CGIAR

CGIAR SYSTEM ANNUAL PERFORMANCE REPORT 2018

Working Together to Improve Performance

Engaging youth digital innovators
BIG DATA 2018 annual report

BIG DATA created a Youth in Data initiative, and engaged a group of young digital innovators from Africa and provided them with training on social media and journalistic data reporting. A group of 12 of these digital innovators (half from CGIAR institutions and half from other youth groups in Kenya and Nigeria) then participated in the Annual Big Data in Agriculture Convention in 2018.

Source: BIG DATA, AR 2018.

Social protection and marginalized communities
PIM 2018 annual report

In 2018, PIM research on social protection for agriculture and resilience included studies on the impact of social protection programs in ten countries (Bangladesh, China, Egypt, Ethiopia, India, Mali, Pakistan, Peru, Uganda and Yemen) on a variety of outcomes, including poverty, income and assets, nutrition, resilience, gender, education, agricultural investment and labor supply.

Work with FTA in Uganda, Peru and Indonesia highlighted in a set of briefs the need to address social differentiation in reforms recognizing collective rights in forestlands, and the relevance of disaggregating results to analyze how formalization processes influence changes in rights for vulnerable groups.

Source: PIM, AR 2018.

Additionally, PIM findings were used to modify the design of social protection programs in Bangladesh (the Vulnerable Group Development Program and the Improved Maternity and Lactating Mothers Allowance Program), Egypt (the "Takaful and Karama" program), and Mali ("Programme de Filets Sociaux du Mali Jigisémèjiri").

Responding to increasing demand from Funders and the development community, PIM included a new area of work on helping poor people to improve their resilience in fragile settings. This research generated policy-relevant insights on humanitarian aid responses in Mali, on the national cash transfer program in Yemen, and on the economic activities of the forcibly displaced Rohingya populations in Bangladesh.

A young farmer fetching water in front of fields of diverse crops in Bihar, India. Photo: C. Zanzanaini/Bioversity International

IV. WORKING TOGETHER TO IMPROVE PERFORMANCE

Progress on Results Reporting

Agricultural Research for Development (AR4D) is a long-term endeavor, where only a small fraction of innovations will have a large impact and get adopted at scale to make a substantial difference. CGIAR reports different types of data to show progress against System targets over time. The reporting system aims to show progress towards outcomes at all stages, using different types of data (see Figure 3).

2018 saw the first reporting from CRPs and Platforms under the CGIAR Strategy and Results Framework introduced in late 2017. Achievements included:

- The first annual CGIAR System Performance Report based on data from the new reporting systems was published in October 2018. This was the first annual report to be underpinned by supporting evidence, in the form of linked databases.
- The first demonstration of a new results dashboard was presented to CGIAR System governance bodies in November 2018. One feature was a database of OICRs documenting concrete achievements that are attributable to CGIAR innovations, searchable by geographic location or by their contribution to CGIAR's IDOs (examples drawn from OICRs can be found throughout this report). The demonstration dashboard also contained databases on CGIAR innovations, publications and partners.
- Management Information Systems (MISs) were officially adopted by all CRPs and Platforms and initial steps were taken to link these "interoperably" to a central data warehouse that will feed an online results dashboard which will be launched in late 2019.

Results based management (RBM) is an essential part of CGIAR's work. Each of the CRPs and Platforms has defined practical outcomes that it is working to achieve. Each year, the CRPs and Platforms develop an annual Plan of Work and Budget (POWB) against a standard template that sets out key research and development milestones for the year along impact pathways. A milestone can be, for example, the completion of a significant activity, such as completion of a set of trials, or a major survey; the release of a particular technology onto the market; or the production of significant new evidence about the effects of a policy or variety.

Milestone Achievement in 2018

Reported progress in 2018 for each CRP and Platform against planned milestones is shown in Annex 6, together with evidence of

Figure 3: CGIAR's spheres of performance framework, reporting indicators and evidence studies and the typical timeframes for reporting

		Years from star-up (typical timeline)						
Spheres of performance framework: CGIAR reporting indicators and evidence studies	**1-3**	**4-6**	**7-9**	**10-12**	**13-15**	**16-18**	**19-21**	**Longer**
Control: Innovations at Research Stage. Publications, Capdev, Partnerships, Progress against milestones								
Control: Innovations available for use								
Influence: Policy findings, Early Stage changes in policy and Investment, Progress against milestones								
Influence: Outcome Case Report, Policies enacted								
Interest: At-scale adoption, Impact (SRF targets)								
Evidence: Ex-post Impact studies complete								

Source: Presentation to CGIAR System Council meeting, November 2018.

achievement (if complete) or an explanation (if incomplete, extended for a further year, canceled, or changed).

Table 13 summarizes the overall achievement of 2018 milestones, as reported in the CRP and Platform annual reports. Across the CRPs and Platforms, 71% of milestones were completed in 2018. A further 24% were extended.

The highly technical nature of most research means that subject matter specialists are needed to assess the relevance, scientific quality and efficiency of research. Since research is inherently risky, people who understand the research are in the best position to assess whether a missed milestone is a sign of poor management, or a sign that the research needs to be redirected, or whether it was simply a poor year (for example a year that experienced a drought) and the work needs to be repeated. RBM is therefore the role of CRP management, with oversight and appropriate challenge from their independent steering committees and governance bodies.

In 2018, some milestones were extended due to financial or resource constraints. In some instances, there were insufficient funds in 2018 to complete a milestone, or inadequate staffing when a staff member had resigned during the year (RICE, 2018), or it took longer than expected to recruit new staff (LIVESTOCK, 2018). Other reasons for extension included the aim to determine greater scaling opportunities (PIM, 2018), factors related to the external environment (political, legal, economic or market factors) (CCAFS, 2018), and research and science revealing opportunities for extensions (BIG DATA, 2018).

Milestones that changed in 2018 were done so due to factors related to the external environment. For example, a CCAFS milestone was to ensure that national planners in at least one country supported the incorporation of CCAFS-informed climate services, insurance and/or safety nets into CSA or adaptation investment portfolios for international climate finance providers, yet in 2018 national planners in two countries (Colombia and Nepal) agreed to do this (CCAFS, 2018).

Another factor influencing milestone change was the nature of partnerships. WLE had a milestone to promote 16 business models for resource recovery from fecal sludge through an ongoing free MOOC. A change was required as the host MOOC did not adopt the WLE provided modules. Therefore, a free online curriculum of resource recovery and reuse (RRR) business models will instead be made available. As part of this milestone, WLE also established a new partnership with the National Institute of Business Management in Sri Lanka (WLE, 2018).

Changes were also made for financial reasons. Due to a lack of common operational funding and communication between RICE and a pathologist to tackle three diseases in target sites, a RICE milestone to determine the spatial distribution of pests and diseases and the deployment of available isolines was changed. RICE will conduct a workshop to build a common strategy in specific sites where bilateral funding is available (RICE, 2018).

Two milestones from EiB were delayed in 2018. The first was related to a reprioritization of breeding use cases based on landscape analysis using sample tracking for genotyping and field data collection apps. However, in 2018 the prioritization remained the same. The second milestone aimed to ensure that Core Systems are certified as BrAPI (Breeding

Table 13: Achievement of planned research for development milestones in 2018

PLANED MILESTONE STATUS	TOTAL	%
Cancelled	7	2%
Changed	8	2%
Completed	270	71%
Delayed	2	1%
Extended	91	24%
Total	**378**	**100%**

Source: CRP and Platform 2018 annual reports.

Application Programing Interface) Version 1 compliant; that workflow was implemented for the case studies identified in EiB's first year, and connectivity across the different tools or systems was implemented. The third component of this milestone has been delayed until 2019 (EiB, 2018).

Milestones were cancelled primarily because they had been moved or redirected to a different Flagship or cluster of activity within a CRP (WHEAT, 2018; GLDC, 2018).

System-level RBM

At the System level of CGIAR the overarching concern is whether all Programs and Platforms have well-functioning and transparent management and governance systems in place that carry out high quality RBM. This assurance is vital in order for System Funders to contribute pooled funding with confidence that will be used well in any part of the System. This is the rationale behind the introduction of new Program Management Performance Standards for CGIAR in 2018.

The standards are innovative in that they focus program efforts in each business cycle on a limited number of well-defined high-priority areas identified jointly by key stakeholders. These standards complement the more complex analysis carried out in independent appraisals and evaluations. They highlight key aspects of management, and provide a strong incentive for managers to fix any problems within the business cycle because these must be addressed before Programs can be considered for funding for the next business cycle.

Following a consultative process across CGIAR and its Funders, an initial six standards, and draft assessment criteria were approved in December 2018 for the current business cycle (2019-21). These include standards for the approval of grants and allocation of funding; financial management; transparent documentation; quality of results reporting; and the identification of gender relevance of research. The criteria for the standards are to be piloted in 2019, with an official assessment in 2020, which will feed into decisions on the next business cycle.

This performance report, and the data collection and assessment undertaken as part of the reporting process respond to two standards in particular:

- Performance standard 2: correct reporting of gender within the research portfolio.
  - This standard aims to ensure that CGIAR is recognized as a global leader for the science of gender in agriculture, and the integration of high-quality gender research throughout the CGIAR research portfolio.
  - In this report there is a dedicated section to reporting on integrating gender and equity into CGIAR research for development.

- Performance Standard 5: Program reporting to CGIAR (annual reports, CRRIs, OICRs) is of adequate quality and the evidence presented is properly archived, linked and accessible.
  - This standard aims to provide assurance to Funders and other stakeholders that CGIAR results reporting is of high quality and credible and supported throughout by high quality evidence.

The data presented in this report were assessed at several levels to assure quality: by Flagship leaders, by CRP Program Management Units, by Management Information System (MIS) managers and by a quality assurance team. See Appendix A for more information on data collection and methods.

CGIAR Platforms

Three Platforms support the work of CGIAR: GENEBANK, BIG DATA and the EiB.

The Genebank Platform

The activities of GENEBANK in 2018 were targeted specifically to bring about increased conservation and use of genetic resources with the aim of achieving CGIAR SLOs and SDGs. The work of GENEBANK directly contributes to indicator 2.5.1 of SDG Target 2.5, which aims to "maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks ... and promote access to and

fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge".

In 2018, a total of 96,566 germplasm samples (66,930 accessions) were distributed by the CGIAR genebanks to users. Of these, 56,393 (58%) were distributed to recipients outside CGIAR in 87 countries and 40,173 samples (42%) were provided to CRPs. For the second year in a row, germplasm distribution outside the CGIAR exceeded that inside CGIAR.

Table 14 shows germplasm numbers for 2017 and 2018. It shows that the percentage of samples delivered outside of CGIAR was higher in 2018 (58%) than in 2017 (56%). It also shows that developing countries received a larger proportion of germplasm in 2018 (77%) compared to 2017 (67%).

Figure 4 presents a summary of germplasm distributions for 2018 (GENEBANK, 2018).

By the end of 2018, CGIAR genebanks were managing 773,112 accessions, including 25,576 in vitro accessions and 32,212 accessions held as plants or trees in screenhouses or fields. Approximately 80% of total accessions are immediately available for international distribution. Of the seed accessions, 57% is secured in safety duplication at two levels and 78% is duplicated at the Svalbard Global Seed Vault (SGSV). 72% of clonal crop collections is safety duplicated in the form of cryopreserved or in vitro cultures.

Progress is being made in upgrading collections and strengthening quality management systems (QMS) of both genebanks and germplasm health units (GHUs). More than 156 standard operating procedures have been drafted and genebank procedures for acquisition, distribution, conservation, regeneration and characterization have been audited and will be externally validated in 2019 and 2020.

The Platform for Big Data in Agriculture

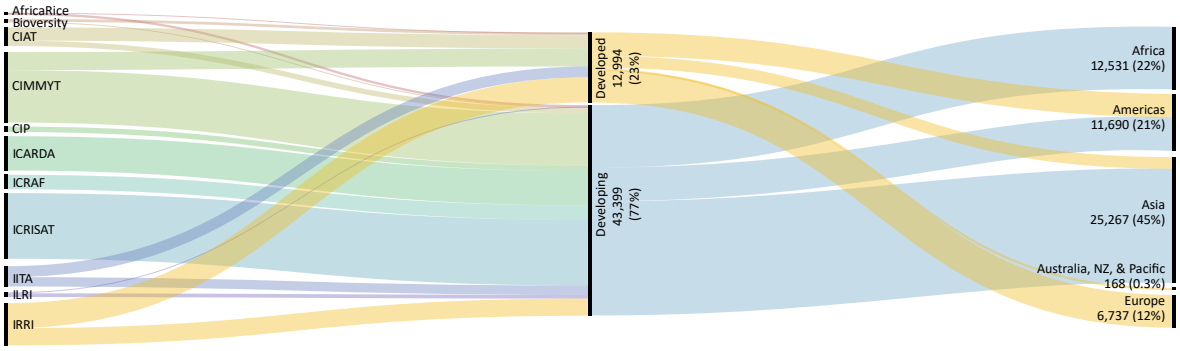
The ultimate goal of the BIG DATA is to harness the capabilities of big data to accelerate and enhance the impact of international agricultural research. This platform aims to provide global leadership in organizing open data, convening partners to develop innovative ideas, and demonstrating the power of big data analytics through inspiring projects.

Table 14: Germplasm numbers delivered by CGIAR to developing countries and users for 2017 and 2018

	NUMBER OF SAMPLES DELIVERED OUTSIDE OF CGIAR	NUMBER OF SAMPLES DELIVERED TO DEVELOPING COUNTRIES
2017	61,376 (56%)	41,336 (67% of samples delivered outside of CGIAR)
2018	56,393 (58%)	43,423 (77% of samples delivered outside of CGIAR)

Source: Genebank Platform 2017 and 2018 annual reports.

Figure 4: Germplasm samples distributed by each Center to users outside CGIAR and the geographical region of recipients in 2018



Source: GENEBANK, 2018.

In 2018, BIG DATA launched GARDIAN, which has made datasets, publications, and crop varieties across all Centers and genebanks of the CGIAR easily accessible and FAIR (Findable, Accessible, Interoperable and Reusable) for the first time.

The Platform's Communities of Practice (CoP) reached several hundred members in 2018. When the European Union's General Data Protection Regulation came into effect, the Platform and the CGIAR System Organization developed an online course to help agriculture development researchers understand its wide-ranging implications for legal and ethical use of research data.

Also in 2018, the Annual Big Data in Agriculture Convention, co-hosted by ILRI and ICRAF, attracted 400 attendees, 2,500 remote participants, and millions of social media views. The convention reached its target of 60% non-CGIAR participants, with global information technology firms, start-ups, governments, and other research institutions forging new partnerships and seeing the breadth and depth of CGIAR research (BIG DATA, 2018).

The Platform offered five start-up grants in 2018 to data-driven projects under their innovation process, the Inspire Challenge, and granted scale-up awards to three projects from the 2017 cohort. The Platform reviewed the innovation strategy of the Inspire Challenge and improved the application process to source fewer "basic research" innovations. As a result, over 90% of submissions in 2018 targeted small producers as users of data innovation (BIG DATA, 2018).

The Excellence in Breeding Platform

EiB seeks to modernize breeding programs targeting the developing world for greater impact on food and nutrition security, climate change adaptation and development. Drawing on innovations in the public and private sector, the platform provides access to cutting-edge tools, services and best practices, application-oriented training and practical advice.

A key output for EiB in 2018 was the Platform's contribution and response to the Crops to End Hunger Initiative (CtEH). EiB began to introduce continuous improvements in product pipeline management, including an annual stage-gate decision process supported by an online product profile tool to focus variety turnover on market knowledge (EiB, 2018).

Also in 2018, capacity development workshops to support breeding scheme optimization were held in Africa and Asia, with a breeding scheme assessment tool applied to the National Agricultural Research Organization (NARO) and the Kenya Agricultural and Livestock Research Organization (KALRO) breeding programs.

Business volume for low-density genotyping services grew from USD 200,000 in 2017 to USD 800,000 in 2018, covering 14 CGIAR mandate crops, and these are being applied to key traits and quality control by smaller crop breeding programs in Africa and Asia.

For bioinformatics, biometrics and data management, advances were made in system interoperability, data analytics and capacity development in 2018 (EiB, 2018).

Collaboration across CGIAR

All CRPs and Platforms engage in cross-CGIAR partnerships and collaboration. A number of new partnerships were initiated in 2018, paving the way for greater collaboration in the future. The three Platforms are proving to be valuable partners for the CRPs.

Figure 5 presents the number of reported collaborations among CRPs and Platforms for 2018. A significant number of collaborations (105 out of 240, 44%) was identified between the Agri-Food System (AFS) and Global Integrating CRPs, with certain "hot spots". For example, FTA and PIM reported eight collaborations, as did RTB and CCAFS. These collaborations provide evidence of synergies between these two types of CRPs and leverage their impact.

Data from 2018 also revealed the high number of collaborations between the two commodity-related platforms (GENEBANK and EiB) and the eight AFS CRPs, which are benefiting from the exchange of knowledge on plant genetic resources and improved breeding technologies to modernize several CGIAR breeding programs and related pipelines, as requested through CtEH.

Use of Pooled Funding (W1/2)

The CGIAR Trust Fund provides for two types of pooled funding for programming carried out by the CRPs and Platforms: Funding Windows 1 and 2 (W1/2), in addition to W3 funding. An explanation of these funding types can be found in the Funding section of the report.

W1/2 funding is used by the CRPs to take advantage of opportunities to accelerate research or pathways to scale and impact. The range of actual activities funded by W1/2 during 2018 included developing and piloting innovations; gender and youth integration; capacity building; communication; innovative research and data generation; ex-ante and ex-post impact assessments; enhancing partnerships and collaboration; and policy engagement. CRPs split their W1/2 funding between cross-cutting support at the CRP level and funding for their flagships. Platforms are almost entirely funded through W1/2; as such, they use the funds to cover the critical recurring costs of maintaining the functions of genebanks, breeding and data management, as well as opportunities for innovation.

W1/2 funding was valuable for strategic investments along the whole impact pathway, from upstream research to downstream development of business models and multi-stakeholder partnerships for innovation and scaling out. LIVESTOCK shifted percentages of their funding from generating new data to developing strategies, tools and business plans to achieve impact, demonstrating a shift in priorities as a CRP becomes more mature (LIVESTOCK, 2018).

Table 15 provides a list of examples of W1/2 use reported in 2018.

A full list of internal CGIAR collaborations across CRPs and Platforms can be found in Annex 7.

Table 15: Examples of W1/2 use in 2018

CRP OR PLATFORM	TYPE OF USE	EXAMPLE
EiB	Development of tools	The development of standardized tools such as an online product profile tool; a template for breeding program improvement plans; a digital needs assessment; and genotyping services support.
A4NH	Multi-stakeholder engagement; capacity development	Strategic engagement with national partners in food systems analysis; assessment of multi-stakeholder partnerships to identify opportunities for scaling up; and partnership building and capacity development activities.
GLDC	Capacity development	Support for graduate students and interns to undertake work on an improved understanding of youth realities, youth aspirations and transitions in the drylands.
LIVESTOCK	Data and knowledge generation	Mapping African tick distribution and diagnostics to guide antibiotics use.
RTB	Development of tools	Maintenance and improvement of breeding support tools such as RTB-base, BrAPI; enrichment of protocols and trait dictionaries with gender-responsive scoring methods useful in participatory varietal selection.
WLE	Development of tools	The development and implementation of disaster risk management tools in South Asia.

Source: CRP and Platform 2018 annual reports.

Figure 5: Number of reported collaborations among CRPs and Platforms for 2018

		FISH	FTA	LIVESTOCK	MAIZE	RICE	RTB	WHEAT	GLDC	A4NH	CCAFS	PIM	WLE	Gender	Genebank	EiB	Big Data
Agri-food system CRPs	FISH	FISH															
	FTA	0	FTA														
	LIVESTOCK	0	0	LIVESTOCK													
	MAIZE	1	2	1	MAIZE												
	RICE	2	0	0	2	RICE											
	RTB	2	3	0	3	3	RTB										
	WHEAT	1	1	1	4	2	1	WHEAT									
	GLDC	0	0	3	5	0	2	3	GLDC								
Integrating CRPs	A4NH	2	0	2	4	2	3	4	1	A4NH							
	CCAFS	2	4	5	3	4	8	4	0	3	CCAFS						
	PIM	2	8	5	5	4	5	2	2	4	5	PIM					
	WLE	2	4	1	1	1	3	1	1	2	5	2	WLE				
Integrated research platform (PIM)	Gender	1	1	1	1	1	2	1	1	1	1	2	2	Gender			
Platforms	Genebank	0	2	4	0	2	3	1	1	0	1	0	0	1	Genebank		
	EiB	2	1	3	2	4	1	2	1	0	0	0	0	1	2	EiB	
	Big Data	2	1	3	1	6	5	3	1	1	2	3	0	2	2	1	Big Data

Source: CRP and Platform 2018 annual reports.

Cross-CGIAR collaboration contributes to the release of a biofortified zinc maize hybrid

MAIZE 2018 annual report

After many years of breeding research, Guatemala's first biofortified zinc maize hybrid, ICTA HB-18, was released in May 2018 as part of efforts to improve food and nutrition security in a country where over 46% of children under five suffer from chronic malnutrition.

More than 40% of Guatemala's rural population were found to be deficient in zinc, an essential micronutrient that plays a crucial role in pre-natal and post-natal development, and is key to maintaining a healthy immune system.

It was developed by CIMMYT, MAIZE, A4NH and Guatemala's Institute for Agricultural Science and Technology, with support from HarvestPlus. Commercialized by the private sector company Semilla Nueva, the biofortified zinc maize hybrid contains 6-12ppm more zinc and 2.5 times more quality protein compared to conventional maize varieties.

Source: MAIZE, AR 2018.

Improving Efficiency

Highlights of efficiency improvements in 2018 included:

- Taking advantage of the EiB platform for AFS breeding programs. This involved sharing protocols (for example, barcoding and sampling), service providers (molecular markers, bioinformatics), sequencing and High Throughput Phenotyping facilities.
- Connecting AFS CRP and Center breeding programs with the CtEH initiative and the product line approach towards more demand-driven variety delivery.
- Connecting all the CRPs' and Platforms' annual results in a common management information system from the Managing Agricultural Research for Learning and Outcomes (MARLO) program and the Monitoring, Evaluation and Learning (MEL) platform through the CGIAR Level Agricultural Results Interoperable System Architecture (CLARISA), including a quality assurance process for these data which will be fed into a System-wide results dashboard in 2019.

Program Monitoring, Evaluation, Learning and Impact Assessment (MELIA)

All CRPs and Platforms integrate monitoring, evaluation, learning and impact assessments to test their assumptions, learn and improve their work. In 2018 the CGIAR Communities of Practice (CoPs) on monitoring, evaluation and learning (MEL) and impact assessment (IA) held a joint meeting. The meeting covered discussions on strengthening a shared understanding of MEL and IA roles and responsibilities; continuing to build CGIAR quality standards and guidelines for MEL and IA work undertaken at the project, Program, Platform, Center and System levels; exchanging and sharing the MEL and IA work of the CRPs, Platforms, Centers, and at System level; and reviewing the MEL and IA work plans and Terms of References.

An example of MELIA work in 2018 was a program evaluation of remote weather stations (RWSs) in Sri Lanka, a project implemented by IWMI. The risk information technology used in this project was subsequently the focus of a Challenge Fund project, also implemented by IWMI. The Challenge Fund is a joint initiative of the Global Facility for Disaster Reduction and Recovery (GFDRR) and UK Aid and aims to bridge the gap between technology and on-the-ground user needs in the field of disaster risk identification to build greater disaster resilience. The scope of the evaluation included the IWMI Challenge Fund project and broader efforts involving this technology in Sri Lanka.

The evaluation found that the RWSs were continually developed and improved from their innovation to the time of the evaluation; partnerships with six local organizations were formed or strengthened; the tool was co-developed with ten beneficiaries; the project was gender-informed because a gender analysis was conducted and gender gaps were identified and communicated; 144 beneficiaries were trained; and USD 741,900 was leveraged (WLE, 2018).

An example of an ex-post impact assessment in 2018 was IFPRI's study on the impact of their decentralization strategy on country development indicators in Africa and Asia. The study used country-level panel data on 57 countries in Africa and Asia from 1981 to 2014 to assess the relationships between IFPRI's in-country presence (as measured by staff present) and various policy and outcome indicators in those countries.

An econometric model with country fixed-effects, year fixed-effects, and country-specific time trends was used, controlling for several factors deemed to affect the different policy and outcome indicators such as the country's research capacity, production environment and resources, political economy and institutions, and complementary investments.

It was found that IFPRI's presence and intensity of its policy-oriented research in a country is positively and significantly associated with most of the policy and outcome variables analyzed. Estimated benefit-cost ratios were moderate to high in the range of 8.4–25.4 for land productivity, 9.6–17.3 for labor productivity, and 5.5–75.3 for GDP per capita. These translate into internal rates of return of 101–207 percent for land productivity, 101–161 percent for labor productivity, and 75–383 percent for GDP per capita (PIM, 2018).

Also in 2018, an ex-post impact assessment of the livelihood impacts of improved cassava varieties in Nigeria was published in the *Journal of Agricultural Economics.* The assessment found that adoption of improved cassava varieties has led to a 4.6 percentage point reduction in poverty, though this is sensitive to the measurement of adoption status. Therefore, accurate measurement of adoption is crucial for a more credible estimate of the poverty reduction effect of adoption. The analysis also suggested that farmers who are more likely to be adopters are also likely to face higher structural costs. Therefore, addressing structural barriers that make improved technologies less profitable for the poor would be important to increase the poverty reduction effect of improved cassava varieties (RTB, 2018).

A list of the status of evaluations, impact assessments and learning exercises in 2018 can be found in Annex 8.

Oversight and Advice from System Governing bodies

Key 2018 developments

During 2018, CGIAR's governing and advisory bodies provided important strategic direction, oversight, and accountability* for the System.

Key developments included:

- **Agreement of the inaugural** CGIAR System 3-year Business Plan (2019-2021). Stewarded by the System Management Board (SMB) through to approval by the System Council in November 2018, the plan reflects the broad input and commitment of CGIAR's stakeholders to working in an increasingly aligned and strategic manner (refer below).
- **Establishment of a CGIAR System Reference Group** (SRG) as a forum in which Funders and the SMB can assess CGIAR's comparative advantage and design bold action to better deliver research and innovations that support global efforts to address the world's fragile food system. Recommendations of the SRG are anticipated to be endorsed by the System Council in November 2019, to then inform the development of a longer term 'CGIAR 2030 Plan' (the 2030 Plan), a key action in the 2019-2021 Business Plan.
- **Ensuring a fully constituted System Council** Assurance Oversight Committee (AOC) to provide assurance of the completeness and effectiveness of System-wide audit functions, with structured reporting lines between internal and

Researchers in discussion at a food market in Uganda. Photo: N. Palmer/CIAT

*All decisions of the System Management Board and System Council are publicly available.

external auditors and the System Council; and oversight of System-wide governance, risk management and internal controls.

- **Articulating the forward -looking direction of the System Council's independent science and impact assessment advisory bodies** for implementation in 2019, with support from a newly established Advisory Services Shared Secretariat.

Functioning of the System Council

The System Council continued during 2018 to keep under review the strategy, mission, impact and continued relevance of the CGIAR System in a rapidly changing landscape of agricultural research for development. In addition to the 27 formal decisions taken during 2018, the System Council used its convening power to steward the System's conversations on proactive measures to strengthen gender equality in both CGIAR's research and its workplaces. The commitment of System Council members on its Standing Committees and other related groups further contributed to effective functioning of this governance body's important mandate.

Functioning of the System Management Board

The System Management Board (SMB) also functioned effectively in 2018. It met four times (twice virtually) and added retreat days for dedicated strategic discussion. During 2018, the SMB progressed 51 formal decisions, reached continuously across the System for opinion and presentations by expert staff, dealt with compliance matters in ways that strengthened Funder confidence, and acted on reports of its Audit and Risk Committee, as well as two ad hoc Working Groups. The key achievement for the year was its oversight of the design of a new business planning cycle, culminating in submission of a 2019-2021 three-year business plan to the System Council for approval in November 2018.

Three-year Business Plan 2019-2021

To fully unlock the potential of the 2016 CGIAR governance reforms – which opened the door to a reinvigorated sense of collective ownership – in 2018 the CGIAR System approved an inaugural CGIAR System 3-Year Business Plan (2019-2021).

The new CGIAR Business Plan adds up to an ambitious but achievable set of innovations to create a more efficient, focused and less fragmented System. It represents a period of sustained change to proactively manage a necessary evolution of the CGIAR System as it faces profound shifts in its operating environment.

The business plan sets out 10 action points that aim to achieve successful implementation of CGIAR's research portfolio; greater cooperation between Centers; a new portfolio developed as part of a new 2030 Plan; a step change on gender both in the workforce and in research programs; and stabilized funding that is commensurate with the task.

During the business plan period, the 2030 Plan will be developed to set out an ambitious forward vision for the CGIAR System including a new round of programming for the 2022-2030 period, framed in terms of CGIAR's planned contribution to meeting the SDGs. The SMB

The 10 priority actions of the CGIAR business plan 2019-2021

Action 1: Implement and enhance the portfolio of CRPs and Platforms
Action 2: Create finance sustainability and growth in CGIAR
Action 3: Strengthen Program performance management
Action 4: Improve people management
Action 5: Pursue new cross-Center alliances
Action 6: Enhance collaboration with delivery partners
Action 7: Align and enhance assurance systems
Action 8: Align high-quality independent advisory services into System-level decision-making
Action 9: Strengthen collective resource mobilization and communication efforts
Action 10: Prepare a longer-term plan

Source: CGIAR, 2019.

will lead the development of the 2030 Plan, with the SRG operating as a consultation platform in 2019.

System Advisory Functions

The CGIAR System's 2018 objective, expert advisory bodies comprised:

Independent Science and Partnership Council (ISPC)

2018 was a very productive year for ISPC with multiple publications timed to provide inputs to System wide thinking on the possible future focus of CGIAR research.

The interface between publicly funded research and the private sector is increasingly important and the ISPC/Commonwealth Scientific and Industrial Research Organisation (CSIRO) strategic study, ""Public Agricultural Research in an Era of Transformation: The Challenge of Agri-Food System Innovation", explores how the *United Nations 2030 Agenda for Sustainable Development (SDG) transformation* agenda reframes agricultural research and innovation.

The publication proposes that CGIAR develops four new narratives on scaling, partnership, social license and science, that frame critical areas of CGIAR's activities and role.

The Science Forum 2018 on "Win more, lose less: Capturing synergies between SDGs through agricultural research" was held from 10-12 October 2018 in Stellenbosch, South Africa, co-hosted by the Agricultural Research Council, South Africa. Background papers were prepared prior to the meeting and a summary brief of the meeting is available.

In recent years the ISPC has convened a series of thee workshops on foresight in CGIAR, culminating in November 2018 in the launch of the book, "Agriculture and food systems to 2050", produced by ISPC. Briefs summarizing discussions at the workshops are also available on the ISPC website.

Standing Panel on Impact Assessment (SPIA)

SPIA was an integral part of the ISPC in 2018 and focused on ex-post impact assessment of CGIAR research. SPIA produced five major synthesis studies during 2018 and many resulted from the SPIA-led Strengthening Impact Assessment in the CGIAR (SIAC) project. These included studies on: the findings of the 25 impact assessments conducted under SIAC; the adoption and diffusion at scale of on-farm natural resource management (NRM) practices; the rigor revolution in impact assessment and its implications for CGIAR; the impact and influence of policy oriented research in CGIAR; and methods for assessing the impact of agricultural research on poverty. In addition, 13 impact briefs based on studies funded under SIAC were produced.

In November 2018, SPIA hosted and co-organized a joint meeting of the Monitoring, Evaluation and Learning and Impact Assessment Communities of Practice at FAO in Rome. The objective was to better coordinate the work of the two CoPs in light of recent changes in CGIAR's reporting standards, integrated performance framework, and independent advisory services (including SPIA itself).

SPIA also integrated data collection on a prioritized set of CGIAR innovations into wave 4 of a nationally-representative household panel survey implemented by the Ethiopian Central Statistical Agency. Approaches introduced in wave 3, for example visual aid protocols for identifying sweet potato varieties, will be maintained while adding DNA fingerprinting for varietal identification from crop cuts for sorghum, maize and barley.

ISPC and SPIA launched a new website in late 2017 which resulted in a major improvement in overall visibility. Data collected from Google Analytics from October 2017 until March 2019 indicate that sessions per month increased from 865 to 1,374, users per month increased from 522 to 915, and page views per month increased from 2,507 to 3,307.

Independent Evaluation Arrangement (IEA)

IEA completed a compilation and review of all evaluative studies (evaluations, reviews, and impact assessment studies) in CGIAR over the past 10 years in 2018. This was followed by a thorough study, in collaboration with SPIA, of over 200 impact assessment studies completed over the past 10 years, including mapping to SLOs and thematic areas for a better understanding of coverage and gaps.

The studies, analysis and findings will feed into both the new evaluation cycle and be used by CGIAR focal points for future planning of impact assessment studies.

A review of CGIAR's Open Access – Open Data (OA-OD) policy and implementation support was completed in 2018, in advance of full implementation of the policy across CGIAR. The review team found OA- OD policy had already resulted in a cultural shift in Centers and CRPs, with positive demonstrable changes being implemented across the System.

Recommendations from the review focused on the need for clarity in System-level governance and management for OA and OD oversight and reporting, as well as dedicated resources at Center and System level to support OA-OD practices. It also called for updating the guidance material needed for compliance, and for the different communities (legal, open access, data managers) to come together, as well as an active central role to champion and promote OA and OD across CGIAR. The SMB considered all six recommendations and fully agreed with three, and partially agreed to the remaining, with indication that BIG DATA would take on many of the actions and responses proposed.

Forward-looking operational principles for System Council advisory bodies

Building on 5 operational principles established based on broad consultation over the prior 12 months, in October 2018, the System Council approved terms of reference for:

- CGIAR's Independent Science for Development Council (ISDC), as a newly mandated successor to the Independent Science and Partnership Council;
- CGIAR Standing Panel on Impact Assessment (SPIA), with an elevated role to provide direct advice to the System Council; and
- A CGIAR Advisory Services Shared Secretariat, to provide operational support to ISDC and SPIA, and to ensure the delivery of high quality external independent evaluative data according to the CGIAR System's multi-year evaluation plan as a successor to the IEA.

Steps were taken in late 2018 under the oversight of the System Council's Strategic Impact, Monitoring and Evaluation Committee to ensure that these mandates will be effective by April 2019.

System Council Intellectual Property Group (SC IP Group)

Strategic management of intellectual assets by CRPs and their partners is essential for realizing CGIAR's impact. The CGIAR Principles on the Management of Intellectual Assets (IA Principles) and the accompanying guidelines provide guidance to Centers on ways intellectual assets can be used to achieve impact for CGIAR target beneficiaries and further CGIAR's strategy. The IA Principles seek to achieve a delicate balance between maintaining the founding value of global accessibility of CGIAR research results and achieve targeted impacts using intellectual property rights and licensing.

The SC IP Group facilitates coordination between the System Council and the System Organization, and advises the System Council in order to enable it to provide adequate oversight of Intellectual Asset management in CGIAR, while safeguarding sensitive and confidential information.

For 2018, the SC IP Group found that CGIAR Research Centers have overall complied with the IA Principles and that the justifications provided in the Centers' reports were adequate. They further noted excellent progress across all Centers in the implementation of open access policies.

In 2018, the Centers reported one provisional patent application, five plant variety protection applications, five Restricted Use Agreements, and 73 Limited Exclusivity Agreements.

Definitions of Restricted Use Agreements and Limited Exclusivity Agreements can be found in the IA Principles. The justifications provided for these intellectual property applications and agreements were found to be consistent with the IA Principles. Highlights from 2018 are available for review in the CGIAR System Intellectual Assets Management Report 2018.

5 operational principles for CGIAR Advisory Services

Independence of advice, being neither Funders, members of the System Council, nor implementers of CRPs or Platforms and avoiding other potential conflicts of interest;

Improved efficiency, with a view to providing advice that maximizes CGIAR's impact while reducing overall costs;

Improved communication, such that various assessments and evaluation workstreams in the System are aligned with CGIAR Business Plan cycles;

Improved and systematic linkages between science and development through innovation and effective partnerships, such that innovation and partnerships are embedded in all aspects of CGIAR's advisory services;

Higher ownership and improved coordination of the advice by the System itself, such that the advice provided by the advisory services needs to be communicated to and formally discussed by the System Council on a regular basis.

CGIAR System Internal Audit Function

2018 was the first year of operation of the newly designed CGIAR System Internal Audit Function, the primary purpose of which is to identify strategic recommendations that add value and improve CGIAR System-wide operations, achievable only by reason that the Internal Audit Function arrangements take a cross-System view.

A major feature of the work of the Internal Audit Function team is to provide Centers and the SMB with evidence-based and benchmarked recommendations grounded in engagement of wide-range of stakeholders and whole of system data. This helps to prioritize actions that strengthen the cross-System operational environment that is fit for purpose given the nature of CGIAR research activities.

Providing valuable information upon which to make improvements, key 2018 engagements:

- provided assurance to CGIAR's stakeholders that CGIAR Centers have in place procurement, anti harassment and whistle-blowing policies and continue to strengthen these;
- established a baseline of arrangements supporting objectivity of the external auditors of CGIAR entities contributing to further discussions on maximizing the benefits of this important assurance provider;
- assessed the extent to which risks and opportunities related to common CGIAR ICT systems are well managed.

In 2018, a whole of System review of the quality of Internal Audit teams benchmarked to international standards was undertaken, with the results of it being shared with Centers and SMB in early 2019.

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 15 CGIAR Research 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