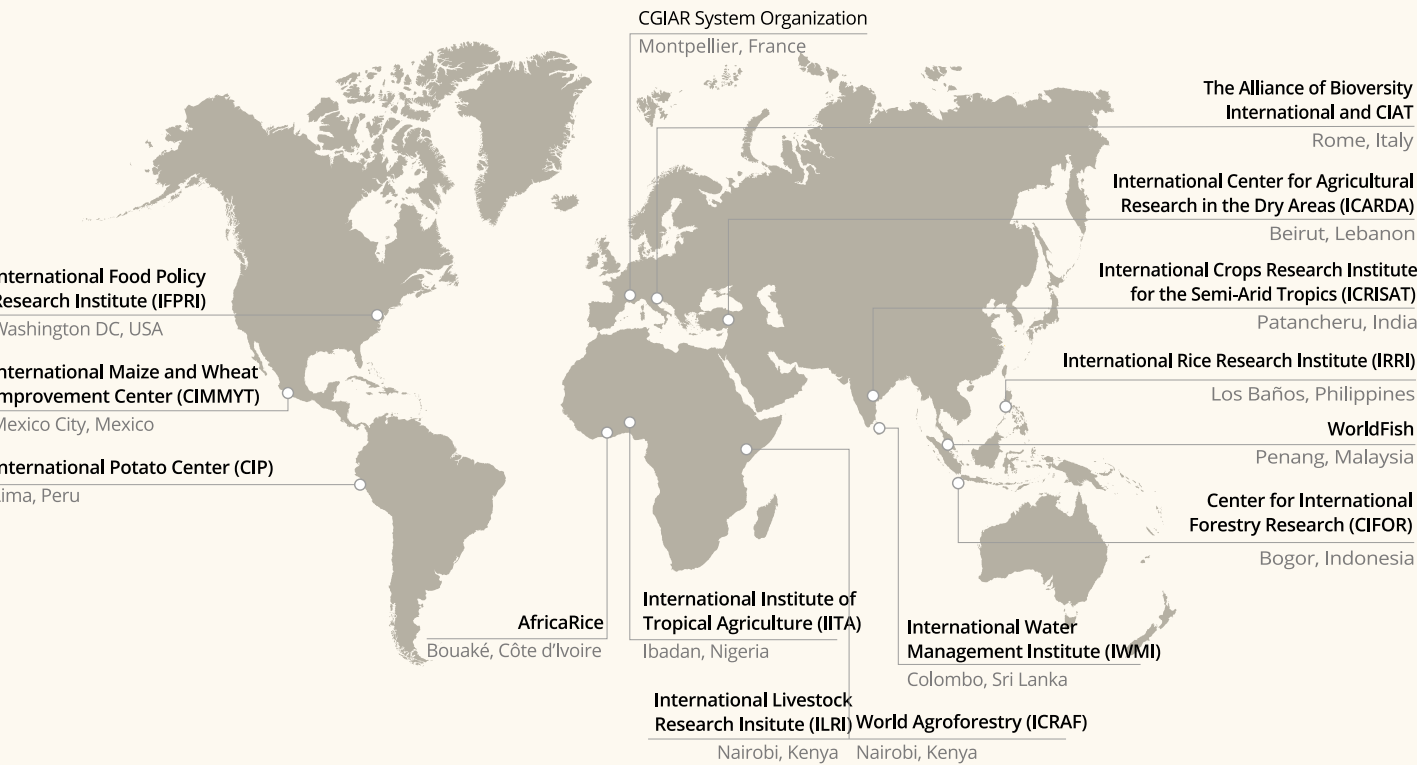
Figure 2 shows expenditure by CRPs and Platforms by funding channel. There is a range in the overall size of program funding: expenditure in 2020 varied from about US\$24 million to US\$65 million.

Figure 2. Funding to CGIAR Research Programs and Platforms by channel



[READ MORE ABOUT CGIAR'S FINANCIAL HIGHLIGHTS](#)

Our Centers across the World



CGIAR Trust Fund* contributors

CGIAR greatly appreciates the contributions made by all funding partners, without which none of our work would be possible, including investments to CRPs through targeted projects and bilateral investments in CGIAR Research Centers.


CONSULT THE FULL LIST OF CGIAR TRUST FUND CONTRIBUTORS AND BILATERAL CONTRIBUTORS



AfricaRice
Africa Rice Center (AfricaRice)
www.africarice.org





The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)
www.bioversityinternational.org/alliance/



CIFOR
Center for International Forestry Research (CIFOR)
www.cifor.org



CIMMYT
International Maize and Wheat Improvement Center (CIMMYT)
www.cimmyt.org



CIP
International Potato Center (CIP)
www.cipotato.org



ICARDA
Science for resilient livelihoods in dry areas
International Center for Agricultural Research in the Dry Areas (ICARDA)
www.icarda.org



ICRISAT
International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
www.icrisat.org



IFPRI
International Food Policy Research Institute (IFPRI)
www.ifpri.org



IITA
International Institute of Tropical Agriculture (IITA)
www.iita.org



ILRI
International Livestock Research Institute (ILRI)
www.ilri.org



IRRI
International Rice Research Institute (IRRI)
www.irri.org



IWMI
International Water Management Institute (IWMI)
www.iwmi.org



World Agroforestry
World Agroforestry (ICRAF)
www.worldagroforestry.org



WorldFish
WorldFish
www.worldfishcenter.org





























The CGIAR System Organization greatly values the ongoing support of the French Region 'Occitanie /Pyrénées-Méditerranée', and in particular, the Region's generosity in building the Organization's headquarters in Montpellier, France, on the Agropolis International site.

* Recognizing contributions to the CGIAR Trust Fund from March 2017.



CGIAR is a global research partnership for a food-secure future. CGIAR science is dedicated to reducing poverty, enhancing food and nutrition security, and improving natural resources and ecosystem services. Its research is carried out by 14 CGIAR Centers in close collaboration with hundreds of partners, including national and regional research institutes, civil society organizations, academia, development organizations and the private sector.



CGIAR System Organization

1000 Avenue Agropolis
34394 Montpellier
France

Tel: +33 4 67 04 7575
Fax: +33 4 67 04 7583
Email: contact@cgiar.org

www.cgiar.org