

Appendix 1.
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Comparative Advantage Analysis
Illustrative Example
CCAFS Flagship Program 1 Policies & Priorities for CSAⁱ

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The overall goal of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) was to catalyze positive change towards Climate-Smart Agriculture (CSA), food systems, and landscapes—and thereby contribute to system-level outcomes on poverty alleviation, food and nutritional security, and natural resources. The aim of Flagship Program 1 of CCAFS (FP1) was to assess how enabling policy environments and priority setting for targeted investment could support the scaling of interventions, contributing to food and nutritional security and poverty reduction under climate change. It was designed to do this primarily through activities involving priority setting, trade-off analyses, and foresight, and effectively informing investment decisions at national, regional, and global scales. FP1 provided inputs to—and received inputs from – other CCAFS flagship programs, essentially to improve the enabling environment for the uptake of technologies researched in FP2 (CSA) and FP4 (climate services), and to a lesser extent FP3 (low-emissions development).

CCAFS ran for 12 years and entailed the development of four detailed proposals throughout its life: first as a Challenge Program, then as a Phase 1 CGIAR Research Program (CRP), followed by an extension/transition phase, and finally a Phase 2 CRP. Structure, partnerships, and the program theory of change underwent considerable change between 2010 and 2021. FP1 evolved considerably during this period, and CCAFS’s (and FP1’s) Comparative Advantage (CA) changed over time, highlighting the fact that organizations’ CA can (and should) be dynamic.

Step 1: Describing desired deliverables

Development outcome
CSA interventions, policies, and new investments prioritized, targeted, and implemented by state, national, regional, and global agencies informed by CCAFS science and engagement, to improve food and nutrition security and climate resilience
Deliverables
1. Research products including vulnerability analyses, country profiles, priority setting tools, technical assistance materials, used to inform new global, regional, national, and local investments
2. Increased capacity for innovation in partner organizations via participatory foresight and scenario processes and workshops, and trainings for national policymakers and climate negotiators
3. Mechanisms to link local-level CSA action with national and regional policy processes co-developed and tested with partners, including national and global multistakeholder platforms

These deliverables basically form the impact pathway for FP1 achieving its stated development outcomes, linked to the hypotheses as set out in the Phase 2 proposal:

H1: CCAFS projections, scenarios, methods, and priority-setting tools will help decision makers target and implement policies and programs at various scales that improve food and nutrition security and reduce poverty.

H2: Improved policies and programs, and increased investments, can facilitate the scaling of CSA, which will contribute to food and nutritional security and reduced poverty under a changing climate.

The three (high-level) deliverables listed above cover nearly all the outputs of FP1. Note that some of the constituent deliverables were done by or with other CCAFS flagships—it is not always easy to separate flagship outputs, given the way in which the flagships were designed and operated.

Step 2: Identifying (potential) partners

For a relatively aggregated analysis such as this one, there appears to be no one-to-one correspondence between a deliverable and a specific type of partner. This is reflected in Table 1 below, in which the (historical) demand, innovation, and scaling partners (partner types) of FP1 are listed for each deliverable. Partner types used in this document are listed in Table 2.

Table 1: Potential partners

Deliverable	Current organizations	Potential organizations	Why not others?
1. Research products related to climate change priorities & investments	Demand partners (DPs): CGIAR internal, funders, governments, NARS, CSOs, GROs, •Innovation partners (IPs): ROs •Scaling partners (SPs): MSPs, government	Several other ROs are capable of producing the deliverable	Lack of capacity to take on new work Limited working relationships with key in-country/in-region partners
2. Capacity development on climate change policy, planning, and negotiation	DPs: funders, government, NARS, CSOs, PS IPs: ROs, government SPs: ROs, MSPs, government	Several other national, regional & international ROs are capable of producing the deliverable	Lack of capacity to take on new work Limited working relationships with key in-country, regional or continental partners
3. Science-policy bridging mechanisms	IPs: MSPs, government SPs: MSPs, governments	Some CSOs and CBOs are likely capable of producing the deliverable	Limited working relationships with key partners Limited incentives to stay for the “long haul”

Table 2: Partner abbreviations used in the document

Partner	Abbreviation
National/sub-national governments	Government
Funders	Funders
Global & regional organizations (e.g., UN agencies, ADB)	GRO
Private sector associations (farmers, industry, etc.)	PS
National agricultural research and extension systems	NARS
National, international civil society organizations	CSO
Research organizations and universities	RO
Multistakeholder platforms	MSP
Farming communities / Climate Smart Village	CSV
Community-based organizations	CBO

Table 3 summarizes the human, physical, and social capital required for each deliverable, and the incentives needed. For other considerations beyond these—regarding the ability of other potential organizations producing a particular deliverable—for FP1 a key consideration was flexibility, and

the speed with which partner organizations could respond to new opportunities for achieving potential outcomes with short windows of time for action.

Table 3: Sources of Comparative Advantage for FP1’s deliverables

Deliverable	Human Capital	Physical Capital	Social Capital	Incentives
1. Research products related to climate action and priorities	Climate vulnerability & adaptation scientists Food system scientists Economists & other social scientists including gender specialists Programing & GIS skills	Computing Global, regional, national datasets Access to Global Climate Model output: appropriate variables at appropriate spatial & temporal resolutions	Partnerships and working relationships with national research scientists (including NARS) in target countries and regions, ARIs, climate research organizations	Methods, data, and analyses as international public goods that are made openly available and can be used in other contexts
2. Capacity development on climate change policies, investment priorities, climate negotiation	Policy scientists, social scientists, gender specialists Foresight & scenario specialists	The wherewithal for engagement, attending/facilitating /financing whole series of meetings, R&D backstopping	Strong working relationships with funders, CC contact points in government ministries, continental- and national-level MSPs	Strong and trusted relationships with decision makers and/or their advisers at national, regional, and continental levels, that can deliver in the policy and investment climate action space
3. Multilevel science-policy bridging mechanisms tested and evaluated	Policy and social scientists <i>Other non-CGIAR/CCAFS partners needed:</i> •National government champions •CSOs, NGOs •Farmers/CSVs, CBOs •PS •National and international ROs •Traditional authorities and faith-based groups	The wherewithal for engagement, meetings, planning and R&D backstopping	Partnerships with local farmers, extension workers, researchers	Strong and trusted relationships with decision makers at different levels Tried and tested methods (as IPGs) that provide models for multilevel science-policy linkage in different contexts

Table 4 shows other potential partners for all three deliverables. In all cases, suppliers globally are likely to be/were already known to CGIAR scientists, via both existing relationships and the published literature. Quantification of these organizations’ output of the three deliverables would be challenging, though for deliverables 1 and 2, all the potential partners mentioned have produced somewhat related deliverables that are in the public domain. Some (but not all) of the potential partners listed were partners of CCAFS at some stage during its lifespan.

Table 4: Partner identification

Deliverable	How to identify potential partners	Examples of potential partners	Quantification
1. Research products related to climate action and priorities	Suppliers globally are likely to be already known to CGIAR scientists, via both existing relationships and the published literature	RO: ECI Food Systems Group, Oxford University RO: Stockholm Resilience Centre RO: World Resources Institute	These (and many other) ROs have produced related deliverables
2. Capacity development on climate change policies and negotiation	Suppliers globally are likely to be already known to CGIAR scientists, via both existing relationships and the published literature	RO: South African Institute of International Affairs (SAIIA) RO: Institute of Policy Analysis and Research, Kenya (IPAR) RO: Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN)	Such ROs have produced (or have the capacity to produce) related deliverables
3. Multilevel science-policy bridging mechanisms tested and evaluated	Suppliers globally are likely to be already known to CGIAR scientists, via both existing relationships and the published literature	Other CBOs and NGOs that were not part of CCAFS processes in different countries and regions	

Economies of scope in these deliverables: Economies of scope existed for D1, in which CGIAR/CCAFS work on downscaled climate model data and tools gave a considerable head start on assessing climate hazards and exposure in different locations and production systems. These tools and datasets, most of which are still available at www.ccafs-climate.org, provided entry points to a wide range of highly relevant analysis, as well as the basis for a considerable body of related work. CCAFS-Climate consists of over seven terabytes of data, which have been used and cited in many hundreds of publications. The key contribution was taking the outputs of IPCC climate models and making them much more suitable for use in agricultural applications and impact studies, including the projection of benefits for several of the initiatives of One CGIAR.

Economies of scale: These likely existed for D1. One example is the extensive series of CSA country profiles that were produced, with rapidly increasing efficiency, for more than 40 countries between 2014 and 2021. Economies of scale also existed for D2, to some extent— training material and training courses were repackaged and repurposed for other audiences and target groups. For example, a national training course on Nationally Determined Contributions (NDCs) was developed for Kenya with funding from GIZ. This was then adapted for, and implemented in, several other countries in sub-Saharan Africa and Southeast Asia, with support from other donors as well as GIZ.

Step 3: Assessing relative trade-offs

There are big challenges in attempting to assess relative trade-offs.

Firstly, the time dimension presents a challenge: for example, organizational and data environments have changed considerably since 2010 when CCAFS started. For Deliverable 1, a host of studies have been conducted in the last 10 years, but relatively speaking there were few available in 2010; scoring has been attempted as for the early years of FP1.

Secondly, for any of the three (highly aggregated) FP1 deliverables, it seems that any organization could in fact produce them, even if it were completely inefficient to do so. Scores have been allocated based on a judgement call on other organizations' productivity in relation to the deliverable components that CGIAR can do. Third, scoring in the table below needs to be done with respect to partner types, given the broad nature of the deliverables involved, making it difficult to be specific.

Scores have been entered in Table 5 below, although it should be noted that the numbers themselves are **highly tentative and to be taken as illustrative only**.

Table 5: Relative effectiveness of producing the deliverables

Deliverable	Potential Partner			
	CGIAR / CCAFS	International ROs	National / regional ROs	CBOs, (I)NGOs
1. Research products related to climate action and priorities	100	80	60	30
2. Capacity development on climate change policies and negotiation	60	60	100	50
3. Multilevel science-policy bridging mechanisms tested and evaluated	40	20	60	100

The real point of thinking about relative effectiveness is not the scores, which are almost always likely to be rather arbitrary, but the rationale for differences in the effectiveness of partner organizations. For example:

- For D1, all potential partner types were judged likely to be weaker on social capital, to varying extents: very few if any would have the global reach of CGIAR. In addition, national and regional research organizations and CBOs/NGOs would likely be weaker on technical capacity for some of the work involved.
- For D2, national & regional research organizations were judged to be the most effective, although as for other partner types, they would still need access to foresight and scenario specialists, if they did not already have this. For the other partner types, social capital would likely be somewhat weaker, and these would need to be strengthened.
- For D3, it is difficult to identify partners other than CBOs/NGOs who would be more effective in setting up sustainable, national MSPs, given that very strong trusted country presence and convening power would be crucial. To be effective in this space at national level, CGIAR and the ROs would need other key partnerships (see Table 3).

As noted above, the nature of the deliverables makes this challenging to score. The scores above (for what they are worth) suggest that FP1 had some kind of (shared) CA for doing D1 compared with D2. For D2 and D3, FP1 needed a wide range of partners.

Table 6 shows an assessment of spillover benefits across program areas within and across CRPs or initiatives that might make those activities worth performing inside CGIAR, regardless of CA. A lot of FP1's work depended on long-term engagement with the same partners and the slow development of trust and on taking advantage of windows of opportunity as and when they arose, in a somewhat ad hoc manner. There would have been substantial spillovers in such work with respect to social capital, which would be a strong argument for keeping much of this work inside CGIAR.

Table 6: Possible spillovers and value of keeping inside CGIAR

Spillovers				Current Organizations	Potential Organizations	Value of Keeping Inside CGIAR
Human Capital	Physical Capital	Social Capital	Incentives			
Foresight and scenario specialists				ROs at the cutting edge of foresight work		Wide potential applicability of in-house expertise across CGIAR, particularly in a highly dynamic and changing R4D environment
National government champions						Given CGIAR’s geographic spread, there are likely to be few other orgs with as wide a spread of national champions
		Strong working relationships with funders, CC contact points in government ministries, continental- and national-level MSPs		Development organizations (FAO, IFAD)		Effective utilization of CGIAR’s wide partnership networks in multiple countries
		Partnerships with farmers/CSVs, extension workers, researchers		NGOs, CBOs		Effective utilization of existing partnership networks in multiple countries

Step 4: Planning partnerships, refining proposals

Some international ROs played a significant role in producing deliverables (D1 in particular) for FP1; the scores in Table 5 suggest that they might have been able to play a greater role still. On the other hand, the roles they played were largely to do with technical capacity. Most researchers usually seem very busy, and some research partners could be high-risk in the sense that non-delivery of agreed outputs could have disrupted FP1 and CCAFS substantially. A second point is that these ROs are often expensive, and despite some progress since 2010 many remain heavily focused on academic rather than research-for-development (R4D) perspectives: for the latter, the focus is getting the job done even if it is not perfect (perfection often being the enemy of the useful). Twelve years ago, it was difficult to find ROs with even a partially developed sense of an outcome orientation. The tension between academic excellence and R4D still exists.

One way to deal with disruption is by having well-developed monitoring and evaluation systems in place, so that evidence can be (relatively quickly) gathered on performance as well as outcomes. Two strategies can help: first, pulling the plug earlier rather than later—though this can damage future relations with the partner involved, so must be done with due consideration and care. Second, doing extra due diligence around an organization’s capacity for delivery, and willingness to deliver on time and reasonably within budget: personal relationships can be hugely helpful, but again if things go badly wrong, these can suffer. In retrospect, FP1 could have done better in both these respects.

ⁱ This appendix presents a retrospective application of the Comparative Advantage Analysis developed by ISDC. The views expressed are those of the author. They do not necessarily reflect those of ISDC or any organization.