

CGIAR Science Groups Evaluations: Brief on Quality of Science

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Independent Advisory and Evaluation Service

Introduction

The successful evaluation of **Quality of Science (QoS)**, research, and innovation is essential for achieving and measuring progress toward the Sustainable Development Goals. The Evaluation Guidelines on Quality of Science in Process & Performance Evaluations have elevated QoS as a standalone, cross-cutting evaluation criterion complementing the six OECD/DAC criteria to frame how evaluative judgments are made. The QoS criterion is operationalized through four key dimensions: design, inputs, processes, and outputs (for more detail, refer to the FAQs). Central to the QoS criterion are the elements of credibility and legitimacy.

The value and utility of the QoS criterion were demonstrated in the report, Quality of Science: Evaluative Evidence from CGIAR Portfolio, a retrospective synthesis of the 2020-2023 reviews and evaluations of the CGIAR Research Programs (CRPs) and Platforms. The learning informed the design of the 2024 Science Group evaluations (TORs), with targeted QoS-related questions and associated data collection methods:

- *To what extent do the **Science Groups (SG)** management processes ensure the **Quality of Science (QoS)**, including credibility, legitimacy, and relevance to next stage users, as well as the potential effectiveness of the research and operations?*
- *In what ways are the **research outputs from the Science Groups** of high quality and influential?*

The main findings on QoS from the SGs evaluation reports were synthesized under the four QoS dimensions. Individual SG evaluation case studies and deep dives were consulted to ensure validity and consistency. Results from the Online Survey and individual key informant interviews (KIIs) were also considered. The Altmetric Attention Score (AAS) was used to assess influence. Finally, lessons learnt from each SG evaluation as well as key recommended actions for the development of the 2025-2030 CGIAR Portfolio in the context of QoS are included.

Key Recommendations and Recommended Actions

The final SG-level recommendations would solicit Management responses, to be available for each SG on the SG Evaluations Portal. Key recommended actions, some of which are embedded in the SG-level recommendations, focus on fostering operational and organizational learning to enhance various dimensions of QoS.

SG-Level Recommendations:

1. The Science Programs (SPs) should establish a funding model that offers greater protection against financial shocks, potentially through contingency budgets and stronger linkages with bilateral funding sources.
2. The SPs should provide clearer definitions of the roles and responsibilities for the principal leaders of the main components of the new structure.
3. The SPs should systematically design and consistently implement Monitoring, Evaluation, Learning and Impact Assessment (MELIA) frameworks and plans to support timely, result-based decisions, and to assess concrete progress in QoS toward desired outputs and outcomes.
4. A revision of the CGIAR Performance and Results Management Framework (PRMF) is needed to

balance the drive for dashboard outputs and outcomes in the R4D context with quality internal peer reviews and strategic choices of journals to improve overall quality.

5. Functional thematic linkages across the portfolio are essential for maintaining science credibility (relevance and effectiveness) and fostering legitimate partnerships (efficiency and coherence) to enhance QoS. Thematic communities of practice should be established across the 2025-2030 portfolio, aligned with the Impact Areas, with thematic leaders reporting to the CGIAR Chief Scientist. This approach will strengthen linkages, integration and coordination, in line with the Integration Framework 2023.

Recommended Actions:

1. The design and roll-out of the 2025-2030 portfolio should aim to make informed adjustments while minimizing disruption to established partnerships and elements that have proven effective.
2. The revised Partnerships Framework (2024) (2022 version in the SG evaluation scope) should be operationalized to form new partnerships and strengthen existing ones, focusing on scaling with strategic actors who possess deep contextual knowledge. To effectively scale research outputs, tools are needed for partner selection and monitoring, while also considering the comparative advantage of each partner.
3. CGIAR portfolio-wide processes should be mapped and consistently monitored for research quality assurance and ethics oversight to enhance the legitimacy of the outputs and processes of the science programs.
4. The planning process for the 2025-2030 portfolio must carefully consider how far along the research-for-development continuum it should progress, to avoid moving too far into development. A re-assessment of the scaling readiness strategy may be necessary.
5. A CGIAR position paper must be developed to address the interface between fundamental knowledge creation and the uptake and scaling of research. This should ensure a consistent and coordinated approach across SPs, including lessons learned from CGIAR's Regional Integrated Initiatives (RIIs).
6. A position paper must be developed on the value of Altmetric Attention Scores (AASs) as an indicator of the influence of peer-reviewed publications for a wider audience, as well as a tool for monitoring CGIAR's contributions to global dialogues and national-level actions. This is particularly important in major impact areas, including food systems transformation and climate change.
7. To address the widespread rhetoric around the push for radical transformation of agriculture based on questionable approaches to future food production, the 2025-2030 portfolio needs to develop a more robust communication strategy. This strategy should emphasize its science-base and demonstrably effective approach to future food production in an environmentally responsible way.
8. Frameworks for interdisciplinary collaboration should be developed to bridge the gap between the biophysical, behavioral and social sciences. Incentives for transdisciplinary research should be provided to integrate multiple scientific perspectives in alignment to Impact Areas and the SDGs.

Delivering high-quality science and research to advance the SDGs requires internal and external collaboration, effective processes, and strong partnerships. For more information on methodological and content-related materials on QoS, refer to the designated thematic page.

8 case studies and 3 deep dives under SG evaluations

- Feedback loops among GI;
- Synergies in CGIAR breeding programs, centers and targeted markets;
- Status of partnerships with NARES and the private sector;
- One Health approach;
- Climate change mitigation/adaptation across different initiatives and work packages;
- Strengthening resilience to climate change and other shocks;
- Transformational agroecology; and
- Diversifying food systems and diets for improved nutrition.
- Food, feed and waste: Livestock in peri-urban settings;
- Social inclusion and participatory research processes;
- Strengthening national policies and institutional building for Food, Land and Water (FLW) transformation.

Figure 1. List of SG evaluations case studies and deep dives.

Main Evaluative Findings

The findings from assessing QoS across the three SG: Genetic Innovation (GI), Resilient Agri-food Systems (RAFS), and System Transformation (ST) - were synthesized under the **four QoS dimensions** (design, inputs, processes, outputs). The Altmetric Attention Score (AAS), which tracks the reach and impact of scholarly research through online interactions, was used to assess *influence*. Lessons learned related to

QoS and key recommended actions for developing the 2025-2030 CGIAR Portfolio are also included.

Design: The SG research portfolio is largely aligned with national and regional priorities and development goals in target countries. However, greater effort is needed to integrate with national research agendas and resolve discrepancies between CGIAR, NARES, and donor priorities, particularly regarding crops and breeding targets in GI-SG. The design of the RAFS-SG was considered overly complex and somewhat disconnected, as it included initiatives that did not align well with other SGs. In contrast, the design specifications in ST-SG initiatives facilitated the expansion of research into new areas such as food environments, consumer behavior, and food systems transformation, which are highly relevant to global objectives for nutrition, health, and food security. Co-design with stakeholders was generally satisfactory but appeared rushed in some cases. There was a tendency to rely on established partnerships and ongoing research as a basis for delivery. While results from the online survey highlighted the need to improve stakeholder interactions and enhance end-user involvement, 90% of external respondents appreciated the opportunity to voice their needs and priorities in the research process.

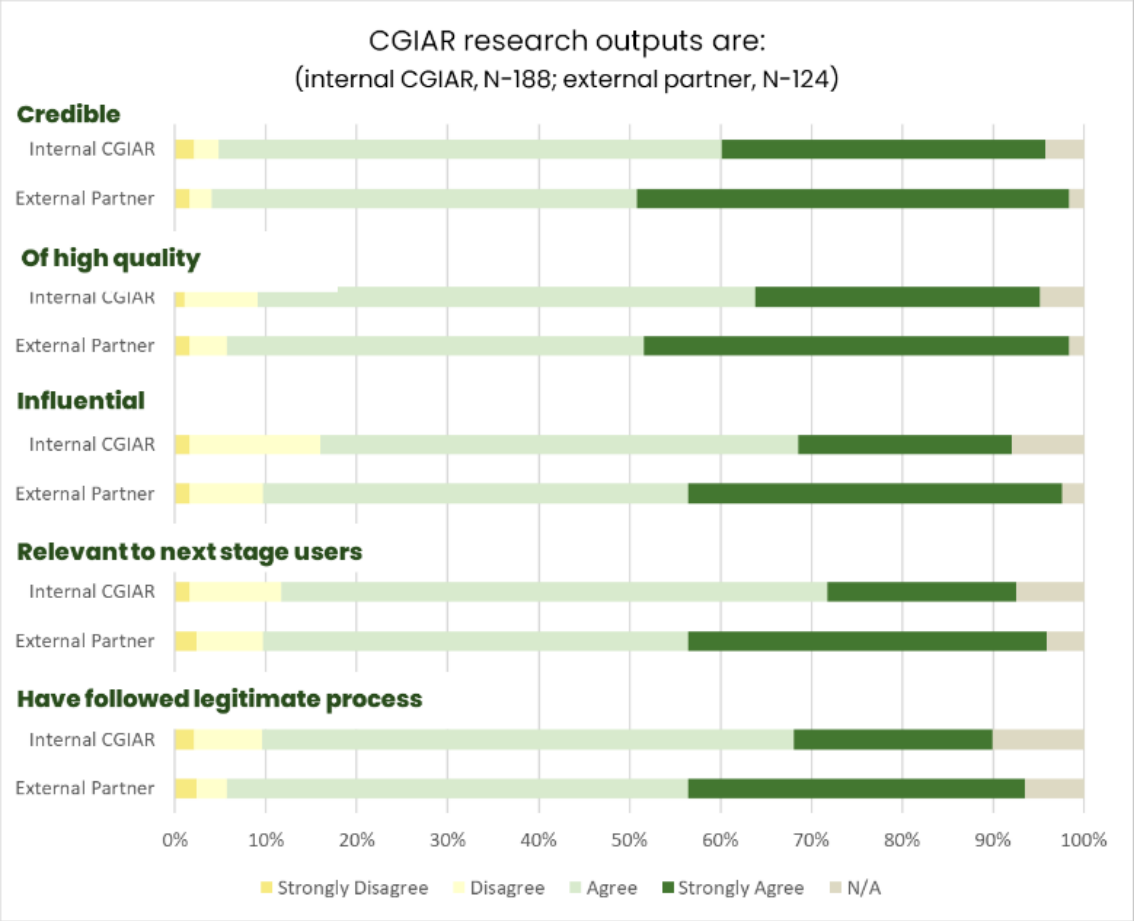


Figure 2. Quality of Science of Research Outputs. Source: Results from Online Survey.

Inputs: In evaluating the adequacy of research inputs - such as research staff, team composition, research infrastructure and funding - relative to outputs, several deficiencies were identified across all SGs. These gaps in disciplinary skill base, including breeding resources, social science, partnerships and communication, cross-sector modeling and policy analysis, nutrition, political economy, behavioral science, and psychology, could potentially impact the generation of high-quality scientific outputs. Despite these challenges, SGs recognized the value of additional skills provided by ARI and NARES partners. However, funding cuts, along with uncertainty and irregularity in disbursements significantly affected the QoS in all SGs. As a result, activities were scaled down, the retention of valuable human resources was jeopardized; and the ability to explore new partnerships and invest in advocacy and communication - key strategies to influence systems transformation - was compromised.

Processes: This dimension assessed management and coordination, the effectiveness of partnerships, and inclusion and ethics. Concerns were identified regarding role clarity and inconsistent engagement of initiative leadership across different initiatives. The multiple roles and responsibilities of leaders and co-leaders led to confusion, with ambiguities in supervision and performance assessment, which in turn reduced morale and motivation. The planned consolidation of research initiatives into broader

programs is expected to reduce role multiplicity and clarify the responsibilities of key actors. While successful partnerships created an environment conducive to producing high-quality scientific outputs and scaling innovations, concerns were raised about the effectiveness of engagement with partners. Cross-initiative collaboration, even within the same country, has been notably poorly coordinated, inconsistent, and limited. This issue was partly due to insufficient funding and inadequate empowerment of country conveners. SGs evaluations identified key areas where stronger coordination, collaboration, and integration across initiatives and SGs are needed to enhance the generation of quality science. While gender considerations were integrated into the design and implementation of all SGs, youth, and social inclusion lacked a robust strategy. There was also a lack of clarity regarding oversight processes for ethics policies across initiatives, with concerns raised about the fair and ethical treatment of partners. Implementing streamlined, portfolio-wide processes for research quality assurance and ethics oversight could enhance the legitimacy of SG outputs.

Outputs: Many tangible products and services generated by the SGs demonstrated originality, novelty, credibility, and the potential to generate *International Public Goods (IPGs).* Several outstanding examples of high-quality scientific outputs included peer-reviewed publications, datasets, policy briefs, training materials, and media products- all relevant to innovation outcomes and beneficial for broader audiences and next-stage users. These findings were supported by the results of the Online Survey. New varieties, production methods, technologies, and policy advocacy remained core outputs of CGIAR. Numerous peer-reviewed articles were co-authored with local researchers, leading to more equitable outcomes in skills development, capacity building, and data sharing and supporting legitimacy. However, budget cuts negatively impacted the magnitude and quality of these outputs. There is a need for expanded metrics to better capture the quality and influence of non-peer-reviewed outputs, measure the extent and effectiveness of partner engagement and capacity strengthening, and assess policy impact. These improvements could more effectively demonstrate the contributions of research for development (R4D).

Influence: Publications across all SGs achieved top Altmetric Attention Scores (AASs), indicating their significant influence. Including AASs and bibliometrics in future evaluations would provide a more comprehensive reflection of both scientific and social impact. Influence was further demonstrated through active participation in global dialogues and national-level actions, particularly in the areas of nutrition, healthy diets, and food systems transformation.

Lessons were learned from all SGs regarding **linkages, integration, and coordination** methods to improve science quality, positioned to inform the design and structure of the 2025-2030 portfolio. Although the 2022-2024 CGIAR Portfolio enhanced linkages between initiatives within SGs, cross-SG linkages remained weak, primarily due to insufficient funding, mechanisms, and oversight. The Portfolio has the potential to further enhance these linkages and significantly strengthen integration, collaboration, and engagement if mechanisms for integration and coordination - such as communities of practice, global theme and impact area leadership, and oversight and direction of the Chief Scientist - are given high priority.



Figure 3. Signs mark multiple CGIAR centers' collaboration at the ILRI facility in Nairobi, Kenya. Photo credit: IAES.

TO LEARN MORE ABOUT SG EVALUATIONS, VISIT THE CGIAR SCIENCE GROUP EVALUATIONS PORTAL AND QUALITY OF SCIENCE RESOURCE HUB.

Independent Advisory and Evaluation Service
Alliance of Bioversity International and CIAT Via di San Domenico, 1 00153 Rome, Italy
IAES@cgiar.org
https://iaes.cgiar.org/