Independent Science and Partnership Council

25 September 2015

ISPC Commentary on the Climate Change, Agriculture and Food Security (CCAFS) – Pre-proposal (2017-2022)

Summary

As the CCAFS pre-proposal states, climate change is a grand challenge that requires a response from the agricultural research and development community that integrates food security, adaptation, and mitigation. Part 1 of the CCAFS pre-proposal is very well written, compelling, and makes a strategic case for a stand-alone CRP to address the challenges of climate change. The Theory of Change has been revised, and impact pathways are well-elaborated. In Phase II, research activities will be further integrated with AFS and I-CRPs, particularly through Climate-smart Villages (CSVs) – the centrepiece of its site integration plans. The pre-proposal also provides compelling narratives on the lessons learnt from Phase I. In 2013, CCAFS re-oriented its research activities to focus on Climate-smart Agriculture (CSA). CCAFS Phase I established strong, relevant external partnerships, and the CRP continues to develop/deepen partnerships with other organizations committed to delivering the CSA agenda. CCAFS is the knowledge partner of the Global Alliance on Climate Smart Agriculture (GACSA). It has a strong consideration of cross-cutting themes on capacity building and enabling environment, and will have a stronger focus on gender (compared to Phase I) through its new Gender and Social Inclusion (GSI) strategy.

Recommendation: The ISPC considers this pre-proposal **Satisfactory with adjustment**, and recommends inviting the proponents to submit a full proposal, taking into account the ISPC's comments below or providing a justification for the lack of change:

- The overall theory of change could be further improved. Individual Flagships now include statements of research hypotheses, assumptions underlying hypotheses, and key research questions, all of which is much appreciated. Some of these hypotheses do need reformulation, and assumptions should consistently draw on credible scientific evidence.

- Details of the potential for advancing knowledge and IPG delivery should be made clearer both at the CRP and Flagship level.

- Phase II appears more focussed than Phase I, but information on the evidence base which justifies the evolution into new areas and discontinuation of non-strategic activities would strengthen the narrative.

- The CRP's site integration as well as Flagships 1/2 strategy is centred on CSVs, and an elaboration of the rationale for focus on CSVs, factors that influenced (influence) choice of sites, and implications of CSVs for scale-up would greatly add to the justifications provided.

- As CCAFS aims to inform research in AFS-CRPs and signal demand for innovations that will respond to climate change in the next generation of crops, livestock, and fish, details on this should be included in the full proposal.

CRP score: B

1. Overall analysis as an integral part of the CRP portfolio [Score: A]

The strategic purpose of CCAFS is to marshal the science and expertise of CGIAR and partners to catalyse positive change towards climate-smart agriculture, food systems, and landscapes. Considering 'climate change' as a grand challenge and the need for agriculture research for development (AR4D) to address this, there is a well-written, compelling case in the pre-proposal for a stand-alone program in the CGIAR to be a highly significant contributor to the global response on climate change. Looking to the future (5-10 years down the line), explicit strategies for mainstreaming this program or parts therein within the CGIAR could be given further consideration and elaborated at the full proposal stage (ISPC commentary on extension proposal). CCAFS comprises four flagships (FPs): FP1 – Climate-smart practices; FP2 – Climate information services; FP3 – Low-emissions development; FP4 – Food systems governance under climate change – all centred on climate change and its related challenges. The vision and challenges for the FPs are ambitious. CCAFS describes its pathway to impact as critically dependent on its capacity to integrate the adaptation-led FP1 and FP2 with low-emissions strategies (FP3) and institutional approaches to food systems (FP4). Several FP hypotheses are inter-dependent, and FPs may be seen as logical steps, derived from the grand challenge.

CCAFS is closely linked to all proposed CRPs except Genebanks, which also implies that its success or failure will depend on the performance of other CRPs. This is so because CCAFS is dependent on technical and scientific input from other CRPs, particularly in FP1 and FP3: in part, it is a science and information 'broker' that, through its integrative systems science, mainstreams innovations developed by AFS-CRPs and selected non-CGIAR partners[1]. Structurally, plans and mechanisms for integration with CGIAR and non-CGIAR partners are spelt out very well, through six learning platforms and three twinned flagships (with WLE, PIM/A4NH and FTA), and in other CRP pre-proposals (for example, RAFS and FTA pre-proposals indicate co-investments and joint research plans). Annex 5 of the pre-proposal also provides an example of how boundaries between CRPs are clarified in SE Asia, and is evidence that CCAFS is purposefully planning for its articulation with other CRPs. Operationally, success (or failure) in integration will become evident as work scales up in Phase II, and as co-investments come through and implementation plans are formulated. At the full proposal stage, it would be helpful for CCAFS to spell out an M&E plan for integration as this could become a useful prototype of the learning process for integrative CRPs.

The scientific and academic arguments fit, appear credible, and are very similar to the ones used in the extension proposal (conditions have not changed to such an extent as to require changes in justification). Citations include many CCAFS publications that fall in the category of 'grey literature', which works to establish the CRP's credibility in this space, but do not provide a basis for judging where assertions/approaches/strategies fit within current debates in this field. It is accepted that this was not called for in the pre-proposal, but a broader range of references would be essential in the full proposal. For instance, there is substantial empirical evidence that questions the relevance and appropriateness of farmer-level index-based agricultural insurance products for smallholders. While Greatrex et al. 2015 refute these doubts through a presentation of case studies and some of these cases are based on rigorous evaluations, evidence from other cases is questionable. This is one example where critical assessment of the broader economic theory and empirical evidence should continue to be an integral part of research within the FP, and evidence

[1] For instance, FP1 proposes to generate evidence on portfolios of technologies and practices that enable CSA-outcomes; cost-effectiveness and related co-benefits or costs associated with such outcomes; and, context-specific information on geographies, incentives etc. that will enable adoption at scale – integration with AFS-CRPs and some I-CRPs is critical in the identification of CSA-relevant portfolios of technologies and practices.

of such assessments at the full proposal stage would strengthen the overall arguments and FP-level ToCs. In addition, details on the actual research, beyond background and persuasive justification sections, and the potential for advancing knowledge in Phase II should be made evident.

The pre-proposal provides detailed narratives on learning from Phase I as well as from earlier ISPC commentaries. For instance, CCAFS updated the ToC, and it will attempt greater integration with other CRPs, through co-investments and site integration. A stand-alone research theme 'knowledge-to-action' was dropped (now mainstreamed), and there is a new Gender and Social Inclusion (GSI) strategy. Such attention to feedback and record of acting on lessons is appreciated. Elaboration of the what, why and how prioritization of strategic (or non-strategic) activities was done would be helpful in the full proposal.

CCAFS has identified focus countries and five geographies for each of the Flagships. Site integration is based on the Climate-smart Village (hereafter CSV) approach – this appears appropriate and in line with the CRP strategy. CSVs are described as a multi-stakeholder learning platform at key sites. NARES are key partners in most CSVs, and local private sector actors will be involved in Phase II. Presumably, these partnerships will enable research outcomes (and impacts) at scale. At full proposal stage, it would be helpful to understand the rationale for the CSV approach (over and above the testing and learning platform function) as well as the rationale for the choice of specific CSV sites, and how these will be integrated or successes from CSVs scaled-up in different contexts.

2. Theory of change and impact pathway [Score: A]

The Theory of Change (hereafter ToC) has been revised based on the ISPC commentary on the extension proposal, and these changes are highly appreciated. Annex 7 of the pre-proposal presents the CRP-level and Flagship (1-4) ToCs. The ToC on how large-scale adoption of climate-smart practices, services and institutions might occur is based on Lipper at al. 2014: while informative and clear, this work is more of a concept or approach proposed for CSA at scale, than a theory of change in its proper sense. Hence, while the hypotheses underlying ToC(s) are clear, some are so general that they seem to be statements of aspirations rather than testable hypotheses. This need for sharply-stated testable hypotheses is more of an issue at the Flagship level and is considered in Section 6. While the basic theory of change and how change can be reached needs revision in successive rounds, impact pathways have been well-elaborated.

Annex 4, Figure 4.1 illustrates the alignment of CCAFS within the CGIAR SRF – this is compelling and suitable. While it is not appropriate for every CRP to address every SLO and IDO, if claims are made, justifications should accompany the narrative. For instance, the link between optimized consumption of diverse nutrient-rich foods (SLO-2 improved food and nutrition security for health) and research activities currently appears tenuous because a causal relationship is not described, and the existing empirical evidence suggests a long, complicated pathway from agricultural research to nutrition outcomes and impacts. Critical reviews at regular intervals are required to produce a clearer alignment.

3. Cross-cutting themes

CCAFS has redefined its gender strategy, and elevated its Gender and Social Inclusion (GSI) theme through a new appointment. It intends to setup a system-wide gender and climate change network, and the full proposal should include a description of the rationale and functioning of the

network in relation to the existing CGIAR Gender and Agriculture Network. Gender receives considerable attention in the pre-proposal. Yet, since gender objectives and work plans are under development, the specifics can be better assessed in the full proposal. Considering limited success of other actors including development agencies, and the early stages of gender mainstreaming in the CGIAR and its evolving nature in CCAFS, critical assessment of strategies and objectives is important. The full proposal should include focused hypotheses based on critical examination of evidence. Through its gender audits and RBM, CCAFS intends to penalize, vis-à-vis budgetary adjustments, insufficient attention to gender research. In testing and implementing such a system, CCAFS may come up with lessons for other CRPs to enable appropriate consideration of gender in research. Compared to the gender strategy, incorporation of the cross-cutting theme "youth" is minimal. This lack of detail suggests that the youth strategy is "under development", and we look forward to more details in the full proposal on how youth will be targeted.

CCAFS is choosing to target a sub-IDO 'increased capacity of beneficiaries to adopt research outputs' under 'enabling environment improved' rather than a capacity development sub-IDO. This sub-IDO is embedded in all FPs. Enabling environment is also a centrepiece of their partnership strategy. Consideration of enabling environment is substantial, and comes across as integral to the CRP. Having said that, the narrative is at a fairly high level, and information on specific activities and evidence of success or failure to-date in delivering this rather tricky sub-IDO would be helpful. Capacity development of institutional partners as well as potential end-users of innovations is embedded in all Flagships, and is well-integrated into the proposal. It constitutes 35% of overall budget vis-à-vis partnership component, and staff and operational costs. Academic capacity building is done via MSc and PhD courses at University of Galway (listed as a strategic partner, US$1.5 million invested by CCAFS over 2017-2022). While the CRP's commitment to capacity development is unquestionable, selected rigorous IA of efforts could form a critical piece of evidence (for example, an IA of CD efforts undertaken with Pan African Farmers Organization for UNFCC and Alliance for CSA in Africa).

4. Budget

Windows 1/2 funding (post 18% cut in 2015) remain at the same levels, in USD, representing 40% of the overall budget in 2017-2022. Bilateral funds are 20% of the total budget for 2015 (post 18% cut); and set to grow in value from 34% of budget in 2017-2019 to 56% of budget in 2020-2022, representing an opportunity to leverage W1/2 as well as a risk (if funding does not come through or a mission drift in terms of strategy). But, CCAFS notes that it is cognizant of the demands bilateral funding could place on its portfolio of activities.

FP1 has the highest share of budget (33% of overall budget in 2017-2022) much like in Phase I. FP1 is followed by FP4 (25%), FP3 (23%) and FP2 (20%): it is difficult to comment on changes in relative allocations across FPs in Phase I and Phase II given the re-planning of the portfolio of Flagships. Changes in allocation between FPs in 2017-2019 and 2020-2022, for example increases for FP2 and FP3, appear suitably justified.

5. Governance and management [Score: A]

ISPC noted in its extension proposal commentary that CCAFS was outstanding in its commitment to work with relevant strategic partners for key functions such as governance. The pre-proposal narrative indicates that the CRP has continued to improve the governance structure and management in purposeful ways (for example, by hiring a Gender and Social Inclusion leader). In terms of structure, no change in the strong leadership structure – comprising the CRP Director, FP

leaders (2 from within CGIAR, 2 located at non-CGIAR research institutions), Regional Program Leaders, 2 cross-cutting leaders as well as a Program Management Committee (PMU) – is envisioned. However, for a program focussed on testing and identifying portfolios of CSA-relevant technologies as well as an explicit objective to influence policy, there are relatively few political scientists or impact assessment specialists in the core team (with the exception of IFPRI/FAO scientists in FP4). CCAFS has a strong Results Based Management (RBM) system in place, but there is an absence of M&E role(s) at the CRP level. Considering the importance placed on internal learning processes and the 2030 outcomes envisioned, this might become consequential in the long run.

CCAFS has been commended in the past for its partnership strategy. Differentiation between new strategic (or key) partners, and providing a rationale as well as narrative on how the relationship has deepened or evolved is needed in the full proposal to assess progress (for instance, as the engagement with the private sector deepens in Phase II). Given the reliance on its upstream partners for technical and scientific input in some FPs, and downstream partners for scaling, the full proposal should also consider how CCAFS will manage the risk of its partners failing to deliver. The proposed establishment of a Partnership Advisory Committee (PAC) that will meet on the sidelines of global conferences is an interesting approach to ensuring relevance of partnerships. Information on how the PAC will feed into PMU and ISC decisions is needed.

6. Flagships

Flagship 1: Climate-Smart Practices and Portfolios *[Rating: A]*

A major challenge for the CGIAR remains the provision of compelling evidence that transformation to climate-smart agriculture can be a means to address food and nutritional insecurity, and mitigate additional stressors resulting from climate change on the livelihoods of agriculture-dependent households, particularly the poorest among them. FP1 is the heart of CGIAR strategy on climate change, and combines its excellent comparative advantage in science (technologies, practices, and related innovations) with strong downstream partner strategy for delivery i.e., ensuring science shapes programing of CSA investment programs and projects. The point made earlier about CCAFS playing the role of a science or information broker (between CGIAR and downstream partners, in particular) is salient in this regard, and this role is appropriate. At its most basic, the FP ToC states that adoption of Climate-smart Agriculture (CSA) will enhance adaptive capacity, food security, and reduce GHG emissions of agricultural systems, particularly those managed by smallholder farmers.

Application and testing of CSA-relevant innovations occurs at Climate-smart Villages. Details on site selection, strategy for prioritization of CSA portfolios, and the how-to of scale-up needs elaboration in the full proposal. CoA 1.7 (Learning Platform 2) is innovative in concept, and has high potential to feed into priority setting for CGIAR and NARES research programs – details on how this will occur should be included in the full proposal. The full proposal should also explicitly consider the role of rigorous *ex-ante* impact assessments to inform CSV activities in CoAs 1.1, 1.2 and 1.3. Additional details on how *ex-post* impacts are (or will be) documented would be welcome in the full proposal. For instance, does FP1 monitor a range of socio-economic and environmental variables at varying scales (from household to field to landscape) in CSVs? CoA 1.4 draws on 1.1, 1.2, and 1.3 experiences to put together a coherent story, with a high potential for integrative research IPGs. In the case of CoA 1.6, CGIAR's comparative advantage in identification of innovative business models and financial instruments to incentivise CSA adoption, and large-scale investments is not evident and requires some discussion.

As with the broader pre-proposal, gender and capacity development have received serious attention. Enabling environment for CSA is covered in other FPs, and articulations of the connections between technologies and practices on the one hand, and policies and institutions on the other deserves more attention.

Flagship 2: Climate Information Services and Climate-Informed Safety Nets *[Rating: B]*

FP2 is strategically relevant with a clear ToC: the argument that better forecasts and predictions are essential for adaptation planning and implementation is convincing. The justification for focus on weather insurance and safety nets as one of the many risk management options (including existing informal) is credible. But, CCAFS should continue to critically examine prospects for significant insurance adoption by smallholder farmers. FP2 hypotheses 1 &3 and related assumptions are clearly stated, even if they are complex, and are testable subject to development of appropriate indicator(s) for 'enhanced capacity' or long-term monitoring of risk mitigation (achieved or potential). Hypothesis 2 could be better formulated – it is not evident what is meant by "investment" here or how investment is evidence-based. Perhaps it is the choice of investment instrument that is evidence-based?

The Flagship's strategy for research partnerships is clear. That is, FP2 partners have expertise that complement core strengths or bring capacity to an area for rapid progress, for example, IRI on climate science or University of Reading on meteorological data. It has established partnerships with private sector actors in the communication and media technologies sector. These partners may become critical to delivery of CoA 2.2 (farm communities receive appropriate climate information and advisory services). Cross-cutting issues appear well-covered, but information on data management or open access are essential in the full proposal given the FP's focus on information services. Overall, FP2 research includes a good mix of scientific questions spanning a range of disciplines, and while one could question CGIAR comparative advantage in some areas, CCAFS appears to have adroitly turned this into a collaborative advantage through excellent partnership strategy and establishing an integrative learning platform.

Flagship 3: Low Emissions Development (LED) *[Rating: B]*

Topically, FP3 is strategically relevant and has the principal charge on mitigation of agricultural GHG emissions while ensuring food security – two of the three goals of CSA. In the full proposal, a clearer case for the comparative and collaborative advantage of CCAFS in mitigation should be made as the proposed activities span several thematic areas (livestock, forests, nutrition etc.), and this is not always evident. For instance, under CoA 3.1, will CCAFS invest in controlled trials to quantify GHG emissions of smallholders? If CCAFS considers such trials critical to its work, elaboration and justification (including cost-benefit analyses) of the methods that will be used is also needed. The full proposal should also include explicit justification of the focus on smallholders as one of the key target groups (and beneficiaries) of FP3. One of the positive developments in FP3 Phase II is the increased focus in terms of the types of interventions and production systems (geographies). However, the full proposal should state how (and what) priorities were identified in the context of the relatively 'newer' activities to avoid coming across as more about strategic partnerships than strategic research. For example, it is not obvious how technologies under CoA 3.2 (AWD, rangeland management, conservation agriculture) etc. were identified for various countries/regions. Additionally, a number of activities and research questions predate the existence of CCAFS. While there may still be a need to continue studies of,

for instance, commodities like soy or oil palm, is there a sufficient case that such studies will advance knowledge (in the sense of IPGs)?

The ToC and CoA hypotheses require some clarification and better justifications, even as the inclusion of assumptions for ToC is very welcome. For instance, H1 is framed as "development interventions in crops, livestock, and trees" having the potential to drive a shift to LED practices. What is meant by 'development interventions' here? This hypothesis also needs to consider the trade-offs involved. In the case of hypothesis 2, how is 'institutionalized change' going to be measured? CoAs do build on each other, though some (for example, CoA 3.5 on opportunities for mitigation in food systems, including through dietary changes and food waste management) are less developed than others (for example, CoA 3.4 on supply chain governance to avoid deforestation, a twinned FP with FTA). CoA 3.3 has framed excellent research questions on enabling environment that could help achieve FP3/CRP objectives, such as "*What information can inform policy, incentives and finance to lead to successful farm-level changes in practices at large scales? What is the economic feasibility of LED and sustainable business models and mechanisms for financing transitions to LED?"* etc. Gender and capacity development issues appear to be well-recognized, much like other CCAFS FPs.

Flagship 4: Food System Governance under Climate *[Rating: C]*

Agricultural research has been criticized in the past for not focussing sufficiently on food systems. Ensuring that food systems are resilient to a changing and variable climate by influencing policies and institutions at various levels, and enabling equitable food systems, is an important challenge worthy of a CGIAR FP. ISPC comments on the extension proposal noted that CCAFS could have a role in such policy engagement research, but sought clarity on "research hypotheses on policy and institutional change, particularly mechanisms in varying contexts". CCAFS FP4 needs to be reconceptualized to ensure it can effectively address this challenge and advance knowledge i.e., it should demonstrate clear R4D potential with IPGs. At the FP level, the hypotheses are long and wordy, and provide background and context rather than hypotheses. All hypothesis statements could benefit from reformulation to emphasize testable elements, and assumptions underlying hypotheses should be supported by science. For example, is there any evidence that governance systems can 'optimize' consumption of diverse nutrient-rich foods? It is also unclear if methods exist (or can be developed with available funding in a five-year timeframe) to deliver results. For example, one of the research outputs is a characterization of different levels of resilience, but methods to quantify even a single level of resilience do not yet exist, much less ones to undertake comparisons.

Since CoA 4.1 (climate science, environmental research and agricultural modelling) is tightly linked to other CoAs (4.2 and 4.4), a critical question in engaging such work is assessing the availability and quality of data. Activities in CoA 4.1 do have the potential to focus on quality of data and account for trade-offs, but it is questionable if improving access to available weather and climate information is sufficient to enable better policy-related decision-making. There is emerging evidence from research on effectively communicating information on climate change, for instance, that suggests that scientific data alone may not be sufficient to change behaviours or influence decisions (an assumption underlying FP4 ToC – that decision makers recognize the need for scientific evidence). In that sense, activities in CoA 4.2 that challenge existing policies and explore their drivers, and CoA 4.3 on influence of donors might be relevant. ISPC welcomes the continued collaboration between CCAFS, PIM and A4NH on generating (science-based) scenarios, and exploring the utility of scenarios in public and private sector decision-making. This Flagship has the potential to deliver a range of outcome indicators related to increased

investments in climate-smart and food-smart systems informed by CCAFS science and use of projections and priority setting, but it is not yet convincing and needs to be significantly rewritten in the full proposal.

Recommendations

- CCAFS FP4 needs to be reconceptualized to convince reviewers that it can effectively address the challenge of supporting resilient food systems
- Hypotheses should be reformulated to emphasize testable elements
- Significant rewriting required