CGIAR | Independent Advisory and Evaluation Service

Resilient Agrifood Systems Science Group Evaluation: List of Annexes

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REPORT TITLE: RESILIENT AGRIFOOD SYSTEMS SCIENCE GROUP: EVALUATION REPORT

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Annex 1: Methodology

The evaluation was guided by the quality standards, principles, and criteria specified by the CGIAR Evaluation Framework (CGIAR. 2022) and Policy (CGIAR. 2022a). They align with the Organization for Economic Co-operation and Development-Development Assistance Committee, (OECD-DAC) (OECD, 1991; OECD, 2019). The CGIAR Quality of Research for Development (Qor4D) Framework (CGIAR, 2020) further guided the evaluation, specifically to support the quality of science assessment. In particular, the evaluation was guided by the CGIAR principles described in table below.

Table 1. CGIAR Evaluation Principles/Standards: How they were Mainstreamed in the RAFS SG Evaluation

CGIAR evaluation standard/ principle	How these are mainstreamed
Relevance, use, and utility	• The evaluation team pursued an approach fostering the intentional use of the evaluation findings and recommendations for organizational learning and informed decision-making. The approach was based on stakeholder engagement throughout the process, from the scoping phase, during which inputs were collected to tailor evaluative questions, to collaborative work on final recommendations. • The evaluation timeline was primed for use, with learning sessions with portfolio (P25) initiative drafters and ISDC members planned during the process.
Independence and lack of bias	• IAES staff and members of the evaluation team involved in the evaluation signed statements related to potential conflicts of interest. None of the evaluation team had a conflict of interest. • Evaluation team members were independent external experts drawn from the jointly vetted Evaluation Function roster of experts. IAES had a layered quality assurance system (see relevant section).
Transparency	• Evaluation purpose, objectives, and methods were thoroughly explained to stakeholders during all evaluation activities. • The evaluation's participatory approach fostered multiple perspectives and provided feedback loops, check-ins, and sense-making. • The evaluation outputs—reports, case studies, and management response—were published on the IAES website. Stakeholders were involved in the review and evaluation validation processes (see relevant sections). • The evaluation knowledge management, communications, and dissemination plan were co-created and included as a line item in the evaluation budget.
Legitimacy and participation	• The evaluation adopted a participatory approach based on a constant consensus-building process, facilitated by the evaluators at all levels and with all stakeholders. • The evaluation team engaged with a variety of stakeholders to ensure high representativeness and listened to multiple voices.
Responsiveness to gender, diversity, and inclusion	• The evaluation sought balanced participation of women and men throughout the data collection process.

CGIAR evaluation standard/ principle	How these are mainstreamed
	• Evaluation questions were formulated with adequate gender focus, and specific indicators were designed to assess the achievements from a gender perspective. • Appropriate methods for data collection were guaranteed, ensuring the protection of women. If needed, specific group interviews with female participants were organized to create an atmosphere where women felt free to express their opinions and views. • To the extent possible, the evaluation team collected, analyzed, and presented sex-disaggregated data to gain insights on how the Science Group (SG) contributed to gender equality and social inclusion. • One of the deep dives concerned social inclusion and CGIAR's outreach to the most vulnerable. • The evaluation team's composition was gender balanced, with the team leader (TL), the Evaluation Analyst, Wand one subject matter expert (SME) being women.
Ethics and equity	• High standards of integrity were adopted; sensitive data was protected; confidentiality provisions were safeguarded, and full respect for local cultures were ensured. • The evaluation considered power dynamics and the inclusion of multiple perspectives/representation of groups in data collection.
Evaluability	• Evaluation readiness was pre-informed by an evaluability assessment for four out of 15 of the RAFS initiatives. • Data availability was among the selection criteria for case studies and deep dives.
Credibility and robustness	• The evaluation adhered to international rigorous standards and criteria. • Evaluation approaches and methods included data triangulation through different sources. • An inclusive approach with respect to stakeholders was key to the evaluation.
Measurability	• The evaluation matrix included both quantitative and qualitative indicators. • To the extent possible, performance was measured against planned indicators and targets, through the envisaged sources (if available). • Qualitative analysis was based on comparison among different groups of stakeholders and sources.
Mutual accountability	• Real-time information on the evaluation process was ensured. • Any potential delays or deviations were promptly communicated.
Efficiency	• Findings and recommendations from previous reviews/evaluations (e.g., CGIAR, 2021) were linked to the evaluation exercise. • The evaluation was streamlined to minimize the time and resources required and to optimize value, for instance, the selection of countries for field visits was coordinated in view to ensure efficiency between the three SG evaluations.

CGIAR evaluation standard/ principle	How these are mainstreamed
Comparative advantage	• Comparative advantage was framed among evaluation sub-questions, namely under Coherence.
Fairness, confidentiality, and no harm	• The team was guided by the principles of conducting evaluations in a conflict-sensitive fashion, e.g., avoiding doing harm, understanding the drivers of conflict, fostering peacebuilding, as well as ensuring the confidentiality and the security of everyone involved. High standards of ethics and integrity were adopted while collecting data. Sensitive data was protected; and confidentiality provisions for safeguarding and full respect for local cultures were ensured.
System framing and complexity awareness	• Context analysis was ensured through stakeholder engagement, in-depth interviews with key actors, and desk review, to capture the complexity of the realities examined and the work done by CGIAR.
Capacity building	• Capacity building was pursued through stakeholder engagement and collaboration. • To the extent possible, field evaluation activities, such as participatory workshops, spread an evaluation culture and fostered stakeholders in strengthening their evaluation capacities. • Learning events linked to the knowledge management and dissemination plan were developed in collaboration with user groups and the management response process.

Annex 1.1: Overall Approach

In accordance with the evaluation Terms of Reference (ToR), the exercise adhered to the specificities of a **cluster evaluation**. In the CGIAR approach, this cluster evaluation used SGs as the entry point and therefore consisted of three independent evaluations, each one taking into account the initiatives under each SG. While the cluster evaluation ensured greater efficiency by reducing individual project-level evaluations, it supported the identification of success factors and potential risks by leveraging comparison among different initiatives gathered under the same cluster (ILO, 2020). Cluster evaluations allowed for identifying synergies (systemic coherence) and strategic issues to better inform CGIAR's understanding of its effectiveness in delivering on its mandate and on areas of potential improvement, leveraging the influence of each SG.

The evaluation team acknowledged that this exercise supported decision-making processes related to future programming and, as such, it was a part of a continuous learning process in which all actors contributed and will be able to use the findings in their work. The evaluation was designed with the aim of providing indications on success and failure to replicate the former and avoid the latter in the future.

The approach merged **developmental evaluation (DE)** and **utilization-focused evaluation (UFE)** approaches. Such a combination was most suitable given that the current CGIAR portfolio had only been implemented for two years. DE was intended to provide real-time feedback and generate rapid learning, while UFE was based on the principle that evaluations should be planned and conducted in ways that enhanced the likely utilization of the findings and of the process itself, to inform decisions and improve performance. The evaluation also included elements of **real-time evaluation (RTE),** which stressed monitoring and real-time adjustment. RTE was adopted to ensure that authors of CGIAR initiative

proposals, as well as members of the Independent Science for Development Council (ISDC), could benefit from early-stage evaluative evidence in time to inform the development and review of the next portfolio.

The exercise sought to maintain an adequate balance between **learning and accountability** objectives. While good practices, lessons learned, and recommendations were identified for learning, evaluation findings were structured, taking into consideration aspects related to performance and achievements in terms of outputs and outcomes, and to determine whether SG activities generated an effect in changing the initial needs and problems.

The evaluation adopted a **participatory approach** based on a constant consensus-building process, facilitated by the team at all levels and with all stakeholders. In this framework, the evaluation engaged with a variety of stakeholders to identify critical issues and good practices.

The evaluation process was **gender-sensitive and balanced**, ensuring the representation of women during interviews and focus group discussions. In addition: i) some of the evaluation questions were formulated with adequate gender-focus; ii) specific indicators were designed to assess the achievements from a gender perspective; iii) appropriate methods for data collection were guaranteed, ensuring the protection of women; iv) to the extent possible, the evaluation team collected, analyzed, and presented sex- disaggregated data to assess how the SG was contributing to gender equality and social inclusion.

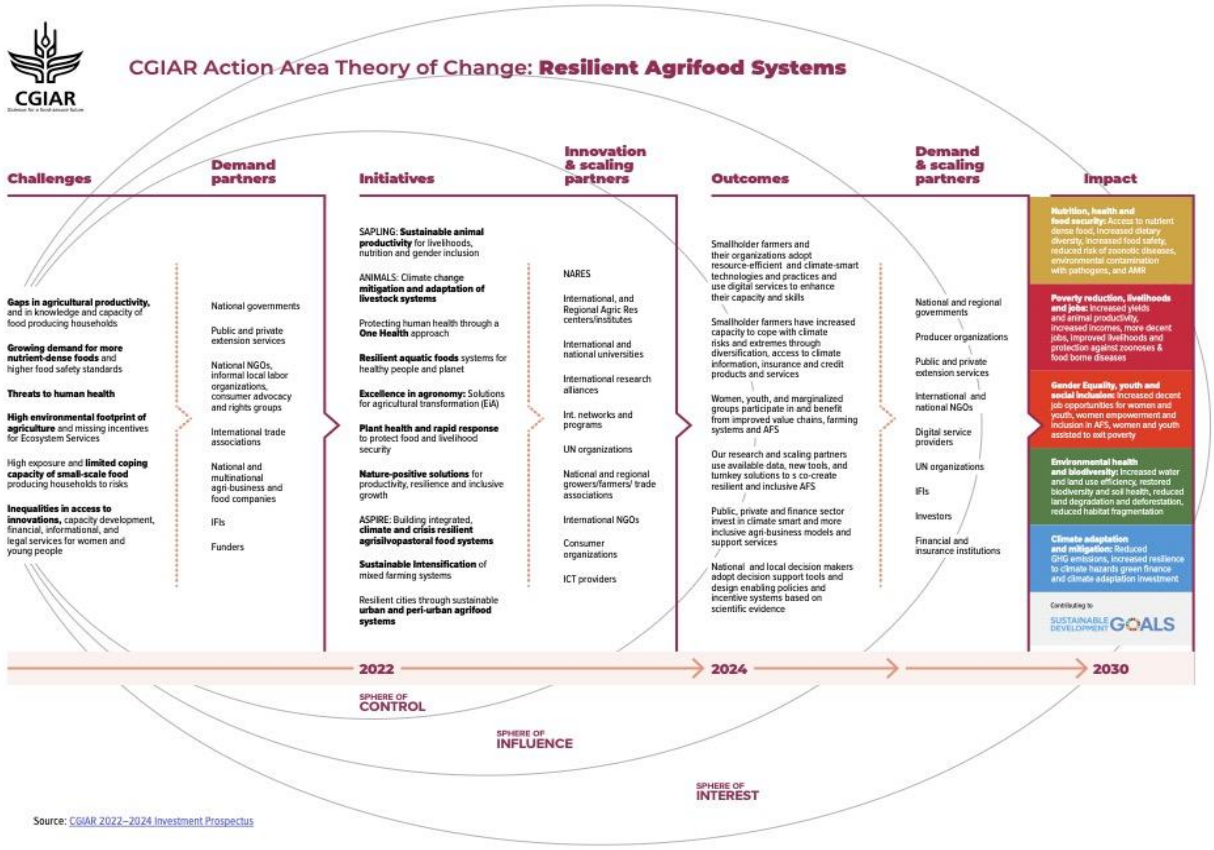
As indicated in the ToR, an initial **theory of change** (ToC) was developed for each SG. The RAFS ToC (see Figure 1) described the logical chain linking the challenges affecting agricultural productivity, human, and environmental health; the 15 ongoing initiatives under the SG; the envisaged six outcomes[1]; and long-term impacts in five areas[2] related to Sustainable Development Goals (SDGs). While the SG ToC provided the broad framework for RAFS' work, each individual initiative had its own ToC, which linked the Work Packages (WPs) to the end-of-the initiative (EoI) outcomes and to long-term impacts.

The evaluation team referred to both types of ToC throughout the evaluation exercise. On the one hand, the team assessed the SG-level ToC soundness and checked the validity of the assumptions underlying the causal chain linking challenges to outcomes and to long-term impact. On the other hand, the team referred to the initiative-level ToCs to assess performance against expected positive changes; reasons underpinning success and reasons behind slow progress; and to guide thematic specific analysis.

[1] Six outcomes: 1. Smallholder farmers and their organizations adopt resource-efficient and climate-smart technologies and practices and use digital services to enhance their capacity and skills. 2. Smallholder farmers have increased capacity to cope with climate risks and extremes through diversification, access to climate information, insurance and credit products and services. 3. Women, youth, and marginalized groups participate in and benefit from improved value chains, farming systems and Agri-Food Systems (AFS). 4. Our research and scaling partners use available data, new tools, and turn-key solutions to co-create resilient and inclusive AFS. 5. Public, private and finance sector invest in climate smart and more inclusive agri-business models and support services. 6. National and local decision makers adopt decision support tools and design enabling policies and incentive systems based on scientific evidence.

[2] Five impact areas related to SDGs: 1. **Nutrition, health and food security**: Access to nutrient dense food, increased dietary diversity, increased food safety, reduced risk of zoonotic diseases, environmental contamination with pathogens, and AMR. 2. **Poverty reduction, livelihoods and jobs:** Increased yields and animal productivity, increased incomes, more decent jobs, improved livelihoods and protection against zoonoses & food borne diseases. 3. **Gender Equality, youth and social inclusion**: Increased decent job opportunities for women and youth, women empowerment and inclusion in AFS, women and youth assisted to exit poverty. 4. **Environmental health and biodiversity:** Increased water and land use efficiency, restored biodiversity and soil health, reduced land degradation and deforestation, reduced habitat fragmentation. 5. **Climate adaptation and mitigation:** Reduced GHG emissions, increased resilience to climate hazards green finance and climate adaptation investment.

Figure 1. RAFS SG ToC



Source: CGIAR 2022-24 Investment Prospectus

Annex 1.2: Data Collection and Analysis

The evaluation adopted a mixed methods design, combining the strengths of quantitative methods with those of qualitative approaches. While quantitative data collection analysis made it possible to highlight general features and trends, qualitative methods allowed deeper understanding of stakeholders' perceptions on reasons behind successes or slow progress. Quantitative and qualitative information and data from primary and secondary sources were constantly triangulated to ensure consistency and credibility of results. The data collection process relied on the following activities:

DESK REVIEW

An analysis of key documents and information resources was carried out, including corporate strategic documents, programmatic and reporting documents, relevant evaluations and evaluability assessments, review of CGIAR Results Dashboard, national and sectoral development strategies and plans of countries concerned by the analysis.

KEY INFORMANT VIRTUAL AND FACE-TO-FACE INTERVIEWS

Semi-structured virtual and face-to-face interviews during field missions were conducted with internal and external stakeholders, guided by the Map of Stakeholders and according to the interview protocol and guidelines presented in Annex 3, prepared by the evaluation TL and shared with SMEs. Overall, 183 people were interviewed (see Annex 4). Figures below represent the breakdown of interviewees by country, gender and stakeholder type.

Figure 2. Distribution of RAFS SG Interviewees by Country and Gender, N= 183[3]

Figure 2.1. Interviews by Modality and Location

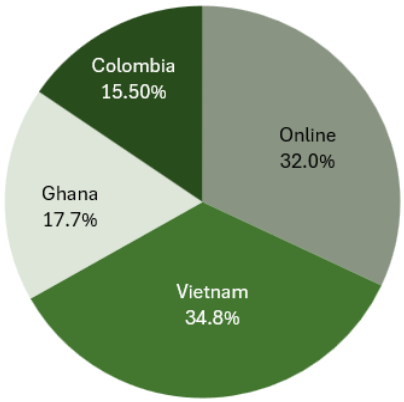


Figure 2. Interviewees by Gender

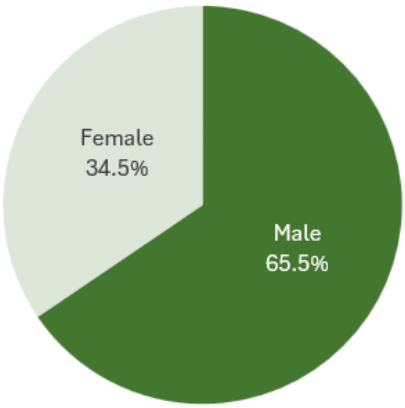
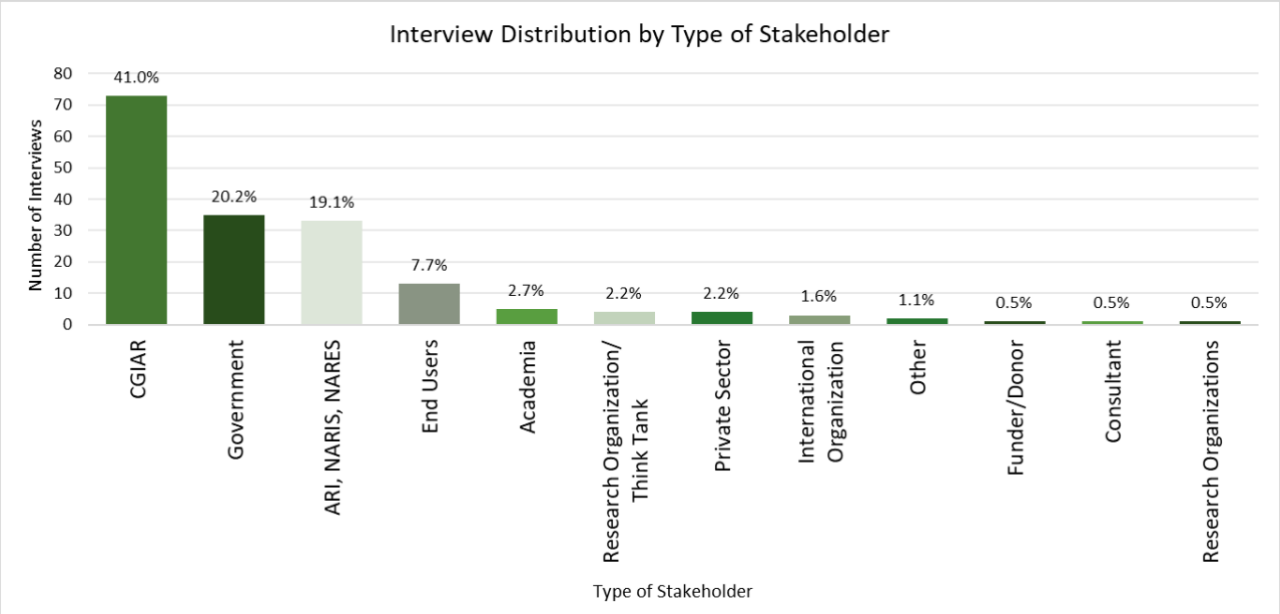


Figure 3. RAFS Interviewees by Type of Stakeholder, N= 183



CASE STUDIES AND DEEP DIVES

Given the breath of the activities covered by the SG, a case study and deep dive method was adopted. Case studies provided a thematic perspective for the evaluation, allowing the team to include in the main report evidence that shows the SG's work in a particular area of intervention. Deep dives allowed to conduct a thorough analysis on specific topics, challenges, outcomes, opportunities that cut across SG's work. This method fostered a deeper understanding of specific issues, providing insights useful for the general analysis. Case studies and deep dives were processed both remotely, by the SMEs, and through

[3] Figure 3 data: Total interviews conducted: 183. Distribution of interviews by modality and location-online: 32%; Vietnam: 34.8%; Colombia: 15.5%; Ghana: 17.7%. Distribution of interviews by gender-Female: 34.5%; Male: 65.5%.

field visits in selected countries. The evaluation team selected the set of case studies and deep dives shown in the table below. Selection criteria are also indicated.

Table 2. Case Studies and Deep Dives

Case studies/ deep dives-RAFS	Initiatives covered	Selection criteria
CASE STUDY No. 1 One Health Approach	INIT 07; INIT 13; INIT 22; INIT 17	Strategic importance to RAFS, as per inception meetings and interviews
CASE STUDY No. 2 Climate change mitigation/adaptation across different SG initiatives and WPs	INIT 10; INIT 11; INIT 14; INIT 18; INIT 19; INIT 20; INIT 34	Strategic importance to RAFS, as per inception meetings and interviews, and desk review. In seven CGIAR initiatives, climate change mitigation and adaption are reported as an output, providing greater scientific studies and data for global use in forecasting. LINKAGE TO SG Toc: ToC outcomes: 1) Smallholder farmers and their organizations adopt resource-efficient and climate smart technologies and practices and use digital services to enhance their capacities and skills; 2) Smallholder farmers have increased capacity to cope with climate risks and extremes through diversification, access to climate information, insurance, and credit products and services.
DEEP DIVE No. 1: Food, Feed, and Waste–Livestock in Peri-Urban Settings	INIT 12; INIT 16; INIT 21	Strategic importance-New to CGIAR, forward looking perspective for future work
DEEP DIVE No. 2: Social Inclusion and Participatory Research Processes	INIT 15; INIT 12	Area of improvement as identified by 2021 Synthesis Report.

Field visits: Three countries were visited for the RAFS evaluation: Vietnam, Ghana, and Colombia for direct observation of some initiative activities. This was particularly true in Vietnam, where the evaluators joined ongoing activities linked to One Health (OH), Asian Mega Deltas (AMD) and Excellence in Agronomy (EiA) initiatives. Countries for field work were selected strategically, according to the predetermined criteria: regional representation, initiative diversity and Center-related characteristics *vis-à-vis* SGs

Focus group discussions and participatory workshops: During the field missions, several focus group discussions with internal and external stakeholders were conducted to trigger a dialogue on strengths and weaknesses of ongoing initiatives, as well as on good practices and lessons learned. In Vietnam, a participatory workshop with internal stakeholder was also organized to validate preliminary findings and to develop tailored recommendations in a participatory manner.

Portfolio analysis: The RAFS SG portfolio-wide (common) and tailored (selected initiatives) analysis included:

- Analysis of the validity of the RAFS SG and selected initiatives' ToCs.
- Process analysis of the implementation of selected initiative/WP, including fidelity to the proposal, delivery mechanisms, and challenges encountered.
- Content analysis of quantitative data from various sources including results dashboard and annual/technical reports.
- Content analysis of qualitative data presented in the initiative technical reports.

Online survey: An online survey across three SGs and its core stakeholders was conducted by IAES between April and May 2024 to gather quantitative and qualitative data and information, specifically by focusing on aspects related to efficiency and coordination mechanisms. A total of 437 respondents was recorded, almost half (46%) have engaged with CGIAR system for more than ten years; and 21% have been engaged between five-ten years. Out of 166 external respondents, the top respondent groups included: 17% government (national/sub-national); 22% representatives of the National Agricultural Research and Extension/Innovation System (NARS, NARIS) and 25%- from university/research organizations. (Survey report available here after its publication).

Annex 1.3: Additional Analytical Approaches

Primary and secondary data collected were analyzed with a regular process of triangulation through the different sources and the mixed approach. Different types of analysis were carried out:

- Content qualitative analysis from interviews, desk review, and participatory evaluation activities, such as focus group discussions and workshops.
- Quantitative analysis of data emerging from the online survey, Results Dashboard, and technical reports.
- Comparative analysis of information obtained from different stakeholders, countries, and initiatives.
- Process analysis on the implementation of selected initiatives or WPs to assess delivery mechanisms, internal coordination arrangements (and if these were suited to produce results), and related challenges. The process analysis particularly guided the assessment of the SG's work efficiency.
- Analysis of the validity of the SG rationale and ToC, which particularly guided the assessment of relevance.
- Portfolio performance analysis (based on data availability) using any indicators and data of progress available to compare expected outputs and outcomes with actual performance. This analysis supported the assessment of SG's work effectiveness.
- Assessment of the Quality of Science (QoS), to assess the quality and validity of scientific processes and outputs. QoS was assessed by key informant interviews, two country case studies, two thematic deep dives and review of a sample of scientific outputs, and against the QoR4D criteria. A total of 101 individual research outputs (journal articles, technical publications, innovations and communications materials) were assessed.
- Comparative advantage analysis to support the assessment of the SG coherence.
- Contribution analysis where relevant, to assess the SG contribution to achieved results.

Annex 1.4: Limitations

The main limitation to this evaluation relates to the fact that the exercise took place only two years after the launch of the SG initiatives in 2022, making it challenging to assess performance against planned outcomes. Against this backdrop, the exercise was not intended to assess mid or long-term effects but rather the presence of the preconditions needed to attain the expected results in the future.

Another limitation is that the evaluation team could not access aggregated summary data on outputs and outcomes achieved at both initiative and SG levels against the corresponding Results Frameworks. On the one hand, information collected on outputs and outcomes is mainly qualitative from interviews and narrative reports, on the other, the Results Dashboard did not allow comparison for what is achieved

against what was planned in the ToC, nor does the structure of the technical report facilitate conducting such a comparative exercise

Regarding the case study, a limitation was that neither CGIAR as a whole nor the SG have a country results framework that could have guided the inquiry, and against which assessing results achieved. With this backdrop, the country level assessment relied mostly on qualitative analysis.

The tight timing for data collection and completion of the report compared to the wide geographical and thematic coverage of SG's work was another important limitation.

Annex 2: Case Studies–Executive Summaries

Additional information is available by request and evidence would be integrated in the stand-alone synthesis on Quality of Science (QoS) across the three SGs to be available in the Evaluation Portal

Annex 2.1: One Health Approach

This case study focused on the RAFS One Health Initiative, by considering activities carried out in Vietnam. The approach is novel, complex and multi-faceted. The case study was selected for the potential for learning from new work and practice in this area. One Health is an approach to tackling the global challenges that sit at the nexus of health, agriculture and environment, and address questions around generating solutions to existing and emerging complex health threats. Developing a set of possible solutions in this space requires a One Health Approach (OHA) and the CGIAR thematic response was the One Health Initiative (OHI).

The OHA was found to be highly relevant for the context of a rapidly industrializing and urbanizing environment such as Vietnam where rapid social and economic change, as well as government commitment to the approach, give the potential for rapid learning and application of results.

The OHI work packages (WPs) were global in scope and ranged across several sub-themes including managing the spread of zoonotic diseases, antimicrobial resistance, food safety and water quality. Given the length and range of activities present, a sub-set of evidence was drawn from Initiative activities in Vietnam. WPs where interviews and site visits were conducted included those on emerging and neglected zoonoses, food safety, antimicrobial resistance and economics, governance and behavior.

Interviews were conducted with 45 individuals, either singularly or in focus groups representing a wide range of stakeholders. QoS was also assessed through review of a range of different outputs, and the results contributed towards the overall RAFS QoS assessment.

Relevance: Overall, One Health as an approach is a novel and innovative way to address complex, multi-factorial challenges that sit at the nexus of several inter-connected, but often incoherently managed themes. Broadly speaking, OHA is an important possible response with the potential for global impact if, by applying it, challenges can be addressed. Early signs are promising that aspects of the approach may be effective. The design provided to test this hypothesis seems appropriate, but the results are yet to demonstrate impact, particularly at scale.

Effectiveness: Whilst design was appropriate and cross-system and cross-initiative working under an OHA umbrella was the right way to address this complex set of systems problems, progress towards outputs is insufficient for assessment of the outcomes resulting from the design. Some important progress has been made in some technically challenging areas.

The shortened implementation period along with budgetary reductions have impacted on science quality and led to stress and low morale among staff.

The OHI in Vietnam is a strong example of partnership with stakeholders leading to uptake of policies and approaches with the potential for widespread lesson learning.

Some difficult ethical issues have been addressed using this approach, not always conclusively (e.g., farming wildlife for consumption), but addressing these dialectics are what research initiative are meant to do.

Some important new areas for capacity building have emerged from the approach, with food safety uptake in meat markets being a strong example. Once scientific evidence of the benefits of the OHA are available, more widespread uptake and capacity building are likely.

Efficiency: It was found that awareness of the SG, its aims and approaches was absent in Vietnam. Outside CGIAR, there was very limited awareness of Initiatives, but rather a focus on long term relationships with specific centres. The team found no evidence that instigating an over-arching Science Group (SG) either helped or hindered efficiency. No added value was found from the SG approach.

Coherence: Multi-actor collaboration is difficult to achieve. Some actors were less engaged in OHI in Vietnam than others. Addressing this imbalance in the future will be important for impact and should be considered in future design.

The OHA has not been universally adopted to address research questions across RAFS. For example, research on aflatoxin contamination in Plant Health (Int 13) and West and Central Africa Food Systems Transformation (Int 22) was not included in the design. This has not led to duplication of effort but could have resulted in synergistic learning had it been included. Considering how and when to draw activities into the OHA sphere is something needed going forward.

Quality of Science

Research design/relevance: The research agenda and questions were well founded in clearly articulated local needs; however, some important respondents expressed a preference for applied over fundamental science.

Evidence emerged that changes to budgets and planning frames impacted on science quality, for example by reducing sample sizes of experiments.

Management processes: While there were high quality scientific outputs (and more expected), some inconsistencies of approach appeared, notably between CGIAR centres. Examples are journal assessment and choice, authorship choice and inclusion, and the application data management policies. More could be done to coordinate science quality consistently.

Input: Constant change of planning timeframes and budgets has led to low morale among OHI staff in Vietnam.

Management of Postgraduate students was found to be inconsistent and with some evidence of poor practice. Much could be done to improve this and enhance the experience, and therefore impact, of post graduate researchers.

A systematic approach to gathering impact data and narratives was found to be absent. This may make it hard to ascribe the cause of impact in the future.

Credibility–outputs: The volume and depth of scientific outputs funded since the OHI started was limited by the short period of implementation. Much of the current published research has emerged from pre-Initiative work. The team found no evidence that science quality has demonstrably improved since the implementation of the SG approach to management.

Conclusions

- OHA is novel and innovative with the potential to tackle complex challenges at the nexus of human, animal and environmental health.
- Cuts to resources during implementation may have impacted upon the quality and value science planned.
- Consistent actors buy-in takes time to achieve. Not all actors have fully bought in yet and some key trade-offs in the approach have yet to be resolved (e.g., different stances on animal welfare).

Recommendations from the case study

a. A more consistent and focused program of activities in sub-themes such as 'food loss and waste' and/or 'circular economy' actions could lead to greater impact if there were cross-Initiative thematic leadership.
b. A CGIAR wide approach to managing science quality, including the postgraduate researcher learning experience, is recommended as this could lead to important improvements in practice and quality.

Annex 2.2: Climate Change Mitigation/Adaptation across Different SG Initiatives and WPs

The case study in Colombia offered an opportunity to assess how initiatives on climate change adaptation and mitigation had operated. These are the initiatives that were emphasized during the field trip: Nature +(INI12), AgriLAC Resiliente (INI14), and Livestock and Climate (INI34). The evaluation was conducted through many focus group discussions and individual interviews. From these, the team was able to ascertain the above initiatives' relevance, effectiveness, efficiency, and coherence under RAFS.

Relevance and coherence: Relevance of the SG research portfolio in Colombia remains the same as in previous cycles. The government of Colombia has a goal to stop deforestation by 2030 and even begin reforestation in stages. Nature+ and Livestock and Climate initiatives, both work in the Northeast of the country where the deforestation occurs. Together, though with different partners, they are working with scientifically proven good practices to increase pasture productivity while giving less incentives for deforestation. Some interviewees mentioned that consistent and constant contact with stakeholders/ranchers/growers/ has been CGIAR's comparative advantage over agricultural universities throughout the years. However, the current higher transactional costs of working with CIAT in Colombia are such that partners feel that CGIAR's comparative advantage has decreased.

Effectiveness: While documenting 116 outputs under climate change under RAFS in Colombia, scientists noted that due to the slowness of the start of the initiatives and the constant budget cuts, the effectiveness was not as it should have been. The initiatives gave the scientists greater opportunities to expand partnerships (and even countries) to their existing compared to ones from the CRPs. Partnerships created several opportunities for enhancing effectiveness.

Efficiency: While the governance and management of RAFS was deemed suitable, the process of the introduction and cuts of the budgets of the initiatives created a great challenge to the scientists and their partners. There was a lack of coordination among the comms staff among the initiatives and with CGIAR.

Quality of Science: Though only two years of implementation of the initiatives, the QoS was assessed on many outputs including journal articles, technical publications, technical outputs, and communication publications. The analysis led to a positive assessment of the quality of the scientific work. However, the shift from the CGIAR research programs (CRPs) to the 34 Initiatives created greater administrative duties for the scientists; thus, they had less time for conducting their research compared to the past. Additionally,

cuts in budgets meant cuts in scientists; therefore, it was stated that this has had a negative effect on the QoS.

Recommendations form the case study

a. For the writing of the science programs: CGIAR should ensure scientists' input into the writing/proposing of the research agenda.
b. NARS and other appropriate stakeholders should be given a chance to provide input into the writing of the new portfolio.
c. Comms personnel should have science programs and CGIAR coordination so that the One CGIAR has One Voice or the appearance of such.
d. Funding should be announced for the following year based on soundness of those resources to ensure fewer budget cuts.
e. Ensure cross cutting issues of gender and climate change cannot be dropped by future cuts and remain an integral part of the science programs.
f. Ensure each center reduces the cost of doing business with the CGIAR by reducing the high transactional costs that many partners expressed to the evaluation team.

Annex 3: Deep Dives–Executive Summaries

Annex 3.1: Social Inclusion and Participatory Research Processes

Global initiatives and frameworks are shaping research agendas in gender, youth, social inclusion, participatory research, inclusive innovation, food systems, climate-smart strategies, inclusive natural resource management, and their interconnections. CGIAR is focusing on generating key insights and recommendations for the P25 area, examining initiatives in collaborative design, climate, resilient agrifood systems, and innovation development.

The framework of the RAFS Strategic Action Area, the 2021 Evaluation Synthesis recommended CGIAR research and innovation prioritization on the vulnerable poor, particularly women, and those who are at risk of natural resource depletion, climate change, economic deprivation, and conflicts. Furthermore, it suggested improving risk assessment and metrics, and co-developing social and technical innovations with at-risk populations.

The deep dive was conducted in Ghana. The field visit gave the three RAFS SG Initiatives—Resilient Aquatic foods (AqFS), Sustainable Intensification Mixed Farming Systems (MFS), and Excellence in Agronomy (EiA)—a country perspective. The initiatives were assessed for relevance, efficiency, effectiveness, internal and external constraints, and scientific quality. Desk reviews and interviews provided evidence, and triangulation strengthened findings and conclusions.

Relevance: The initiatives' objectives and design align with national development objectives, action plans, and priorities in food and agricultural development, food security, natural resource preservation, and climate change mitigation. However, the co-design process was not directly inclusive of small-holders, rural women, youth, indigenous people, and other disadvantaged groups. Scaling up strategies, selection criteria and prioritizing crops or agricultural produce determine likelihood of initiatives helping or benefiting the most vulnerable.

Effectiveness: The three initiatives are implemented in rural communities in Ghana's northern region, where smallholder agriculture provides employment, income, and food security. Severe poverty is prevalent, with multidimensional poverty accounting for 80.8% and households that rely on livestock rearing and food crop production experience the greatest food insecurity. However, the likelihood that the Initiatives achieved results for the most vulnerable groups may be dependent on the selection criteria of

direct beneficiaries, processes or strategies of scaling up and the crops prioritized. Budget cuts and short project cycle were major constraints across the three Initiatives, negatively affecting work plans leading to scaling down scope of activities and reducing outreach to fewer small holder farmers and vulnerable groups.

Efficiency: The initiatives possess internal coherent governance and management structures. They have strong country presence, comparative advantages in incentives to produce societal goods at low profits; and possess diverse disciplinary expertise to enhance interdisciplinary approach key for strategic research required for food systems transformation. In addition, they leverage existing in-country partnerships with comparative advantages in other dimensions; social, biophysical and human capital, respectively to achieving results for smallholder farmers.

Quality of Science: The research processes are based on evidence-based data and rigorous analytical procedures that are relevant to the production of innovations and their expected outcomes for the most vulnerable. The research products are bundled innovations with social and technical interventions.

Gender: Integration strategies are gender-aware, accommodating, and responsive; youth and social inclusion are recently adopted while social inclusion lacks a valid definition and a strategy going forward. Initiatives are internally coherent and possess a robust country-wide presence. Leveraging partnerships with public and private sectors and farming communities for development outcomes, the initiatives offer competitive advantages in utilizing data science and behavioral sciences to analyze robust baseline data for generating novel science of social goods production at low profits that cater to the needs of the most vulnerable. Budget cuts and a short project cycle are key factors limiting their performance.

Recommendations from the deep-dive

a. Identify non-market interventions such as social safety nets to empower vulnerable groups, especially youth, to meet the minimum asset thresholds for inclusive participation in value-chain developments. Adopt financial incentives, social policy and welfare interventions to enhance participation of resource-poor, landless farmers and youth in co-design processes: planning and implementation stages.
b. Adopt an integrated food systems transformation approach to maximize synergies within and across the initiatives and centers and address diversification of food production systems through inclusion of under-utilized crops in research agendas for improved agrobiodiversity, health and food and nutrition security.
c. Define socio-economic indicators and conduct a vulnerability mapping assessment to identify and classify vulnerable groups under the social inclusion category.
d. Project cycles should be increased from three years to five years to achieve meaningful results and impacts.
e. Social scientists must be grounded in gender research, understand concepts of innovation and scaling and their impacts on gender, youth and social inclusion.
f. Develop and disseminate knowledge products, in local languages, tailored to contextualized situations and socio-economic profiles of the smallholder farmers and vulnerable groups.

Annex 3.2: Food, Feed, and Waste–Livestock in Peri-Urban Settings

This deep dive focused on different activities related to improved resource use in different environments funded within the RAFS SG.

The theme of the deep dive and the activities chosen for evaluation were selected to draw conclusions and lessons across a range of activities, methods, geographies and approaches that can shed light on attempts to address the wider challenge of resource use in both rural and urban settings. A range of

projects were chosen within the circular economy, food loss and waste, agro-ecology and food systems areas. Target Initiatives included Nature+, Resilient Cities, Transforming Agrifood Systems in Southern Asia and OHI. From a food systems perspective, the connection between food production and use from rural to urban and peri-urban environments was central to the choice of activities reviewed.

The method used was individual and group interviews. Respondents were chosen purposively or by snowballing from one key informant to another. The time allocated to this deep dive limits the sample of interviews conducted and findings should be seen in this light.

Not all activities within this theme could be assessed. A smaller sample was reviewed based on specific waste resource use activities including food waste recycling, farm residue use and innovative stakeholder management approaches.

Relevance: The evaluation found that the challenged addressed, the impact of urbanization and its relationship with environmental, agricultural, nutritional, and societal issues, is highly relevant, particularly in societies experiencing rapid urban growth.

Effectiveness: The evaluation assessed that the rate of progress in generating scalable outputs is not yet sufficient across the various initiatives where activities were reviewed to allow the assessment of effectiveness. Activities were fragmented and somewhat scattered and could benefit from a greater concentration of effort or oversight.

Efficiency: The design targeted the vulnerable where innovation was tested, but many new circular and bio-economy concepts have yet to be piloted. Whilst some activities in this space are mature, these tend to be ones that were on-going prior to start of Initiatives.

Coherence: Novel research initiatives in RAFS offered opportunities to revisit issues such as Food Loss and Waste from new perspectives (e.g., resource use efficiency and UPU policy), an approach which is to be commended and not lost in future re-design.

Quality of Science: Science quality across the activities reviewed was variable. The highly applied nature of this work may generate valuable and practical insights in the future but is not likely or expected to make important knowledge breakthroughs. Both Nature+ and Resilient Cities are new and innovative. More time is needed to generate high-quality science products from these Initiatives. More might be done to address some of the more founding questions in the resource use space, particularly around evidencing trade-offs between different approaches and technologies to advise policy.

Conclusions

- Much important work has been continued within the Initiatives from earlier CRPs. The use of stakeholder platforms and the engagement with urban and peri-urban actors is a strength of this range of actions. Greater coordination and concentration of activity in these areas, with a focus on exemplars, could drive greater future uptake and promote more experimentation and risk taking.
- The use of national innovation platforms and stakeholder groups to ground the research and coordinate activities in the thematic area of resource use in rural and urban areas is a good practice which could be more widely adopted.

Recommendation from a deep dive:

The evaluation recommends that a more consistent and focussed program of activities has to be achieved with sub-themes such as food loss and waste and/or circular economy actions through cross Initiative thematic leadership.

Annex 4: Evaluation Matrix for Evaluation of RAFS SG

	Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
Key Question	**I-RELEVANCE** **1) To what extent does the SG Research Portfolio respond to the needs and priorities of its external stakeholders and to what extent is the SG ToC based on CGIAR's comparative advantage and suited to deliver results?**				
1.1	How appropriate were mechanisms of prioritization of research in SG level portfolio towards stakeholders' current and future needs and priorities?	A) Extent to which the SG role has been relevant in supporting countries and partners to address their research and developmental needs and priorities; B) Alignment of SG research work and initiatives with the needs and problems expressed in national development plans, national research agenda and sectoral policy strategies; C) Extent to which the SG underlying research questions (at SG and initiative levels) are relevant to regional and global concerns; D) Users and stakeholders' perceptions on the relevance and validity of SG rationale; E) Extent to which individual (by initiative) or collective actions (by SG) capitalized on contextual opportunities ; F) Identified experiences of responsiveness of the SG work to country or regional needs.	National and regional partners and stakeholders; CGIAR directors, SG thematic areas directors; strategic documents, research documents; national development plans and sectoral strategies; past evaluations.	Desk review, demi-structured interviews, case studies, deep dives.	Content qualitative analysis.
1.2	How well did activities under the SG ensure flexibility and adaptability of the research portfolio to increase its relevance to evolving contexts and reprioritize	A) How have any changes occurred in the context of intervention affected the rationale of the SG and its initiatives? B) How has the SG adapted to changing conditions and emerging needs?	National partners and stakeholders; CGIAR directors, SG thematic areas directors; technical reports.	Desk review, semi-structured interviews, case studies, deep dives.	Content qualitative analysis.

	Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
	around emergent needs?				
1.3	To what extent were the objectives and strategies of the SG articulated in terms of a solid theory of change (ToC) and built on CGIAR comparative advantage across the system?	A) How coherent and aligned are the SG objectives, scope of initiatives, and activities? B) What is the adequacy of the SG results framework, including internal linkages among initiatives and complementarity with other SGs? C) What is the evidence-base behind assumptions underlying the impact pathways contained in the ToC? D) To what extent were contextual factors, internal and external, considered in building the SG ToC? E) Did the SG design/planning approach include participatory bottom-up planning processes responding to internal and local demand? F) To what extent did the SG rationale build upon CGIAR comparative advantage and value added? G) Does the ToC include appropriate assumptions and risks? How were these identified?	SG ToC, SG narrative, sample of initiative-level ToCs.	Desk review, demi-structured interviews, participatory workshops.	Analysis of the validity of the ToC.
Key Question	**II - COHERENCE** **E.Q.2 - How coherent and compatible was the design and implementation of the SG Portfolio with the CGIAR Integration Framework Agreement towards CGIAR's 2030 Research Strategy?**				
2.1	How has the SG operationalized CGIAR's collective vision in the 2030 Research Strategy and CGIAR's Integration Framework Agreement?	A) To what extent have GTIs and RII engaged one another to assess, prioritize and align around regional and national priorities? B) How has the SG architecture facilitated coherence, coordination and collaborative research and innovation offers from CGIAR, considering comparative advantage? C) Has the SG facilitated internal coherence, reinforced collaboration among CGIAR centers, and reduction in duplication of research efforts within CGIAR?	CGIAR directors, SG thematic areas directors, initiative leaders and co-leaders.	Semi-structured interviews; desk Review.	Content qualitative analysis; comparative advantage analysis; process analysis.

	Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
		D) To what extent have synergies among initiatives been fostered and achieved at SG level? E) To what extent has the SG' work fostered CGIAR position in countries?			
2.2	In what ways has the SG addressed key considerations and opportunities for enhancing coherence across, between, and within each SG?	A) To what extent have SG governance and management arrangements been suited to enhance the coherence of the CGIAR Portfolio? B) In which ways did a partnership model among GTIs and RIIs advanced internal coherence? C)To what extent has the SG devised GTI and RIIs alignment to link scaling-ready, priority GTI outputs with RII scaling activities (and in which geographies)?	CGIAR directors, SG thematic areas directors.	Semi-structured interviews; desk review.	Content qualitative analysis; comparative advantage analysis; process analysis.
2.3	To what extent does the SG draw on the capacities of the Impact Area platforms and vice versa and to what extent in-house synergies have been fostered and achieved?	A) How has the SG used its ToC to reflect on different impact pathways within CGIAR? B) To what extent is the SG interacting and collaborating with the other SGs? C) To what extent has the SG interacted with the Impact Area Platforms to maximize capacity development, synergies and impact?	Initiative leaders, co-leaders, initiative stakeholders, external stakeholders, technical reports.	Semi-structured interviews, desk review, case studies, deep dives.	Process analysis; content qualitative analysis.
Key Question	**III-EFFECTIVENESS** **3) To what extent have the SG initiatives achieved, or are expected to achieve, their objectives in their respective areas of work, including any differential results across subgroups of users/clients?**				
3.1	Overall, what progress has been made towards the SG expected outputs and what is the likelihood that these outputs will	A) Reported results (outputs and outcomes) against targets-quantitative and qualitative (refer to the indicators contained in the initiative proposals and SG narrative).	Technical reports, Initiative leaders, co-leaders, initiative stakeholders.	Desk review, semi-structured interviews, Case studies, deep dives.	Portfolio performance analysis comparative analysis across countries, topics, initiatives.

	Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
	lead to the planned outcomes?				
3.2	How effectively has the research under the SG contributed to the planned outcomes?	A) To what extent has the SG supported research innovation and strengthening in countries involved? B) To what extent has the SG supported capacities through knowledge brokering, the sharing of know-how and peer-to-peer learning? C) To what extent has the SG contributed to the scaling-up of evidence-based solutions to common agrifood problems? D) To what extent has any SG initiative contributed to the development, improvement, and implementation of policies that improve the resilience of agri-food systems? E) What are partners' self-assessment of improved capacities at individual and organizational level as a consequence of the SG work? F) To what extent has new or improved practices and techniques been adopted by partners, practitioners, final users? G) What are the linkages created among the scientific community and practitioners for mutual benefits as a consequence of the SG activities? H) To what extent is the knowledge generated by the SG actionable by local partners and organizations? I) Is there any evidence of the new knowledge generated by the SG been implemented by local stakeholders?	Technical reports, initiative leaders, co-leaders; SG thematic areas directors, initiative stakeholders, external stakeholders and institutions.	Desk review, semi-structured interviews, case studies, deep dives; focus group discussions.	Portfolio performance analysis, comparative analysis across countries, topics, initiatives, contribution analysis.
3.3	What constraints–both internal and external–has the SG faced in implementing its	A) Is there any factor affecting the quality of the scientific outputs or preventing from accessing or using the knowledge generated under the SG? B) To what extent have the assumptions contained in the ToC occurred? Are there new hypotheses that have	Technical reports, literature, initiative leaders, co-leaders,	Desk review, semi-structured interviews, case studies, deep dives; focus	Portfolio performance analysis, comparative analysis across

	Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
	activities? How have these constraints been addressed?	emerged after the ToC formulation? How are these affecting the SG work? C) Has the SG work triggered any unexpected effects/results (positive or negative) for stakeholders? D) What is the analysis of risks and external conditions and their potential impact on the achievement of results? E) To which extent has the budgetary turbulence affected the delivery of results?	initiative stakeholders.	group discussions.	countries, topics, initiatives; analysis of validity of the ToC.
3.4	What are the most important opportunities for enhancing effectiveness across the SG research portfolio?	A) What are the new promising areas of work and how could the SG intervene in those areas? B) To what extent is the SG fostering inclusive innovation and research practices that include marginalized groups?	Initiative leaders, co-leaders, initiative stakeholders, external stakeholders.	Semi-structured interviews, case studies, deep dives.	Comparative analysis across countries, topics, initiatives; content qualitative analysis.
Key Question	**IV-EFFICIENCY** **EQ 4 - To what extent is the governance, management and internal coordination of the SG deemed suitable for achieving its objectives?**				
4.1	Have the financial and human resources been made available in an efficient and timely manner for smooth implementation of the SG Portfolio?	A) How has the budget allocation process and management affected SG cohesion, mission, and delivery? B) What would be the optimal allocation of time commitments among other roles of the SG management teams? C) How has the structure of the SG and the wider CGIAR system influenced efficiency in research and partnership? D) What has been the role of centers in facilitating efficiencies while implementing the SG Portfolio?	Technical reports; Initiative leaders and co-leaders; M&E officers; staff; initiatives' partners.	Semi-structured interviews, desk review.	Process analysis.
4.2	What are the internal and external factors influencing efficiency	A) What mechanisms and systems (e.g., finance, human resources, digital) at SG level have supported an effective administration and achieved efficiencies in	Technical reports; initiative leaders and co-leaders;	Semi-structured interviews, desk review.	Process analysis.

	Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
	within a system of legally independent centers, considering the constraints of limited resources?	delivery within and across the SG-level portfolio? B) What cost recovery mechanisms are in place for services and functions provided across centers, and how could these be optimized for best value-for-money in delivery of the SG portfolio? C) Has the research funding mechanism been effective for funding critical continuous operations and operational improvements? D) What is the role of the SG, and/or the centers, in raising funds to support the SG ToC? E) What have been the specific operational and strategic challenges affecting efficiency and how can they be improved in the future? F) Is there enough clarity of the roles and responsibilities within the SG? G) Tho what extent SG coordination and communication mechanisms are suited to deliver results? H) Have protective measures been put in place to mitigate risks and have they proven to be effective? I) What is the stakeholder assessment of the efficiency of the institutional setup of the SG?	initiatives' partners; staff.		
4.3	How has CGIAR's Integration Framework Agreement design and roll-out aided SGs to effectively stimulate the learning, monitoring, and adaptability of the SG Portfolio, through initiatives?	A) What approaches are used in the SG to improve efficiency of management of the Research Portfolio and how effective are they? B) How did the approach to allocation of resources (funds, people, time, expertise) support the achievement of the SGs results? C) How timely have financial or other mechanisms been identified and implemented to enhance the responsiveness of research and innovation to new challenges? D) How effectively is the SG monitoring, documenting	Technical reports; initiative leaders and co-leaders; M&E officers; staff; initiatives' partners.	Semi-structured interviews, desk review.	Process analysis.

	Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
		and sharing its results, lessons learned and experiences? E) Do the SG and the initiatives have an adequate monitoring and evaluation framework and capitalization plan? F) Were risk assessment and mitigation strategies designed and implemented during the period covered by the evaluation?			
Key Question	**V-QUALITY OF SCIENCE** **5) To what extend does the SG ensure the Quality of Science (scientific credibility and legitimacy)?**				
5.1	To what extent do the management processes of the SGs ensure the QoS (including credibility, legitimacy, relevance to next stage users, and potential effectiveness) of the research and operations?	A) How appropriate is the research design under the SG initiatives; B) Is the adopted methodology under the SG appropriate and credible for the planned research activities? C) Has the SG Research Portfolio been co-designed with key partners? D) How well were the needs of beneficiaries considered in the SG Research Portfolio? E) Are roles and responsibilities sufficiently clear and with due recognition? F) Are partnerships inclusive and recognized? G) Are planned processes sufficiently gender aware and responsive? H) Is the donor commitment to funding secure and adequate? I) Is capacity building appropriate for planned activities?	Internal and external stakeholders; technical reports.	Desk review; semi-structured interviews.	QoS analysis.
5.2	To what extent and how are the research outputs by the SGs of	A) Are resources (laboratories, fields) adequate to implement the SG Research Portfolio? B) Has the recent restructuring towards One CGIAR facilitated or hindered the generation of quality	Bibliometrics and altmetrics for peer-reviewed publications;	Desk review; semi-structured interviews.	QoS analysis.

	Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
	high quality and influential?	outputs? C) Are peer-reviewed publications generated of sufficiently high quality and open access? (use of bibliometrics and altimetrics–see suggested methodology below) D) Are physical outputs such as improved varieties, technologies, methodologies, digital innovations etc. of high quality; relevant to next stage users and of IPG value? E) Are other written outputs such as working papers, technical reports and policy briefs of high quality and relevant to next stage users?	rubrics for communication methods and tools, other written outputs and physical outputs.		
Key Question	**VI-CROSS-CUTTING THEMES** **6) How well were the cross-cutting themes of partnerships, gender and climate change integrated into design and implementation of the SG Portfolio?**				
6.1	To what extent did the SG design enhance partnerships reach of CGIAR?	A) To what extent has the SG managed to engage relevant partners during the design and implementation of its activities? B) To what extent have the SG activities brokered institutional collaborations in countries/regions covered by the initiatives? C) To what extent has the SG promoted complementarity, harmonization and coordination with key partners to maximize the achievement of results? D) Are there any challenges related to developing partnerships during the implementation of the SG activities? E) To what extent partnerships were aligned with CGIAR Partnership Engagement Framework?	Initiative leaders, co-leaders, initiative stakeholders, external stakeholders, technical reports.	Semi-structured interviews, desk review, case studies, deep dives; focus group discussions.	Analysis of the validity of the ToC, process analysis; content qualitative analysis.
6.2	How well were the cross-cutting themes of partnerships,	A) To what extent were gender considerations taken into account in designing and implementing the SG initiatives?	Initiative leaders, co-leaders, initiative	Semi-structured interviews, desk review, case	Comparative analysis across countries, topics,

	Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
	gender and climate change integrated into design and implementation (tagging)?	B) Were initiatives implemented in a manner that ensures gender equitable participation and benefits? C) To what extent were women given access to the services delivered by the initiatives and to what extend did women participate in the SG activities? D) Was there use of gender disaggregated data during monitoring activities? E) Was there adoption of specific gender approaches to promote the empowerment of women along the SG activities? F) To what extent have the SG initiatives contributed to the promotion of gender equality and women's empowerment? G) To what extent has climate change mitigation been mainstreamed while designing and implementing SG initiatives ? H) To what extent has climate change adaptation been integrated and implemented?	stakeholders, external stakeholders, technical reports.	studies, deep dives, focus group discussions.	initiatives; content qualitative analysis, process analysis.
6.3	How well were the cross-cutting themes of gender, social inclusion, and climate change integrated into design and implementation?	A) To what extent were gender considerations taken into account in designing and implementing the SG initiatives? B) Were initiatives implemented in a manner that ensures gender equitable participation and benefits? C)To what extent were women given access to the services delivered by the initiatives and extent of female participation in the SG activities; D) Was there use of gender disaggregated data during monitoring activities? E) Was there adoption of specific gender approaches to promote the empowerment of women along the SG activities? F) To what extent have the SG initiatives contributed to the promotion of gender equality and women's	Initiative leaders, co-leaders, initiative stakeholders, external stakeholders, technical reports.	Semi-structured interviews, desk review, case studies, deep dives, focus group discussions.	Comparative analysis across countries, topics, initiatives; content qualitative analysis, process analysis.

Sub-questions	Indicators or dimensions to be assessed	Sources of data	Data collection method	Analysis method
	empowerment? G) To what extent climate change mitigation has been mainstreamed while designing and implementing SG initiatives ? H) To what extent has climate change adaptation been integrated and implemented?			

Annex 5: Key Informant Interview Guide (Combined)

This is a short guide on conducting and analyzing in-depth semi-structured interviews for the CGIAR Science Group (SG) Evaluation**.** This document is expected to guide the work of Team Leaders (TLs), Subject Matter Experts (SMEs), and other people involved in data collection through interviews.

Note: The questions to be asked and/or phrases to be quoted are in *italics*. What is not in italics is an input for you to conduct the interview (rules, tips, what to say at the beginning and at the end of each interview).

COLLECT DATA

Interview tips:

Please bear in mind the following while conducting in-depth interviews:

a. **Prior to the interview, read carefully and understand the questions, if** you have any doubt contact the SG TL. Learn the question so you can ensure to ask key questions as interviews often jump on topics.
b. **Stakeholders wearing multiple hats:** interviewees are likely to be involved in multiple initiatives and/or work packages (WPs) and you may not be aware of all those when you invite the person. At the start of meetings, inquire about participants' roles and adapt the meeting protocol accordingly. Then, inform the other SG evaluation TLs if one of the other roles is related to the scope of other SG.
c. **Be prepared for questions about IAES and the Evaluation Function:** Familiarize yourself with these topics to provide answers https://iaes.cgiar.org/evaluation. In case Svetlana and/or Ibtissem are taking part to the interview, you can delegate to them for explanation. (Evaluation Policy & Framework brief). Impact assessments are an input into our evaluations-our focus is process/performance evaluations.
d. When asking/posing questions, **try to be as clear as possible, speak slowly** and in a clear voice.
e. **Be open-minded:** Avoid bringing in your school of (scientific) thought, giving the feeling of being judgmental or critical on what the interviewee is saying. These attitudes could hinder the full and free expression of opinions by the interviewee.
f. **Be a good listener:** Use a proactive listening approach: focus on what the interviewee says, waiting for them to finish expressing their thoughts before moving to the next question; if necessary, paraphrase what the speaker is saying to convey that the interviewer is listening and that the message has been received.
g. **Expect emotions such as frustration and sadness:** this could affect framing of the discussion. Be attentive to signs of anxiety and allow space for individuals to express concerns related to uncertainty and morale due to CGIAR reform, or other work challenges.
h. **Ask open-ended questions:** these types of questions help to avoid being answered like Yes/No and require the interviewer to elaborate on their point. Yes or no questions are one-dimensional and do not stimulate discussion and are better suited for surveys. Similarly, 'why' questions put people on the defensive and lead them to take a 'politically correct' side on controversial issues.
i. **Submit factual questions before opinion questions:** for example, ask "What activities were implemented?" before asking "What are strengths and weaknesses of activities implemented?".
j. **Using probes:** for example, "Would you give me an example of what you are mentioning?", or "Could you elaborate on that further?". This is very important to have evidence of what the interviewee says.

Introduction to the Interview for all stakeholders

1. **Thank you**

I want to thank you for taking the time to meet with me today. My name is … and I am an independent consultant working on behalf of the Independent Advisory and Evaluation Service (IAES, formerly CGIAR Advisory Service CAS) of CGIAR.

2. **Introduction and purpose of the evaluation**

If needed, you can proceed with a short explanation of CGIAR and IAES by summarizing the following: **CGIAR** is a global research partnership dedicated to transforming food, land and water systems in a climate crisis. CGIAR works on agricultural research for development (AR4D), science and innovation for vulnerable and marginalized people across the world. The 2030 CGIAR Research and Innovation Strategy provides a good overview of the regions, impact areas and impact pathways. The 14 research centers that are part of the CGIAR system are non-profit research organizations conducting innovative research for development (https://www.cgiar.org/research/research-centers/).

The **IAES's** Evaluation Function delivers and supports **process and performance evaluations,** not impact assessments, which provide accountability, support to decision making, and lessons for improving quality and effectiveness of agricultural research for development outcomes.

This is an external independent evaluation of the CGIAR Resilient Agrifood Systems (RAFS) Science Group (SG). The evaluation is conducted upon the request of the CGIAR System Council.

Note: it is possible that not all interviewees may understand/remind what this entails. If necessary, provide a short explanation or reminder of RAFS SG. Information available at https://www.cgiar.org/research/cgiar-science-groups/.

The evaluation combines summative and formative dimensions; the purpose of the evaluation it to contribute to the steering of evidence-based decisions, support CGIAR's institutional learning, and provide accountability.

The objective of the evaluation is to determine:

- where success lies at the SG and initiative levels, and CGIAR at large.
- roll-out and implementation difficulties of the portfolio.
- reasons and factors behind successes and difficulties.
- good practices, lessons learned and recommendations for future programming at CGIAR.

The evaluation covers **the SG initiatives implemented during the period 2022-24.** This implies that results achieved under previous CGIAR Research Programs (CRPs) and platforms are not considered under the scope.

3. **Introduction to the interview (duration, how the interview will be conducted)**

The interview will take from 45 minutes to one hour.

The questions may be cited to help interviewees know in advance what will be asked; however, preference is for general areas specified above.

You can paraphrase the following suggested statement:

I will be asking you some questions regarding your work on this initiative/under this SG/thematic area in your center.

This will include (1) a bit of background on your involvement in this SG/initiative, (2) any successes that you note, (2) any challenges that affect achieving success, (4) lessons learned and recommendations to improve future programming.

I will be taping the interview to not lose any information (I can't write fast enough to get all information down). *Of course, the recording will stay in a protected evaluation folder of evaluation, and it is just to help me/us (the evaluation team) to remind what you say. If you have any objection or bad feelings towards recording, I will take only notes.*

NOTE: Normally, recording government officials is not allowed or appropriate. In the case of CGIAR stakeholders, the National Agricultural Research Extension Services (NARES)[4] may or may not be government *per se*. Therefore, I suggest not to record in the case of government officials. This requires an additional effort in terms of capturing at best the contents of the interview and faithfully transcribing what the interviewee says. In all other situations, I strongly recommend you record the interview (**with an appropriate explanation of the use that will be done and explanations of provisions for confidentiality and protection**).

Are there any questions about what I explained?

4. **Confidentiality and consent**

All information and comments you provide will be kept confidential. This means that your interview responses won't be shared with anyone and only used by the evaluation team members to elaborate findings and conclusions. **We will ensure that any information included in the report does not identify you as the respondent, unless you insist to be quoted**. You don't have to talk about anything you don't want to.

Are you willing to participate in this interview?

What to say at the end of each interview

Would you like to add anything else?

I'll be analyzing the information you and others provided, which will be used to draft the evaluation report. If something is not entirely clear, or if I need more information, I will contact you quickly. Thank you for your time!

ANALYZING DATA

Organize the **interview notes** soon after the interview when contents are still fresh in mind.

Then take adequate time to **transcribe the interview**, bearing in mind that generally, transcript requires more time than the interview itself. Interview transcripts should be as much detailed as possible and faithfully report what the interviewee said, avoiding mixing what was said with interviewer's interpretations and personal opinions, **the latter are indeed useful and can be placed in footnotes.**

In this phase, **verification and validation of the data and findings collected from the interviews is also required**. For example, if the interviewee says that the initiative strongly integrated a gender dimension, this should be supported through concrete examples and verified thorough appropriate desk review, quantitative data, additional interviews.

Considering the evaluation's timeline, interviews' transcripts should be uploaded in the SharePoint **within two days** from the date of the interview.

A final report on main findings from interviews conducted and desk review will be requested to SMEs. The report should also include the description of the evaluation methodology adopted, any limitations and the list of persons interviewed, and documents consulted.

[4] A designated group in column in Master Stakeholder Mapping–column G.

INTERVIEW QUESTIONS

NOTE: All questions below are linked to the evaluation matrix**. The interview may be time-consuming so adequate time should be planned (around one hour).** You may consider providing the key interviewees with a list of themes or copy of the questions to facilitate the process. Although not all interviewees will be asked all the questions (depending on their role and the activities in which they are involved in), by the end the evaluators and SMEs should have collected enough answers to all the questions contained in the core interview guide.

Per each evaluation criteria, select appropriate questions considering the role of the person/organization interviewed.

Although some questions can be skipped, if adequate information is gathered prior to the interview through desk reviews and email exchanges or through other meetings, the interview is challenging. **Do not go in a hurry, it is preferable to skip a few questions rather than asking all of them roughly. You may also consider arranging a follow-up with the interviewee to complete any important pending questions.**

After the interview's introduction (see above, pages 2-3), continue one by one with the questions below according to the type of stakeholder.

Questions marked with X may be eliminated according to what was mentioned in the Note. "OR" indicates that you can select one of two similar questions.

INTERVIEW QUESTIONS-SCIENCE GROUP LEVEL

SG directors, science (thematic) directors, M&E focal points, staff at SG level

GENERAL QUESTION

1. *X Please, briefly describe **your role and involvement** in the RAFS SG or in CGIAR.*

NOTE: Question 1 is not a requirement but is preferable. The brief description should take no more than five minutes. This is included to provide an opportunity for the interviewee to explain their work in their own words, it can be used as a sort of icebreaker and helps to set the scene for the following questions. If you believe you do not have enough time for all the questions and if you have already gathered enough information on interviewee's role -through desk review and prior email exchanges-you can proceed to the next question.

RELEVANCE

2. *Could you briefly explain how **the SG-specific rationale**[5] was conceptualized, and also mention any (internal and external) **consultative process and co-design carried out**?*
3. *What is the evidence-base behind the **assumptions and casual links** underlying the impact pathway contained in the SG **theory of change** (ToC)?*
    a. *Have any **risk assessments** been carried out? If so, could you explain how risks were identified?*
4. *Have any **contextual changes, or ToC developments,** affected the SG rationale? Can you give specific examples of contextual changes in target countries and explain how these*

[5] RAFS: *R4D focused on farm landscape management.*

affected the initiative rationale or its implementation? If the contextual changes were negative, what actions were taken to address the impacts?

   a. *Could you share any example of the **SG responsiveness to emerging concerns** and changing contexts, both in terms of rationale and modality of work?*

EFFECTIVENESS

5. Since the start of new CGIAR portfolio, between 2022-24, what would you consider to be the top SG **achievements *vis-a-vis* the SG ToC** (probe if necessary)? How are these achievements contributing to CGIAR Impact areas? (By asking this question, guide the conversation around one or more specific impact area-i) Nutrition, Health & Food Security; ii) Climate Adaptation & Greenhouse Gas Reduction; iii) Poverty Reduction, Livelihoods & Jobs; iv) Gender Equality, Youth and Social Inclusion; v) Environmental Health and Biodiversity).
6. Could you mention **any success** at initiative or a country level in one or more of the SG thematic areas and explain **which factors you would attribute the positive result?** Please tick the relevant area-one or more-and provide explanations.

Box 1. RAFS Thematic Areas

RAFS

- Aquatic food systems.
- Livestock-based systems.
- Crop-based systems.
- Biodiverse agro-ecosystems.
- RIIs.

7. To what extent has the SG supported **research innovation** at country, regional or global level? Is there any evidence **of innovative solutions or new knowledge** generated by the SG **being used/implemented** by partners and stakeholders, e.g., NARES, ministries, partners? Could you provide examples?
8. What are the **main difficulties or challenges** affecting the SG efforts in successfully implementing its portfolio of initiatives, and align to ToC aspirations?
9. What have been the **missed opportunities** and how could the SG intervene in those areas?
10. Has the SG adopted any specific **gender strategy/approach** to promote equality and women's empowerment across its initiatives and activities? How and why did you tag the initiative for gender? Have you engaged with the Gender Platform? If so, could you provide examples?
11. Broadly, the SG initiatives are labelled as ('principal' or 'significant') for **climate change** adaptation and/or mitigation, could you provide more information on how climate change is considered/tackled at SG level? Is there any specific guidance for initiative leads existing on this?
12. Are you aware of the **CGIAR Partnership Framework**? How would you consider the SG or initiative or center capacity to broker **institutional collaborations** and to establish **partnerships** in countries/regions covered by the initiatives?
    a. Is the SG able to partner with **different types of stakeholders**? Could you provide examples?
    b. How would you consider the **responsiveness** of these partners so far?
    c. Do you believe that SG partnerships have definite **complementing value** in terms of resources, capacities, advocacy and outreach? If yes, could you please describe?

d. How helpful/inhibiting is the **CGIAR architecture suited** to the **establishment and operationalization** of partnerships?

EFFICIENCY

13. During period 2022-24, have **financial and human resources** been made available in an **efficient and timely manner** for the smooth implementation of the SG Portfolio/initiative?
    a. How **timely have financial resources** been identified and implemented to enhance the responsiveness of research to new challenges or **emerging needs**?
14. Do you believe there is adequate **balance between available resources and expected results**? If not, what measures could be taken?
15. What is the role of the SG and/or the centers, in **raising funds** to support the Portfolio?
16. What are the **SG monitoring mechanisms** and to what extent the **results** linked to the implementation of the SG activities are effectively **assessed, monitored, and reported?** What and how **monitoring data and evaluation evidence inform strategic planning? How are outcomes measured at the SG level?**
17. Has the SG developed any **mechanism to capitalize results** from different initiatives? If so, could you describe it and explain how it contributes to **organizational learning?**
18. Do you think there is sufficient **complementarity and coordination** among SG initiatives, among different SGs, between the SG and the platforms, and among different CGIAR centers? Could you elaborate on that further?
19. What have been the specific **operational and strategic challenges affecting efficiency** and how can these be improved in the future?
20. What **cost recovery mechanisms** are in place for services and functions provided across centers, and how could these be optimized for best value-for-money in delivering the SG Portfolio?

COHERENCE

21. What is your opinion on the **SG alignment** with centers priorities? Could you share examples of alignment?
22. In your opinion, to what extent is SG's work based on **CGIAR's comparative advantage**? Could you give an example? Could you elaborate on that further?
23. How and to what extent have **GTIs and RII** engaged one another to assess, prioritize and align around regional and national priorities?
24. How has the **SG architecture facilitated coherence, coordination and collaborative research** and innovation offers from CGIAR, considering comparative advantage?
25. Has the SG facilitated **reduction in duplication of research efforts** within CGIAR? If so, how?

QUALITY OF SCIENCE
QoS DESIGN

26. X To what extent does the **SG Research Portfolio address global/regional problems**? Could you provide examples?

NOTE: This question can be skipped if enough information is collected through questions under RELEVANCE.

27. Is the **adopted methodology appropriate and credible** for the planned research? Could you elaborate on that further?
28. X Could you provide any examples of how the SG research has been co-designed with external partners and stakeholders?

NOTE: This question can be skipped if enough information is collected through questions under RELEVANCE.

QoS INPUTS

29. Is the **disciplinary skill base** appropriate and sufficient to satisfactorily implement the SG Research Portfolio?
    a. Are additional skills needed?
    b. Would integration with other initiatives provide needed skills?
30. Is the **composition of the team** sufficiently diverse (gender, nationality, age) to legitimately implement planned research activities?
31. Are **resources** (laboratories, fields) adequate to implement the research activities?
32. Is **capacity building** offered within the SG Research Portfolio appropriate for planned research activities?
33. Is **donors' commitment** to funding for the SG Research Portfolio secure and adequate?

QoS PROCESSES

34. Are **roles and responsibilities** sufficiently clear and with due recognition?
35. Are **partnerships** inclusive and recognized?
36. Are **leadership and management processes adequate** to support research scientists in an uncertain environment?
37. Has the **recent restructuring of CGIAR Research Portfolio** negatively affected the generation of quality outputs?
38. Are **incentives** in place within the SG to reward performance?
39. Have potential internal and external negative consequences and **risks** been sufficiently recognized and articulated?

QoS OUTPUTS

40. Are **peer-reviewed publications** generated of sufficiently high quality and open access? (use of bibliometrics and altmetrics)
41. Are other **written outputs** such as working papers, technical reports and policy briefs of high quality and relevant to next stage users?
42. Are **physical outputs** such as improved varieties, technologies, methodologies, digital innovations etc. of high quality, of IPG value, aligned with SDGs as well as influential and relevant to next stage users?
43. Do the outputs position the SG Research Portfolio for **uptake** and impact? (also relates to IPGs). Is there a scaling **readiness assessment system** in place?
44. Is there sufficient effective **engagement with policy makers?**
45. Are there any **factors affecting the quality of the scientific outputs** or preventing access to or use of the knowledge generated under the SG Research Portfolio?

GOOD PRACTICES, LESSONS LEARNED, RECOMMENDATIONS

46. Can you cite **good practices and lessons learned on the SG modality of work?**
47. Please provide your **recommendations/suggestions** for improving the relevance, effectiveness, efficiency, QoS of the SG and to inform the P25 development.

INTERVIEW QUESTIONS-INITIATIVE LEVEL

Initiative Leaders, co-leaders, country focal points, WP leaders, M&E focal points, other staff at initiative level, CGIAR implementing centers

GENERAL QUESTION

1. X Please, briefly describe **your role and involvement** in the initiative. xx

NOTE: Question 1 is not a requirement but is preferable. The brief description should take no more than five minutes. This is included to provide an opportunity for the interviewee to explain their work in their own words, it can be used as a sort of icebreaker and helps to set the scene for the following questions. If you believe you do not have enough time for all the questions and if you have already gathered enough information on interviewee's role - through desk review and prior email exchanges - you can proceed to the next question.

RELEVANCE

2. In your opinion, what are the **country-regional-global research and development needs and priorities** that might be adequately addressed through this initiative and how is the initiative consistent with these needs and priorities?
3. In your opinion, what is the initiative's **added value** for the country and/or for the topic addressed, and/or for the involved stakeholders?
4. Have any **contextual changes affected the initiative rationale** compared to the period in which it was conceptualized and launched? Can you give specific examples of contextual changes in target countries and explain how these affected the initiative rationale or its implementation? If the contextual changes were negative, what actions were taken to address the impacts?
5. Did the initiative design process **include participatory bottom-up mechanisms** to respond to local demand? If so, could you provide examples? Or: Can you explain **how local partners participated in the research design process?** What were the processes or stages by which country or regional needs were incorporated to respond to contextual demand?
6. To what extent have the **assumptions** contained in the ToC of the initiative occurred? Are there **new hypotheses** that have emerged after the ToC formulation? How are these affecting the implementation of the initiative?

EFFECTIVENESS

7. Overall, what **progress** has been made towards the initiative expected outputs and what is the likelihood that these outputs will lead to the planned end-of-the initiative outcomes? Are there any related **constraints?**
8. Or: Considering the period 2022-24, what **preliminary changes** can be observed as result of the initiative and/or could you mention **any success and explain to which factors** you would attribute the positive effects?
9. To what extent has the initiative supported **research innovation** at country, regional or global level? Is there any evidence of **innovative solutions or new knowledge** generated by the **initiative been used/implemented** by partners and stakeholders? Could you provide examples?
10. Or: To what extent do you think the **knowledge** generated by the initiative has a potential to be **actionable** by local partners and organizations?

11. To what extent is the initiative **supporting capacities** through knowledge brokering, the sharing of know-how and peer-to-peer learning among partners and stakeholders? Please, provide examples.
12. To what extent is the initiative contributing to the development, improvement, and implementation of **policies** that improve the resilience of agri-food systems?
13. What **constraints–both internal and external**–has the initiative faced in implementing its WPs and activities? How have these constraints been addressed?
14. Could you explain whether and how the initiative takes **gender** into account both in terms of design and implementation?
15. What is, to date, the **initiative outreach to the vulnerable poor** and marginalized groups? Are there any related challenges?
16. Do you believe the initiative **partnerships** have definite **complementing value** in terms of resources, capacities, advocacy and outreach or not? Could you please describe it? How would you consider the **responsiveness** of external partners so far?
17. Are there any specific **challenges related to partnerships** within this initiative?
18. To what extent is the initiative interacting and establishing **synergies** with other RAFS initiatives, CGIAR Platforms and/or other SGs?
19. To what extent is the initiative reinforcing **collaboration among CGIAR centers**? Please provide examples.
20. To what extent have **climate change mitigation and adaptation** been mainstreamed while designing and implementing the initiative? Please provide concrete examples.

EFFICIENCY

21. Have **financial and human resources** been made available in an **efficient and timely manner** for the smooth implementation of the initiative?
22. Have any **budgetary constraints** affected the delivery of results?
23. Do you believe there is adequate **balance between available resources and expected end-of-the-initiative outcomes?**
24. What is the role of the SG, and/or centers, in **raising funds** to support the initiative?
25. Does the initiative have a **monitoring system established** (M&E responsible, budget for monitoring, frequency and modality of data collection across countries, M&E digital tools, partners taking part to the system)**?** To what extent the **results** linked to the implementation of the initiative are effectively **assessed, monitored, and reported?** Could you explain how **monitoring informs strategic planning? How are outcomes measured at initiative level, particularly regarding capacity building?**
26. Has the initiative developed any **mechanisms to capitalize on results** from different countries and partners? If so, could you describe it and explain how it contributes to organizational learning?
27. What have been the specific **operational challenges affecting efficiency** and how can these be improved in the future?
28. To what extent **coordination and communication mechanisms** within the initiative-and between the initiative and the SG-are suited to deliver results?
29. OR: How would you consider the efficiency of the SG and the initiative institutional set-up?
30. How efficiency affects partnerships (look at budget cuts for example).
31. In the last two years, with the occurred changes, do you feel more or less frustrated, and why? (remember that MoUs and budgets are signed by centers not by CGIAR).
32. Do you have this initiative under your job description?

COHERENCE

33. In your opinion, to what extent is the initiative based on **CGIAR's comparative advantage** (https://iaes.cgiar.org/isdc/publications/identifying-and-using-cgiars-comparative-advantage)? Could you elaborate that further?
34. What is the comparative advantage **of having CGIAR** dealing with this topic/initiative?
35. What is the comparative **advantage of having this initiative under the SG?**
36. What is the comparative advantage and value added of having SGs? How do they help addressing challenges in efficiency, different resources, different topics?
37. Based on the experience of this initiative, how has the **SG architecture facilitated coherence, coordination and collaborative research and innovation** offers from CGIAR?

QUALITY OF SCIENCE
QoS DESIGN

38. X To what extent does the **SG Research Portfolio address global/regional problems**? Could you provide examples?

NOTE: This question can be skipped if enough information is collected through questions under RELEVANCE.

39. Is the **adopted methodology appropriate and credible** for the planned research? Could you elaborate on that further?
40. X Could you provide any examples of how the SG research has been **co-designed** with external partners and stakeholders?

NOTE: This question can be skipped if enough information is collected through questions under RELEVANCE.

QoS INPUTS

41. Is the **disciplinary skill base** appropriate and sufficient to satisfactorily implement the SG Research Portfolio?
    a. Are additional skills needed?
    b. Would integration with other initiatives provide needed skills?
42. Is the **composition of the team** sufficiently diverse (gender, nationality, age) to legitimately implement planned research activities?
43. Are **resources** (laboratories, fields) adequate to implement the research activities?
44. Is **capacity building** offered within the SG Research Portfolio appropriate for planned research activities?
45. Is **donor commitment** to funding for the SG Research Portfolio secure and adequate?

QoS PROCESSES

46. Are **roles and responsibilities** sufficiently clear and with due recognition?
47. Are **partnerships** inclusive and recognized?
48. Are **leadership and management processes adequate** to support research scientists in an uncertain environment?
49. Has the **recent restructuring of CGIAR Research Portfolio** negatively affected the generation of quality outputs?
50. Are **incentives** in place within the SG to reward performance?
51. Have potential internal and external negative consequences and **risks** been sufficiently recognized and articulated?

QoS OUTPUTS

52. Are **peer-reviewed publications** generated of sufficiently high quality and open access? (use of bibliometrics and altmetrics)
53. Are other **written outputs** such as working papers, technical reports and policy briefs of high quality and relevant to next stage users?
54. Are **physical outputs** such as improved varieties, technologies, methodologies and digital innovations of high quality, of IPG value, aligned with SDGs as well as influential and relevant to next stage users?
55. Do the outputs position the SG Research Portfolio for **uptake** and impact? (also relates to IPGs). Is there a scaling **readiness assessment system** in place?
56. Is there sufficient effective **engagement with policy makers?**
57. Are there any **factors affecting the quality of the scientific outputs** or preventing access to or use of the knowledge generated under the SG Research Portfolio?

GOOD PRACTICES, LESSONS LEARNED, RECOMMENDATIONS

58. Can you cite **good practices and lessons learned on the SG modality of work?**
59. Please, provide your **recommendations/suggestions** for improving the relevance, effectiveness, efficiency, quality of science of the SG and to inform the P25 development.

INTERVIEW QUESTIONS FOR CGIAR external partners – NARES, academia, governments, CSOs, private sector, UN agencies.

NOTE: The list of questions for external stakeholders should be fine-tuned according to the type of stakeholder interviewed. This is a general set of questions that could be further detailed according to the specific role and experience of each stakeholder.

1. X Please, briefly describe your involvement/the institution/Organization's involvement in activities related to the SG.

NOTE: Question 1 is not a requirement but is preferable. The brief description should take no more than five minutes. This is included to provide an opportunity for the interviewee to explain their work in their own words, it can be used as a sort of icebreaker and helps to set the scene for the following questions. If you believe you do not have enough time for all the questions and if you have already gathered enough information on interviewee's role-through desk review and prior email exchanges- you can go directly to the next question.

RELEVANCE

2. To what extent are the SG initiatives (or this initiative) **relevant to your Institution/ organization's situation?** That is, are the SG initiatives aligned with needs and priorities of your institutions/Organization? Explain why.
3. Do you believe that you (your institution/organization) have (has) been **able to contribute to the design and planning of the SG initiatives (or this particular initiative)?** If yes, how? If not, what is your opinion on this?
4. What do you consider as **the SG (or this initiative) added value** in promoting resilient agri-food systems compared to other international organizations?

EFFECTIVENESS

5. Considering the period 2022-24, **what preliminary changes** can be observed because of the initiative? Could you mention **any success and explain which factors** contributed to the positive effects?

6. To what extent do you think the **knowledge** generated by the initiative has a potential to be **actionable** by local partners and organizations? Please, provide examples, if any.
7. Or: Are you engaged (your organization/institution) in **up-scaling and replicating research and knowledge generated under the initiative?** If yes, please summarize.
8. Do you think that the SG's work has in any way strengthened your organization's/institution's capacities and outreach? If yes, how and in which areas?
9. Or: Did you receive any specific **training or capacity building from CGIAR to be part of this initiative? I**f yes, please explain.
10. Based on your experience of collaboration with the SG (or with this initiative), what are the **main difficulties and challenges** affecting efforts in successfully implementing the SG's activities?
11. To what extent has the SG/CGIAR mobilized partnerships in your region/country? Please give examples. What could be other opportunities for partnerships?

EFFICIENCY

12. Based on your experience with this initiative, to what extent do you think there is an adequate **balance between available resources (human, financial) and expected end-of-the initiative outcomes?**
13. In implementing this initiative, what is your appreciation of **the quality of the coordination mechanisms with your organization/Institution?** (Were role and tasks clear enough? Was the initial timeline respected? Did you receive enough guidance on the implementation of the activities? Were tools for collaboration efficient?)
14. Have you (or your institution/organization) been involved in **monitoring and capitalizing results** achieved under the initiative? If yes, could you please describe how?

COHERENCE

15. Do you think there is sufficient **complementarity, synergy and coordination** with other ongoing initiatives in the same thematic areas?
16. Have you noticed any **duplications of efforts** compared to other ongoing research initiatives in the country (or duplication around the same topic)?

QUALITY OF SCIENCE

17. Could you provide any examples of how research activities within the initiative have been **co-designed** with external partners and stakeholders?

NOTE: This question can be skipped if enough information is collected through questions under RELEVANCE.

18. In your opinion, is there any **factor affecting the quality of the scientific outputs or scientific processes adopted under the initiative** and/or preventing you from accessing or using the knowledge generated?
19. Basing on your experience within this initiative, are **resources (human resources, funds, laboratories, fields) adequate** to implement the planned research activities?
20. Is it likely that the outputs planned under the initiative will be scaled-up? (also relate to IPGs). Have you noticed the presence of any **scaling readiness assessment system in place?**

GOOD PRACTICES, LESSONS LEARNED, RECOMMENDATIONS

21. Can you cite **good practices and lessons learned emerging from your participation or knowledge of this initiative?**

22. **What do you view as major opportunities for the SG in your region/country?**
23. Please, provide your recommendations/suggestions for improving the effectiveness of the SG and/or of this initiative. Or: What could be done better for improving the results and contributions of SG/CGIAR in your region/country or at initiative level?

INTERVIEW QUESTIONS FOR Donors

1. How did the (name of the donor) come to be involved with the SG (or with this specific initiative) and **how does it relate to your own organizational interests and priorities?**
2. How else have you previously been involved in the work of CGIAR?
3. Who are your most **strategic partners** in promoting research and development around resilient agri-food systems? In your opinion, has the SG effectively liaised with these partners? Please, explain.
4. What could be **other opportunities for partnerships?**
5. What do you consider the main challenges related to long term support to the SG/initiative?
6. Please, provide your **recommendations/suggestions** for improving the effectiveness of the SG and/or of this initiative. Or: What could be done better for improving the results and contributions of SG/CGIAR in your region/country or at initiative level?

Annex 6: List of Stakeholders Consulted in Interviews-Total: 183

Table 3. List of Stakeholders Consulted in Interviews

INTERVIEWEE	GENDER	LOCATION	TYPE
Hung Nguyen-Viet	M	Kenya	CGIAR
Vivian Hoffmann	F	USA	CGIAR
Wacera Ndonga	F	Kenya	CGIAR
Steven Lam	M	Kenya	CGIAR
Olusola Augustine, Felejaye	M	Nigeria	CGIAR
Job Maguta Kihara	M	Kenya	CGIAR
Chinyere Obilo	F	Nigeria	CGIAR
Carlo Fadda	M	Kenya	CGIAR
Solomie Gebrezgabher	F	Ghana	CGIAR
Tosin Somorin	F	Ghana	CGIAR
Pamella Opiyo	F	Ghana	ARI, NARIS, NARES
Sean Mattson	M	Colombia	CGIAR
Natalia Ortiz Escobar	F	Colombia	CGIAR
Hectro Fabio Espinoza	M	Colombia	National/sub-national government
Ezequiel Cadavid Hernandez	M	Colombia	National/sub-national government
Nestor Romero Perilla	M	Colombia	CGIAR
Gisele Didier	F	Colombia	Research organization, think tank (IDRC)
Alejandro Ortega-Beltran	M	Nigeria	CGIAR
Nicholas James Davis	M	Kenya	CGIAR
Bram Govaerts	M	Mexico	CGIAR

INTERVIEWEE	GENDER	LOCATION	TYPE
Deissy Martinez Baron	F	Colombia	CGIAR
Andrea Estefania Castellanos	F	Colombia	CGIAR
Augusto Castro	M	Colombia	CGIAR
Julian Humberto Rivera	M	Colombia	CGIAR
Andres Felipe Pino	M	Colombia	CGIAR
Monica Juliana Chavarro	F	Colombia	CGIAR
Carolina Gonzalez	F	Colombia	CGIAR
Adriana Patricia Tofiño Rivera	F	Colombia	ARI, NARIS, NARES
Cristiano Rossignoli	M	Malaysia	CGIAR
Marie-Charlotte Buisson	F	France	CGIAR
Simon Heck	M	Peru	CGIAR
Pay Drechsel	M	Sri Lanka	CGIAR
Susanne Bodach	F	Sri Lanka	CGIAR
Jayaratnam Asumptha	F	Sri Lanka	International, multilateral global/regional organization
Dzifa Agbefu	F	Ghana	CGIAR
Abdul Rauf Malimanga Alhassan	M	Ghana	Academia, University
Bertha Dartey	F	Ghana	National/sub-national government
Alessandra Galie	F	Kenya	CGIAR
Bjoern Ole Sander	M	Bangkok	CGIAR
Deepa, Joshi	F	Sri Lanka	CGIAR
Timothy J. Krupnik	M	Bangladesh	CGIAR
Purnima Menon	F	India	CGIAR
ISLAM, AKM Saiful	M	Bangladesh	CGIAR
Inga Jacobs-Mata	F	South Africa	CGIAR
Aminou Arouna	M	Ivory Coast	CGIAR
Regina Kapinga	F	Tanzania	CGIAR
Robert Asiedu	M	Nigeria	CGIAR
Jacobo Arango	M	Colombia	CGIAR
Kabugi, Assenath	F	Kenya	CGIAR
Natalia Triana Angel	F	Colombia	CGIAR
Juan Andrés Cardoso	M	Colombia	CGIAR
Stefan Bukart	M	Colombia	CGIAR
Ciniro Costa Jr	M	Colombia	CGIAR
Maya Rajasekharan	F	Colombia	CGIAR
Julián Chará	M	Colombia	Research organization, think tank (IDRC)
Carlos Villavicencio	M	Colombia	Private sector association/company
Juan Pablo Castro	M	Colombia	Private sector association/company

INTERVIEWEE	GENDER	LOCATION	TYPE
Jhon Freddy Gutierrez	M	Colombia	ARI, NARIS, NARES
Sara Valencia	F	Colombia	ARI, NARIS, NARES
Felipe Torres	M	Colombia	National/sub-national government
Hector William Moreno Quitian	M	Colombia	National/sub-national government
Diana Leidy	F	Colombia	National/sub-national government
Andy Jarvis	M	Colombia	Funder, Donor
Rodrigo A. Martínez Sarmiento	M	Colombia	ARI, NARIS, NARES
Olga Lucía Majorga	F	Colombia	ARI, NARIS, NARES
Jorge Mario Díaz Luengas	M	Colombia	ARI, NARIS, NARES
Olga Pérez	F	Colombia	ARI, NARIS, NARES
Carolina Gonzalez Almario	F	Colombia	ARI, NARIS, NARES
Temina Lalani-Shariff	F	India	CGIAR
Jim Hammond	M	England	CGIAR
Roberto Rocha Correa	M	Tunisia	CGIAR
Tomas Solis	M	Colombia	CGIAR
Inese Berzina	F	Latvia	CGIAR
Robert Caudwell	M	Vietnam	CGIAR
Joe Tohme	M	Colombia	CGIAR
Miguel Antonio Romero Sanchez	M	Colombia	CGIAR
Tran Ngoc Thach	M	Vietnam	ARI, NARIS, NARES
Truong Thi Kieu Lien	F	Vietnam	ARI, NARIS, NARES
Nguyen Van Men	M	Vietnam	National/sub-national government
Ly Hung	M	Vietnam	National/sub-national government
Luu Minh Tuan	M	Vietnam	National/sub-national government
Tran My Hanh	F	Vietnam	National/sub-national government
Nguyen Van Sang	M	Vietnam	National/sub-national government
Tran Thi Kim Thuy	F	Vietnam	National/sub-national government
Le Nhat Tao	M	Vietnam	National/sub-national government
Le Thanh Tung	M	Vietnam	National/sub-national government
Nguyen Van Hung	M	Vietnam	CGIAR
Dong Van Canh	M	Vietnam	End user
Tran Van Dao	M	Vietnam	End user
Nguyen Van Phuong	M	Vietnam	End user
Dong Van Minh Vuong	M	Vietnam	End user
Le Dinh Du	M	Vietnam	National/sub-national government
Nguyen Doan Quoc Duy	M	Vietnam	National/sub-national government
Nguyen Tan Dat	M	Vietnam	Academia, University
Dinh Thi Kim Dung	M	Vietnam	CGIAR

INTERVIEWEE	GENDER	LOCATION	TYPE
Vuong Bui	M	Vietnam	ARI, NARIS, NARES
Sinh Dang	M	Vietnam	CGIAR
Ha Nguyan	F	Vietnam	CGIAR
Mrs Han Dink	F	Vietnam	Consultant, Freelance
Dr Huan	M	Vietnam	Other/TBD
Mr Hiu	M	Vietnam	Other/TBD
Ihuc	M	Vietnam	National/sub-national government
Dr Toang	M	Vietnam	National/sub-national government
Mr Ngan	M	Vietnam	National/sub-national government
Mr Toan	M	Vietnam	National/sub-national government
Mr Du	M	Vietnam	National/sub-national government
Mr Tu	M	Vietnam	National/sub-national government
Mr Tan	M	Vietnam	National/sub-national government
Mr Trong	M	Vietnam	End user
Mr Duong	M	Vietnam	National/sub-national government
Khwong	M	Vietnam	National/sub-national government
Mrs Tho	F	Vietnam	End user
Fred Unger	M	Vietnam	CGIAR
Kees Swaans	M	Vietnam	CGIAR
Huong Pham	F	Vietnam	CGIAR
Mary Atieno Otieno	F	Vietnam	CGIAR
Diego Naziri	M	Vietnam	CGIAR
Thanh Nguyen	M	Vietnam	CGIAR
Dao The Anh	M	Vietnam	ARI, NARIS, NARES
Truong Tuyet Mai	F	Vietnam	ARI, NARIS, NARES
Le Thi Huyen	F	Vietnam	ARI, NARIS, NARES
Pham Thi Bich Ngoc	F	Vietnam	ARI, NARIS, NARES
Do Phuong	F	Vietnam	National/sub-national government
Tran Cong Thang	M	Vietnam	National/sub-national government
Tran Dai Nghia	M	Vietnam	National/sub-national government
Latrong Hai	M	Vietnam	National/sub-national government
Nguyen Do Anh Tuan	M	Vietnam	National/sub-national government
Pham Thi Ngoc	F	Vietnam	National/sub-national government
Bui Nghia Vuong	M	Vietnam	National/sub-national government
Trang Lee	F	Vietnam	Academia, University
Phuc Pham Duc	M	Vietnam	Academia, University
Phan Van Tan	M	Vietnam	National/sub-national government
Pawin Paduingtod	M	Vietnam	International, multilateral global/regional organization

INTERVIEWEE	GENDER	LOCATION	TYPE
Ruby Asmah	F	Ghana	Research organization, think tank (IDRC)
Lawrence Ahiah	M	Ghana	National/sub-national government
Giulia Zane	F	Ghana	CGIAR
Komlavi Akpoti	M	Ghana	CGIAR
AbdulRahaman Fataw	M		End User
Osman Gaali	M	Ghana	End User
Emmanuel Tetteh-Doku Mensah	M	Ghana	Research organization
Mr. Edward	M	Ghana	Private sector association/company
Theophilus Kwabla Tengey	M	Ghana	ARI, NARIS, NARES
Richard Oteng-Frimpong	M	Ghana	ARI, NARIS, NARES
Isaac Amegbor	M	Ghana	ARI, NARIS, NARES
Gloria Adu Boakyewaa	F	Ghana	ARI, NARIS, NARES
Peter Asungre	M	Ghana	ARI, NARIS, NARES
Ken Opare Obuobi	M	Ghana	ARI, NARIS, NARES
Edward Martey	M	Ghana	ARI, NARIS, NARES
Emmanuel Owusu	M	Ghana	ARI, NARIS, NARES
Alex Yeboah	M	Ghana	ARI, NARIS, NARES
Francisca Frimpomaa	F	Ghana	ARI, NARIS, NARES
Prince Etwire	M	Ghana	ARI, NARIS, NARES
Kwabena Darkwa	M	Ghana	ARI, NARIS, NARES
Abdul Rashid Issah	M	Ghana	ARI, NARIS, NARES
Salim Lamini	M	Ghana	ARI, NARIS, NARES
Mercy Mingle	F	Ghana	ARI, NARIS, NARES
Nuhu Jinbaani	M	Ghana	ARI, NARIS, NARES
Joseph Adjebeng Danquah	M	Ghana	ARI, NARIS, NARES
Francis Kusi	M	Ghana	ARI, NARIS, NARES
Prof. Adda Wesseh	M	Ghana	Academia, University
Solomon A. Konlan	M	Ghana	ARI, NARIS, NARES
Baba Musah	M	Ghana	Local government
Olufunke Cofie	F	Ghana	CGIAR
Wuletawu Abera	M	Ghana	CGIAR
Samuel Adjei -Nsiah	M	Ghana	CGIAR
Leonard Rusinamhodzi	M	Ghana	CGIAR
Phuong Nguyen	F	Vietnam	CGIAR
Jackline Nekesa Makokha	F	Kenya	National/sub-national government
Renee Bullock	F	Kenya	CGIAR
Mariam D Quain	F	Ghana	Research organization, think tank (IDRC)
Rasheed Imoro	M	Ghana	Local government

INTERVIEWEE	GENDER	LOCATION	TYPE
Abdulrahman Nurudeen	M	Ghana	CGIAR
Sarah Appiah	F	Ghana	CGIAR
Aggrey Agumya	M	Ghana	Regional/Continental Partner
Deepa Joshi	F	Sri Lanka	IWMI
Sarah Schmidt	F	Germany	International, multilateral global/regional organization
Robin Sanchez Moron	M	Colombia	End user
Alba Trillos	F	Colombia	End user

Annex 7: Online Survey Results

The online survey is one of the data collection methods conducted for the evaluation.

The survey was released on April 26 and closed on 15 May 2024. The survey was released in English but was available in Spanish upon request. The survey was designed in such a way that respondents were directed to a set of specific questions based on their respective types of engagement with CGIAR.

A total of 437 individuals responded to the survey, out of an estimated 1,233 recipients. The survey was sent to the following groups:

- CGIAR staff and consultants (258 responses[6])
- External Partners (142 responses[7])
- Donors (10 responses).

The exact numbers of recipients may differ from this estimation given that the evaluation team did not have access to complete lists for privacy and data protection reasons, and thus was not able to fully track the recipients of the survey.

7.1. Survey Results for RAFS SG

7.1.1 Overview of RAFS SG Respondents

Table 3 below reveals that the majority of the 78 respondents who indicated that the most of their work fell under the RAFS SG[8] were male. Half of the respondents fell into the role category of 'Scientist/Researcher/PhD student', followed by 'Initiative/Work package Lead/co-lead'. 72% of respondents have been involved with CGIAR for at least five years, with 50% of respondents having been involved for more than 10 years.

[6] A total of 271 internal CGIAR respondents took part in the survey. Out of these, 13 respondents were excluded because they left the survey at the beginning and too few questions were answered, so it was not relevant to include them in the analysis.

[7] A total of 271 external partners took part in the survey. Out of these, 14 respondents only answered the first section on respondent background.

[8] The question on affiliation to a Science Group was asked to internal CGIAR staff/consultants only, and not to external partners.

Table 4. Online Survey-Profile of RAFS SG Respondents (N= 78)

	Profile of Respondents	No. of respondents	Percentage
Gender	Male	48	62%
	Female	27	35%
	Rather not say	3	4%
Role	Scientist/Researchers/PhD student	39	50%
	Initiative/Work package Lead/co-Lead	24	31%
	MELIA/Coordinator/PPU	11	14%
	Support Global Group (P&C, Finance, PCU, D&D, other)	6	8%
	Science Group/Platform Managing Director	4	5%
	Other	4	5%
Period of involvement with CGIAR	Less than 2 years	5	6%
	2 to 5 years	17	22%
	5 to 10 years	17	22%
	More than 10 years	39	50%

The geographical distribution of the 78 respondents spanned 29 countries (refer to Appendix 1 for a detailed list of countries and respondent counts). Respondents were primarily engaged in 21 distinct initiatives and 77% of them also contribute to other initiatives (see Figures 1 and 2 below). In Figure 1 RAFS initiatives are highlighted in green, System Transformation (ST) initiatives in orange and Genetic Innovations (GI) initiatives in light green.

Figure 4. Main Initiative of Respondents–RAFS SG [9]

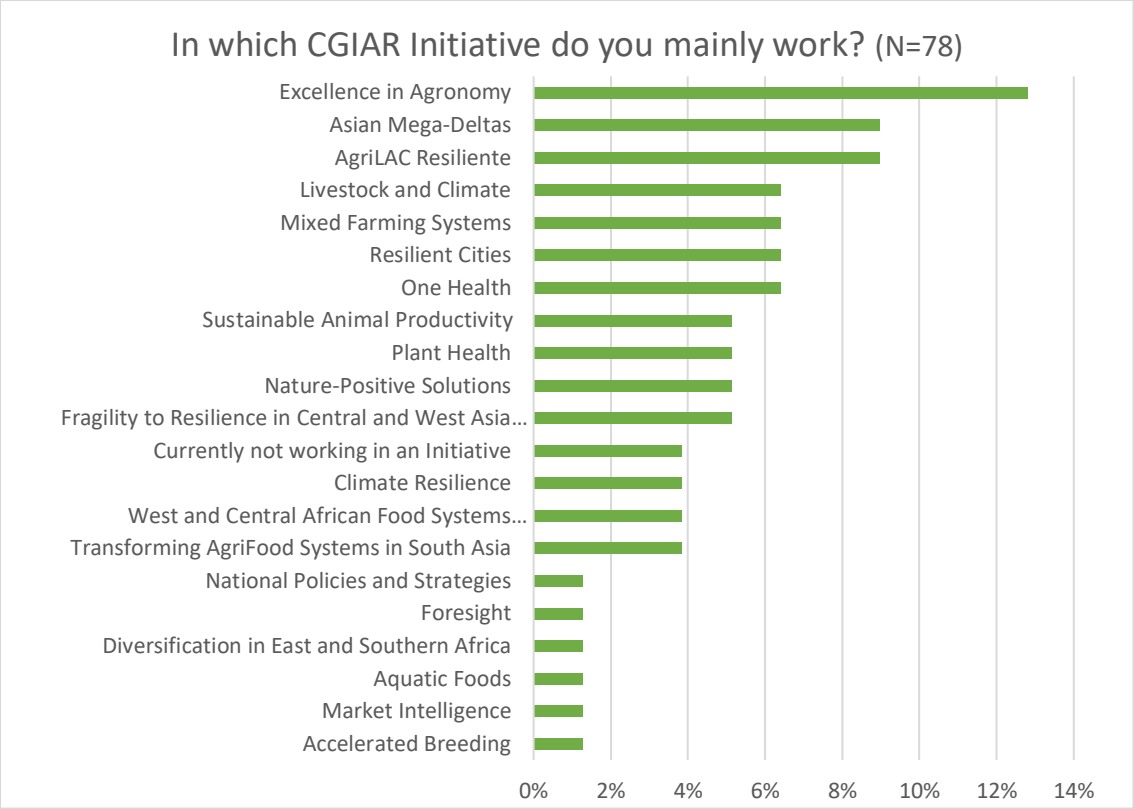
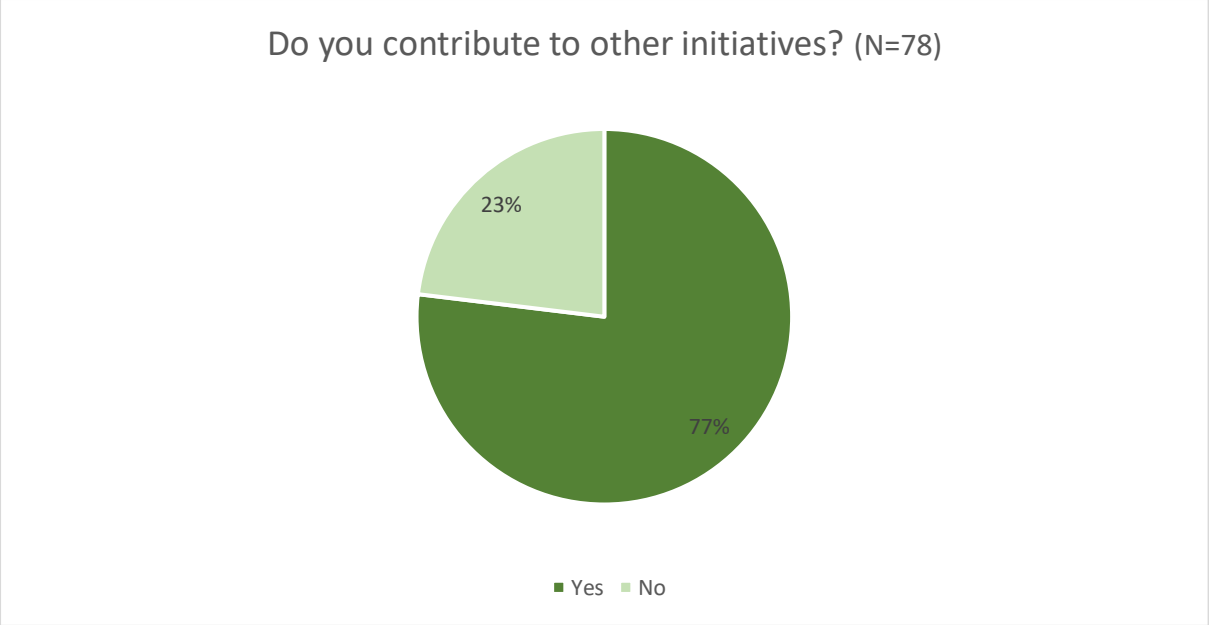
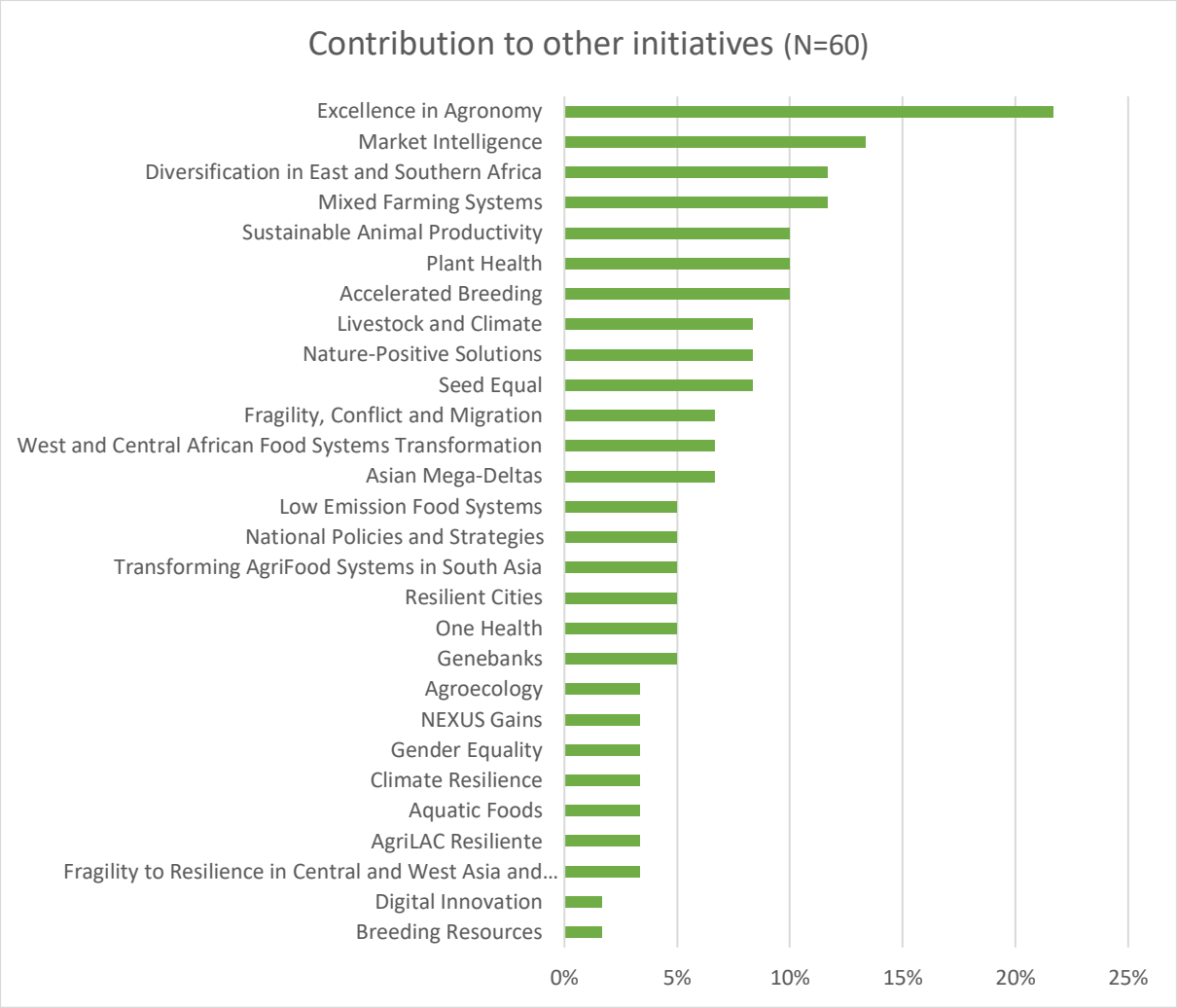


Figure 5. Contribution to other Initiatives-RAFS SG



[9] In Figure 1 and 3, RAFS initiatives are highlighted in green, ST initiatives in orange and GI initiatives in light green.

Figure 6. Contribution to other Initiatives-RAFS SG



7.1.2 Relevance

Figure 7. Priorities of the 2030 Research Portfolio

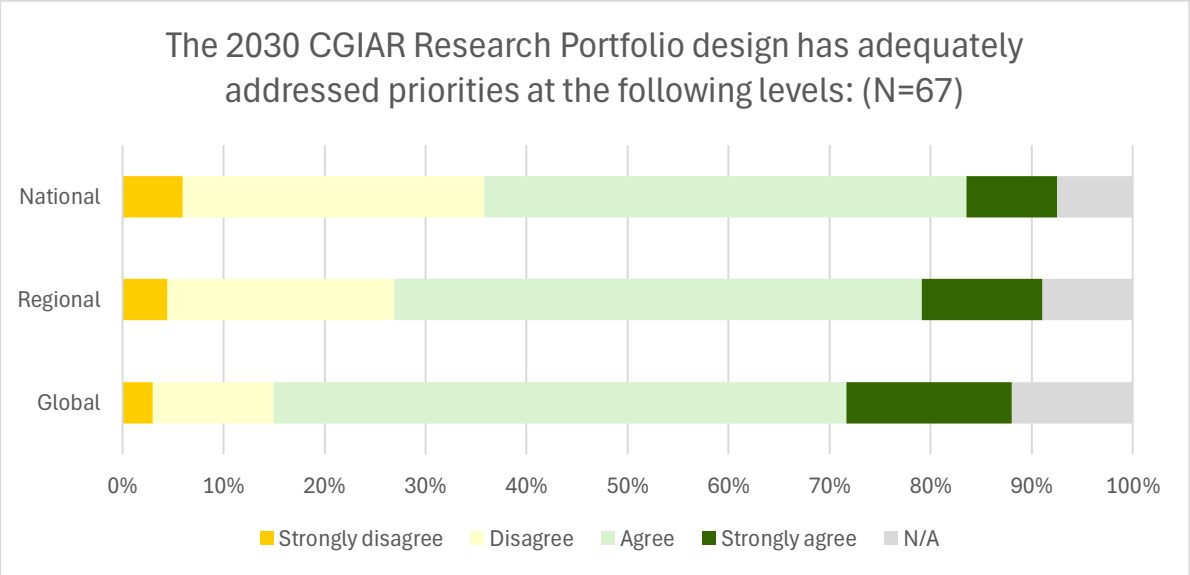


Figure 8. System Transformation Strategies and Interventions–RAFS SG

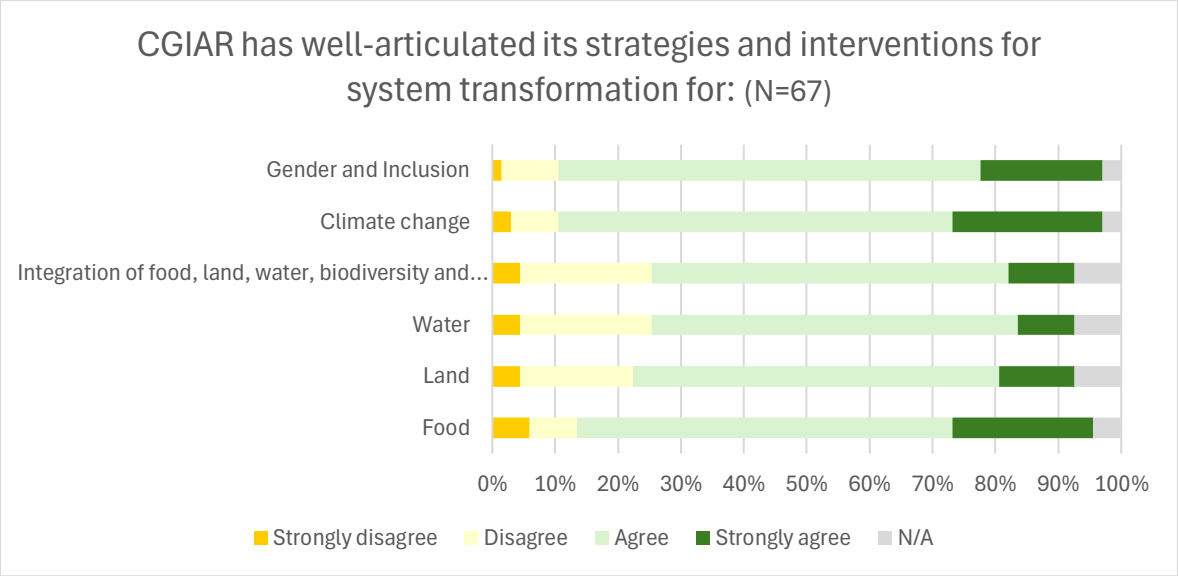


Figure 9. Science Group/Action Area Theory of Change–RAFS SG

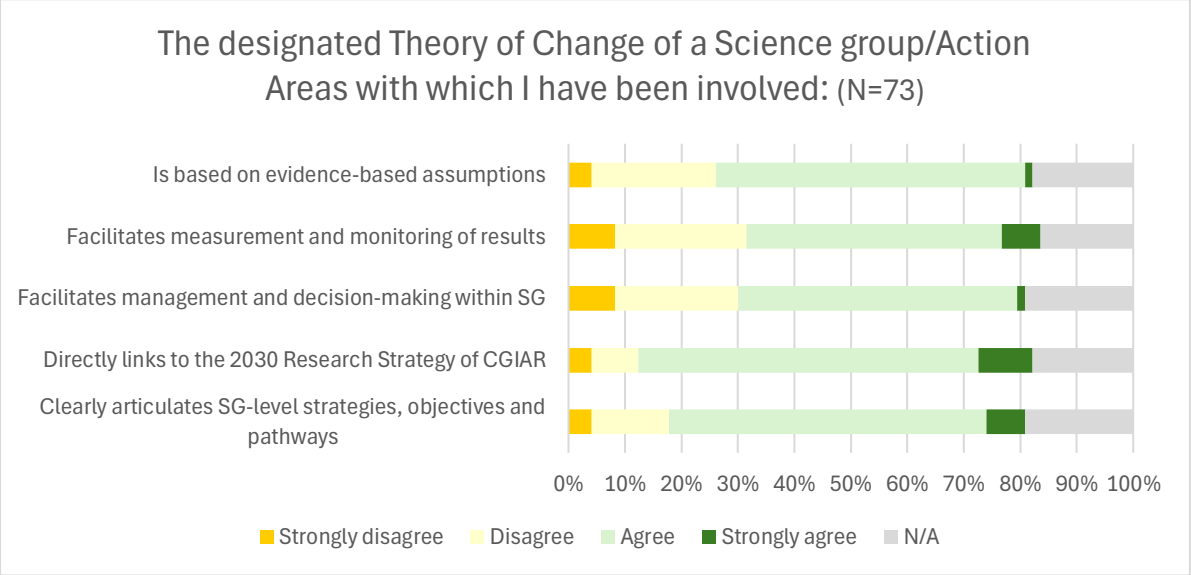


Figure 10. Initiatives Theories of Change–RAFS SG

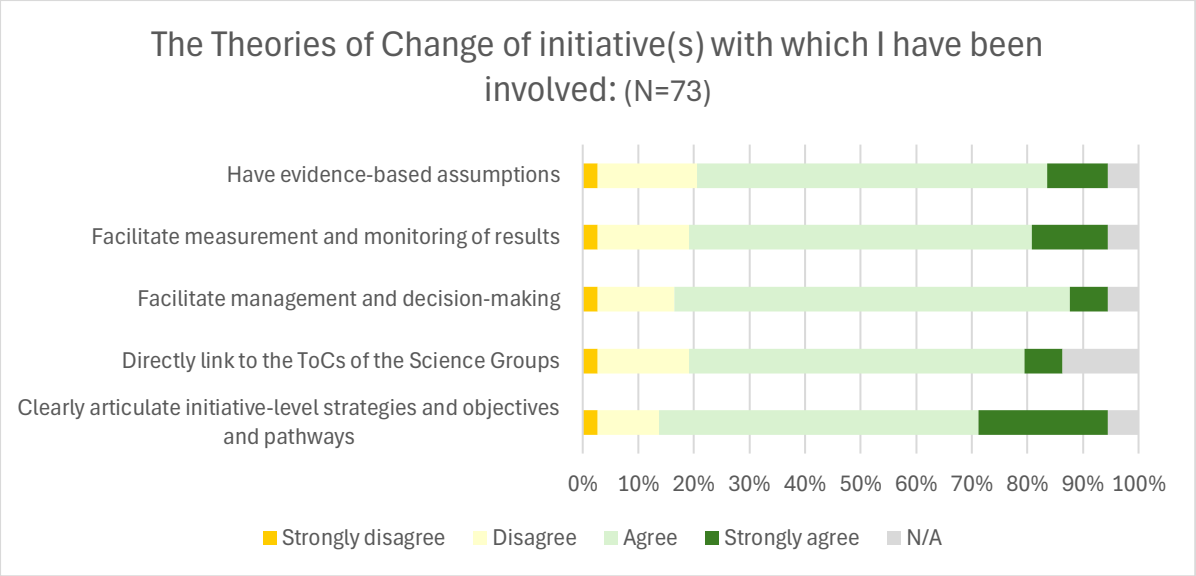


Figure 11. CGIAR's Comparative Advantage–RAFS SG

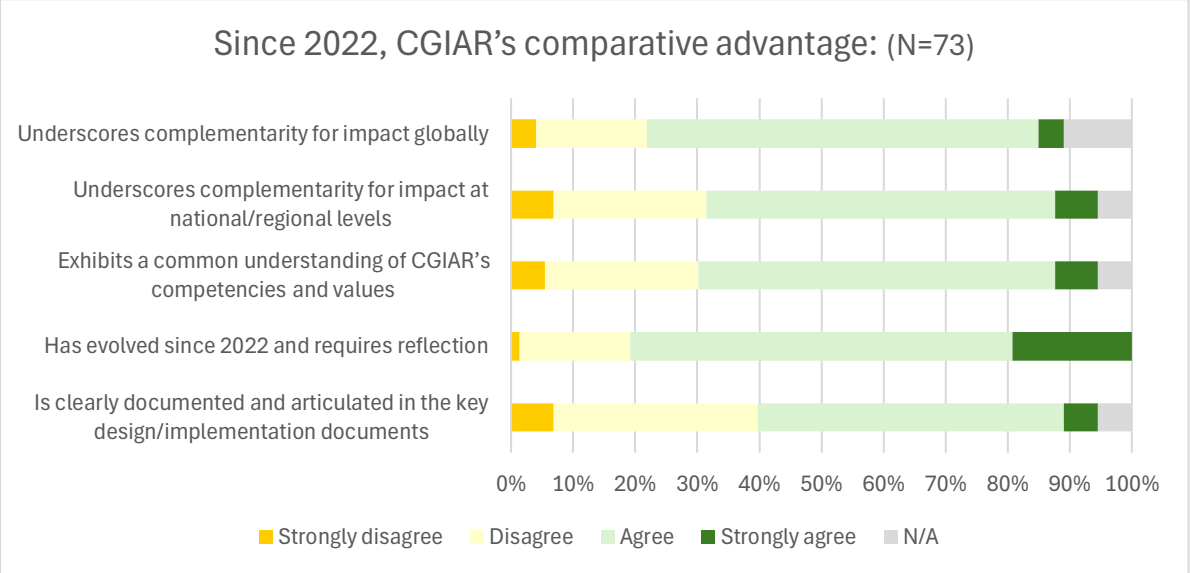
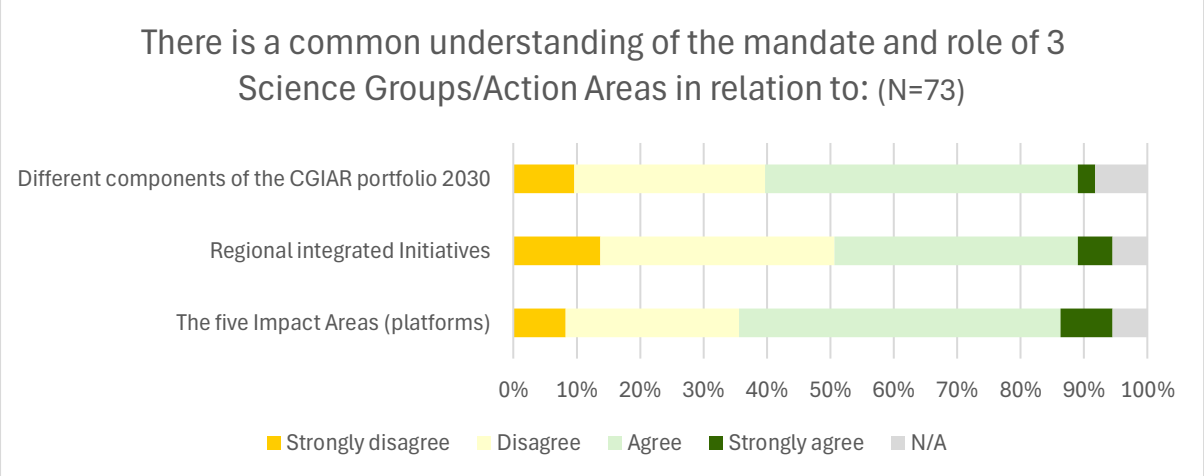


Figure 12. Mandate of Science Groups/Action Areas–RAFS SG



7.1.3 Effectiveness

Figure 13. Effectiveness–RAFS SG

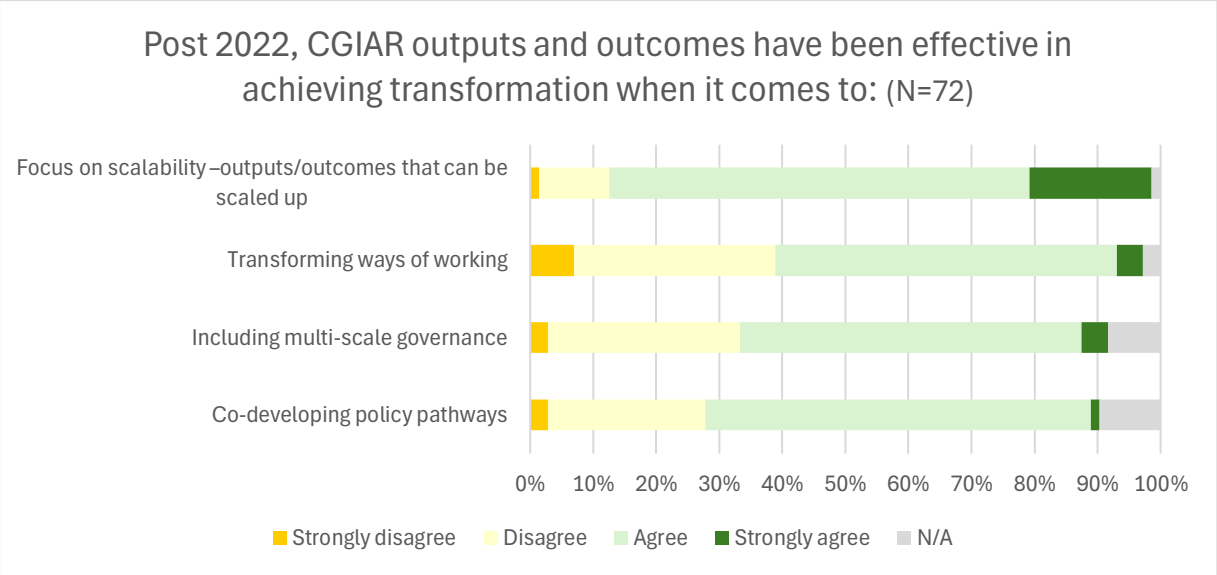


Figure 14. Gender Tagging–RAFS SG

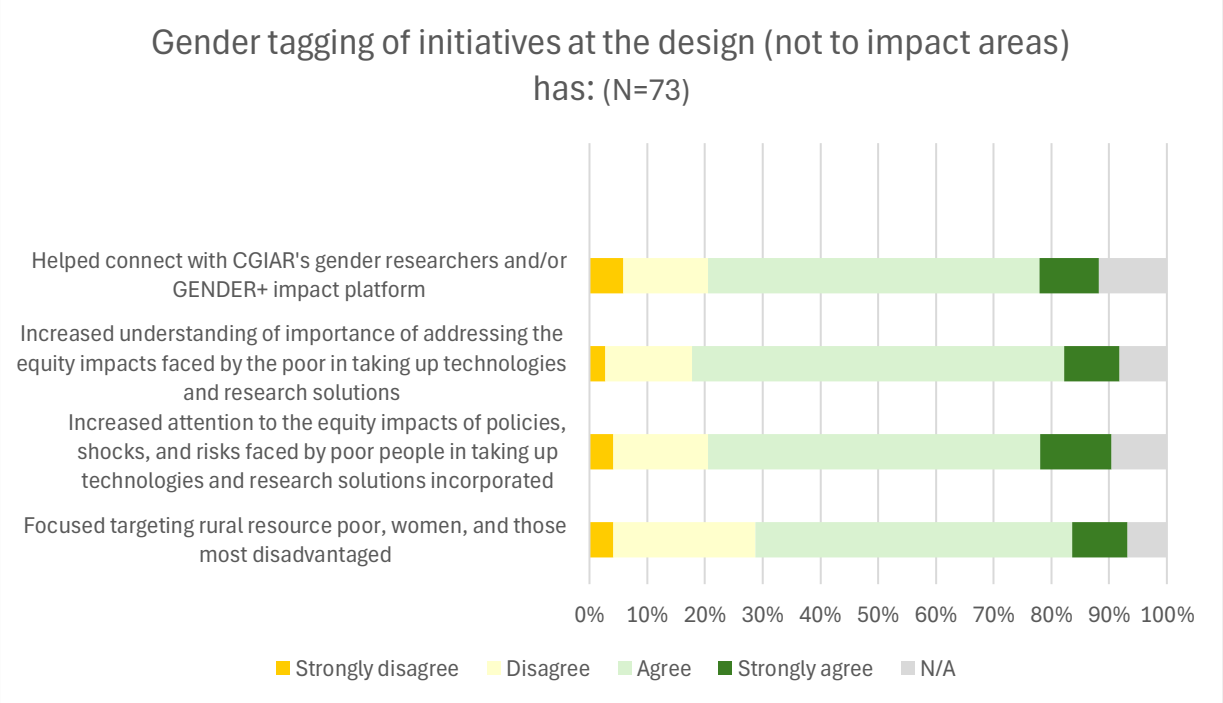


Figure 15. Climate Change Tagging–RAFS SG

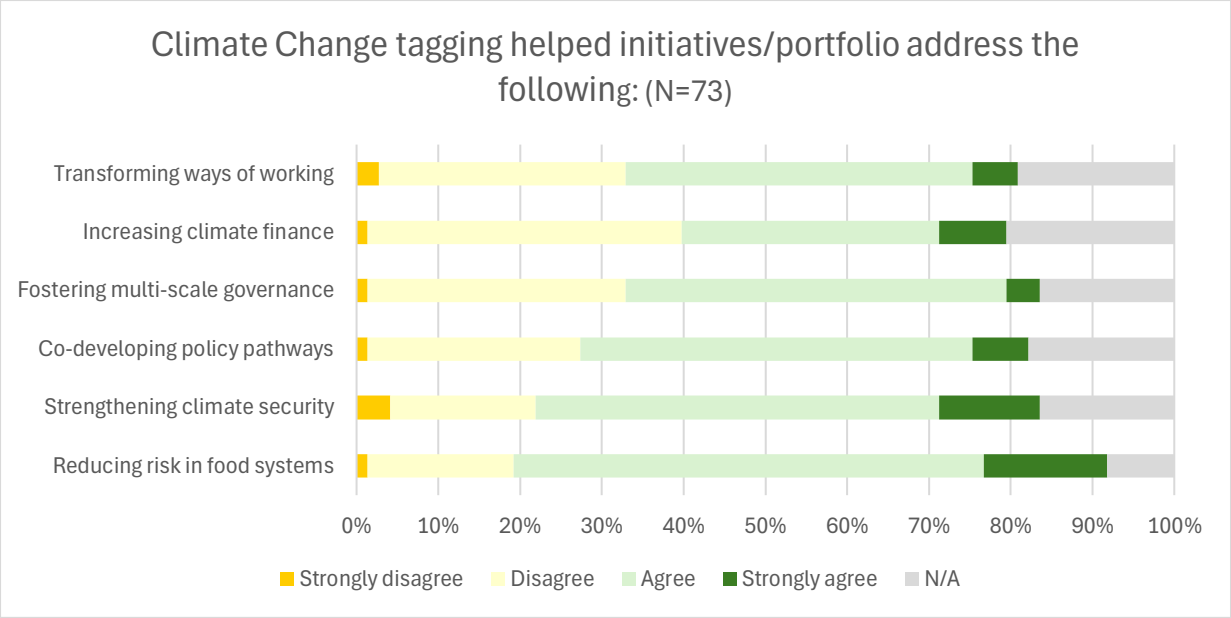
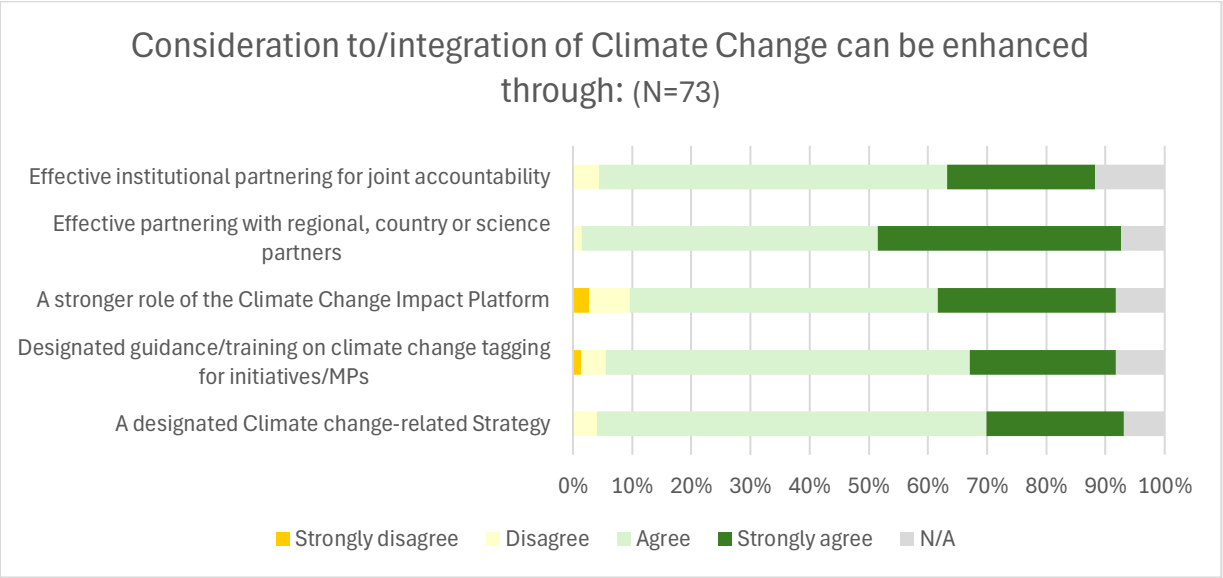
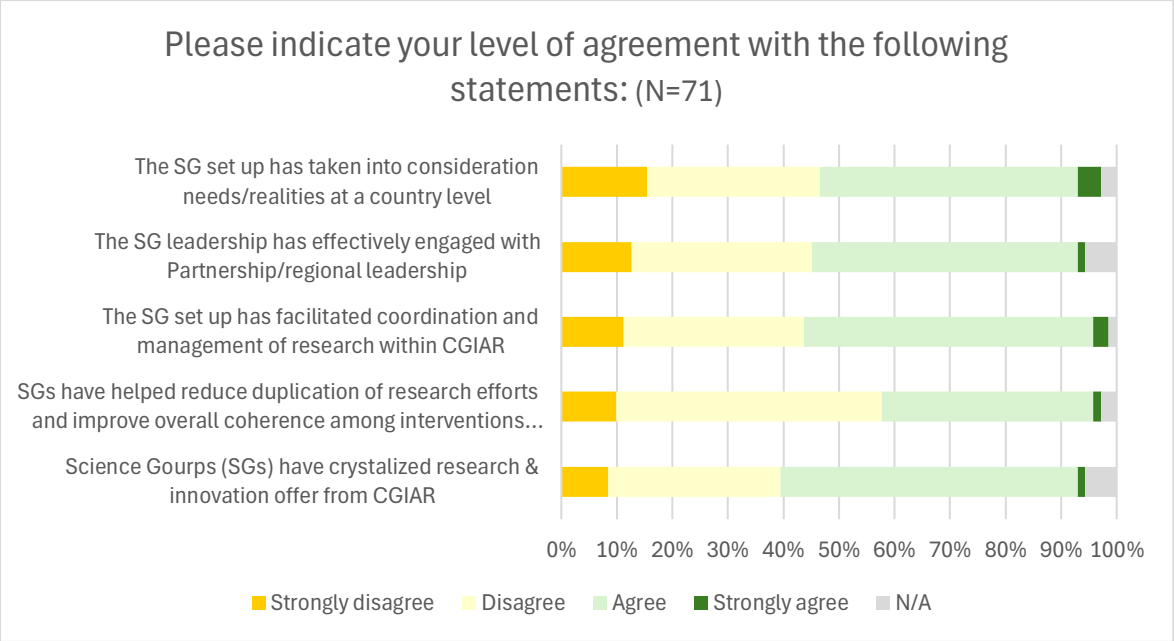


Figure 16. Enhancement of Integration of Climate Change–RAFS SG



7.1.4 Coherence

Figure 17. Coherence–RAFS SG



7.1.5 Efficiency

Figure 18. Initiative Resources–RAFS SG

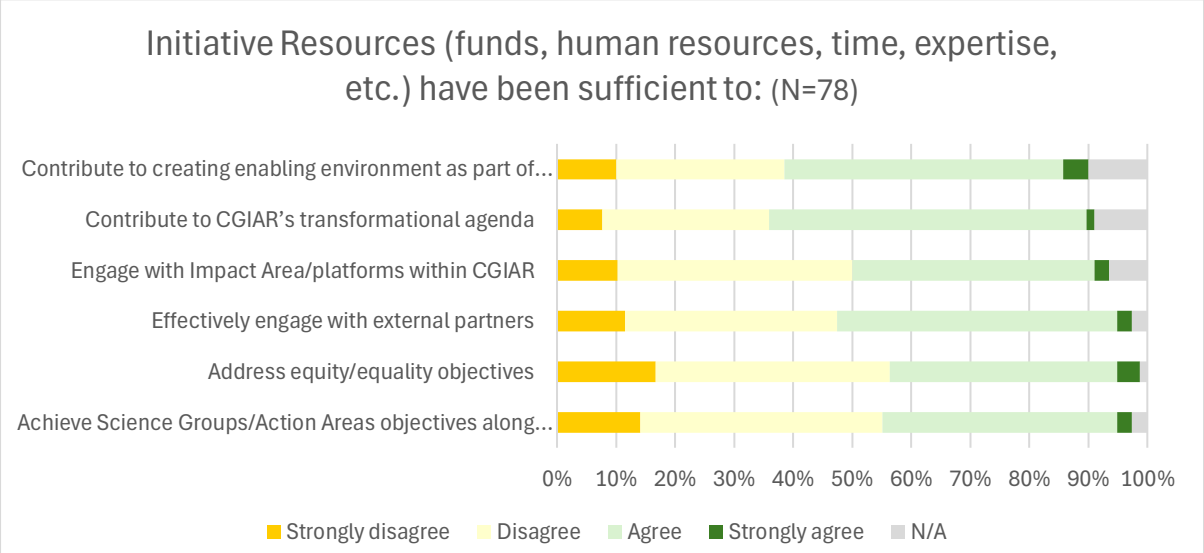
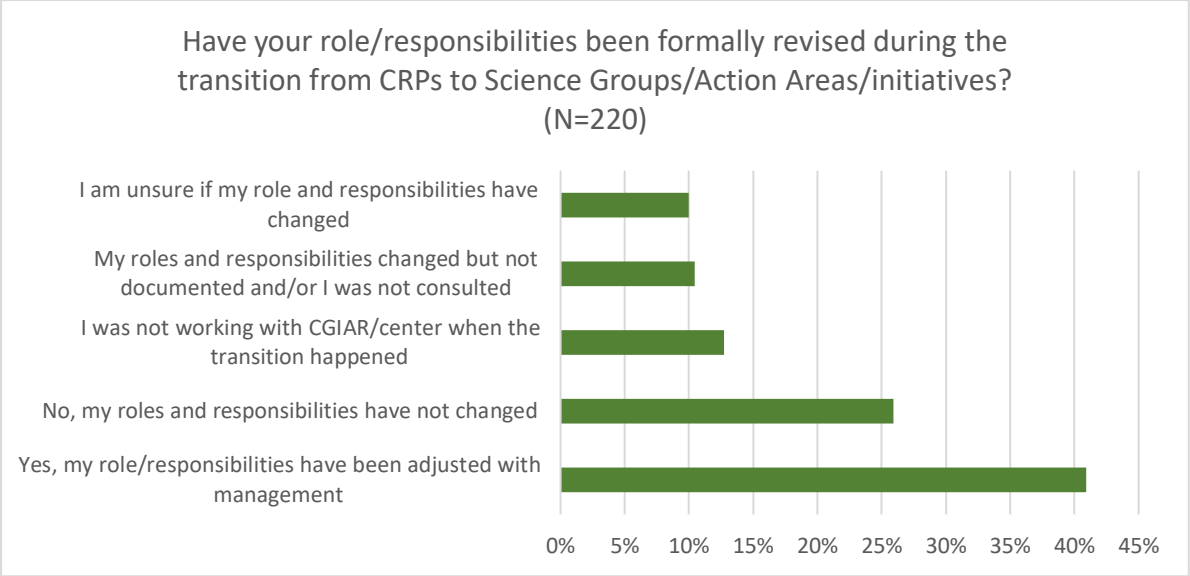
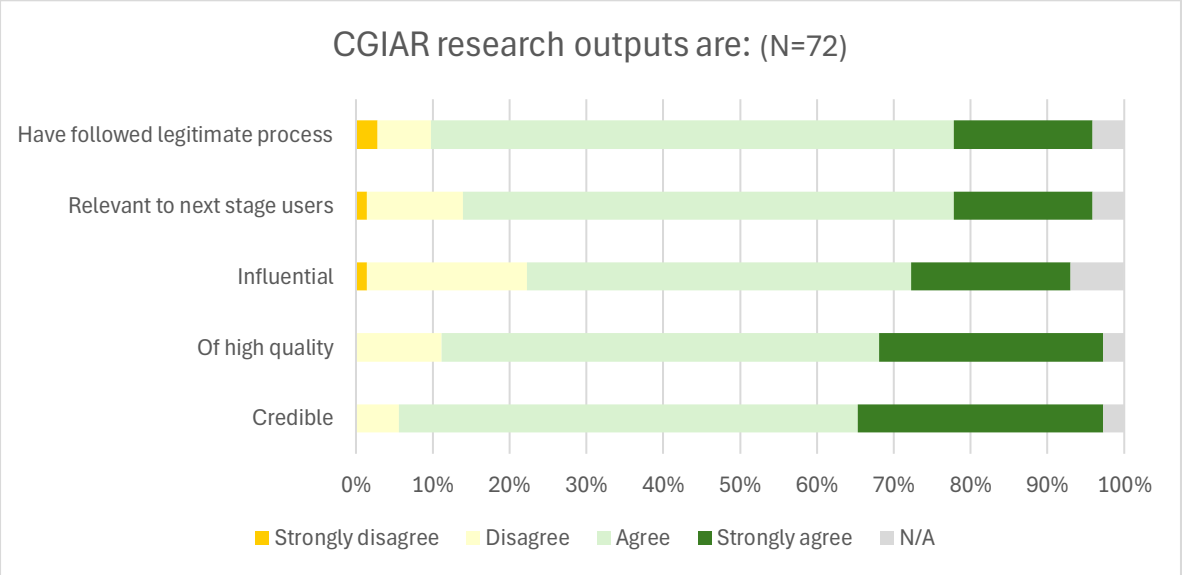


Figure 19. Transition from CRPs to Action Areas: Impact on Roles- All SGs



7.1.6 Quality of Science

Figure 20. Quality of CGIAR Outputs–RAFS SG



The survey results suggest that most respondents have a highly positive view of CGIAR research outputs across various dimensions—credibility, quality, influence, relevance, and legitimacy. This indicates strong overall confidence in the work produced by CGIAR.

Credibility: CGIAR's research outputs are perceived as highly credible by almost all respondents (92%).

Quality: The quality of CGIAR's research is another area where stakeholders expressed high levels of satisfaction (86% of respondents agree that CGIAR's research outputs are of great quality).

Relevance to next-stage users: 82 % of respondents believe that CGIAR's research is relevant to next stage users.

Legitimacy of process: Finally, the perception that CGIAR's research follows a legitimate process is shared by 86% of respondents.

Influence: CGIAR's research is viewed as highly influential by 71% of respondents, while 22% disagree (the highest percentage of disagreement compared to the other criteria).

Respondents identified the following factors affecting the quality of CGIAR research outputs:

- Funding uncertainty, limited budgets and budget cuts resulting in:
  - lack of stability for key investments;
  - difficulties in long-term planning for interventions and experimental designs;
  - delays of planned activities;
  - reduction of field research involving the community;
  - reduced size of the teams; and
  - reduced opportunities to engage with external partners.
- Timescales are too short for agricultural research.
- Administrative burden, which limits the time available for research. More/new CGIAR positions created additional burden for scientists involved in initiatives to respond to requests from various new directors. Moreover, re-planning and re-budgeting reduces the time available for high quality research and publications.
- Pressure to produce outputs to publish on CGIAR spaces for the sake of reporting and for a competitive surge pulled the quality down.

Figure 21. Influencing Transformative Changes-RAFS SG

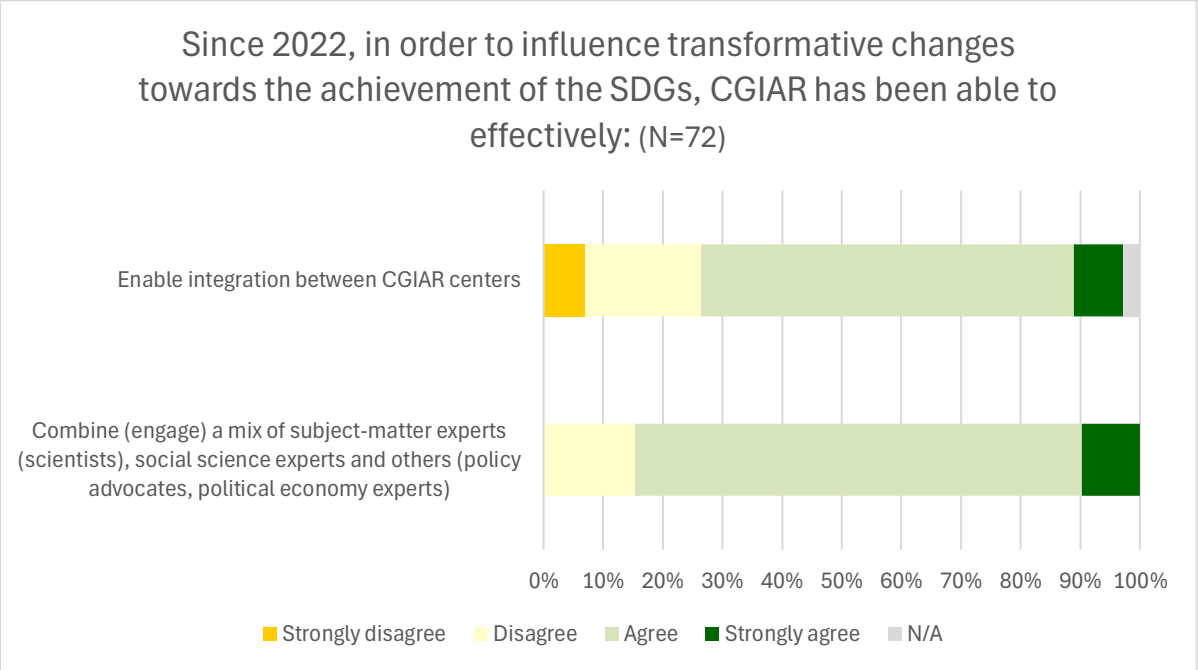


Figure 22. Engaging the Global South-RAFS SG

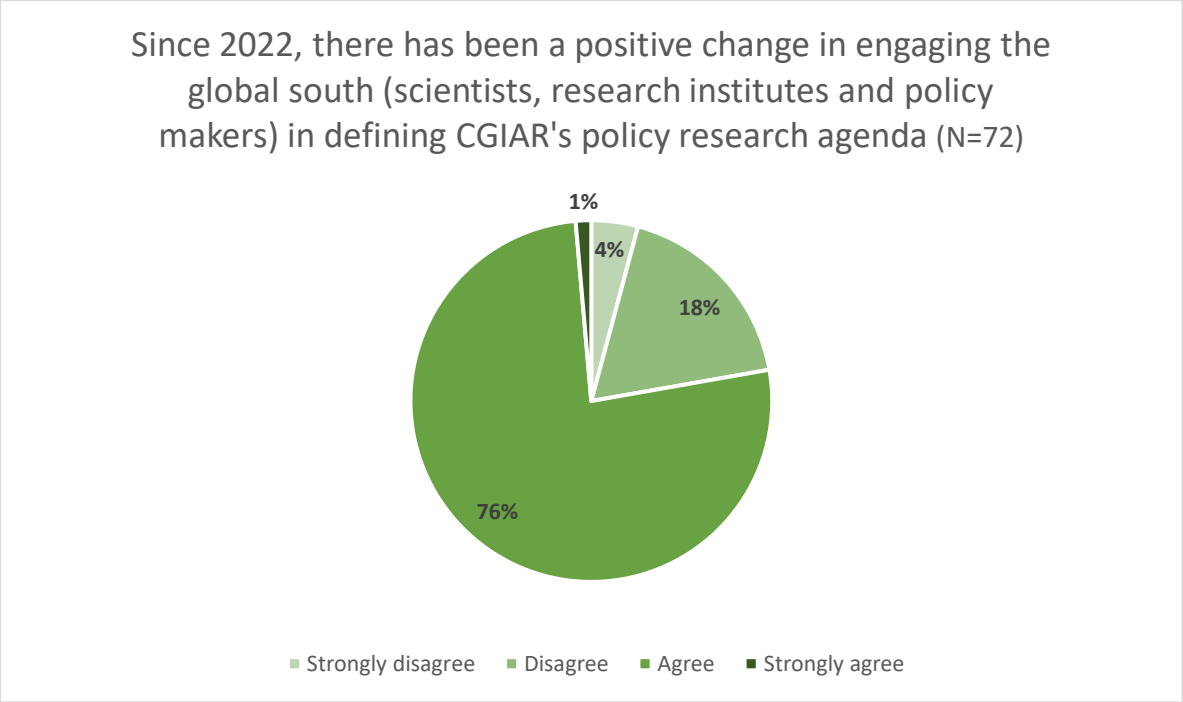


Figure 23. Rigor of CGIAR Scientific Methods-RAFS SG

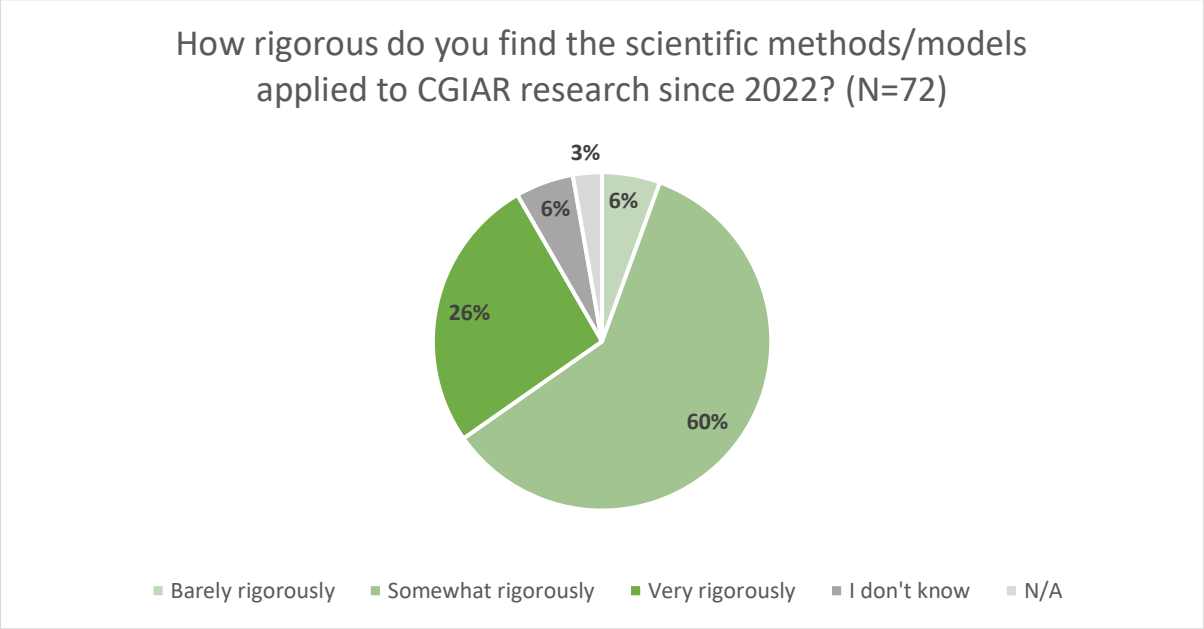
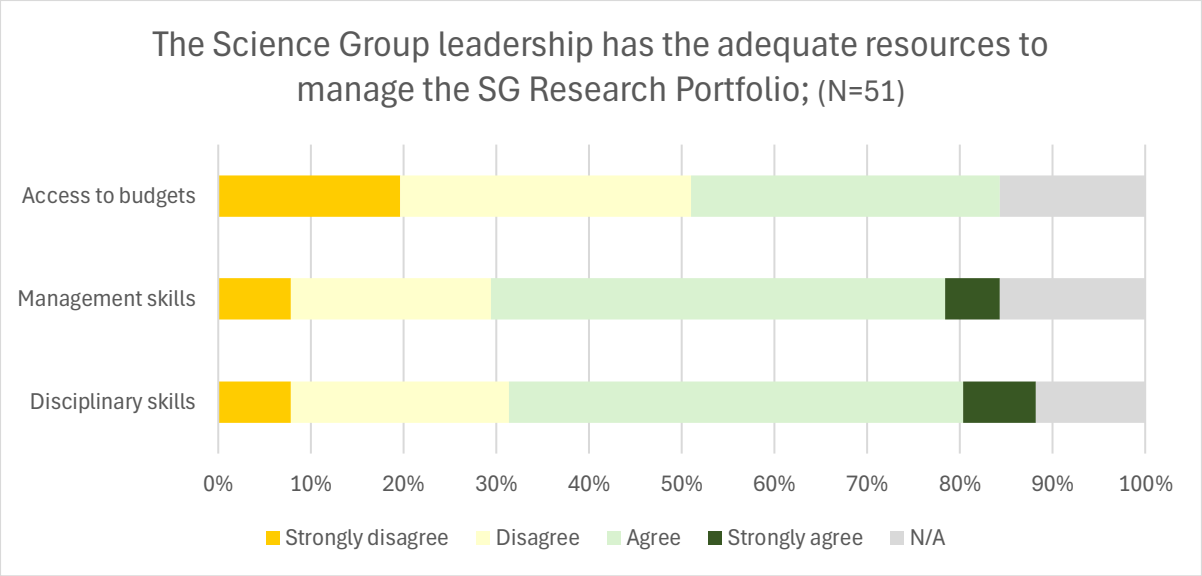


Figure 24. Resources to Manage the SG Research Portfolio-RAFS SG



7.1.7 Partnerships

Figure 25. Partnerships-SG Research Portfolio-RAFS SG

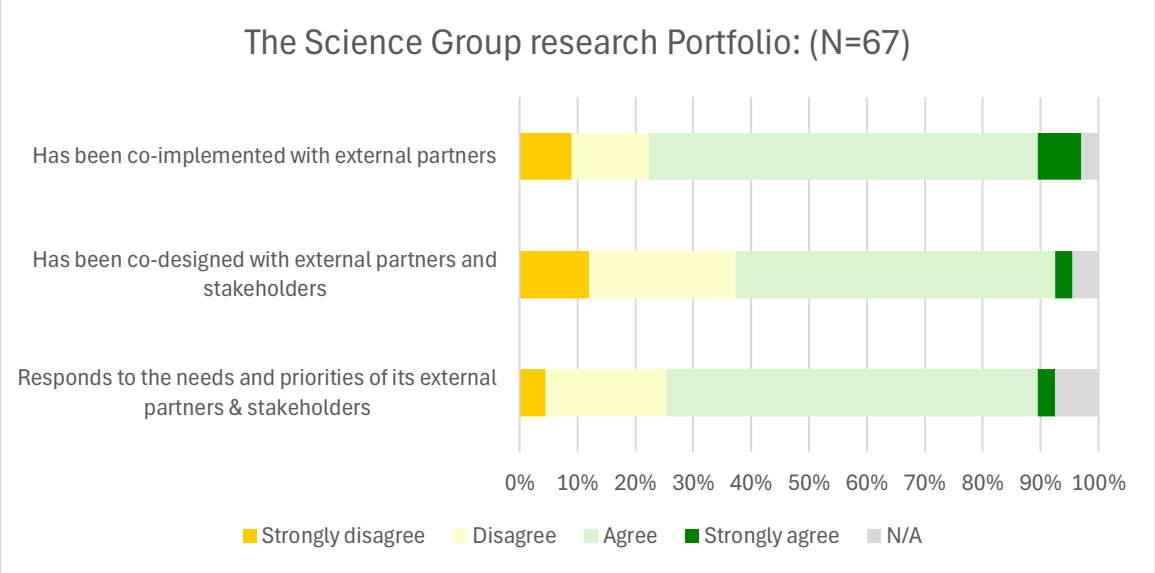
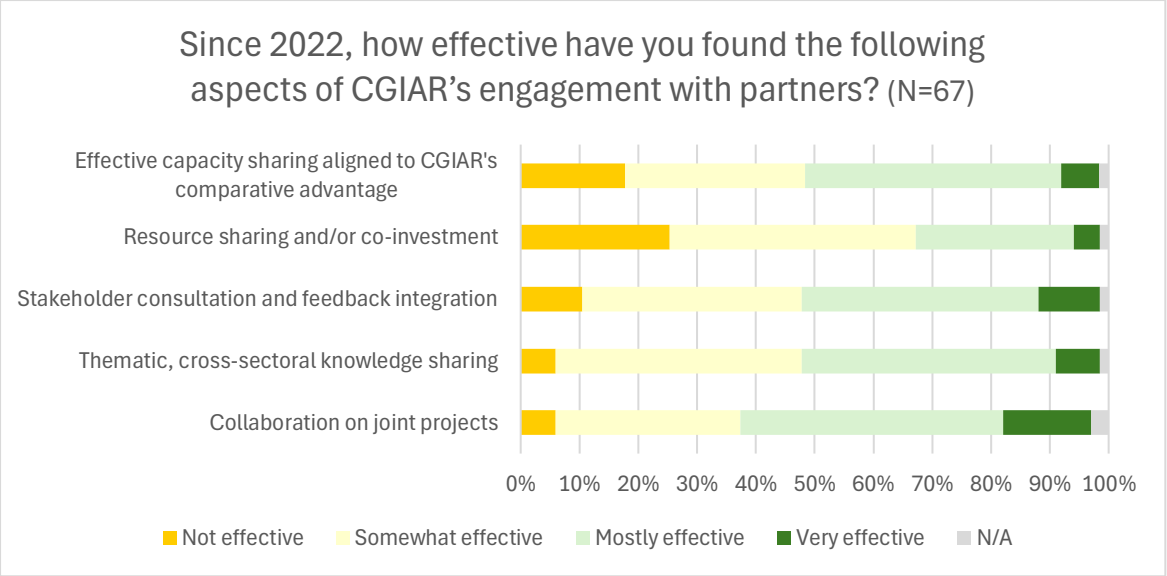
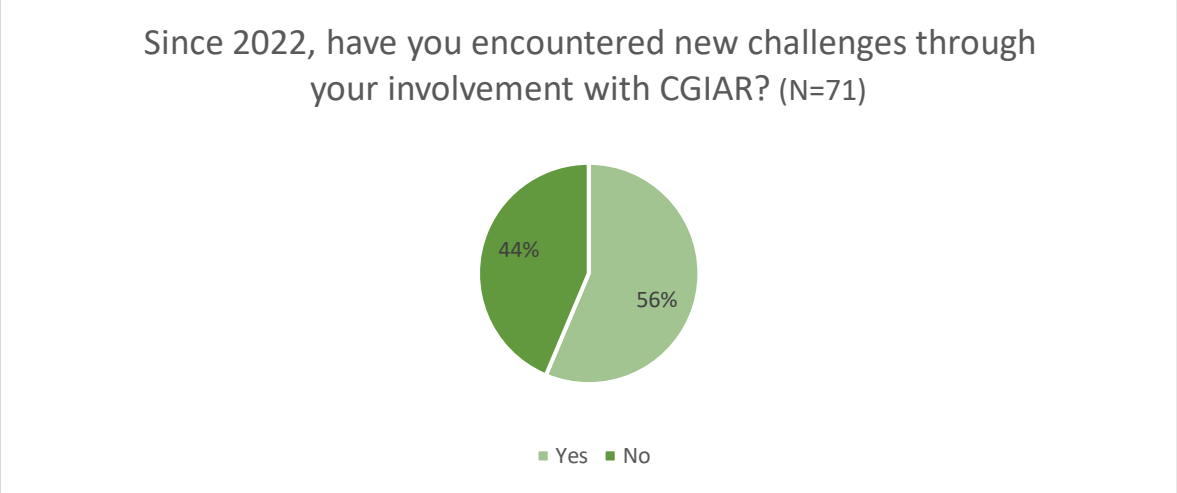


Figure 26. CGIAR's Engagement with Partners



7.1.8 New Challenges since 2022

Figure 27. New Challenges since 2022-RAFS SG



What challenges have you encountered since 2022? (N= 40)

RFS SG respondents identified the following challenges:

- Financial uncertainty and unforeseen budget cuts, resulting in not enough resources to carry out research effectively.
- Short implementation times and uncertainty about the duration of current initiatives.
- Coordination and integration amongst different centers, with every center having its own system and the structure tends to create several administrative layers.
- More bureaucracy and more administration.
- Lack of clarity and leadership, as well as poor management.

7.1.9 Looking Forward

Considering CGIAR's comparative advantage, what role should it play towards achieving SDGs? At what level(s)? (N= 36)

Respondents identified the following:

- Provide research evidence, conducting high quality research and generate science-based solutions and innovations for the achievement of the SDGs.
- Focus more on generating scientific evidence that is needed to support policies and decision-making at the national, regional and global level.
- Focus on scaling.
- Co-develop solutions to partners' main challenges and empowering national partners.

Figure 28. Top Three Challenges of Evolving CGIAR Portfolio–RAFS SG

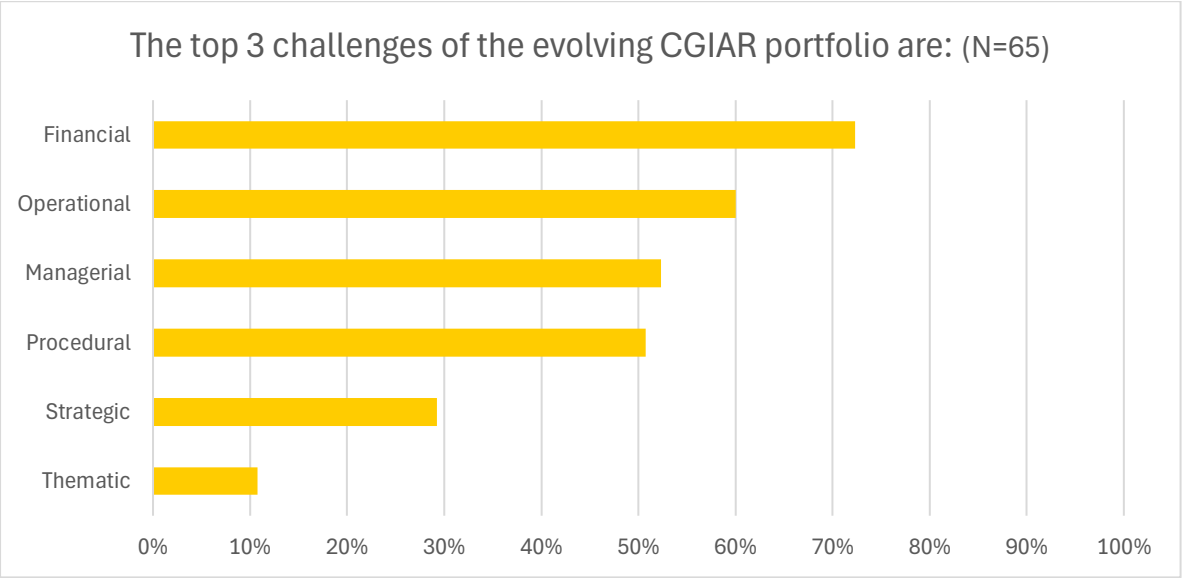


Table 5. Location of Respondents–RAFS SG

Country	Percentage of respondents	No. of respondents	Country	Percentage of respondents	No. of respondents
Kenya	27%	21	**Cote d'Ivoire**	1%	1
Bangladesh	8%	6	**Ecuador**	1%	1
Peru	6%	5	**Ethiopia**	1%	1
Vietnam	6%	5	**Finland**	1%	1
Colombia	5%	4	**Ghana**	1%	1
Nigeria	5%	4	**Italy**	1%	1
Philippines	5%	4	**Malawi**	1%	1
Mexico	4%	3	**Morocco**	1%	1
Senegal	4%	3	**Netherlands**	1%	1
India	3%	2	**Tanzania**	1%	1
Sri Lanka	3%	2	**Trinidad and Tobago**	1%	1
Zimbabwe	3%	2	**Tunisia**	1%	1
Afghanistan	1%	1	**Uganda**	1%	1
Benin	1%	1	**United Kingdom**	1%	1
			Uzbekistan	1%	1

Annex 8: Quality of Science Evaluation Criteria-RAFS SG Evidence

https://iaes.cgiar.org/evaluation/publications/applying-cgiar-quality-research-development-framework-process-and *as referenced in the TORs.*

EQ 5 - To what extend does the SG ensure the Quality of Science (QoS) (scientific credibility and legitimacy)?

8.1. Design

FINDING 11 – The SG research portfolio design well-considered global and regional problems and, for countries visited, it was clearly aligned with national challenges and needs. However, initiatives were developed in a relatively short space of time and drew heavily on existing research partnerships and pre-existing activities. A less rapid process of developing research questions, testable hypotheses and partnerships may have given a stronger sense of co-ownership. The adopted research methodologies are generally of a high standard and the use of ToC across initiatives and WPs is an example of improved practice between CGIAR Research Programs (CRPs) and current initiatives.

To what extent does the SG Research Portfolio address global and regional problems?

Initiatives in RAFS aligned their research questions with the key global challenges at the time of design and have demonstrated some important flexibility during implementation by responding to the specific agenda of Food Systems Transformation, for example in Vietnam.

Strong national, regional and international partnerships continue to underpin high quality field work. Where assessed in detail, initiative proposals are well founded in global challenges and closely aligned with Sustainable Development Goals (SDGs). Regionality can be seen mostly in commodity and landscape foci. For example, improving productivity in risk in Southeast Asia whilst reducing the carbon impact of rice production has the potential for distinct, regional and global impact where uptake is strong.

Innovations emerging from the RAFS portfolio of initiatives have the potential to address key global challenges, including climate change and the transition to new, more appropriate, global food systems. Over the long term, RAFS has drawn into the initiatives the key local and global partnerships necessary to generate research-based solutions towards developing a sustainable food system.

Has the SG Research Portfolio been co-designed with key partners and stakeholders?

A significant proportion of scientific design and founding relevance was drawn into the RAFS initiatives from earlier work associated with CRPs. It was founded that an extensive, but somewhat truncated (hurried) consultation and co-design process was conducted. A high proportion of scientific effort considered can be ascribed to clear local needs, and, in many cases, for example One Health Initiative (OHI) in Vietnam, is driven by new national policies in this field.

How well were the needs of beneficiaries considered?

The use of ToC across initiatives and work packages (WPs) is an example of improved practice between CRPs and initiatives. Closer alignment of under-lying research questions with real world problems increases the likelihood that significant, voiced, needs are being addressed. Few ToCs have changed since initiatives started. However, the time is very short for new needs to be surfaced and included.

In RAFs, a high proportion of research is applied. One Health and Resilient Cities Initiatives, for example, show significant action research activity. This sentiment was echoed in Vietnam and Ghana.

The initiatives assessed employed demand-driven national stakeholder consultation surveys or procedures, to co-design research with important stakeholders and partners such as National Agriculture Research and Extension Services (NARES), the private sector, NGOs, farmer associations, universities, and government organizations and ministries. Information on the degree to which the needs of the most poor or most vulnerable was addressed by the research was not available. Inclusion of these groups is, largely, assumed during design if co-design is conducted with farmers. If the degree to which the poorest are reached is a question that needs to be answered, then additional measurement of engagement and impact might be needed.

Is the adopted methodology appropriate and credible for the planned research?

Currently, PRMS for RAFS shows 605 individual innovations in two years. To assess the appropriateness of the method for each associated scientific step for this many wide-ranging scientific activities is not possible. A sample and case studies and deep dives showed that methods are generally of a high standard, and this is largely evidenced where data generated produces a paper accepted by a high quality, peer-reviewed international journal. Where outputs are reported in non-peer reviewed technical reports, method quality is harder to assess. A lot of technical reports have co-authorship from strong academic institutions, and this increases the likelihood of rigor and appropriateness.

Open access vs non-open access: Of the 2,464 outputs identified across GTIs and RIIs in 2022 and 2023, only 88 items were non-open access. This degree of accessibility declined from around 13% of all outputs in 2022 to less that 6% in 2023. This seems an acceptable proportion considering that some outputs may have restricted intellectual property value as a result of collaboration with private sectors actors. No important variation between GTIs and RIIs on open access was identified in RAFS.

Peer review vs non-peer review: Considering the same set of outputs from the perspective of peer review shows that there was a small decline in the proportion of outputs peer reviewed in RAFS between 2022 and 2023 (from about 30% to around 20%). The actual number of peer reviewed outputs remain roughly the same (2022= 336, 202 = 305) but the total volume of outputs increases in this time from 1,000 in 2022 to 1,464 in 2023, showing an acceleration of non-peer reviewed outputs by around 50% in this period. A higher proportion of this growth in non-peer reviewed outputs is from RIIs (from 199 in 2022 to 440 in 2023) than from GTI (from 465 in 2022 to 719 in 2023).

To what extent does the SG Research Portfolio align with relevant SDGs?

The use of SDGs and Impact Areas to align ToCs during the planning phase of initiatives means that, at a very high and somewhat superficial level, alignment can be clearly demonstrated. What is more problematic is to see the specific contribution that individual research activities and innovation application may have to achieving specific SDG indicators. An example might be SDG 12.3 on food loss and waste which requires a 50% reduction by 2030. Looking at case studies and deep dives in RAFs where this type of activity features, the likely contribution to this indicator is not mentioned and no effort to measure contribution is offered. In interviews, actors asked about the baseline food, land and water (FLW) measurement against which impact can be assessed, random FLW estimates not based in quantitative analyses were mentioned (e.g., "losses in the fresh fruit chain are terrible–more than 50%"). This may be an isolated example, but it does suggest that, if relevance of SDGs is important, then more effort to align at indicator and to visualize progress towards the SDG would be useful.

8.2. Inputs

FINDING 12 – The only skill 'shortage' highlighted refer to gender and partner engagement experts. Cases of inadequacy of inputs constraining results were not identified. However, budget cuts have had some possible negative impacts on science quality. Much could be done to improve the student experience and reduce drop-out rates among Post Graduate Researchers associated with RAFS.

Is the disciplinary skill base appropriate and sufficient to satisfactorily implement the SG Research Portfolio? Are additional skills needed? Would integration with other Initiatives provide needed skills?

The only skill shortage mentioned during the evaluation was with respect to access to gender specialists, who seem to be in short supply and much appreciated where they are available in-country (e.g., in Vietnam), and social scientists, particularly regarding experts in engaging with external partners. Many scientists in Colombia indicated that the initiatives gave greater integration of scientists with more opportunities to share skill sets compared to previous CRPs.

Is the composition of teams sufficiently diverse (gender, nationality, age) to legitimately implement the SG Research Portfolio?

Gender balance among scientists. Interrogation of the CGIAR Workforce Dashboard shows that, as of 1 June 2023, RAFS had a workforce of 1,673 of which 502 (30%) identified as female. This gender imbalance is slightly improved at mid-level scientist (34%) but returns at the support staff level (29%).

In terms of staff location, RAFS is heavily concentrated in Sub-Saharan Africa (51.3% of the workforce). It was not possible to ascertain the staff composition by nationality from the Dashboard.

Are resources (laboratories, fields) adequate to implement the SG Research Portfolio?

The planned-for nine-year horizon encouraged some ambitious and potentially valuable longitudinal research to be initiated or continued, for example large Randomized Control Trials (RCTs) in several initiatives. Cuts resulted in some of the depth/frequency of some of these studies to be reduced and sample sizes to be decreased, and has threatened the likelihood of endlines being completed.

Scientific infrastructure endowment and needs vary significantly across geographies and subjects. Cases of inputs constraining results were not identified during the interviews or from the case studies conducted.

Is the donor commitment to funding secure and adequate?

Interviews suggest that several activities have been successful in drawing external funding towards them. For example, GIZ are keen to fund circular economy work in various countries under One Health and Resilient Cities Initiatives. In some cases, particularly for applied and upstream work, local funding by external donors of activities in RAFS is and central part of what sustains activity (e.g., the Ghana Bioeconomy Innovation Platform). Many scientists in Colombia mentioned the budget cuts prompted them to apply for bilateral funds to make up for the gap in CGIAR budgets.

Is capacity building appropriate for planned activities?

Generalizing about capacity building across the panoply of activities in RAFS is difficult. In the cases considered in detail, capacity building activities seemed appropriate and engaged a good number of target beneficiaries. Various capacity building approaches were assessed from working with farmer groups up to supporting postgraduate research.

Overall, the PhD experience across RAFS is highly variable and students spoke in some cases of isolation, over-burden supervisors, variation in student experience and having to contribute to initiative deliverables. Initiative managers where often not aware of the number of PhD students associated with their work. There seems to be no central agreement on what a student should expect from a CGIAR supervisor and no rules other than those taken from partner academic institutions. Questions such as: "what is the maximum number of students a CGIAR staff member can supervise" and "what are the maximum number of hours of paid work a PhD student can do a week" could not be answered, suggesting some underlying and risky lack of quality norms. Data on the number of students currently under supervision, proportion finishing within an appropriate time frame and drop-out rate were not available. Some standards and norms for quality control of student experience and mapping their journey would improve the likelihood of strong PhD outcomes. Best practice would be a One CGIAR Doctoral Training Program.

8.3. Processes

FINDING 13 – The evaluation could not find any evidence of quality oversight at CGIAR science group level. Oversight seems to be at initiative level. Fairly consistent efforts to recognize national and other partner efforts through co-authorship or acknowledgement were recorded. The existence of MELIA support more widely in initiatives is seen as an advance on the situation in CRPs. However, data to demonstrate future scientific impact is not being collected systematically. Successive cuts to budgets in the past two years have had a significant impact on the management of science. In addition to budget uncertainty, system changes, staff-turnover and over-loading of tasks generated low morale among scientists.

Are roles and responsibilities sufficiently clear and with due recognition?

For QoS, responsibility for quality should rest with the relevant scientific leader within the initiative. We could not find any evidence of oversight at a systems level. An example is journal choice policy which seems to be left to individuals. Management of postgraduate research quality is also orphaned. Other policies, such as ethics and scientific misconduct, are managed at center level and this seems to work well.

Questions asked during case studies on data management and quality control suggests that this may be an area that needs improvement, particularly at field level and among associated researchers who are unaware of the right international standards.

Are partnerships inclusive and recognized?

Outputs reviewed show a consistent effort to recognize national and other partner efforts through co-authorship or acknowledgement. In Colombia, interviews were made with nine partners. All nine expressed satisfaction with the initiative's partnering. Some had formal MOUs while others expressed that they had an organic relationship with the initiative.

Are planned processes sufficiently gender aware and responsive?

Initiatives reviews are increasingly gender aware, but there is still much to do. Discussions with partners in Ghana, for example, showed that building in gender design into small scale farm equipment can still be an afterthought, even when the team is entirely female. This might be the moment for CGIAR to take a broader view on defining access and inclusion for science, beyond the already well recognized gender space.

Does the monitoring and evaluation (M&E) system have sufficient resources to function effectively?

Many interviews noted a heavy burden on them to populate various data sets related to M&E. The existence of MELIA support more widely in initiatives is seen as an advance on the situation in CRPs where leads had to input data.

As mentioned above, the absence of longitudinal impact narratives in Initiatives risks the loss of important impact evidence which will be hard to create in the future. For example, evidence to support the contribution made by One Health to future food safety need to be collected and curated now, if it is to be used to demonstrate the long-term cumulative benefits of the investment in this space in the future.

Are leadership and management processes adequate to support research scientists in an uncertain environment?

Successive cuts to budgets in the past two years have significantly affected the management of science. Many scientific leads either reduced the percentage of time they were committing to the actions needed (without reducing the deliverables) or spread themselves too thinly. Leadership of the Resilient Cities initiative, for example, was diminished by the addition to that individual of other major tasks, including leading a CGIAR center. Almost all research leaders have been impacted. The result has been, in many cases, stress, disillusion and, possibly, high staff turn-over. None of these things have been conducive to maintaining the highest standards of science.

Has the recent restructuring of CGIAR Research Portfolio (e.g., move from CRP to INTS–One CGIAR processes) negatively affected the generation of quality outputs?

Morale among scientists is generally low. Budget uncertainty, system changes, staff-turnover and over-loading of tasks, particularly at Initiative management levels, all contribute to this impression.

Collaborative work across Initiatives, SG and centers has a high transaction cost, particularly if not pre-budgeted, and this has caused frustration and diminished flexibility.

Table 6. Examples of QoS Impacts of Budget Cuts

Example of QoS cut (initiative example)	Possible impact on QoS (suggested by respondents)
Reduction of number of countries covered in a survey (Nature+).	Reduced international relevance of results
Topping up budget with bilateral funds (Nature+ - Burkina).	Spill over impact on other outcomes from reduced budget
Reducing survey sample size (not mentioned).	Lower rigor and credibility of research findings.
Reducing survey scope (not mentioned).	Lower rigor and breadth of research findings.
Cutting midline surveys (One Health).	Reduced validity of findings.
Cutting shared and cross-cutting activities between Initiatives (SAPLING/Nature+).	Output lost.
Work package consolidation (Nature+: soil health and biological diversity).	Reduced rigor. Lower potential for cross-learning and novelty.
Additional administrative burdens on scientists to make changes (all).	Reduced time for scientific activities.
Transfer of scientific effort into search for bilateral funding to maintain activity levels (all).	Reduced time for scientific activities.

Source: interviews and assessment by the RAFS evaluation team

Are appropriate communication methods and tools developed and actively used?

A total of 33 communications tools were assessed and the quality found to be generally fair to high, with some good examples. There is a good blend of different communications product and a substantial volume reflecting the strong communications support that initiatives get from CGIAR center communications teams.

Have potential internal and external negative consequences and risks been sufficiently recognized and articulated?

All Initiatives reviewed, and in cases considered in depth, the risk of budget cuts was not planned for despite this being a common re-occurrence in the past. It is not clear at what level the system considers and registers business risk. ToC as it is currently used does always include identification of risks or counter-factual arguments. Adding regular re-assessment of ToC including risk assessment might address this challenge.

Across several Global and Regional Initiatives efforts to introduce agro-ecological and innovation systems approaches were found. A good example is AgriLAC Resiliente and the efforts to establish Innovations Hubs in Guatemala. Another is the Innovation Hub established by Resilient Cities in Ghana. This approach is novel and innovative to some degree. It has the merit of engagement with many stakeholders. How sustainable these approaches are in environments of diminished investment in agricultural extension and rural development by national actors in all but a handful of countries could, and should, be questioned.

8.4. Outputs

FINDING 14 – Quality, rigor and credibility of RAFS outputs range from excellent to poor. Greater emphasis on quality control, reducing the drive/incentive for dashboard outputs and outcomes, more internal peer review, and more rigorous journal choice would improve overall quality.

What is the likelihood of the SG Research Portfolio generating IPGs?

There are many examples of RAFS innovations and approaches with high potential for widespread International Public Goods (IPGs). The One Health effort to innovate in food safety in different markets in Ethiopia, Kenya, the Philippines and Vietnam is an example of a relatively simple innovation (consumer facing visual quality scales) being tested in an innovative way (Randomized Controlled Trials) with, if successful, potential for very widespread uptake and impact.

In Colombia, a strong example of scaling-up of evidence-based solutions to common agrifood problems was the combined efforts of the Livestock and Climate Initiative with their partners (to improve good practices in cattle raising for both meat and milk. The initiative worked with a large private Mexican seed company to sell more widely CIAT's recommended forage seeds and with a large fertilizer company to better inform ranchers on improved pasture production. This has the effect of decreasing deforestation since improved productivity of pastures means there is no need to expand by deforestation.

Is the SG Research Portfolio sufficiently rigorous and credible?

We found examples of high quality and rigorous work, especially some were this is evidenced by papers in high quality, peer reviewed journals, however we also found some pockets of activity of lesser quality which was not peer reviewed and whose purpose seems uncertain. Sometimes, particularly for technical reports, meeting reports, power point presentation from meetings, it is hard to understand why these are in the public domain. Often the quality of editing is poor, or the content is overly long and not well synthesized.

Where data is presented as authoritative, it is important that it is done so with a high level of rigor and credibility, and this should be guaranteed by choosing academic journals in the top quartile of the quality indices. However, recent changes in the academic journal global market have opened the opportunity for open access publication (as a cost) in new style publication platforms, for example the Frontiers and MDPI journals. Whilst these journals have some pockets of excellence, there is much of poor quality, with dubious peer review and evidence of 'gaming' the citation indices that drive Journal Impact Factors.

Are peer-reviewed publications generated of sufficiently high quality and open access?

Much high-quality science and practice has been continued from the work of the previous CRPs. New, novel and useful areas of research and application, tackling important global challenges and complex inter-sections between challenges have been given more emphasis and impetus under Initiatives structure. These include for example, the One Health approach, Resilient Cities, considering the important structural changes at the rural-urban intersection, and Nature+, considering aspects of the bio-economy and circularity.

In some cases, the initial long planning periods proposed under the initiative (e.g.., nine years) promoted efforts to gather founding data at scale (e.g., One Health Initiative RCTs in several countries).

Long envisaged planning period of initiatives (they were told nine years) means much founding/baseline work initiated which can lead to high quality science results in the future.

Assessment of outputs was limited by the evaluation scope (only two years of effective delivery to be assessed). Nevertheless, there were some excellent outputs, including in world leading journals, with a high likelihood of uptake, strong credibility, rigor and novelty.

A high number of journal articles funded by RAFS have been in journals of debatable quality (e.g., MDPI or Frontiers). The use of these types of journals for high quality, world leading, research may undermine the credibility of the outputs. Publishing policies vary across the System. A single policy would be helpful to guide future publication.

At the level of technical reports, briefs, communications and non-peer reviewed outputs, there is some excellent material, but also some that is either of limited quality, poor potential for scientific uptake or, in some cases, poorly reviewed. A re-focus on quality over quantity of this type of output might be considered.

There is insufficient evidence to demonstrate that science quality has improved during the transition from CRP's to SGs and initiatives, which is disappointing. This might be a motivation to concentrate science quality management in future design.

Of the 1,811 RAFS knowledge products, 435 had an Altmetric score (23%) demonstrating a range of impact from very high[10], to not yet showing interest.[11] The first is a globally important synthesis which made headlines across the world because of a finding that trees planted to mitigate climate change were not all surviving after five years. The timing was good because of the climate change conference and the journal is excellent. The second example is also a good journal but has not yet shown much impact or uptake.

What this shows is that Altmetric is useful as a measure of science being more widely noticed. It also seems to encourage more citations. Dixon and Baker (2022) show a relationship between Altmetric scores and citations "for articles published in major pharmaceutical journals", demonstrating that greater promotion of published work at the time of publication positively impacts on the level of citation. However, this data does not include journals with poor self-citing practices. These types of journals are in common use in RAFS. Using open access journals with rigorous peer review is best academic practice, however, changes in global academic publishing means that care needs to be taken with journal choice.

Altmetric is a useful metric for assessing influence and encouraging the promotion of scientific outputs and should be promoted alongside other quality assessment metrics, internal and external peer-review and careful curation of journal choice for placing outputs. It is the view of the evaluation team that a successful system of science quality assessment evaluates the research and not the vehicle for sharing that research. Achieving this needs a comprehensive approach to assessment.

Are physical outputs such as improved varieties, technologies, methodologies, digital innovations etc. of high quality; influential and relevant to next stage users and of IPG value?

Are other written outputs such as working papers, technical reports, policy briefs etc. of high quality and relevant to next stage users?

[10] For example: Nature Positive Solutions output, Banin et al, 2022, "The road to recovery: a synthesis of outcomes from ecosystem restoration in tropical and sub-tropical Asian forests", Phylosophical Transactions of the Royal Society B, 378:1867 – Altmetric 1543 – taken up by 202 news outlets and widely cited.

[11] For example: One Health, Duong, et al, 2023, "Temporal Dietary Diversity Patterns are Associated with Linear Growth but Not Ponderal Growth in Young Children in Rural Vietnam", The Journal of Nutrition, 153/10.

Are other written outputs such as working papers, technical reports, policy briefs etc. of high quality and relevant to next stage users?

In terms of innovations, of the 18 reviewed by the team, four were assessed as excellent and all were good. There are some high potential outputs being generated by RAFS SG. Attribution is not always easy to work out what was innovation and/or technical reports were generated by initiatives based on the work since 2022 and what culminated from many years of investment (e.g., direct seeding of rice within AMD and EiA) and what is 'new' innovation. Many of the current outputs reviewed may be based on pre-Initiative work.

A good example of novelty and high quality among new work might be the OHI work on food safety capacity building in Ethiopia which was rated as excellent by SMES, with high potential for future impact. Many of the current outputs reviewed may be based on CRP-era pre-initiative work.

The evaluation team assessed 44 technical reports of various types (Table 9). The assessment of quality in this category is that it is variable, with some strong work and other examples of technical work that may not have been ready for public dissemination. There are some very high quality and important manuals and capacity building materials and good examples of co-authorship with national partners.[12]

[Nb: output review summary here]

Is there sufficient effective engagement with policy makers?

We see, in general, a strong attempt to use scientific outputs of various kinds to engage with and provide evidence to policy makers. Engaging policy makers with highly technical evidence is difficult. A senior Vietnamese policy maker told the team "*We don't need any more complex science; we want technical solutions.*" This is a legitimate concern for policy makers and politicians alike–they need to deliver tangible results. Our assessment is that, from the sample of outputs and case studies, an appropriate balance is being struck between providing deep and high-quality evidence based scientific insight and delivering packages of high potential innovations.

Do the outputs position the SG Research Portfolio for uptake and impact? (also relate to IPGs)

Scientific impact is not expected to be linear. It may be derived over long-time frames and through obtuse links and mechanisms that are not obvious to the researcher. The means reveal this impact requires an on-going narrative to be developed so that future impact can be linked to past inputs. This element of impact narrative capture seems to have been lost in the transition from CRPs to initiatives.

Review found many high-quality products with great potential for future impact. A few examples are given in Box 1.

[12] For example: Asmah, P et al, 'Manual on Cage Fish Farming for beginners', 2023.

Box 2. Examples of High-Quality Innovations with Potential for Widespread Impact

AMD (Int 18). DeRISK SE Asia. Crop decision trees for supporting farmers to make climate smart production decisions (Kim et al, 2022). This neatly brings complex forecasting together with farmer knowledge to provide a practical answer to planting challenges in a changing environment.

AMD and Excellence in Agronomy (Int 11 and 18). Mechanized direct seeding for improved farming efficiency and reduced carbon footprint in rice production in Vietnam. This has a potentially game changing approach with widespread applicability.

Excellence in Agronomy (Int 11). User interface of e-agrology directed to farmers as a one stop shop where farmers can consult localized decision support for the management of their fields. This has highly potential e-farming innovation.

Is there a scaling readiness assessment system in place?

The balance between fundamental research, with applied research (including development and scaling), has been the center of a long debate. The transfer of innovations and technologies from initiatives to Regional Initiatives envisaged a dichotomy of effort between these two aims. There are few examples of this approach being effective in RAFS.

Efforts to assess impact and scaling readiness of innovations are an interesting innovation (seemingly an evolution of the now discontinued Output Impact Case Reports conducted under the CRPs). Researchers are asked to complete an Impact Package and Scaling Readiness Report (IPSR). These were not mentioned by any actors interviewed for the RAFs evaluation and may be seen as another reporting burden. They appear useful, but not much used yet.

Innovation introduction and scaling was done in both regional and global initiatives. The theory of passing innovation for maturing to regional initiatives does not seem to have worked well in practice, although that are examples of success (e.g., various rice systems innovations being scaled in the Mekong Delta with collaboration from several Initiatives and AMD coordination). One challenge mentioned by stakeholders that may have constrained this free movement of innovations to scaling entities was budgets and budget cuts as well as bureaucratic funding constraints to sharing budgets which have been highlighted elsewhere. Systematic disincentives seem to be in place that discourage resource, and therefore, activity/innovation, sharing.

Innovation readiness: RIIs are intended take more mature innovations from GTIs and scale them[1]. Analysis of the Readiness Level of innovations (on a zero to nine level scale) suggests some evidence of this with a higher proportion of Level 8 and 9 innovations managed by RIIs. There is also a peak of mid-level readiness around level four. Nonetheless, a fair proportion of innovations remain in GTIs up to level nine and at level six the proportion with GTIs is higher than RIIs. Further disaggregation by Initiative was not available to the reviewers. If this data says anything it is that not all innovations pass from GTIs to RIIs.

A further concern identified, in the Ghana deep dive, was the potential challenge of equity during scaling. It was found that strategies for including the most vulnerable and resource poor in scaling had not always been considered (e.g., only farmers of a certain size were considered for a scaling initiative). This issue may need further consideration in future scaling plans if the transition from innovation to adoption is not to exacerbate inequity.

The subject matter experts (SMEs) have reviewed and assessed 101 individual outputs against QoS criteria. Some findings drawn from this are suggested here. The spread of assessment is shown in Table 6.

Table 7. Synthesis of Scientific Output Assessments by the RAFS SG Evaluation Team[13]

Item	No. reviewed	Assessment				
Assessment criteria		4	3	2	1	0
Journal papers	21	9	5	7	0	0
Technical publications	36	10	8	17	1	0
Technical outputs	14	4	8	2	0	0
Communications materials	30	1	18	11	0	0
Total	101	24	39	37	1	0
%	100	24	39	37	1	0

Source: RAFS SG Evaluation Team Assessment

Many products assessed are clearly from centers and do not mention initiatives or SGs. In this respect the message about the structure of how science is managed varies across RAFS. A consistent message of how delivery of science is structured and branded would be preferable.

Multiple authorship on some outputs can lead to confusion. It is often unclear who contributed what and in some cases it looks like author lists have been loaded for diplomatic reasons–e.g., listing initiative leaders as authors who have not contributed to the output substantially, adding the names of senior national counterparts who have not contributed substantially to the output, or for other reasons not established. These practices potentially detract from the credibility of science and should be discouraged.

Some centers have a high proportion of low-quality journals (e.g., ILRI–one in six papers in Frontiers or MDPI), while journal choice and quality of outputs is much higher in others (e.g., IFPRI (no papers in Frontiers or MDPI). There is common use of special issues, an approach much criticized in among international researchers. There is significant international debate surrounding this complex and contested issue[2]. The best way of avoiding being drawn into this debate is to discourage the use these journals.

Quality vs quantity in scientific outputs. Many communications and reports are work in-progress. Sometimes the quality is dubious with poor founding in actual science (or evidence provided to support the claims). The release of this type of material into the public domain risks hard won credibility. A more systematic effort to avoid this would be beneficial and manage this risk going forward.

The volume of scientific outputs in two years is impressive. However, much of this comes from science conducted prior to 2022.

Identifying specific 'winning' technologies from the huge number of registered innovations for RAFS is challenging. It would help if all technologies had a common stage rubric to show where it is on the innovation development scale.

There are numerous literature reviews, which is to be expected for initiatives where are at an early stage of a planned nine-year research cycle. Some of these are high value, systematic, peer reviewed and published in important journals. Some other reviewed were of a lower quality but were published in lower

[13] The assessment criteria are as follows: **0** = not assessable or relevant; **1** = low, lacking novelty, rigor, relevance, objectivity, and/or credibility; **2** = weak, standard methods, established knowledge, weak coherence, low applicability; **3** = good, original methods, approach, broad applicability; and **4** = excellent, highly original, new knowledge, theories or concepts, significant international applicability.

quartile journals. A consistent policy on literature quality, methods and standards across the SG would have helped managed quality of this type of output.

A third of outputs, reports and presentations assessed were 'weak' (although a similar proportion were 'excellent'). With this uneven quality there needs to be some quality control. Not all should be published externally as they risk under-mining overall SG quality assessment. It is difficult to discern what the quality control process is for all outputs, but some sort of national level management of quality would improve standards. There were no 'not assessable' outputs and only one rated as 'low' by the evaluation team.

Internal peer review seems often to be by inviting co-authorship e.g., if a colleague is asked to review a paper their name is included in the final list of author, this is an opportunity for a more systematic peer review policy, possibly exploring a peer review college approach and by reinforcing the academic citizenship aspect of mutual peer review.

Table 8. Assessment of Journal Papers

Output type	Title	Journal	Year	Authors	Author association	Related INTs	Journal Impact Factor	Citations	Design	Relevance	Objectivity	Transparency	Inclusivity	Ethical	Rigour and credibility	Originality and novelty	Assessment
Journal article	Navigating One Health in research-for-development: Reflections on the design and implementation of the CGIAR Initiative on One Health	One Health	2024	Steven Lam a, Vivian Hoffmann, Bernard Bett, Eric M. Fevre, Arshnee Moodleya, Chadag Vishnumurthy Mohan, Javier Meteo-Sagasta, Hung Nguyen-Viet	CGIAR = 8/8	7	4.8	0	Interesting research approach involving quantitative methods and analysis of interview word association. Hard to work out who was interviewed and what bias might have impacted the results (e.g., One Health actors interviewing each other). Some risks of the approach being over reductive.	Highly relevant to the underlying initiative questions.	Interviews conducted at a time when the initiative was being cut, so a finding that the funding was insufficient and planning horizon too short not very surprising. Objectivity could be questions because we don't know exactly who was interviewed and whether a proper counter-factual was considered.	Based on the key questions of the Initiative and related to the theory of change. Lack of analysis of the interviewees is a concern - whose opinions are these? Open access.	Hard to judge from the evidence provided.	Prior informed consent, but no evidence of independent ethical review.	This is a good way of tackling a high-level question about a new approach and a good effort was made to produce a robust method. Credibility hard to judge without assessing the independence of reviews or seeing the questions asked. Generally, a very useful thorough piece.	Some methodological novelty for this type of review and certainly original work that adds to the discourse in this field.	3
Journal article	Food Safety knowledge, needed and trusted information of pork consumers in different retail types in Northern Vietnam	Frontiers in Sustainable Food Systems	2022	Trang et all	CGIAR = 3/9	7	4.7	0	Large survey questionnaire but small test sample. Not clear how questions were developed.	Very interesting research questions re. consumer attitude to food safety in Vietnam. Conclusions are a little disappointing.	Difficult to say how much recipients were impacted by ongoing food scarcity in Vietnam when work was done. Seems objective.	Open access. Data offered on demand.	Authors seem to have made a good effort to include researchers and a wide range of respondents.	Ethics done at Hanoi University.	Hard to know how else this type of research can be done. Combining with some focus groups would have added strength.	Interesting and possibly the first of its kind in Vietnam.	3
Journal article	Gender considerations in One Health: a framework for researchers	Frontiers in Public Health	2024	Galiè, A., McLeod, A., Campbell, Z.A., Ngwili, N., Terfa, Z.G. and Thomas, L.F.	CGIAR = 4/6	7	5.2	1	Literature followed by a proposed framework from the authors. Method seems a bit thin and would likely not be accepted by some journal.	Highly relevant to the discourse on One Health given relative novelty and likely high impact on women.	Method was literature review and discussion. No testing has occurred to hard to judge objectivity.	Open access. Authors opinions. Might have been improved by some testing of the framework.	Not obviously inclusive	Ethics not needed.	Relatively low level of rigor.	Despite the simplicity, an interesting contribution to a new area of research.	2
Journal article	The public health importance and management of infectious poultry diseases in smallholder systems in Africa.	Foods	2024	Grace, D., Knight-Jones, T.J.D., Melaku, A., Alders, R. and Jemberu, W.T.	CGIAR = 2/5	17 & 7	5.2	0	Literature review with no design stated.	Important to do literature reviews, but not very clear what the purpose of this one was.	A literature without a method, so not possible to judge how objectively the literature was chosen.	Open access.	As method of including papers for review is not discussed, it is not possible to assess inclusivity.	Ethics not needed.	Basic literature review with limited information about how literature was chosen.	Low. Literature review adds little to existing knowledge.	2

Output type	Title	Journal	Year	Authors	Author association	Related INTs	Journal Impact Factor	Citations	Design	Relevance	Objectivity	Transparency	Inclusivity	Ethical	Rigour and credibility	Originality and novelty	Assessment	
Journal article	Developments, bottlenecks, and opportunities in seed markets for improved forages in East Africa: The case of Kenya	Grassland Research	2024	Florez, J.F.; Karimi, P.; Paredes, J.J.; Ángel, N.T.; Burkart, S.	CGIAR = 5/5	17	0	0	Design clear, but probably too ambitious - too many actors and countries to give confidence about the findings.	Seem highly relevant to developing fodder seed systems	Limited sample size, but method well explained.	Open access. Not a very strong journal.	Very small sample size limited inclusivity.	Ethics is not mentioned in this paper - which is rather surprising.	Qualitative study, but method shows reasonable rigor and sample acceptable by the standards of this type of research. Six countries with six actor types - so typical y only one interview per type - which is weak, but this is recognized.	Novelty comes with the subject as fodder seed markets not excessively researched.	2	https://onlinelibrary.wiley.com/doi/epdf/10.1002/glr2.12073
Journal article	What monetary incentives are rice farmers willing to accept to stop straw burning? Evidence from a choice experiment in the Mekong Delta, Vietnam	Environmental Challenges	2024	Ong Quoc Cuong, Matty Demont, Isabelita M., Pabuayon, Dinah Pura T. Depositario	CGIAR = 1/4	Market Intelligence	8.7	0	Well-constructed experiment with clear hypothesis and identified need. Willingness to pay model with large sample size.	Very relevant to climate and rice production policy. Useful findings.	Experimental technique good, so high level of objectivity.	Open access. Good journal in this field.	Large sample size and wide range of actors and possible models.	Approach to ethics clearly explained.	High level of rigor and novelty.	Relatively novel approach to testing behavioral responses to incentives in the field preparation.	4	
Journal article	Occurrence, antimicrobial susceptibility, and resistance genes of *Staphylococcus aureus* in milk and milk products in the Arsi highlands of Ethiopia	BMC Microbiology	2024	Abiot Deddefo, Gezahegne Mamo, Minda Asfaw, Adem Edao, Adem Hiko, Dereje Fufa, Mohammed Jafer, Melaku Sombo, and Kebede Amenu	CGIAR - 1/6	One Health & Resilient Cities	4.2	0	Seems a well-designed experiment with reasonable sample size given field work challenges.	Highly relevant to address issues of One Health and rural to urban food safety. Findings potentially highly useful for policy given AMD challenges.	Experiment objective	Open access in high quality journal.	Cross sectional sample representative	Clear and appropriate statement on ethics.	Rigor appears high.	Novelty is founded on the location of the sample - which is otherwise under-researched.	3	
Conference paper	From Waste to Relief: Unlocking the Potential for Food Rescue in Low- and Middle Income Countries	Tropentag 2023	2023	Bodach, S., Athukorala, A., Wickramaarachchi, H.	CGIAR = 3/3	Resilent Cities	n/a	0	Literature review. Claims robust method, but this is not detailed. Research questions and hypotheses not very clear.	A very relevant review prior to proposing research actions in the field of food rescue.	Results seem objective. South-south learning a good addition.	Open access. Presented at a very well-known fora.	Authors all IWMI staff. Would have been good to include somebody from NARS.	Not needed for a literature review.	Basic review but done reasonably well and with some rigor. It is not clear how representative the papers/documents reviewed are of the universe of knowledge on this subject.	Not a lot of literature in this space, so a high degree of novelty and usefulness.	2	
Activity report paper	United for progress: Ghana's multi-institutional circular bio-economy Innovation Hub		2023	Agbefu, D, Dreschel, P, and Amoah, P.	CGIAR = 3/3	Resilent Cities & Nature+	n/a	0	Whole Journal issue sponsored by Resilient Cities. In house journal of RUAF an NGO. No clear peer review or publication policies.	Some relevance, but more a communication of activities in progress.	Of limited scientific value.	Open access. No evidence of editorial policies on ethics or objectivity.	Authored by project implementors.	Not required for this type of output.	Limited rigor and low credibility.	The innovation platform approach adopted (but not mentioned) is reported and can be useful for others working in this space.	2	https://ruaf.org/publications/?taxonomies=magazine

Output type	Title	Journal	Year	Authors	Author association	Related INTs	Journal Impact Factor	Citations	Design	Relevance	Objectivity	Transparency	Inclusivity	Ethical	Rigour and credibility	Originality and novelty	Assessment
Journal article	Evaluating responses by ChatGPT to farmers' questions on irrigated lowland rice cultivation in Nigeria	Scientific Reports	2024	Ali Ibrahim, Kalimuthu Senthilkumar & Kazuki Saito	CGIAR = 3/3	11	2.5	0	Literature followed by methodology consisting of interviews to evaluate the ability of an AI chatbot assistant (ChatGPT) to provide quality responses to farmers' questions on rice production.	Highly relevant in the provision of extension services.	Research is relevant because it addresses effectiveness of AI in extension services.	Open access.	Not so inclusive	Ethical approval acquired	Ai responses were evaluated statistically.	Important and novel. Underscores application of AI in extension services.	4
Journal article	Preparing for, coping with and bouncing back after shocks. A nuanced resilience assessment for smallholder farms and farmers in Northern Ghana	International Journal of Agricultural Sustainability	2023	Mirja Michalscheck, Fred Kizito, Bekele H. Kotu, Franklin K. Avornyo, Carl Timler & Jeroen C. J. Groot	CGIAR = 5/6	19	3.4	1	Literature followed by the description of Resilient Assessment Framework and FarmDESIGN to assess resilience. The FarmDESIGN is bio-economic, static model with a multi-objective optimization algorithm.	Relevant to predicting vulnerabilities, resilience and coping strategies of farmers according to different scenarios.	Modeling method distinct from literature review relevant in view of concerns with the carrying capacity of local ecosystems and the perspective of sustainable arable farming under scenarios of increasing land scarcity.	Open access.	Not so inclusive.	Not required.	Based on modeling and farmers' consultations.	Probably the first study to address site-specific intra- and inter-household differences in resilience.	3
Journal article	Enhancing smallholder maize shelling mechanization through the collective business model: the case of Northern Ghana	Frontiers in Sustainable Food Systems	2024	Isaac Gershon K. Ansah, Bekele Hundie Kotu, Benedict Ebito Boyubie and Joseph Ekow Bonney	CGIAR = 2/4	19	4.7	1	Literature followed by a conceptual framework on collective action and Qualitative Comparative Analysis (QCA) methodology to analyze the data of a sample of 156 farmers.	Highly relevant contributed to evidence around business models in smallholder agriculture in general and agricultural mechanization in particular.	The objective is non-biased for the sustainability of the innovation.	Open access.	Inclusive.	Ethics acquired.	Might have benefited more from cross-validation and application of econometric procedures to assess the QCA-identified configurations.	Adds to emerging literature or study on topic.	3
Journal article	Drivers of maize yield variability at household level in Northern Ghana and Malawi	Geocarto International	2023	Stella Gachoki & Francis Muthoni	CGIAR = 2/2	19	3.8	0	Literature review with methodology based on machine learning methods.	Use machine learning to scale out specific bundles of sustainable agriculture intensification (SAI) technologies with a low probability of failure.		Open access.	Literature review.	Ethics not needed.	A panel household survey data on maize yield and agronomic practices.	Adds little to existing knowledge.	2

Output type	Title	Journal	Year	Authors	Author association	Related INTs	Journal Impact Factor	Citations	Design	Relevance	Objectivity	Transparency	Inclusivity	Ethical	Rigour and credibility	Originality and novelty	Assessment	
Journal	Economic-environmental assessment of silvo-pastoral systems in Colombia: An ecosystem service perspective	Heliyon	2023	Fernando Sandoval, D., Fernando Florez, J., Johanna Enciso Valencia, K., Efren Sotelo Cabrera, M., and, Burkart S.	CGIAR = 4/4	Nature+	4	7	Well-designed experiment	Extremely relevant. Coupled with the fact that pastures are rarely improved for either grass species or fert. This was an economic study of existing silvo pastoral systems.	SPS are combinations of trees, shrubs, and forage grasses, that can be planted in different intensities (e.g., living fences, shade trees, intensive silvo-pastoral systems), aimed at increasing the available quantity and quality of animal feed and thus, animal productivity, while reducing the environmental impact of traditional, extensive grazing systems. Supported by government policy.	As it involves policy makers who support the SPS. The adoption of SPS in Colombia, like in other Latin American countries remains low; thus, this economic study	Data was first collected at CIAT research fields then verified at various locations throughout Colombia on growers' pastures producing data for analysis by economic terms.	N/A	Very rigorous analysis since it involved firstly the study done under controlled conditions at CIAT fields then to various non-controlled conditions in growers' pastures.	Yes, the objective of this article is to evaluate the economic-environmental performance of two proposed SPS for a cattle fattening system for the Colombian context.	4	Results show that both SPS improve the profitability indicators of the production system and reduce the probability of economic loss. Likewise, the reduction of methane emissions in the SPS is estimated at USD 6.12 per cattle, and the economic value of microclimatic regulation at USD 26 per hectare.
Journal	Nutritional and biomass evaluation of a Megathyrsus maximus collection in a dry tropical climate in Colombia	Tropical Grasslands-Forrajes Tropicales	2023	Carvajal-Taipia, J., Barahona-Rosales, R., Castromontoya, J., Arango J., and Jose Vivas-Quila, J.	CGIAR = 0/5	LC	2.1	1	Good typical design by breeders.	Seems relevant to try African accessions vs CIAT's.	Good design using standard breeders' assessment of accessions.	The 130 accessions were from Africa and had probably not been tested against the CIAT accessions previously.	Wide range of national and international partners acknowledged.	N/A	Typical analysis for assessing accessions' differences and for identifying top yielders.	Medium, it seems like a typical breeder assessment of accessions to identify a top yielder among the 130 accessions.	4	"The integral evaluation of biomass and nutritional parameters showed that the set of 28 M. maximus accessions contained 2 accessions with high nutritional quality and competitive biomass production. "
Journal	Evaluation of a Model (RUMINANT) for Prediction of DMI and CH4 from Tropical Beef Cattle	Animals	2023	Ruden, A., Rivera, B., Ernesto Vargas, J., López, S. , Gaviria, X., Chirinda, N., and Arango, J.	CGIAR = 3/7	LC	2.7	1	Design possibly not as successful as hoped for, but very good practice to share both good and not so good experiments.	Strong potential for relevance to climate change and ruminant production.	Journal with mixed reviewing quality somewhat detracts from objectivity.	Open access	Authored with a range of national and international partners, but not completely clear who contributed what.	N/A	Would have improved credibility of in a stronger journal.	Seems acceptable.	2	With this objective, methane measurements were made in individual chambers, and the results were compared with methane emissions estimated by the RUMINANT model. The model showed a high capacity to predict dry matter intake. However, in the case of methane emissions, it did not. Thus, RUMINANT model was not a good

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																		predictor of methane compared to the measured methane.
Journal	Tailored Forecasts Can Predict Extreme Climate Informing Proactive Interventions in East Africa	Earth's Future	2023	Funk, C., Harrison, L., Segele, Z., Rosenstock, T., Steward, P., Leigh Anderson, C., Coughlan de Perez, E., Maxwell, D., Seid Endris, H., Koch, E., Artan, G., Teshome, F., Maris Aura, S., Galu, G., Korecha, D., Anderson, W., Hoell, A., Damerau, K., Williams, E., Ghosh, A., Ramirez-Villegas, J., and Hughes, D.	CGIAR = 2/22	LC	8.2	6	Reviews secondary data sources. Design appears robust.	Highly relevant and informative for future research.	Strongly objective.	All data accessible.	Wide range of collaborators - majority in US universities.	N/A	Rigorous analysis well presented.	Although a commentary, they make good inferences. They describe, for the first time, how attribution-based insights can be combined with the latest dynamical models to predict droughts at eight-month lead-times.	4	Prediction, therefore, offers opportunities for proactive risk management and improved advisory services, if they can create effective societal linkages via cross-silo collaborations.
Journal	Prediction of crossover recombination using parental genomes	PLoS ONE	2023	Peñuela M, Riccio-Rengifo C, Finke J, Rocha C, Gkanogiannis A, Wing RA, et al.	GRIAR = 1/4	LC	3.7	0	Well-designed research. This paper builds on the hypothesis that chromosomal recombination correlates positively to a measure of sequence identity. It presents a model that uses sequence identity, combined with other features derived from a genome alignment.	Breeding takes a long time over many years. If a model can be identified that can cut that time down, it would prove useful.	The paper is well cited showing previous work done on crossover recombination techniques throughout the world.	Very useful model evolved from this research.	Good mix of various scientists from USA, South America and even Europe. Also, this journal is open source for data.	N/A	Very rigorous analysis.	This paper builds on the hypothesis that chromosomal recombination correlates positively to a measure of sequence identity. It presents a model that uses sequence identity, combined with other features derived from a genome alignment.	4	The proposed model, a characterization of the variation of the recombination rates along the chromosomes, can enable breeding programs to increase the chances of creating novel allele combinations and, more generally, to introduce new varieties with a collection of desirable traits.
Journal	Genomic selection for salinity tolerance in japonica rice.	PLoS ONE	2023	Bartholome, J., Frouin, J., Brottier, L., Cao, T., Boisnard, A, Ahmadi N, and, Courtois, B.	CGIAR = 1/7	LC	3.7	1	Well-designed using the 241 accessions of the Reference Population and the 393 accessions of the Breeder Population.	Salt tolerance by rice is valuable as salt infusion into rivers and local water sources remains a problem now and in the future.	Appears to be objective and knowing the journal with peer review and open sourcing for data sets.	The journal is open sourced.	Good with institutes from Colombia, France and CIAT.	N/A	Very rigorous analysis and this journal is open sourced.	Improving plant performance in salinity-prone conditions is a significant challenge in breeding programs.	4	They show that genomic selection is efficient for predicting the salt stress tolerance of breeding lines. Genomic selection could improve the efficiency of rice breeding strategies for salinity-prone environments.

Output type	Title	Journal	Year	Authors	Author association	Related INTs	Journal Impact Factor	Citations	Design	Relevance	Objectivity	Transparency	Inclusivity	Ethical	Rigour and credibility	Originality and novelty	Assessment	
Journal	Methane Emission, Carbon Footprint and Productivity of Specialized Dairy Cows Supplemented with Bitter Cassava (*Manihot esculenta* Crantz)	Animals	2024	Molina-Botero, I., Gaviria-Uribe, X., Rios-Betancur, J.	CGIAR = 2/3	LC			Good typical experimental design. They showed graphically how they would have 4 treatments on cattle when and precisely to identify the data collected.	relevant to determine the effect of cassava (Manihot esculenta Crantz) supplementation on enteric methane emissions, carbon footprint, and production parameters in dairy cows as no one had done field studies.	No field-based studies have been carried out on the effect of cassava intake on the combination of productive parameters, carbon footprint, and enteric CH4 emissions in cattle or the relationship of these parameters with the most common cattle breeds and crosses of specialized dairy cows.	Due to the abundance of livestock in Latin America producing 70% of global CH4, identifying ways to reduce methane while not hurting productivity of cattle is an important theory to pursue.	2 F 1 M	N/A	Credible design though difficult as cattle would be used but all measurements of intake, feces, CH4 over many days. Appears to have many factors to measure including milk.	The objective of this research was to determine the effect of cassava (Manihot esculenta Crantz) supplementation on enteric methane emissions, carbon footprint, and production parameters in dairy cows.	4	Supplementation with cassava leaves and/or roots is a nutritionally and environmentally sustainable strategy to replace external grain concentrates used in these systems.
Journal	Optimizing nitrogen use efficiency of six forage grasses to reduce nitrogen loss from intensification of tropical pastures	Agriculture, Ecosystems & Environment	2024	Bastidas, M., Vazquex, E., Villegas, D., Rao, I., Gutierrez, J., Vivas-Quila, N., Amado, M., Bedugo, C., and Arango, J.	CGIAR = 5/9	LC			Very rigorous design The field trial was established under a split-plot design with three blocks (replications) and considering the type of N fertilizer as the main factor and the different forage grass cultivars as a second factor nested within the type of N fertilizer. There were two phases of the exp over three years.	Relevant to gather optimum rates of N fertilizer to productivity and Nitrogen Use Efficiencies.	they used 3 different types of fertilezers which proved their theory correct in that the type of N fertilizer did affect the results.	Very much. Most pastures are not improved by use of fertilizers. By using fert, there is less needed to cut more forests down. Pasture productivity goes up.	One female author CIAT and one Spanish institute.	This journal has a CRediT authorship contribution statement.	This journal requires open-source data access.	They aimed to evaluate the effect of different types and rates of nitrogen (N) fertilizers on plant biomass production, nitrogen use efficiency (NUE), and nitrous oxide (N2O) emissions of six tropical forage grass cultivars.	4	"This study highlights the importance of optimizing NUE in tropical pasture systems using an appropriate design of N fertilization strategy. Inappropriate N fertilizer use can significantly increase the N losses (e.g., through N2O emissions, with a potential contribution from N leaching)."

Table 9. Assessment of Technical Publications

Title	Authors	Date	Type of product	Quality assessment (narrative)	Quality assessment (score)	Relevance to next stage user	Positioning for use	Potential for capacity development and impact	Related INTS - institute	
Assessing and prioritizing wildlife value chains and transmission risks of zoonotic diseases	Nguyen Thanh Ha	Dec-22	PowerPoint - to in country training event	Seems a clear presentation of the research plan. Not at all clear to me what the purpose of the presentation is or how the audience responded to it. Note that it is clearly a PhD thesis proposal - see timeline.	3	This depends on who the next stage use is. Potentially useful to national level researchers and policy makers.	Very hard to say. Would need to be translated?	Good potential for impact if research conducted and leads to evidence that effects future policy.	SAPLING	
Food safety knowledge, attitudes, practices and trust of pork consumers of Northern Vietnam	Fred Unger, Nga Nguyen-Thi-Duong, Huyen Le Thi, Phuc Pham Duc, Sinh Dang - Xuan and Delia Grace	Aug-22	PowerPoint - to international symposium	Clear explanation of evidence from a VC survey in Vietnam pork sector.	3	Good founding evidence for INT 22 design and implementation.	Presented at a large and important international symposium– so high-level likelihood of use.	At this level (international presentation of findings) – high.	SAPLING	
Food safety training and rating system for high-risk groundnut foods	Magnan, N., Hoffmann, V., Opoko, N., Posey, S. and Shaibu, A	Aug-22	PowerPoint to international donors	Explains research and its results well to a specific audience.	4	Relevant to policy makers (potentially).	Seems convincing, but needs more widespread adoption for proof on principle	If effective impact will be high (although hard to measure).	Planthealth	
CGIAR Initiative on One Health: Ethiopia stakeholder workshop, 26 April 2023	Lore, T A.	Apr-23	Workshop report	Summary of a series of project presentations followed by a short plenary workshop session. Important to have this recorded.	2	Some relevance to other users as a record of progress. Missing questions and discussion element.	Limited	Limited.	One Health 7, IFPRI	https://cgspace.cgiar.org/server/api/core/bitstreams/8ee2aabd-3191-4ecd-bb2a-bfb50c512c38/content
Effect of light-touch intervention and associated factors to microbial contamination at small-scale pig	Ngo, H., Dang-Xuan, S., Malqvist, M., Nguyen-Thanh, L., Pham-Duc, P., Nguyen-Hong, P., Le-Thi, H., Nguyen-Viet, H., Le, T., Grace, D., Lindahl, J & Unger F	Dec-23	International Journal of Food Microbiology, Vol 406	Useful contribution to the narrative on reducing risk factors in Vietnam pork sector. Good journal and appropriate for this material. Very	3	Strong relevance to next stage user.	Not clear if practices proposed will be adopted in the pork value chain. Further discussion on incentives needed.	Strong potential if simple approaches adopted universally.	One Health 7	https://www.sciencedirect.com/science/article/pii/S0168160523002672?via%3Dihub#s0085

Title	Authors	Date	Type of product	Quality assessment (narrative)	Quality assessment (score)	Relevance to next stage user	Positioning for use	Potential for capacity development and impact	Related INTS - institute	
slaughterhouses and traditional port shops in Vietnam				long author list with no clarity about who contributed what.						
New Directions for tackling food safety risks in the informal sector of developing countries	Henson, S., Jaffee, S., and Wang, S.	Jun-23	ILR Technical Report	Clearly founds the theoretical underpinning logic for a mixture of applied research and operational agendas.	4	Very relevant to next stage user.	Written by two of the leading thought leaders in this field.	Should be very influential- but not clear if it has been. A published paper from this would be useful.	One Health 7 - though clearly funded under CRPs - A4NH	
Value Stream Mapping: Food Supply Chains in India and Bangladesh.	Dora, M. and Veettil.	2022	Research Note 3	Poorly founded explanation of the research. No hypothesis suggested. Method not clearly explained, and concepts often not references. Choice of value chains not explained in method. Several typographical errors. Figures and tables not sourced.	1	Of very limited use to the next stage user. It is not very clear who the target it for this.	Not usable in this form.	Acceptable as an internal report, but to unformed to be released publicly.	TAFFSA WP3	
Biomass briquetting: a training module for trainers and practitioners	Somorin, T.; Gitau, J.; Agbefu, D.; Gebrezgabher, S.	2023	Training Module	Lots of information and text. Hard to say if it has been tested by users - but this is assumed. The aim is a bit vague - seems rather broad. Not clear what the innovative step it.	2	Seems relevant, but would need a high education standand for must users	More diagrams and fewer words might be better for use at this level.	Acceptable, but hard to see how widespread impact will occur from a technical manual like this.	Nature + IWMI	http://www.iwmi.cgiar.org/Publications/Other/PDF/biomass_briquetting-a_training_module_for_trainers_and_practitioners.pdf
Mechanization and postharvest management to support sustainable and	Nguyen Van Hung, Nguyen Thanh Nghi, Nguyen Van Hieu, Tran Thi Cam Nhung, Carlito	Document undated, but expected 2024	Review of technologies	Technical review of new postharvest technologies. Statements	2	Potentially very relevant, but to emerging larger farmers ready to adopt new	It would be hard to invest on the basis of this technical review. This should be linked	It could be argued that if only one technology gets taken up at scale impact would be substantial.	Asia Mega Deltas	

Title	Authors	Date	Type of product	Quality assessment (narrative)	Quality assessment (score)	Relevance to next stage user	Positioning for use	Potential for capacity development and impact	Related INTS - institute
low carbon rice production	Balingbing, Joseph Sandro, Martin Gummert, Virender Kumar			largely not referenced, or evidence provided to support claims. Introduces some exciting new technologies (e.g., laser light leveling and mechanized transplanting). Not very clear who the target market is. Objective of the document is not explained.		technologies/approaches.	to more detailed information.	Difficult to say if this is the best approach.	
Combining Short-Term Response and Long-Term Vision Rethinking the Approach to Fertilizer Subsidies	Many authors - 98 slide deck from a meeting in Nairobi on 29th March 2024.	2024	PowerPoint - to regional meeting	Variable. Slides potentially interesting, but the risk is that un-assessed work leaks out and it used. This work is not peer reviewed	2	Potentially useful, but quality uncertain as slides.	Risky and un-citable.	Could have high potential depending how these are used.	Excellence in Agronomy.
United for progress: Ghana's multi institutional circular bioeconomy innovation hub	Dzifa Agbefu, Pay Drechsel, Philip Amoah	2024	Magazine Article: Urban Agriculture, Jan 2024	An interesting report on a project in progress. Mentions Initiatives but not RAFS.	2	Useful report on work in progress, but of limited scientific value.	Reporting process, which could be useful for others.	Interesting to learn from others, but impact path not immediately clear.	Resilient Cities and Nature +
Informal Food Markets in Quezon City and Pasay City, Philippines: A Rapid Assessment	Roa, J	2023	Technical Report	Vaguely stated general objective and somewhat unclear research questions. The method and approach are a bit vague. Some interesting findings but could have been more condensed.	3	The strong engagement of city government in this work improves the chances of use.	Findings are useful but some actions might have made use clearer.	Difficult to say how this will turn into impact. Findings are interested but need to be activities.	Resilient Cities
Urban stakeholders analysis for food	Aheeyar, M., Jayathilake, N.,	2023	Technical Report	States objective as a 'map' but does not explain	2	Clearly a collaborative effort between external agencies. Engagement	Seems important, but difficult to say how this is	Some potential as stakeholders for next stage	Resilient Cities

Title	Authors	Date	Type of product	Quality assessment (narrative)	Quality assessment (score)	Relevance to next stage user	Positioning for use	Potential for capacity development and impact	Related INTS - institute
waste prevention and reduction in Sri Lanka	Bucatariu, C., and Drechsel, P			why this is needed. No grounding in background literature or state of art. Interesting and useful exercise but no conclusions or recommendations.		with local researchers not obvious-no co-authorship.	positioned within the overall strategy.	of intervention are revealed.	
Governance analysis for urban-wholesale-to-household's food waste prevention and reduction in Sri Lanka	Aheeyar, M., Jayathilake, N., Bucatariu, C., Reitemeier, M., Bandara, A., Thiel, F, and Drechsel, P	2021	Technical Report	Contributed to governance aspects of road map for food waste reduction.	2	The aim of this report is not stated.	Seems important, but hard to say how this is positioned within the overall strategy.	Concludes with a long list of possible actions without much clarity about responsibility or timelines.	Resilient Cities
Case Studies on food waste quantification, characterization, and identification of prevention and reduction options in Colombo	Jayathilake, N., Aheeyar, M., Wickramaarachchi, H., Bucatariu, C., and Drechsel, P	2023	Technical Report	Good number of case studies with internal consistency to approach. Sample choice and analysis framework well explained. Limitations clarified.	4	Approach could be adopted by others usefully on the basis of the information provided.	Well positions for use, visually interesting.	Strong potential if simple approaches adopted universally.	Resilient Cities
NATURE+ in Kenya - Report 2023 & Outlook 2024		2023	Country Overview	Summary of country activities. Not clear what the purpose is. Maybe simply communication.	2	There is a risk that this promotes un-proven approaches and research and raised expectations.	Clear and well presented.	Limited.	Nature+
Circular Bioeconomy Innovation Hub: the case of Ghana. Annual report 2023	Agbefu, D., and Amoah, P.	2023	Annual Report	Activity report - although aims of document not stated.	2	Reports activities rather than research	Successful reports activities but seems lengthy. Not clear what the target audience is for this.	Some potential for informing local stakeholders of activity	Nature +, Resilient Cities, IWMI
Small reservoirs in the Northern regions of	Ebenezer K. Siabi, Komlavi Akpoti, Sander J. Zwart	2023	Technical Report	Report supports the AqFS Initiative's goals	4	Concrete evidence for determining the suitability of reservoirs	Evidence-based and replicable.	Feasible for capacity building of hydrologists,	15

Title	Authors	Date	Type of product	Quality assessment (narrative)	Quality assessment (score)	Relevance to next stage user	Positioning for use	Potential for capacity development and impact	Related INTS - institute	
Ghana and their vulnerability to drying				of food security, sustainability, and community empowerment by examining small reservoir water availability and aquaculture potential.		or dams for fish cage culture.		physicists, data scientists etc.		
A machine learning algorithm for mapping small reservoirs using Sentinel-2 satellite imagery in Google Earth Engine	Ebenezer K. Siabi Komlavi Akpoti Sander J. Zwart	2023	Technical Report	Mapping of reservoirs with machine learning.	4	Provides detailed methodology for next user.	Replicable and scalable.	High probability for capacity building.	15	
A report on the Ghana country level inception workshop of the CGIAR Initiative on Aquatic Foods	Jack Pumpuni Frimpong-Manso, Mary Kudom-Agyemang, Everisto Mapedza, Marie-Charlotte Buisson, Ruby Asmah and Lawrence Ahiah	2022	Workshop Report	Workshop facilitation to co-design priority research activities with stakeholders for healthy aquatic foods sector.	2	Relevant to stakeholders and public.	Relevant to aquaculture stakeholders.	Limited.	Planthealth	
Methodological report on Alternate wetting and drying technology and tailwater recovery in rice production systems in the Northern and Ashanti regions of Ghana	Amankwaa-Yeboah, P., Zemadim, B., Oke, A., Stephen, Y., Harry, O., Joseph, A., Richard, A. and Cofie, O.O.	2023	Methodological report	Study illustrates the utility of stakeholder engagements and co-designing activities in the project communities.	2	Some relevance to other users as a record of progress. Missing questions and discussion element.	Limited.	High probability for capacity building.	One Health 7, IFPRI	https://cgspace.cgiar.org/server/api/core/bitstreams/8ee2aabd-3191-4ecd-bb2a-bfb50c512c38/content
Water management practices in Botanga district, Northern Ghana	Adebayo Oke , Birhanu Zemadim Birhanu, Amankwaa-Yeboah Patricia	2023	Community entry and sensitization workshop report	Illustration of a participatory method to promote AWD technology and the Tailwater	3	Relevant to nest stage users.	High and replicable.	Important as reference material for similar workshop.	One Health 7	

Title	Authors	Date	Type of product	Quality assessment (narrative)	Quality assessment (score)	Relevance to next stage user	Positioning for use	Potential for capacity development and impact	Related INTS - institute
	and Olufunke Cofie			Harvesting system.					
Crop simulation modelling training report	Vimbayi Grace Petrova Chimonyo	2023	Training Report	Capacity building with practical hands-on exercises on the use and application of crop models for decision support.	4	Very relevant to next stage user.	Relevant for use if hands on exercise is emphasized.	Should be important if hands-on exercises are emphasized.	
Cereal-Legume Mixed farming system of Ghana: transformations, structure, and intensification options	Amankwaa-Yeboah P., Mponela P., Akpatsu I. B., OfosuAmpong K., Ofori P., Dugan E., Agbesi K., Jizorkuwie A.	2023	Working Paper	Comprehensive discourse on mixed farming systems, their evolution, types and limitations in Ghana	3	Relevant to the next stage user depending on use.	Use for literature review.	Acceptable for providing background information in capacity building workshops.	11 & 19
Manual on Cage fish farming for beginners	Ruby Asmah, Emmanuel T.D. Mensah, Seth K. Agyakwah	2023	Manual	Pictorial manual on basics of cage fish farming.	4	Relevant for next stage user.	Highly relevant for immediate use-	High probability for capacity building-	15
Best management practices guidelines for small-scale tilapia cage aquaculture in Ghana and Nigeria	Jemimah Etornam Kassah.	2023	Manual	Authored by a practitioner and consultant with experience in tilapia farming.	4	Relevant for next stage user.	Highly relevant for immediate use.	High probability for capacity building-	15
Advances on testing genotypic diversity of forage grasses for their contribution to soil carbon accumulation	Mayorga, M., & Cardoso, J.	2023	Report	High quality as it tries to summarize the advances made through a field trial. One hundred eight accessions were used. Very intricate field trial. Something confirming independent review even of a report would give greater	4	I would expect this to represent screening techniques.	Is a report, so open to next stage use.	Scientific impact. I am sure a journal paper is forthcoming.	L&C

Title	Authors	Date	Type of product	Quality assessment (narrative)	Quality assessment (score)	Relevance to next stage user	Positioning for use	Potential for capacity development and impact	Related INTS - institute
				confidence to next stage users.					
Agronomic Evaluation of Megathyrsus maximus in Palmire, Colombia	Sotelo, M.	2023	Report	Some doubts emerged about the method. This report would benefit from peer review.	2	Not so much as method doubtful.	Available, but doubt on method increase risk of uptake.	For breeders only. They used greenhouse and even test tube for root growth.	L&C, SAPLING
Promotion of Circular Economy Entrepreneurship in Colombia	Chipatecua, G & Bodach, S.	2023	Thematic Brief	Promotes adoption of circular economy approaches. Not a research output, more awareness raising.	3	Not so much, as I am not an economist, but I did not find this to be substantive.	A good entry point for possible users	About SENA in Colombia	Nature + and SENA
Economic benefits of different silvo-pastoral systems in Colombia	Burkart, S.; Sandoval, D.F.; Flórez, J.F.; Enciso-Valencia, K.; Triana-Ángel, N.	2023	Poster	Report/poster that later was published as a journal article.	2	Clear and concise.	Research well explained (for a poster)	Useful way of summarizing and sharing research	Nature +
Public policies for the development of sustainable cattle sector with silvo-pastoral systems in Colombia, Argentina, & Costa Rica	Burkart, S., Lerna, L., Diaz, M., Triana-Angel, M	2022	Poster	Policy review with some interesting results.	3	Post clearly summarizes the research and findings in an understandable way.	Good chance that the approach could be adopted.	Fairly strong, but not too much should be expected from a poster.	Nature + and SENA
Delivering tree genetic resources in forest and landscape restoration A guide to ensuring local and global impact	Gaisberger, H., Jalonen, R., Vinceti, B., Elias, M., Kettle, C.J., Thomas, E., DeRidder, B., Besacier, C., Koskela, J., DeDato, G., DiMatteo, G., Boudagher, M., Dharmawan, I.W.S., Yuskianti, V., Fady, B., Odee,	2024	Book	Well written report with nine international authors.	4	120-page report. aim of this working paper is to highlight key challenges and opportunities for the integration of tree genetic resources TGR– from genes and species to landscapes.	Part of a series with FAO which form core texts in the field.	13 case studies from various countries around the world.	CIAT FAO joint publication.

Title	Authors	Date	Type of product	Quality assessment (narrative)	Quality assessment (score)	Relevance to next stage user	Positioning for use	Potential for capacity development and impact	Related INTS - institute
	D., Ping, H., Yongqi, Z., Rossetto, M., Tolentino, Jr, E.L., Warrier, R. & Yasodha, R.								
Environmental assessment of dairy cattle farms from San Vicente, Caquetá by using the CLEANED model	Gonzales, R., & Ortiz, J.	2023	Internal document	CLEANED is an indicator framework for ex-ante environmental impact assessment, that allows users to explore multiple impacts of developing livestock value chains.	2	Internal Document as the information was collected through semi-structured surveys conducted across 18 farms in San Vicente, Caquetá, Colombia.	Not very clear what the access status is of this document but seems open.	None as an internal document but high if they further develop CLEANED model.	L&C
Optimizing Legume Seed Production Potential in the Tropics: Strategies for Improving the Distribution and Replication of Sustainable Livestock Technologies	Sotelo, M.	2023	Report	Field trials of new varieties. Not particularly groundbreaking or novel. Small sample over only one season.	2	As it stands not very relevant as results inconclusive.	Not ready for use. Should not be a public document.	Not much since this was a preliminary report.	SAPLING
Climate-informed agronomic advisories for maize in Colombia	Diaz, M, Estrada, O., Llanos, L & Ramirez-Villiagas, J	2023	Progress Report	Progress report for the Excellence in Agronomy (EiA) initiative Latin America Use Case.	2	Very interesting approach of using machine learning model to handle the huge data sets.	Progress report- so too early.	Since it will use AI for agronomic advisories, it has huge potential.	Excellence in Agronomy.
Colombian Roundtable for Sustainable Cattle	Burkart, S.	2022	Report/think piece	This was a report about an event where the more than 130 participants from 13 countries (Argentina, Colombia, USA, Paraguay, Brazil,	2	Interesting about this event that they wish to go global, but probably relevant for the next event.	Not obvious.	Not so much capacity development but more of a report on an event.	L&C

Title	Authors	Date	Type of product	Quality assessment (narrative)	Quality assessment (score)	Relevance to next stage user	Positioning for use	Potential for capacity development and impact	Related INTS - institute
				New Zealand, Uruguay, Mexico, Peru, Bolivia, Canada, Ecuador, and Costa Rica.					
Assessing and prioritizing wildlife value chains and transmission risks of zoonotic diseases	Nguyen Thanh Ha	Dec-22	PowerPoint - to in country training event	Seems a clear presentation of the research plan. Not at all clear to me what the purpose of the presentation is or how the audience responded to it. Note that it is clearly a PhD thesis proposal- see timeline.	3	This depends on who the next stage use is. Potentially useful to national level researchers and policy makers.	Very hard to say. Would need to be translated?	Good potential for impact if research conducted and leads to evidence that effects future policy.	SAPLING
Food safety knowledge, attitudes, practices and trust of pork consumers of Northern Vietnam	Fred Unger, Nga Nguyen-Thi-Duong, Huyen Le Thi, Phuc Pham Duc, Sinh Dang - Xuan and Delia Grace	Aug-22	PowerPoint - to international symposium	Clear explanation of evidence from a VC survey in Vietnam pork sector.	3	Good founding evidence for INT 22 design and implementation.	Presented at a large and important international symposium - so high-level likelihood of use.	At this level (international presentation of findings) – high.	SAPLING
Food safety training and rating system for high-risk groundnut foods	Magnan, N., Hoffmann, V., Opoko, N., Posey, S. and Shaibu, A	Aug-22	PowerPoint to international donors	Explains research and its results well to a specific audience.	4	Relevant to policy makers (potentially).	Seems convincing but needs more widespread adoption for proof on principle.	If effective impact will be high (although difficult to measure).	Planthealth

Table 10. Assessment of Technical Output

INT	Product/technology	Relevance to next user	Positioning for use	Scaling readiness	Assessment of IPG potential	Assessment	
7	Assessing and prioritizing wildlife value chains and transmission risks of	Explains method/approach to key survey work.	Outputs essential for collaborative field work.	No scaling program in place. This looks like the founding methodology	Medium to high if the approach is taken up in other countries (e.g.,	3	https://cgspace.cgiar.org/server/api/core/bitstreams/a2ae5d08-

INT	Product/technology	Relevance to next user	Positioning for use	Scaling readiness	Assessment of IPG potential	Assessment	
	zoonotic diseases, PowerPoint for consultation on zoonoses work package, Hanoi, 8/12/22			for PhD field work. Method could be scaled to other users/countries. Dissemination through a high-quality journal probably the best means.	those with land borders to Vietnam).		aa07-49cd-97de-9517840f27b7/content
7	Video on protecting wildlife & health in Vietnam	Nice short video explaining the work. Difficult to say who the intended audience it for this type of material.	Not very clear what the positioning of this is intended to be. Certainly, of general interest. The under-lying reasons for the research seem a bit under played.	Not relevant.	Low to medium. Informative but not an output or a usable finding.	2	https://url.uk.m.mimecastprotect.com/s/OScOCnxp2hQzjErsEPVFT?domain=youtube.com
7	Report: Training of port vendors at 34 markets in Vietnam to improve poor hygiene practices and reduce pathogen contamination	Capacity training useful as part of a wider experiment on food safety in meat value chains.	Training clearly useful but the benefits of the overall approach not measurable until overall analysis complete.	Too early to say as experiment not complete.	Potentially high if overall approach proves efficacious.	3	https://reporting.cgiar.org/reports/result-details/11673?phase=3
7 & 16	Report: Training veterinary officers, meat inspectors and meat handlers to improve hygiene practices in slaughterhouses in Western Kenya	Capacity training useful as part of a wider experiment on food safety in meat value chains.	Training clearly useful but the benefits of the overall approach not measurable until overall analysis complete.	Too early to say as experiment not complete.	Potentially high if overall approach proves efficacious.	3	https://reporting.cgiar.org/reports/result-details/9433?phase=3
11	Summary of digital tools for agriculture in Ethiopia	Tools presented potentially useful, but possibly too early to assess impact.	Not yet in use.	Not yet in use.	Potentially high.	2	
16	Sri Lanka's road map on urban food waste prevention and reduction for households, food services, retailers and wholesalers	Forward by Min of Environment demonstrates potential for policy impact and use. The purpose of the document (other than reporting) is not explained well. Report identifies many actions but no timelines.	Form part of the on-going policy discussion (according to interviews).	Approach (a road map) well positions for use elsewhere.	Approach (roadmap) could have a strong impact if applied.	3	

INT	Product/technology	Relevance to next user	Positioning for use	Scaling readiness	Assessment of IPG potential	Assessment		
16 & 7	Strengthening Capacity, Incentives and Institutions for Food Safety in Ethiopia (SCIIFS)	The innovation is a visual scale to improve uptake of food safety measures. This PRMS describes the tool to measure this - possibly not an innovation.	Too early to say. Results from this type of assessment of effectiveness will greatly increase uptake.	This approach needs further testing before scaling.	Potential very high and broad if this approach works.	4	https://reporting.cgiar.org/reports/result-details/9718?phase=3	9718
17	PigSmart digital extension platform for enhancing farmers knowledge in climate smart best practices in herd health, genetics, feeding and manure management	Platform appears very useful tool with high potential for future impact.	Potential seems high but innovation currently 'incremental'.	Not clear on scaling readiness from data provided.	Could be high, but likely depends on quality of content and uptake.	3		4644
11 & 18	Mechanized direct seeding for improved farming efficiency and reduced carbon footprint in rice production in Vietnam	Highly relevant, but not to the most vulnerable (not the target).	Excellent position for use - returns to adoption very strong with high potential for impact on productivity and climate factors.	Seems to be ready to scale and likely to be widely adopted.	Very high.	4	https://reporting.cgiar.org/reports/result-details/1098?phase=3	1098
17	Dairy profitability simulator mobile application in Kenya - Innovation package and scaling readiness report (IPSR)	Given often tight margins in the dairy sector, a profit simulator would be a very useful application.	Well positioned for use, but IPSR identifies many challenges to overcome.	IPSR says at level 6-testing. This is some way from uptake and sustainable use.	Potentially high, particularly useful for very small scale if it works.	3	https://cgspace.cgiar.org/server/api/core/bitstreams/308ca72f-c0c6-4490-98d0-62ad743c1d8b/content	
11	Sustainable intensification of cocoa production through the development and dissemination of Integrated Soil Fertility Management option (CocoaSoils Use Case)	Important to enhance cocoa productivity and soil management	For use with an array of collaborators.	Scaling readiness in place; Controlled Testing (4).	Potentially high if taken up by cocoa producing countries.	4	https://reporting.cgiar.org/reports/result-details/1185?phase=3	
19	Diversity for Restoration (D4R) tool for Ghana: online catalogue and decision-support tool for selecting multipurpose tree species for mixed farming systems	Output is relevant to agrarian and pastoralist communities, and in farming systems for biodiversity conservation and soil conservation.	With a research team at Forestry Research Institute of Ghana (FORIG).	Under development (1).	Medium to high if taken up by countries in the same region.	3	https://reporting.cgiar.org/reports/result-details/1754?phase=1	

INT	Product/technology	Relevance to next user	Positioning for use	Scaling readiness	Assessment of IPG potential	Assessment	
15	Aquaindicator: a framework of indicators for sustainable aquatic foods.	An Aquatic Foods Index will be important in evaluating and synthesizing sustainability outcomes at local, national and international levels.	Still within partners.	0; Not clear if innovation is fully developed.	Potentially high when deployed.	3	https://reporting.cgiar.org/reports/result-details/9654?phase=3
11	User interface of e-Agrology directed to farmers as a one stop shop where farmers can consult localized decision support for the management of their fields	A flexible, decision-making framework for smallholder farmers.	Capacity development with farmers.	7, testing with farmers.	Potentially high if capacity building is implemented and adopted in other countries.	4	https://reporting.cgiar.org/reports/result-details/814?phase=3

Table 11. Assessment of Communication Materials

Communications product	INTs	Relevance to next stage user	Assessment of IPG potential	Assessment	Source
Mobilizing multi-sectoral coordination and multi-stakeholder cooperation in the field of food safety. Blog on Vietnam One Health website. https://onehealth.org.vn/mobilizing-multi-sectoral-coordination-and-multi-stakeholder-cooperation-in-the-field-of-food-safety.new	7	Seems founding to the collaboration.	Somewhat limited but may be useful for other countries that want to have a similar approach to governance of One Health approaches as Vietnam.	3	
Video on protecting wildlife & health in Vietnam	7	Nice short video explaining the work. Difficult to say who the intended audience it for this type of material.	Not very clear what the positioning of this is intended to be. Certainly, of general interest. The under-lying reasons for the research seem a bit under played.	2	https://url.uk.m.mimecastprotect.com/s/OScOCnxp2hQzjErsEPVFT?domain=youtube.com
Blog/web story on AMR and poultry	7	Tells an insightful story about poultry and AMR from the farmers perspective that conveys the reason for the research well.	It is difficult to know how impactful this type of product is. It communicates the background for the research well. Also highlights a strongly gendered aspect of the work.	3	https://www.cgiar.org/news-events/news/reducing-antibiotic-overuse-in-vietnams-agricultural-sector-stories-from-chicken-farmers/
Nexus Gain Talks: Podcast. "Transformative leadership program for women professional in the water-energy-food-ecosystems nexus"	Nexus	Reports on a research output. Done by a national partner in Nepal. Reviews a course. A series of talks and plenary done online.	Less engaging than the webinar below.	2	https://www.cgiar.org/news-events/news/nexus-gains-new-podcast-series/
Nexus Gain Talks: 'The water-energy-food-ecosystem nexus and One Health: Opportunities for joint action? 11/4/2024 online seminar. Webinar.	7	Led by IFPRI. Involves IWMI. One hour of useful presentations.	Highlights important research that demonstrates water/health/agri/environment interactions as examples of complex interactions that may benefit form a One Health approach to solutions.	3	https://www.cgiar.org/news-events/news/the-wefe-nexus-and-one-health-complex-links-present-challenges-and-opportunities/
Gender, livestock, and antimicrobial resistance through the eyes of veterinary pharmacists - A case study from Thai Nguyen Province, Vietnam. Authors: Campbell, Z, Nguyen-Thi T, Thi Van An, N, Van Quang, V, Xuan Thai, V & Kararazuka N.	7	Led by IFPRI, funded by ACIAR with multiple local and international collaborators. Highly relevant to the next stage user because it highlights a previously under considered gendered aspect of AMR management in	Interesting study with rather small sample size based on 2018 data only presented in 2023. Long gap between field work and publication undermined the voracity of the evidence. Notwithstanding a very useful and uncommon piece of research with useful and widely applicable findings.	3	https://cgspace.cgiar.org/server/api/core/bitstreams/ab16f1c2-b13b-4851-bede-cac9e3acb834/content

Communications product	INTs	Relevance to next stage user	Assessment of IPG potential	Assessment	Source
		Vietnam and possibly elsewhere.			
Ethiopia strides towards One Health with launch of integrated food safety technical working group	7 and 16	Reports establishment of a sub-committee/working group in Ethiopia on food safety under the national One Health umbrella.	If the committee is active the potential for IPG uptake is high, so a good thing.	2	https://www.ilri.org/news/ethiopia-strides-towards-one-health-launch-integrated-food-safety-technical-working-group
Contributing to a World Free from Hunger, Malnutrition, Poverty and Inequality: Framework for Gender-Responsive Livestock Development launches at the Climate and Clean Air Conference. Spinelli, M. 2024. Blog	17	Reports launching of a framework for gender responsive livestock development.	Interesting to report but of very limited knowledge value. Very brief.	2	https://www.cgiar.org/news-events/news/contributing-to-a-world-free-from-hunger-malnutrition-poverty-and-inequality-framework-for-gender-responsive-livestock-development-launches-at-the-climate-and-clean-air-conference/
FoodSENSE offers new ways of assessing and tackling malnutrition in Uganda. Wairagala, P. 2023.	17	Reports launch of SAPLING food security, environment and nutrition tool. FoodSense. Not sure how this relates to One Health.	Well-developed and interesting blog. Not much information about the tool available but seems to be reporting work in progress.	2	https://www.cgiar.org/news-events/news/foodsense-offers-new-ways-of-assessing-and-tackling-malnutrition-in-uganda/
Rice Breeding Innovations - Scientists get new insights on management of paddy dwarfing disease. Press release. 2024.	11	Announced new plan to address problem in India.	Limited IPG potential but useful information. Mentions IRRI several times but nothing about initiatives.	2	
From informal to formal: Empowering women in circular bioeconomy business in Kenya. Blog. CGIAR Gender News. Okoth, E., Gebrezgabher, S., and Mattson, S. 2024	12	Explains briquette making as circular economy and women empowerment activity.	The IPG is not particularly obvious (they could have used another service provider to get the technical knowhow), but empowerment through bio-economy business is a strong concept with wider potential for uptake.	2	https://www.cgiar.org/news-events/news/from-informal-to-formal-empowering-women-in-circular-bioeconomy-business-in-kenya/
CGIAR Science Day in Vietnam: Advancing Science for Food Security through Collaborative Initiatives, "Conference Highlights"	Sapling, AMD, Sustainable diets, One Health, Nature +, Excellen	General information sharing among science stakeholders in Vietnam.	Reporting. Hard to see contribution to science, but not a bad thing. Difficult to know what the purpose of the meeting or the document it. Some good evidence of engagement with policy makers.	2	

Communications product	INTs	Relevance to next stage user	Assessment of IPG potential	Assessment	Source
	ce in Agronomy.				
A Space for Gender in Baseline Surveys- A Blog Post	19	Blog is clear and concise. Content or information is usable for other gender or MEL experts and social scientists.	High potential for adoption and use in research beyond Ghana.	3	https://www.cgiar.org/news-events/news/a-space-for-gender-in-baseline-surveys/
Presentation on Intensification of maize production for smallholder maize-livestock farming system in northern Ghana	19	Presentation communicates progress and scaling readiness on innovation-improved maize-livestock technology bundles (Maize basal NPK timing, living mulch and leaf stripping).	High potential for adoption and use in research beyond Ghana.	3	https://cgspace.cgiar.org/server/api/core/bitstreams/dbd13220-f4c7-4e63-b572-5d6cf0451a4a/content
Cassava breeding in Nigeria adapts tricot on-farm testing to achieve inclusive breeding	11	Presentation communicates progress and scaling readiness on innovation-improved maize-livestock technology bundles (Maize basal NPK timing, living mulch and leaf stripping).	It highlights intersectionality and social inclusion in a demand-driven approach.	3	https://www.youtube.com/watch?v=W_jJYTa2Yuo
ICT-based agricultural extension services and women's empowerment: Evidence from Nigeria and Ethiopia	11	Presentation to assess the association of digital tools or related extension approaches for digital tools with key steps along the Reach – Benefit – Empower - Transform (RBET) framework.	Medium to high potential with proper understanding of the assumptions and principles. Requires other variables for testing.	2	https://cgspace.cgiar.org/server/api/core/bitstreams/cf03ac96-6741-46d6-90a4-75091b874a1f/content
Climate risk management solutions for enhanced resilience in the drylands	L&C	A Poster for a scientific forum, Tropetag 2023 Germany.	Has some potential for other dryland conditions.	2	
How do sustainability policies emerge in the Colombian political system? Analysis of the Policy for Sustainable Cattle 2022-2050	Nature +	Poster for a scientific forum.	Limited to the Colombian context.	3	
Applying co integrated panel models to estimate long term relationships between cattle production and greenhouse gas emissions for Latin America	Nature +	A good PowerPoint on this study.	Not sure how rigorous the model is.	3	

Communications product	INTs	Relevance to next stage user	Assessment of IPG potential	Assessment	Source
Information exchange patterns and technology adoption behavior of cattle farmers in the Colombian Amazon	L&C	Poster for a scientific forum.	Limited to the Colombian context.	3	
Profitability analysis of a silvo pastoral system in Colombia: Economic and environmental benefits	Nature +	PowerPoint presentation.	This PowerPoint summarizes a journal article.	3	
Transforming beef farming systems: Advances in grazing management for sustainable production	L&C	Poster for a scientific forum.	Good summary of current advances.	3	
The carbon footprint of beef transportation in Colombia: market connections and distribution networks	L&C	Poster for a scientific forum.	Very good assessment and could be scaled out to other areas.	4	
Prioritizing climate-smart cattle farming practices and technologies for sustainable livestock production in Colombia's Orinoquia region	L&C	Poster for a scientific forum.	Good but very localized to a specific region of Colombia.	3	
N fixation and N_2O emissions in silvopastoral systems based on Urochloa grasses & Leucaena shrub legume.	L&C	Poster for a scientific forum.	Specific to these SPS systems.	3	
The underlying causes of deforestation during "peacetime": evidence from the implementation of the peace agreement in Colombia	Nature +	A Poster for a scientific forum, Tropetag 2023 Germany.	Interesting study on effects of 'peace' and deforestation.	3	
Owning the land, but at what cost? changes in power relations and land accumulation in cattle ranching in wartime Colombia	Nature +	A Poster for a scientific forum, Tropetag 2023 Germany.	Weakly written with not very specific hypothesis.	2	
Herramientas de Análisis para la Medición del Carbonoa Escala de Paisaje	L&C	PowerPoint presentation.	Good but limited to Spanish speaking countries.	3	
Mapping the suitability of tropical forages-now and in the future	L&C	PowerPoint presentation.	Has potential to be scaled out.	3	
Webinar summary Report: Targeting Tools: Providing climate risk maps to the livestock community.	L&C	Report from the webinar.	Limited to the Colombian context.	3	

Table 12. Assessment Overview

Item	No. reviewed	Assessment (No.)					
		4	3	2	1	0	Check
Journal papers	21	9	5	7	0	0	21
Technical publications	36	10	8	17	1	0	36
Technical outputs	14	4	8	2	0	0	14
Communications materials	30	1	18	11	0	0	30
Total	101	24	39	37	1	0	101

Annex 9: Partnerships

Table 13.Types of Partners under RAFS GTI's and RIIs in 2023

Partner type for GTI	Number/GTI	Partner type for RIIs	Number/RIIs
Research organizations and universities National (Universities)	357	Research organizations and universities National (Universities)	203
Research organizations and universities National (NARS)	147	Government (National)	111
Government (National)	114	Research organizations and universities National (NARS)	90
Private company (other than financial)	110	Private company (other than financial)	88
Government (Subnational)	42	NGO International (General)	30
NGO International (General)	33	Government (Subnational)	25
Research organizations and universities International (General)	32	NGO National (General)	23
Other	31	Research organizations and universities International (General)	21
Research organizations and universities International (Universities)	22	Organization (other than financial or research) International	20
Organization (other than financial or research) International	21	Organization (other than financial or research) Regional	20
NGO National (General)	20	Other	20
Organization (other than financial or research) Regional	20	NGO National (Farmers)	12

Partner type for GTI	Number/GTI	Partner type for RIIs	Number/RIIs
NGO Local (General)	15	Research organizations and universities International (Universities)	11
Foundation	12	NGO Local (General)	10
NGO National (Farmers)	10	Research organizations and universities Regional (NA)	9
Research organizations and universities Local (NA)	9	Financial Institution National	8
Research organizations and universities Regional (Universities)	9	NGO Local (Farmers)	8
Financial Institution National	7	NGO Regional (General)	7
Research organizations and universities Regional (NA)	7	Research organizations and universities Local (NA)	7
NGO Regional (Farmers)	6	Research organizations and universities Regional (Universities)	7
NGO Regional (General)	6	Foundation	6
Financial Institution International	5	Financial Institution International	5
NGO International (Farmers)	5	NGO Regional (Farmers)	5
NGO Local (Farmers)	5	NGO International (Farmers)	4
Research organizations and universities Local (Universities)	5	Public-Private Partnership	4
Financial Institution Regional	4	Research organizations and universities Local (Universities)	3
Public-Private Partnership	1	Financial Institution Local	1
Total	**1055**	Financial Institution Regional	1
		Total	**759**

Annex 10: Updates on Recommendations from 2021 Synthesis and Lessons Learned from a Decade of CGIAR Research Programs

As part of the 2021 Synthesis and Lessons Learned from a Decade of CGIAR Research Programs, the CGIAR Advisory Services (CAS) produced separate briefs for each Action Area. The brief revealed valuable lessons and recommendations for future research programs within One CGIAR. Key recommendations are detailed in the following table:

Table 14. 2021 Recommendations for RAFS Action Area

Recommendation	Management response	Action plan	Timeframe	Reported Status	RAFS Eval Team Assessment
Reorient work to focus more on the vulnerable poor, in particular women and the disadvantaged and those at greatest risk from natural resource depletion, severe climate change impacts, economic deprivation, and conflicts.	The recommendation is addressed by the 2030 Research and Innovation Strategy and will be taken on board across the Initiatives under RAFS.	This focus is part of all selection processes with respect to countries and issues within countries. In the Regional Integrated Initiatives this is a main aspect as they are strongly demand driven and focus on those at greatest risk.	Ongoing throughout 2022-24 business plan period.	In progress	The initiatives have well considered gender, and concrete efforts have been made in this domain. However, the evaluation identified limitations in the delivery of research outputs and outcomes to the most vulnerable groups. Factors such as the criteria for research participation, scaling strategies, prioritization of crops, and the selection of beneficiaries by farming communities, farmer organizations, and partner entities may have inadvertently excluded the most vulnerable individuals, thereby impacting the overall success. Additional constraints included budget cuts and a short three-year project cycle, which constrained resources and led to outreach to fewer smallholder farmers and other vulnerable groups than originally envisioned in the theory of change (ToC). In addition, the engagement with social scientists is still markedly less compared with the technical bio-physical scientific capacity internally available.
Improve assessment and metrics related to risk and resilience and co-develop social and technical innovations with at-risk populations.	The RAFS SG agrees with the recommendation.	Within several Initiatives in RAFS and ST, scientists will work on assessing risks and co-design specific social and technological innovations to de-risk crop and livestock production with at risk populations. The Regional	2022	In progress	Several initiatives focused on strengthening the resilience of smallholder farmers, including with related research and assessments, and developed innovative socio-technical packages for climate-smart agriculture. However, no evidence was found of risk and resilience metrics in use for vulnerable populations or the co-design of these in the RIIs or GTIs assessed. ToC's have not been adapted to include

Recommendation	Management response	Action plan	Timeframe	Reported Status	RAFS Eval Team Assessment
		Integrated Initiatives will especially have that as a strong aspect and reflect this in the ToC.			vulnerability risks in the current annual reports. Vulnerability and 'at risk' populations are not clearly defined.
Foster adoption of technical and social innovations at scale, as required to achieve system transformation, and give greater emphasis to research on scaling science and implementation science.	The RAFS SG agrees with the recommendation.	Scaling readiness assessments of innovations and innovation packages will be embedded in all initiatives. Each initiative has identified specific scaling partners to be involved from the start. Especially the RIIs will focus on this and have this at the core of the methodological approach. They will work with farmers at scale bringing systems innovations to work together with the key partners such as NARS. (https://www.tandfonline.com/doi/full/10.1080/14778238.2021.1884010)	Ongoing throughout 2022-24 business plan period.	In progress	There are examples of good practice (e.g., low carbon rice farming) but also of innovations that do not have scaling readiness 'embedded' (e.g., charcoal production from food waste). Collaboration promised with NARS is variable, working well in countries where there is a lot of CGIAR activity and less comprehensively in others reviewed. The mutual engagement between RIIs and GTIs did not work as expected.
Ensure that public, private, and civil society stakeholders are involved in foresight and priority setting processes and have a sense of ownership about the research agenda.	EMT and System Board have consistently supported the inclusion of stakeholders in the design and delivery of CGIAR's strategy and will continue to keep his engagement a priority.	Via Engagement Framework 1. CapSha needs and opportunities with NARIS partners better considered in the preparation of the second cycle of Research Initiatives through CapSha-issued guidelines.	Ongoing throughout 2022-24 business plan period.	In progress	NARES were consulted during INT design, but less well subsequently. Some stakeholders complained that their voices were not always heard.
Strengthen the systematic incorporation of equity issues into research design and analysis. Diversify partners and skills—including, for example, social scientists and experts	EMT and System Board agree with this recommendation, and we plan to build on many good examples from within CGIAR to enhance our strategic partnerships along the impact pathway and to identify and develop	Initiative Design Teams have been constituted to be diverse in gender, in research discipline and partner type to respond to complex challenges. Socio-economic work will be	Ongoing throughout 2022-24 business plan period.	In progress	There is some evidence that the RAFS SG has responded to this recommendation. Examples are a widespread inclusion of gender analysis in research design, and the use of multi-disciplinary approaches in the One Health Initiative.

Recommendation	Management response	Action plan	Timeframe	Reported Status	RAFS Eval Team Assessment
from the private sector, sustainable finance, and humanitarian sectors—to better address the root causes of sustainable development challenges. Expand socioeconomic work, including poverty and livelihood assessments, adoption studies, policy and institutional analyses, and in-depth gender and youth studies, with strengthened in-house capacity and/or additional partners.	our core competences to meet our 2030 goals.	prominent throughout the portfolio. SGs will be formally reviewing Initiatives on an annual basis to assess progress, including on addressing equity issues. At the levels of the Global Director for Partnerships and Advocacy and the Impact Area Platforms, more strategic approaches to collaboration are already being explored with leading organizations in these topical areas (e.g. WFP for humanitarian sectors). Also see response to recommendation 11 on inclusion of equity in research design.			
Invest in training researchers in systems science. Build research from a shared understanding of food systems that integrates objectives related to production, livelihoods, environment and biodiversity, and health and nutrition; that takes a holistic approach to Agri-food systems and risk management; and that uses participatory innovation approaches to engage with farmers and rural communities.	EMT and System Board agree this is highly needed technical area for capacity strengthening. Many researchers have significant in systems science and many other researchers are appropriately working within a specialized niche. Training resources will need to be allocated selectively such that the research portfolio responds.	CGIAR is building from strong capacities in some sub-system areas noted (e.g. production, livelihoods, environment) and in systems research at farm scale. However, it is recognized that system science is required to address complex development challenges at national and other higher levels. We plan to strengthen system science capacity with partnerships with a few ARIs and to strengthen in-house capacity of CGIAR and national partners to ensure that system science is applied across different spatial scales from	Ongoing throughout 2022-24 business plan period.	In progress	Where there are systems projects (e.g., One Health) capacities are being developed to manage complexity. How far this reaches outside these specific activities is hard to tell after this short period of implementation.

Recommendation	Management response	Action plan	Timeframe	Reported Status	RAFS Eval Team Assessment
		global to sub-national within the portfolio.			
Strengthen MELIA metrics, and develop user-friendly, streamlined reporting systems based on simple, nested ToCs—developed with and owned by partners and stakeholders—that enable required baselines, actions, capacities, and responsibilities to be coherently planned in pursuit of desired outcomes.	EMT and System Board support delivery of best of class performance and results management by CGIAR to meet accountability, learning, communication and resource mobilization needs.	The System Council-approved CGIAR Performance and Results Management Framework (PRMF) 2022-30 describes the nested ToC approach, core results framework and management system functionalities required to deliver on this recommendation.	Ongoing throughout 2022-24 business plan period.	Completed	ToC is now widespread across Initiatives and activities. However, there was little evidence of adaptation of ToC to circumstances suggesting that it is not yet being used pro-actively as a planning and delivery tool. MELIA plans, though existing, have not been systematically implemented.
Tailor corresponding metrics to CGIAR's comparative advantage and realistic expectations of CGIAR's contribution to sustainable development outcomes across the five Impact Areas.	EMT and System Board support establishing a realistic accountability framework of the results that CGIAR intends to deliver or demonstrably contribute towards.	The SC-approved PRMF contains targets and indicators, linked to SDGs, across the five Impact Areas to which CGIAR and partners will contribute. In support of these global targets, Initiatives and projects in the CGIAR Portfolio will develop an accountability framework of the results that CGIAR intends to deliver or demonstrably contribute towards.	Ongoing throughout 2022-24 business plan period.	Completed	
Incentivize the use of MELIA metrics for progressive cycles of evidence-based learning and adaptive management, working in close collaboration with partners and stakeholders, to optimize delivery and impacts. Increase the use of mixed method designs in	EMT and System Board support evidence-based learning and adaptive management to optimize delivery and impact.	The SC-approved PRMF describes an end-to-end innovation to impact management approach (including nested ToC, common results framework, innovation packages, scaling readiness, projected benefits,	Ongoing throughout 2022-24 business plan period.	Completed	PRMF is still to commonly used as an exercise in counting activity. Impact narratives are missing, and we recommend their return.

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evaluations, with metrics for outcome pathways that go beyond CGIAR and its immediate boundary partners.		stage-gates) that will be implemented starting 2022.			
Improve the coverage of cross-cutting themes (e.g., gender, youth) in MELIA by strengthening evaluators' relevant disciplinary skills as applied to evaluation design and implementation.	EMT and System Board support strengthened MELIA capacity coverage of cross-cutting issues such as gender and youth in CGIAR.	Methodological guidelines on designing and delivering evaluations relevant and appropriate to gender and youth issues will be included as part of the new CGIAR Evaluation Policy. Additional Gender MELIA expertise is being engaged in 2021 and will contribute to the development of the methodological guidelines.	Ongoing throughout 2022-24 business plan period.	In progress	
Expand the availability of technical assistance on MELIA to research managers, scientists, and partners.	EMT and System Board support expanding MELIA assistance to research managers, scientists and partners.	New MELIA-related structures are being designed for CGIAR, including a Portfolio Performance Unit and a Project Coordination Unit. Technical support to stakeholders will be strengthened through these and other relevant units. The SC-approved PRMF contains a range of cutting-edge methods to better plan for, learn from, and demonstrate contribution to impact. Progress, bottlenecks and solutions will be described on a regular basis and shared with key stakeholders.	Ongoing throughout 2022-24 business plan period.	In progress	
Develop strategies for developing partnerships and	EMT and the System Board agree on the need for a more systematic	1. Draft 1 of the Engagement Framework outlining the	Ongoing throughout	In progress	There was no evidence of strategies for progressive transfer of responsibilities being implemented or measured.

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institutional capacity, to facilitate a more systematic approach in both areas. Establish explicit time-bound targets and exit strategies for the progressive transfer of responsibilities and resources to enable local partners to sustainably take on a research or innovation area for themselves.	approach to partnerships development and stewardship, and institutional capacity building with local partners. This, however, needs to be done in a manner that responds to stated needs and timelines (demand driven) and leverages existing strengths, and not through unilateral assessments of capacity gaps.	overarching structures, processes, procedures and principles for capacity sharing/strengthening for uptake by mid-January 2022, finalized by June 2022. 2. Prepare and deploy strategies for progressive transfer of responsibilities and resources, with corresponding metrics and milestones, to local partners in select geographies, prioritized by regional directors. 3. Co-design One CGIAR Academy with this purpose as one of its core drivers.	2022-24 business plan period.		There was no mention of a One CGIAR Academy.
Draw on CGIAR's value as a broker of networked actions by making greater use of research and development partnerships to fill knowledge and skill gaps in research processes and innovation webs, enabling CGIAR to focus on its own strengths and areas of comparative advantage. These partnerships, including south-south partnerships, should include the private sector throughout the food system, non-CGIAR ARIs, small and medium-sized enterprises, and civil society organizations (CSOs), to help scaleup innovations, value addition, and market access. Facilitate partnerships linking non-CGIAR	EMT and the Systems Board support this recommendation. A Partnerships Stewardship, Innovation and Intelligence Unit will be set up to support Regional and SGs to put in place the systems and structures to ensure a networked approach to R&D efforts, reducing transaction costs and duplications, and leveraging synergies across sectors and geographies to increase our collective impact.	1. Draft 1 of the Engagement Framework outlining the overarching structures, processes, procedures and principles for capacity sharing/strengthening for uptake by mid-January 2022, finalized by June 2022 2. Design, test and deploy the systems and support structures for networked approaches to R&D with regional and SGs, finalized by December 2022 3. Design, test and deploy activities that align and leverage the insights and assets from SGs, regions and centers, namely in CapSha, institutional partnerships, and partnerships intelligence.	Ongoing throughout 2022-24 business plan period.	In progress	

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ARIs to local and national partners for collaborative research and capacity development in new Initiatives. Explore opportunities for CGIAR programs to contribute productively to national development agendas, foster synergies, and reduce duplication of effort. For example, the GENEBANK and Excellence in Breeding (EiB) platforms were established as service providers to CGIAR but have the potential to strengthen genetic conservation and use and advanced breeding capabilities in national systems.					
Put higher priority on ensuring that research agendas respond to local, national, and regional strategies and Initiatives to facilitate the achievement of outcomes at scale. Initiate or strengthen long-term, transdisciplinary research at dedicated field facilities strategically located in relevant landscapes of developing countries. Co-locate activities from many programs in these geographic areas to better coordinate outcome-driven research	This is one of the main drivers in the new strategy and portfolio. The CGIAR 2030 Research and Innovation Strategy clearly defines the importance of a prioritization process where the demand (local, national and regional strategies/initiatives) will get a higher priority in setting the research focus. In many global Initiatives and all the regional integrated Initiatives, activities will be linked in the key countries/locations building on strong partnerships. Infrastructure will be shared and optimized for the whole system.	Regional Integrated Initiative (RII) teams will continue organizing stakeholder meetings and meetings with the global Initiatives to coordinate plans. Initiative plans will be further designed and operationalized with partners using shared infrastructure.	First steps are made in the initiative design. In the first phase of the agenda 2022-24, initiatives will be rolled out using the shared infrastructure.	In progress	Coordination between RIIs and GTIs in RAFS was less successful that planned. Not all innovations are shared between these two initiative types.

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activities, build partnerships, and share infrastructure.					
Develop consistent policies and practical, ethical guidance to inform CGIAR engagement with local partners at different levels (communities, government, private sector, NGOs, ARIs). Communicating in the right way with local partners is essential; CGIAR should expand its inhouse communications and outreach capacities and ensure that country-based staff are well trained. Develop guidelines for future work based on the experiences of the systems CRPs and Global Integrating Programs in developing, funding, and managing Platform-based research Initiatives with broadening participation and community engagement.	EMT and the Systems Board strongly support this recommendation, acknowledging that policies, ethics guidance, improved communications and in-house training for staff will be crucial to improve our engagement with local partners at different levels. CGIAR needs to continue to foment a culture of collaboration that is responsive to local needs and demands, that leverages local capacity and talent, and that also affords opportunity for local actors to shape and influence CGIAR's research locally and beyond.	1. Draft 1 of the Engagement Framework outlining the overarching structures, processes, procedures and principles for capacity sharing/strengthening for uptake by mid-January 2022, finalized by June 2022. 2. Design, test and deploy the policies, ethics guidance and internal capacity development opportunities in support of improved engagement with local partners, finalize by December 2022. 3. Collaborate with Communications and Outreach in producing and mainstreaming the messages and narratives that reflect CGIAR's commitment to working with local partners in a respectful, accountable, and transparent manner to achieve collective impact, finalized by December 2022.	Ongoing throughout 2022-24 business plan period.	In progress	
Strengthen social science capacities by increasing in-house resources and/or making better use of skilled external partners. Integrate social scientists into action research projects and develop appropriate incentives to	EMT and System Board agree that the major challenges in meeting our commonly shared development challenges have strong socio-economic dimensions requiring social science attention.	CGIAR aims to house disciplinary expertise in three well-coordinated SGs to achieve transdisciplinary cooperation.	Ongoing throughout 2022-24 business plan period.	In progress	The attention to socio-economic dimensions was strong in RAFS. The evaluation noted the desire for more access to gender expertise. Efforts to increase the availability of these skills in a coordinated way among partners, particularly NARES, was not always apparent.

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encourage interdisciplinary and systems research.					
Invest in creating a shared vision-including stakeholders and researchers—on what could be achieved in a group of research activities at the region, country, landscape, or community level and a ToC on how to achieve change. A successful process will require significant attention to facilitating communications among the different levels of researchers and stakeholders.	RDs have been very involved in the presentation and consultation with regions and countries of the Regionally Integrated Initiative to or in partnership with regional partners such regional research institution or regional unions. A platform was creating between RDs and SGDS to develop the enabling environment necessary to craft this shared vision.	Development of a shared strategy for coordination that reflects the shared vision of SGDs and RDs.	By end of 2022.	Delayed	The evaluation did not find a systematic attempt at country level to develop a shared vision for SDGs and RDs.
Expand work on assessing risk and resilience and managing risk throughout the food system by strengthening CGIAR capacities or engaging external partners. Put a higher priority on improving resilience to climate and pest stresses when developing, adapting, and assessing technologies and innovations for crops and livestock.	The new strategy includes a stronger risk assessment and resilience improvement approach and the initiatives prioritize their focus accordingly especially when looking at technologies and innovations in crop and animal systems.	Framing of initiative designs around risk and resilience building, with clear intended results and indicators.	In the design phase (2021-22).	Completed	
Collaborate with ARIs and the private sector on action research that unlocks access to finance, inputs, and innovation-based enterprise opportunities for women, youth, and other marginalized groups, building on index insurance,	EMT and System Board agree on the importance of finance for fostering the types of transformations the CGIAR seeks to contribute to and engagement with the private sector and ARIs in doing so. This will be critical in managing future climate risk, as well supporting the scaling of adaptation	Action research focusing on access among CGIAR target beneficiaries, especially low-income women, to finance (credit and insurance), financial services and information.	Ongoing throughout 2022-24 business plan period.	In progress	Some good work on enterprises and women assessed. Action research on-going, but the balance between fundamental science and action research strong among RAFS partners who would refer innovations/technology over academic research.

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blended (public-private and public-private-producer) finance models, and other emerging approaches.	solutions. Within CGIAR we have recently developed some expertise and forged new partnerships with the financial community (e.g. through CCAFS and Harvest Plus) and have had ongoing work on weather insurance and credit arrangements for producers with private sector partners. Clearly, we need to transform our own ambitions and partnerships with the private sector and international finance institutions as well as to enhance this knowledge and skills within CGIAR.				
Pursue direct links between CGIAR R4D actions—coordinated in country—and official development assistance (ODA) loans and grants to countries, as well as direct co-financing through such mechanisms where feasible and were demanded by national programs.	RDs have responded to countries request for capacity building from the CGIAR in the development of Agricultural development plans and coordinated multidisciplinary teams to supports countries. Also, RDs are collaborating with regional bodies to develop shared research agendas. GD P&A, IFRM, Coms (with support of TTTs to define the CGIAR value proposition to partner governments and national agricultural research and extension system (NARES) by promoting a model that will improve delivery of products and impacts farmers and other clients.	Country engagement strategies that include mapping and tracking of alignment between CGIAR work, national policies and ODA.	Ongoing throughout 2022-24 business plan period.	In progress	CGIAR is highly motivated and successful at attracting ODA, which is very attractive to national partners. How aligned is all this ODA activity with national strategies is less clear– suggesting that NARES engagement is, at times, opportunistic. Alignment between CGIAR and national policies is apparent at design, but not always aligned in practice with the national resources applied to a given policy or strategy.
A wholesale review of CGIAR capacities and opportunities around big data and practical field applications for pro-poor sustainable development should involve: • Expanding the use of remote sensing and GIS;	EMT and System Board fully support CGIAR to expand further the incorporation of big data and digital technologies in research. Recognizing the transformative potential of earth observation, machine learning, robotics, and sensor technologies to advance CGIAR's digital capabilities,	The Digital Initiative will take responsibility for providing cross-cutting services, including a review of key opportunities for CGIAR work on digital applications in low-income settings, and coordination of relevant	Ongoing throughout 2022-24 business plan period.	In progress	At initiatives level, reviewed the application of a comprehensive data management policy was not apparent.

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• Exploring ethical applications of artificial intelligence, big data, and citizen science that would specifically benefit the poor; • Assessing lessons from the rapidly expanding use of open data and digital tools for breeding, weather and agronomic information, extension, and marketing.	CGIAR 2030 Research and Innovation Strategy lists digital revolution as one of "Ways of Working." Across the investment portfolio, more than half of the Initiatives are planning to use big data and digital technologies as a key research and development tool. While researchers are encouraged to continue utilizing big data and innovative digital technologies creatively, institutional shared-learning, ethics training, and safeguard mechanisms will be established to ensure the technical applications are designed and developed responsibly, inclusively, and ethically. CGIAR aspires to become a trusted intermediary in using digital technologies for transforming food, land, and water systems while safeguarding the rights of the poor.	research and innovation across CGIAR. All CGIAR researchers will be supported to access enabling datasets (e.g., remote sensing data from satellites and UAVs, high-frequency market intelligence data) and empowering data analytics tools (e.g., high-performance computing resources, large-scale modeling tools) through Shared Services, public-private R&D partnerships, and technical support mechanisms. Digital Services and the Digital Transformation Initiative will coordinate across the Initiative Portfolio to identify opportunities for initiatives to innovate, synergize, and accelerate their impact pathways using big data analytics and digital technologies. Digital Services will support researchers to utilize necessary digital infrastructure with minimum overhead, on-demand. A collaborative data analysis platform with synthetic data analytics functionality will be developed for researchers to analyze data safely without accessing potentially sensitive data. Overseeing mechanisms will be established to ensure all researchers comply with CGIAR Open and FAIR Data Assets			

Recommendation	Management response	Action plan	Timeframe	Reported Status	RAFS Eval Team Assessment
		Policy and adhere to CGIAR Research Ethics Code.			

Annex 11: List of Documents Consulted

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Additionally, the following briefs, ToCs, and reports were consulted:

ToCs	Reports
Theory of Change (ToC)	RAFS ToC and initiatives
RAFS Background Doc. from SG	Companion Document to the 2022-24 CGIAR Investment Prospectus
RAFS Background Doc. from SG	Useful links for Evaluation of RAFS
Theory of Change (ToC)	CGIAR-Action-Area-Theory-of-Change_Resilient-Agrifood-Systems
Initiatives Inception Briefs	INIT07_PROTECTING HUMAN HEALTH THROUGH A ONE HEALTH APPROACH_INCEPTION BRIEF
Initiatives Inception Briefs	INIT10_FROM FRAGILITY TO RESILIENCE IN CWANA_INCEPTION BRIEF
Initiatives Inception Briefs	INIT11_EXCELLENCE IN AGRONOMY_INCEPTION BRIEF
Initiatives Inception Briefs	INIT12_Nature-Positive Solutions_INCEPTION BRIEF
Initiatives Inception Briefs	INIT13_PLANT HEALTH AND RAPID RESPONSE TO PROTECT FOOD SECURITY AND LIVELIHOODS_INCEPTION BRIEF
Initiatives Inception Briefs	INIT14_AgriLAC Resiliente_INCEPTION BRIEF
Initiatives Inception Briefs	INIT15_Resilient Aquatic Food Systems for Healthy People and Planet_INCEPTION BRIEF
Initiatives Inception Briefs	INIT16_Resilient Cities Through Sustainable Urban and Peri _INCEPTION BRIEF
Initiatives Inception Briefs	INIT17_Sustainable Animal Productivity for_INCEPTION BRIEF
Initiatives Inception Briefs	INIT18_Securing the Food Systems of Asian Mega_INCEPTION BRIEF
Initiatives Inception Briefs	INIT19_Sustainable Intensification of Mixed Farming Systems_INCEPTION BRIEF

ToCs	Reports
Initiatives Inception Briefs	INIT20_ Transforming Agrifood Systems in South Asia_INCEPTION BRIEF
Initiatives Inception Briefs	INIT21_Ukama Ustawi_INCEPTION BRIEF
Initiatives Inception Briefs	INIT22_Transforming Agrifood Systems in West and Central Africa_INCEPTION BRIEF
Initiatives Inception Briefs	INIT34_Livestock_INCEPTION BRIEF
ISDC Reviews of proposals	ISDC-19-Initiative-Proposal-Review (1st Group)
ISDC Reviews of proposals	ISDC-12-Proposal-Review (2nd Group)
ISDC Reviews of proposals	ISDC-Review-CompanionDoc
ISDC Reviews of proposals	ISDC Feedback Docs 1st Batch
ISDC Reviews of proposals	ISDC Feedback 2nd Batch
Plan of Work Budget Other Reports	2022-2024 Business Plan Refresh - February 2022
Plan of Work Budget Other Reports	Archive 2023 OKR - Q3 Progress Report (light)
Plan of Work Budget Other Reports	RAFS 2023 Global and Regional Group Objective and Key results template_Q2 2023 Status Update (1)
Plan of Work Budget Other Reports	Updated-Window-1-Budget-for-2023-Approved-2Aug2023
Proposal or Strategy Documents	2030 Research and Innovation Strategy as approved_
Proposal or Strategy Documents	CGIAR RAFS Initial Narrative
Proposal or Strategy Documents	Companion-Document-to-2022-2024-CGIAR-Investment-Prospectus
Proposal or Strategy Documents	Document-SC13_02_Endorsed-2022-24-Investment_-Prospectus
Proposal or Strategy Documents	OneCGIAR_RAFS Infopoint
Proposal or Strategy Documents	RAFS Overview_ GTIs & RIIs Initiatives_General Slides
PROBs	PROBs 22-24 - Folder
PROBs	PROBs 2023 - Folder
RAFS & RIIs Contact points	List of MEL and IA focal points - 13Nov23
RAFS & RIIs Contact points	RAFS_InitiativeLeads_Marta12Jan24
RAFS & RIIs Teams	Key Contacts List for RAFS & RIIS (Initiatives)
RAFS & RIIs Teams	Key Contacts List for RAFS Management
RAFS Initiatives Type 1 Reports 2022	INIT07_OH
RAFS Initiatives Type 1 Reports 2023	INIT11_Excellence in Agronomy
RAFS Initiatives Type 1 Reports 2024	INIT12_ NPS

ToCs	Reports
RAFS Initiatives Type 1 Reports 2025	INIT13_Plant_Health
RAFS Initiatives Type 1 Reports 2026	INIT15_AquaticFoods
RAFS Initiatives Type 1 Reports 2027	INIT16_RC
RAFS Initiatives Type 1 Reports 2028	INIT17_SAP
RAFS Initiatives Type 1 Reports 2029	INIT19_MFS
RAFS Initiatives Type 1 Reports 2030	INIT34_LC
RAFS Initiatives Results Frameworks	INIT-07_OneHealth
RAFS Initiatives Results Frameworks	INIT-11_EiA
RAFS Initiatives Results Frameworks	INIT-12-Nature-Positive
RAFS Initiatives Results Frameworks	INIT-13-PlantHealth
RAFS Initiatives Results Frameworks	INIT-15-AquaticFood
RAFS Initiatives Results Frameworks	INIT-16-ResilientCities
RAFS Initiatives Results Frameworks	INIT-17-AnimalProductivity
RAFS Initiatives Results Frameworks	INIT-19-MixedFarmingSystems
RAFS Initiatives Results Frameworks	INIT-34-LivestockClimate
RAFS Meetings	CGIAR RAFS Management Retreat June 2023 - Meeting Minutes & Action Items_June 2023
RAFS Meetings	RAFS Annual Workshop Master Slide Deck_Nov23
RAFS Meetings	RAFS Sept_23 Retreat Report
RAFS Operational Structure and Management	RAFS Operational structure and work allocation_Jan 2024
Results Framework	CGIAR Results Framework AA targets
Results Framework	CGIAR Results Framework v3_Oct23
Results Framework	CGIAR-Technical-Reporting-Arrangement-June2022
Results Framework	Outcome table v3_4Jan24_additional merging of AA Outcomes
Results Framework	Proposed RAFS AA Outcomes and Indicators 7 August 2023
Results Framework	SC11-03b_CGIAR-Performance-and-Results-Management-Framework-2022-30_postmeeting8July2021
Reviews_evals_responses	Copy of 2021 Synthesis of CRP Evaluations_June 2023 updates_MDs GDPA RDs (2)_OO
Reviews_evals_responses	IAES_2021 Synthesis_AA2 Brief_Resilient Agrifood Systems(1)

ToCs	Reports
Reviews_evals_responses	Learning-and-Optimization-Report-F
RII Type 1 Reports 2022 and Results Frameworks	INIT-10 - From Fragility to Resilience in Central and West Asia and North Africa
RII Type 1 Reports 2022 and Results Frameworks	INIT10_FR
RII Type 1 Reports 2022 and Results Frameworks	INIT-14 - AgriLAC Resiliente_ Resilient Agrifood Innovation Systems in Latin America and the Caribbean
RII Type 1 Reports 2022 and Results Frameworks	INIT14 AgriLAC Resiliente - 2022 Technical Report
RII Type 1 Reports 2022 and Results Frameworks	INIT-18 - Securing the Food Systems of Asian Mega-Deltas for Climate and Livelihood Resilience
RII Type 1 Reports 2022 and Results Frameworks	INIT18_AsianMega-Deltas
RII Type 1 Reports 2022 and Results Frameworks	INIT-20 - Transforming Agrifood Systems in South Asia
RII Type 1 Reports 2022 and Results Frameworks	INIT20_TAFSSA
RII Type 1 Reports 2022 and Results Frameworks	INIT-21 - Ukama Ustawi_ Diversification for Resilient Agrifood Systems in East and Southern Africa
RII Type 1 Reports 2022 and Results Frameworks	INIT21 Diversification in ESA - 2022 Technical Report
RII Type 1 Reports 2022 and Results Frameworks	INIT-22 - Transforming AgriFood Systems in West and Central Africa
RII Type 1 Reports 2022 and Results Frameworks	INIT22 WCA Food Systems Transformation - 2022 Technical Report

Annex 12: Evaluation Team Background and Declarations of Conflict of Interest

Role	Name
Team Leader	**Natascia Palmieri**

Natascia Palmieri is a social anthropologist with 21 years of experience in the field of development cooperation (project design and development; project management; monitoring and evaluation). She has a consolidated professional experience in the areas of M&E. She has carried out formative and summative evaluations (thematic and strategic evaluations, project and program evaluations), as well as *ex-ante* assessment of project proposals. These assignments have been undertaken on behalf of FAO, the EU, AFD, the ILO, the Italian Ministry of Foreign Affairs, NGOs, and Consulting firms.

Subject Matter Expert	**Ben Bennett**

Ben Bennett is Professor International Trade and Food Economics and Deputy Director of the Natural Resources Institute, University of Greenwich. Ben has worked long-term in Nigeria, the Philippines and Namibia and short-term in over 40 low- and middle-income countries during the past 30 plus years. His research interests lie around agricultural commodities and value chains in a wide range of different products. He has previously been leader or subject matter specialist on five CGIAR evaluation teams. Ben led NRI's submission to the UK Research Excellence Framework in 2021 and is interested in aspects of science quality.

Subject Matter Expert	**Kafayat Fakoya**

Kafayat Fakoya is an interdisciplinary researcher, academic, and consultant. She received her PhD in Fisheries from the Lagos State University in Nigeria where she has been teaching for two decades. Her focal interests include small-scale fisheries, aquaculture, fisheries assessment, fisheries policy, fish in food and nutrition security; gender and inclusive innovations; indigenous and local knowledge; seafood traceability and value chains, nature-based solutions, and transdisciplinary research. She is well-published and is currently the Secretary of Gender in Aquaculture and Fisheries Section (GAFS); a member of the Board of Trustees of Community Catch; a GAFS team member in the AQUADAPT project in SEA; Vulnerability to Viability. She led/co-led past projects including Gendered Design in STEAM; and gender advisor/case study author in Illuminating Hidden Harvest Global Study among others.

Subject Matter Expert	**Craig Meisner**
Though an agronomist, Craig Meisner has a broad interest in nutrition, climate change, women empowerment, and many cross-cutting subjects. During the 34 years spent in Bangladesh, he was able to join seven of the CGIAR centers. Meisner was also a Cornell University Adjunct Full Professor, IFDC and FAON. He led the integration of six CGIAR Centers, ensuring AVRDC and IFDC became members of a CGIAR Advisory Committee, led by the Bangladesh Agriculture Research Council, attended by all the line ministries who meet twice a year.	
Research Analyst	**Marta Maria Molinari**
Marta Maria Molinari is an Evaluation Analyst Consultant with CGIAR Independent Advisory and Evaluation Services (IAES). Results-oriented and motivated with valuable experience in the OED office at the Food and Agriculture Organization of the United Nations. Recently graduated from a second-level Master's degree in Development Economy and International Cooperation (MESCI) at Rome University of Tor Vergata.	

S/N	Conflict of Interest Statements	Natascia Palmieri	Ben Bennet	Craig Meisner	Kafayat Fakoya	Marta Maria Molinari
1	Main employer and any other organization that provides you with remuneration (which may be named participants in the project/ program/ proposal you are being asked to review/evaluate.	Independent Consultant FAO ARS Progetti SPA	Independent Consultant Natural Resources Institute, part of the University of Greenwich	Independent Consultant	Independent Consultant Receives remuneration from Unity Environmental University, Maine US and Houston Independent School District, Texas, US.	Research Analyst
2	Are you aware whether a relative, close friend, close colleague or someone with whom you have financial ties is receiving funding from or giving advice to a project/ program/proposal you are being asked to review/evaluate?	**No**	Some colleagues are working on One health and other initiatives, but he is not directly involved	**No**	. **No**	**No**
3	Does any project/program/ proposal you are being asked	**No**	**No**	**No**	**No**	**No**

S/N	Conflict of Interest Statements	Natascia Palmieri	Ben Bennet	Craig Meisner	Kafayat Fakoya	Marta Maria Molinari
	to review/evaluate cite any of your own current research?					
4	Does any project/program/proposal you are being asked to review/ evaluate name researchers with whom you have active collaborations, recently published joint papers or are in regular email correspondence?	**No**	**No**	**No**	**No**	**No**
5	Does any project/program/proposal you are being asked to review/evaluate name any of your past PhD students are active participants?	**No**	**No**	**No**	**No**	**No**
6	I declare that the information provided on this statement is true and complete.	Dated: 5 January 2024	Dated: 4 March 2024	Dated: 6 February 2024	Dated: 21 August 2024	Dated: 23 November 2023

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