

ISDC Feedback for One CGIAR Research and Innovation Strategy October 30, 2020

The Independent Science for Development Council (ISDC) commends the Executive Management Team (EMT) on the second draft of One CGIAR Research and Innovation Strategy (Strategy). This is an extremely important task undertaken under difficult conditions. We sincerely appreciated that much of feedback previously provided—including that from the ISDC—was incorporated. We acknowledge up front that considerable progress has been made, including the strong focus on the SDGs, foods systems, nutrition, sustainability, and climate change. Our following critical comments should be seen in this light.

Here we provide feedback on the next iteration of the Research and Innovation Strategy. The feedback is organized into two categories: overarching comments and specific comments on the three parts. Feedback on the Results and Performance Framework will include additional workstreams from the CAS Secretariat and will be submitted separately.

Overall Feedback

1. **Culture and style:** The success of any strategy depends on how well it connects with the prevailing organizational cultures. From this perspective, the overall style and tone of the draft Strategy is problematic for a research and innovation strategy. This can be easily fixed but could become a fatal flaw if it is not addressed now. This issue highlights the hugely different target audiences that this Strategy needs to speak to. It seems that two key target groups have been overlooked: (a) scientists and (b) funders committed to funding quality AR4D. The principles of multirational management and governance recognize that different sectors of our societies view the world very differently and use very different language and tools to articulate their perspectives. Clearly articulated respect for these different world views is necessary if the intent is to engage these groups via a vibrant, new strategy. This document runs the risk of alienating the very groups it is trying to address: the scientist and funders of quality AR4D. An obvious example for this is the statement under “innovation focus” where it says: “Research cannot make people food-secure or reduce agriculture’s environmental footprint. Only innovation can.” While this statement is factually correct, it is a typical example of a straw man or straw dog argument, i.e., a fallacy committed by refuting a claim that science never makes.

The purpose of science is to create knowledge, not to change the world. The purpose of *translational science* is to ensure that through the process of knowledge creation, innovation can flourish; this has been a strength of CGIAR. It is the partnership between science *and* innovation that is the magic ingredient. Denigrating one in favor of the other shows a lack of respect and understanding of the scientific process. We know that this was not the intent, but this is how it may come across. Learning is one of the most overcommunicated but underleveraged tools of the common entrepreneur. Elon Musk, arguably one of the most successful innovators of our times, clearly recognizes this: “*One bit of advice: it is important to view knowledge as sort of a semantic tree—make sure you understand the fundamental principles, i.e. the trunk and big branches, before you get into the leaves/details or there is nothing for them to hang on to.*” We suggest engaging a renowned scientist and innovator (yes, the two attributes can co-exist) in the final drafting of the Strategy to ensure that the rationality and methods of science are reflected in the document that will set the tone for One CGIAR research for the next decade.

2. **Influencing policy:** The draft Strategy seems to imply that CGIAR is an agency that is involved in and responsible for setting policy—this would be exceedingly difficult for an NGO without formal links to any government or UN body. The draft Strategy gives the impression that One CGIAR wants to shift from a research organization into an organization with considerably more influence on and responsibility for policy and politics, i.e. a development agency. This would require very different capabilities that would take a long time to build, even if resources were not constrained. This is not aligned with what is loosely called “CG’s comparative advantage.” Building on and highlighting such alignment was one of the fundamental recommendations arising from TAG2.

As with the point above, the CGIAR’s real strength is forging powerful partnerships where institutions that have policymaking and economic development as their core mandate seek out One CGIAR as an essential partner and a source of knowledge in order to rollout innovation at scale. As the draft Strategy recognizes, scientists cannot single-handedly transform a society, they produce knowledge, assets and technologies, which policymakers need in order to underpin their decision making. An impactful research strategy needs to acknowledge that the goal of translational research is, amongst others, to inform policy (or to advice policymakers based on scientific knowledge). This type of policy engagement is currently not sufficiently reflected. Advocacy, a fraught concept for a science-based organization, is mentioned, but the appropriate nature of such advocacy (i.e., evidence-based decision making) is not highlighted. One CGIAR should form strong partnerships with policy and advocacy organizations without aspiring of becoming one.

3. **Partnerships:** Clear articulation of where CGIAR fits within the agrifood innovation ecosystem is essential to defining partnerships. Building on the prior two points, we see CGIAR as playing an essential applied (or translational) research role for development. CGIAR rarely initiates the basic science; rather it applies and translates basic science to specific agrifood-related development domains. Nor does CGIAR implement and scale the innovations—biophysical, policy, or otherwise—that emerge from applied and translational research for development. Rather, CGIAR plays a crucial scientific intermediation role to promote scientific evidence-based innovation and policymaking, i.e., applied research for development. Given this translational science/intermediation role, we see three problems in the present text.

First, the Strategy is silent about upstream partnerships with advanced research institutions (ARIs), including universities, that originate most basic science and scientific training. Universities (including local and regional partner country universities) are not mentioned anywhere as a partner. Relatedly, the whole concept on how to develop science capacity—within the CGIAR and within downstream partners (e.g., NARES and development practitioner)—is completely missing. CGIAR is comparatively small, not typically the source of the basic science on which applied research for development depends and does not provide basic disciplinary degree training to build and maintain its own scientist pipeline. CGIAR must have a strategy for productively engaging upstream ARIs.

Second, related to impact, change comes through the partners, particularly partners in countries. The Strategy should include more vis-à-vis engagement, particularly in the context of increasing levels of adoption on the path to impact. Here again the issue on how to fill capacity and capability gaps through partnering needs attention. Increasingly, success in research partnerships is a result of a deliberate process to broker and establish partnerships until they can be self-sustained, i.e. they don’t usually magically happen, and the process

needs to be resourced. This is a critical role for CGIAR that should be acknowledged in the Strategy.

Third, and related to all the points raised so far, we have some questions regarding resourcing partnerships. It has often been said—but it is not clear in the Strategy—that window 1 and window 2 funding must not be leveraged to attract additional, complementary investment or redirect external research for CGIAR-related outcomes (i.e. in accordance with the ‘Eschborn Principles’). What seems to be lacking is a clear interpretation of these principle, including guidelines for implementation that would foster collaboration and deliver stronger and appropriately scaled impacts and development outcomes. It is not clear to us how the Eschborn Principles translate into current policies, how these polices are interpreted and operationalized and how this will ultimately help establishing productive partnerships, given the relatively small size of the CGIAR compared to some ARIs working in related fields.

While it seems to be the preference of development funders to maintain a clear line of sight between their investment and the intended outcome, such a strategy, if interpreted narrowly, can be severely limiting in the pursuit of translational research. It does not allow for the usual multiplier effect that is often achieved via small, strategic investments with partners in order to leverage their research for CGIAR outcomes. Such co-investment models drive most systems-oriented innovations. We fear that not having access to such incentives could significantly reduce One CGIAR’s ability to influence a global research agenda. We recommend that this issue be clarified in the Strategy and in the investment plans that are currently under development.

4. **Why vs how:** The Strategy should contain less of “why” and more of “how.” Table 1, for instance, provides Success Metric Outcomes at a very aggregated level but there is little tangible or directly attributable in the Strategy of how these will be achieved through One CGIAR’s contributions. What will CGIAR do to move the needle on these metrics, and how? Some of the delivery mechanisms are mentioned (e.g., country programs, action areas, initiatives etc.). This could be strengthened by emphasizing the need for greater impact-focused, cross-cutting initiatives, particularly across the three Action Areas. This would also safeguard against the temptation to fall back into established silos.
5. **Structure, capabilities and skills:** The Strategy is relatively silent on how the new One CGIAR structure/skills/capabilities will support the Strategy, which is a large omission in a strategy document. The word “capabilities” is totally absent from the Strategy and “skills” is mentioned once. This singular reference to skills is in the context that the Strategy “provides an overview of how CGIAR will deploy and develop its capacities, assets, skills and activities to address key global and regional challenges with partners.” However, there is no mention in the Strategy of what this capability set comprises nor how developing, using and deploying the wide array of skills and capabilities in the CGIAR in an effective and appropriate way is central to achieving the Strategy. How will One CGIAR deliver impact based on its core capabilities, which (presumably) sit within the Action Areas? The document is missing One CGIAR’s core value proposition, as we flag in point 3 above.
6. **Resources and control:** Successful stage-gating implies that some projects will be stopped when the envisaged outcomes do not eventuate. What are the plans for redistributing these funds or soliciting new projects? How the money will flow and who controls and manages it will be a natural question that both scientists and funders will ask (where does the control sit and what are the mechanisms for overlooking this?). Hence, this question needs a

carefully thought out response. We recommend some division between scaling-up projects with clear stages and seeding new initiatives to continuously update CGIAR's portfolio as the basic science upstream and the development needs downstream evolve.

7. **Delivery** of the Strategy on the ground is at the scale of regions, countries, and landscapes. This is one of the seven identified Implementation Pathways and it was a central tenet of the first draft strategy. It now appears to be downplayed too much and the critical dependency on this delivery mode for successful outcomes and impacts doesn't come through strongly enough in the document.
8. It is not clear how the investment plan relates to the 10 initiatives mentioned in the Strategy.
9. Is the assumption that the Strategy incorporated lessons learned or best practices from previous evaluations correct? An example of how CGIAR has adapted from previous strategies would be beneficial.
10. The three Action Areas, seven approaches, and five Impact Areas can be a bit confusing. However, the organization and flow of the Strategy is much better. Adding the numbers to the box on p. 13 may help connect the numbers to the titles.

Part 1. Why a new strategy to 2030

11. The "Why" section in Part 1 is very important and its inclusion in this version is necessary to position the strategy. It should be punchy and strong. However, currently the section doesn't answer "Why" very well. Emphasizing the need for food, land, and water systems transformation is imperative to build a strong case for the relevance and credibility of the future research.

The reasoning behind why such a transformation is needed must be strong and should also include the "hooks" so that subsequent sections can logically explain how such transformations can be achieved. An implicit assumption following on from why transformation of our food systems needs to occur seems to be that this can only be achieved by also transforming the science-based knowledge generation that drives innovation. We concur with this: The way in which knowledge is generated needs to change. However, this does not mean that all current CGIAR research must change fundamentally. Sometimes the revolution is best achieved in incremental steps. A strategy needs to get the mix right. Or, to quote from an article from the HBR "[The stretch goal paradox](#):" *Shoot for greatness. But greatness doesn't always come from dramatic leaps. Sometimes it comes from small, persistent steps.* The challenge for this Strategy is to get the mix right; to be successful, the risk appetite needs to reflect the core capabilities and the available resources.

12. For a Research Strategy, the intended research should be front and center (what research will be pursued in which domains) and how this research connects with One CGIAR and SDG progress.
13. What are the main research questions CGIAR will focus on? The Strategy needs to contain more science as well as clear guidance on how to engage with diverse science communities and stakeholders. These main points could also be highlighted through a graphic or a table of what the main research questions or objectives are.

14. Graphics are a great tool helping with the visualization of complex concepts. Presumably, this was the intent of Fig. 1. However, the text is unreadable at the current font size. A clear case where form must follow function.

Part 2. What CGIAR will offer

15. The three Action Areas are the appropriate focus vis-à-vis the comparative advantage of CGIAR. However, Action Area 1 on Transforming Systems needs to spell out CGIAR's relative strengths clearly and concisely, in line with the strong recommendation arising from TAG2.
16. For each Action Area, the statement on delivery on multiple impacts would be a good place to reiterate that there will be tradeoffs among the impact areas while delivering on the Action Area. Providing examples of possible tradeoffs will illustrate them rather than just stating they may occur. This could be done in a figure or text box. Encouraging research teams to work across the Action Areas and making this an explicit goal would help in overcoming a "silo mentality" (see also below).
17. Particularly confusing is "Systems Transformation" as the title used for Action Area 1 (p. 20) and the first among the "Approaches" (p. 30). Apart from causing confusion to the reader of the Strategy, this can also create confusion in its implementation: System Transformation being both a "pillar" of work (Action Area) as well as cross-cutting thread/mainstreamed topic (Approach). A possible reframing is that Approach #1 is to **Seek Multiple Benefits across the Impact Areas**; this Approach would provide an excellent opportunity to articulate CGIAR's robust use of tradeoff analysis during the design and implementation of CGIAR work.
18. The transition from the Action Areas to the ambitious Targets requires more explanation. Strategies and tactics for engaging partners are unclear.
19. The three Action Areas and the diagram (Fig. 2) are appropriately showing that genetic improvement underpins production and food systems. However, the genetic gains graphic suggests (inadvertently?) this will be based on GM (scissors and test tube). Is this the intent? Gains will presumably be based on new breeding technologies such as computational/statistical breeding (genomic selection) and faster breeding cycles. While GM and gene editing can play a role, this graphic should be revised to avoid readers drawing wrong conclusions. Similarly, the statement on p. 25 (third paragraph) should be revised to e.g., "Crop varietal replacement rate on farm...through next generation techniques in informatics, genome to phenome studies and artificial intelligence..."
20. The Strategy needs to balance the need for more diverse diets with clear recognition of the importance of staples in healthy diets. This is an opportunity to better highlight the history and success of CGIAR in providing public good outcomes that would not be achieved if the agenda was left to the private sector alone. CGIAR needs to continue leveraging its strengths in breeding better staples such as rice, wheat, maize, millet, potatoes or cassava in partnership with the private sector / NARS and by applying technologies perfected via these partnerships to non-staple crops. Safeguarding food systems by resistance breeding (e.g., against wheat stem rust UG99), appropriate rotations and sustainable farming practices might lack the desired novelty factor but will critically underpin the functioning of current and future food systems.

Moreover, the portability of breeding techniques across commodities has grown with advances in the life sciences, making complementarity among commodities greater than ever before. One CGIAR is well placed to influence the stability, safety and sustainability of staple food production based on track record and existing networks. It must maintain, leverage and build on that expertise by augmenting with complementary research streams that address the food challenges of the coming generation without overstepping the organization's core skill sets and assets. Again, a sound strategy needs to find the right balance appropriate for the organization's ambitions, core capabilities, track record, partnership networks and available resources.

21. Within metrics, ending all malnutrition (p. 16) is an unattainable, yet aspirational goal. What may increase malnutrition is explained well in risk management, such as political upheaval (#5 p. 34). Metrics need to reflect the often-unavoidable risks that prevent achieving goals.
22. There is a lack of any metric around land use in agriculture—e.g., reducing agriculture's pressure on the habitat, perhaps as reflected in reduced deforestation, if not slowing and then reversing the expansion of agricultural land use.
23. System-Level Targets: CGIAR should publicly record a companion piece to describe the modelling and evidence used to establish targets, the assumptions surrounding the models, in order that ultimately these targets are evaluable.
24. Theory of change (ToC) is one of the most important mechanisms for creating impact. For a functioning stage-gating process, these ToCs need to be carefully developed and must be fit-for-purpose so that their success (or otherwise) can be clearly assessed. They are amongst the most important aspects of a research proposal. Yet, the term "ToC" does not appear in the document. Was this on purpose?
25. Regenerative Agriculture: Is CGIAR taking a position on the Regenerative Ag movement, having now effectively added this concept under a broad definition used for "Sustainable Intensification"? This could open Pandora's Box at a time when One CGIAR needs buy-in and broad-based support. Unfortunately, the terms "sustainable intensification", "agroecology" and "regenerative agriculture" have all been highly politicised and the EMT needs to consider the implication of using these terms in a strategy document. Here is a suggestion how the box on "Sustainable Intensification" could be re-named and re-written within the spirit it was presumably intended: *Sustainable production systems contains several important concepts that must find their way onto farms through innovation systems, with partners. It contains a focus on improved productivity (in all forms, not just yield) and on various means for resource renewal such as soils and water management, agroforestry, ecological principles, biodiversity, microclimate preservation, etc. Farming usually entails environmental trade-offs that need to be minimized in the first instance but can ultimately be overcome through better management and technologies.*
26. Under "Advancing equality for women" consider adding "... and supporting development of youth". The Strategy needs to consider training and skills development as a way of lifting up this population.
27. Why are only three of the five impact areas mentioned in Cross-cutting Impact Support?
28. The current evaluations of CRPs for the period 2017-2019 point to the strategic and organizational value of Global Integrating Programs (currently PIM, CCAFS, A4NH, WLE) to

bring CGIAR and partners together to support system transformation. Therefore, it is positive to see in the draft Strategy the continuing intention to provide integrating Climate and Nutrition support.

29. P. 17 has no indicators for maintaining the genetic diversity of seeds. Some suggestions for these could be 1) number species curated, 2) number of accessions supplied for third party use.

Part 3. How CGIAR will implement this strategy

30. While this draft's Strategy explains partnerships better, pathways to impact needs more details. Critical steps for impact are absent, particularly how CGIAR can better address barriers to adaptation/adoption/uptake. The recognition of impact and scaling from partners is not clear and scaling sits outside of CGIAR's influence.
31. What do these partnerships need to do in order to be transformative and to bring change and impact? The motivation and the contribution of the different possible stakeholders and partners are missing. Also absent is practical implementation guidance for important success factors provided like establishing a system of understanding and strong transformative vision and developing systems-oriented performance tracking system.
32. What will CGIAR do to build and maintain partnerships and what roles do they need partners to play?
33. The intention for a mechanism for local needs and capacity are presented but no strategy is included.
34. Under "Action Area on Sustainable Production" on p. 22, the following paragraph requires clarification: *"These new realities pose both opportunities and risks, particularly to small-scale food producers, whose numbers projected to remain at around half a billion farms to 2030 and beyond; they remain the dominant suppliers of food globally, providing more than half the world's calories, 60% of fish and livestock products, and 80% of vegetables. Most of these producers today have multiple income streams, including non-agricultural income and strong livelihood links with urban areas."* The problem with this statement is that it grossly oversimplifies a very complex interpretations based on highly uncertain data sources. This leaves it open to ideological biases and advocacy. Jessica Fanzo in her article in [The Lancet](#) quotes similar numbers, but has caveats about the locations of the people who consume the calories (they largely reside in these regions where the food is grown).

Fanzo uses Lowder et al. (2016) as a key reference. In their paper these authors says "... Nevertheless, it seems implausible that farms smaller than 2 ha in size are able to produce the majority of the world's food using a mere 12% of the world's farm land, and, in any case, claims to the contrary are unsubstantiated. For some regions and country groups, however, these farms manage a larger share of the region's land and are thus likely responsible for a larger share of the region's food or agricultural production than at the global level. In East Asia and the Pacific, excluding China; South Asia; Sub-Saharan Africa, and in low- and lower-middle-income countries farms smaller than 2 ha operate 30–40% of agricultural land. This would suggest that their share of regional or group-wide agricultural production is sizeable, but it does not provide proof that they are responsible for a majority of agricultural production in those regions or country groups." This provides a far more nuanced take on these statistics. Such balance should be reflected in a science strategy.