RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CGIAR CCAFS

Info Note

Investing in impacts to transform food systems in a changing climate

A design challenge for scaling sustainable finance in climate-smart agriculture

Jana Koerner, Dhanush Dinesh, Akiko Nagano

AUGUST 2020

Key messages

- To achieve agricultural transformation, we need to unlock private capital.
- Sustainable finance can help reorient and leverage private sector flows, but core market failures still limit its potential to reach scale in food systems.
- Crucial needed mechanisms include:

  (i) knowledge platforms for quantifying risk-return profiles and impacts;

  (ii) deep pipelines for developing investment-ready projects; and

  (iii) matching platforms for aggregating portfolios and linking these to investors, with blended finance structures.
- In a virtual design thinking workshop (2nd semester 2020), representatives of the relevant financiers will design (elements) of these crucial mechanisms.
- Designing sustainable investments can change the ways food system innovations are developed and prioritized.

Accelerating innovation development and scaling

We urgently need to transform our food systems in the face of climate change, population growth, changing diets and the depletion of natural resources. This calls for systemic solutions beyond small and isolated public (including donor-) funded projects. The private sector can play a crucial role in scaling climate-smart solutions, by mobilizing the needed capital, technology and expertise. The largest amount of investible capital, however, is harbored by the financial sector, waiting to be unlocked for accelerating the transformation of our food systems.

Financing the food systems transformation

Herrero and Thornton (2020) calculated that 1 USD investment in climate resilience can generate nearly four times its worth in global benefits. The transition of ten critical food systems dimensions would create annual business opportunities worth USD 4.5 trillion (FOLU 2019). In 2020, international asset-owners directing more than USD 2 trillion in investments, committed to move to carbon-neutral investment portfolios by 2050. One-third of the global banking sector (130 banks) signed up to align their businesses to the Paris Agreement goals.

However, sustainable finance still presents quite a paradigm shift for the financial sector, with unclear risks, impacts that are difficult to quantify, and uncertain financial returns. Although impact investment in food and agriculture saw a 22% increase from 2018 to 2019, the total sector allocation of USD 8,284 Mio still remained below potential (GIIN, 2020). To reorient and leverage the needed capital flows towards innovative investments in sustainable food systems, it is imperative to pave the way for scaling sustainable finance.

A proposal for action

CCAFS and partners already identified the main barriers for sustainably investing in food systems (Limketkai et al. 2020), and proposed to design a mechanism to tackle key (knowledge-) bottlenecks for scaling climate-smart agriculture (Koerner et al. 2020). In the following, this info note will

- shortly introduce sustainable finance, and blended finance as main mechanism;
- elaborate on the challenges for financing the food system transformation;
- deduct three critical functions that a facility for scaling sustainable finance would need to fulfill;

RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CGIAR CCAFS

- outline a virtual Design Thinking Workshop to design a facility with one or more of these critical functions, planned in the 2nd semester of 2020.

A short intro to sustainable finance

The term “sustainable finance” refers to any form of financial service that considers environmental, social and governance (ESG) criteria when making business or investment decisions, entailing longer-term investments for the lasting benefit of both clients and society at large.

Traditionally, the finance sector focusses on maximizing financial returns, based on the paradigm of unlimited growth. With consumers and shareholders becoming increasingly aware of sustainability aspects, corporations, asset managers and asset owners started screening for or incorporating ESG standards. Climate change now puts their portfolios and operations at a massive risk, but also presents excellent investment opportunities. Financial actors increasingly see value beyond financial returns and invest in these impacts. These different forms of sustainable finance come with new requirements (e.g. like EU-regulations, fiduciary duties …) and risks (e.g. risk of stranded assets, reputational risk, …).

A question of intent: Different forms of sustainable finance

The space from traditional, return-first investments to pure philanthropy is populated by many different investor types, with different risk return profiles, and seeking different social, environmental and governance returns. By Valoral Advisors (2018), the most known forms are:

- **ESG-integration** uses qualitative and quantitative ESG standards to inform their investment processes.
- **Impact themed investments** select assets that contribute to sustainability challenges such as climate change.
- **Impact first investments** target environmental or social issues which create investment opportunities with some financial trade-off.
- **Philanthropy** focusses on issues where social and environmental needs require 100% trade-off.

Blended finance: Using public and philantrophic capital to lever private investments

Blended finance is a structuring approach that allows organizations with different objectives (either financial return, social impact, or a blend of both) to invest alongside each other. It uses public and philanthropic capital to de-risk and catalyze private investments.

The main investment barriers for private investors addressed by blended finance are (i) high perceived and real risk and (ii) poor returns for the risk relative to comparable investments. Thus, blended finance creates investable opportunities in developing countries, contributing to achieving the Sustainable Development Goals (SDGs) and the Paris Agreement. To date, blended finance has mobilized USD 139 billion in capital for sustainable development in development countries. Convergence (2020) identifies four common blended finance structures:

- **Concessional capital:** Public or philanthropic investors provide funds on below-market terms within the capital structure to lower the overall cost of capital or to provide an additional layer of protection to private investors.
- **Guarantees or risk insurances**: Public or philanthropic investors provide credit enhancement through guarantees or insurance on below-market terms.
- **Technical assistance funds:** Transaction is associated with a grant-funded technical assistance facility that can be utilized pre- or post-investment to strengthen commercial viability and developmental impact.

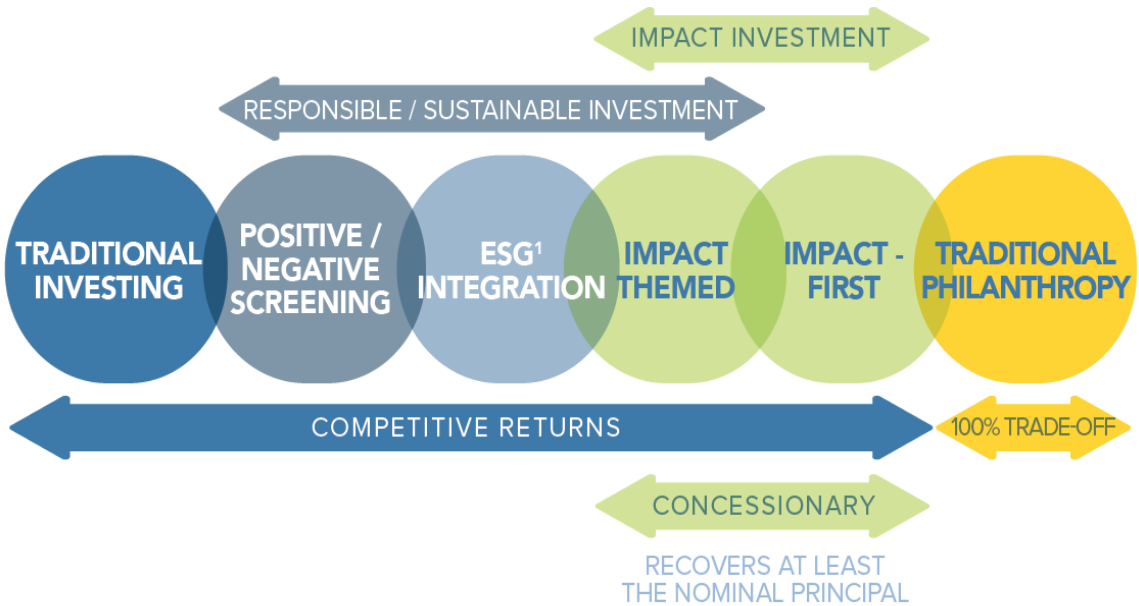


Figure 1: Impact investment spectrum, PRI (Principles of Responsible Investment) and Valoral Advisors

- **Design-stage grants:** Transaction design or preparation is grant funded, including project preparation.

Challenges for financing food systems transformation

The majority of current capital flows to investments in commodities (e.g. trade finance) or the agriculture and food sector (e..g palm oil, soy, beef), that is characterized by large ticket sizes (e.g. large mono-crop plantations). The concept of food systems, however, encompasses investments from the pre-production all the way to consumption and disposal, including sustainabilty aspects like climate risk management and/or natural resource management.

The three main market failures

Climate-smart agriculture can present new investment opportunities for the growing sustainable finance sector. Numerous examples exist already. However, to reach the scale needed, Limeketkai et al (2020) point out three core market failures that need to be addressed first:

- **High investment risk and lack of primary data/information asymmetries**, by building capacity to accurately assess risk and deploy appropriate risk-mitigating mechanisms;
- **Lack of deep pipeline of bankable projects,** today, by creating investment opportunities in food systems that have risk-return profiles and impacts that are attractive to public and private investors;
- **Lack of intermediation** to efficiently connect different pools of capital to investment, by innovations that improve the deal flow, matching the risk-return profiles to different sources of private capital.

Pains and gains of the different actors

Traditionally, the interests and goals of private and public investors are different, if not conflicting. Blended finance is seeking to synergize instead of crowding-out. However, remaining challenges can range from rather technical issues to mandates and ethical discussions, potentially changing the way innovations are developed or prioritized for scaling.

- **Private investors** (e.g. small impact funds from USD 0.5 Mio to USD 5 Mio, larger impact funds with > USD 5 Mio, commercial banks with > USD 20 Mio and institutional investors > USD 100 Mio) wanting to invest in climate-smart agriculture, often face uncertain risks, high transaction costs, small ticket sizes and lack of clarity about the potential impact that may be achieved.
- **Development finance institutions** (> USD 10 Mio) prefer low risk high return investments, being often risk adverse to focus on early stage companies.
- **Development agencies** in turn, might be challenged to justify investments in private sector enterprises, and how to demonstrate and measure the desired impact. Further challenges are how to co-invest with private investors, how to aggregate smallholder farmers, how to satisfy their constituencies' interests, etc.
- **Governments investing** in low- or no-return projects might be crowding-out the private sector, while omitting to invest in developing the right enabling environment. Co-investments with the private sector need to lead to win-win situations.
- **Small and medium enterprises (SMEs)** can be highly profitable and investible, adding value and retaining returns in their respective countries.
- **Farmers** as most important actors for agricultural transformation. Many smallholder farmers produce below profitability, which limits their capacities to adopt climate smart practices.
- **Research institutes** can provide value by (i) assessing investment risks and developing science based ESG frameworks to monitor and assess impacts; (ii) supporting deal sourcing to develop a pipeline of projects with tested appropriate risk-mitigating mechanism; and (iii) and building capacity of investees and/or local financiers, on the above.

The design challenge(s): 3 mechanisms for scaling sustainable finance

The priority actions as identified by Limketkai et al. (2020), can be translated into three critical mechanisms that are needed to scale sustainable finance, towards transforming our food systems in a changing climate:

1. Knowledge platform(s)

This refers to "levelling the playing field", reducing costs and complexities by quantifying i) risk-return profile and ii) impact. These two variables that, if having adequate and robust data, will contribute to the needed paradigm shift for financing agricultural transformation.

Aim: Generating market intel to assess, quantify and reduce risk; and to develop science based ESG frameworks to measure ESG impact.

Functions/services:

- Equipping investors with primary and aggregated data and risk tools for better risk assessment;
- Building a track record for portfolio performance as benchmarks on ESG outcomes and financial returns;
- Distilling the ingredients of success/causes of failure (also using learnings of past investments with SMEs/smallholders in emerging markets, from development agencies and –financial institutions and

the impact investing sector), and develop investors' guidelines.

Phases: Continuous

Possible finance forms: Apart from technical assistance funds, a system based on membership- fees can be feasible if the data is of sufficiently good quality to satisfy the private sector needs.

2. Deep pipeline for bankable projects

A deep pipeline for bankable projects would attract private capital by offering promising proof of concepts or business models that are already tested and ready to scale. Investments could be staged, with catalytic donor or philantropic capital, that is complemented, by private investments when the appropriate risk return profile has been met. This could incentivize private investments in early development phases that may be perceived as high risk, but also bear high potential for impact and financial and ESG returns. This would also change the way how innovations are developed or prioritized for scaling.

Aim: Providing services to identify investable projects and business models, and supporting the actors that will pilot and roll out the projects (most probably SMEs).

Function: Developing simple and standardized projects with model-testing, to catalyze private investments in new markets and business models.

Phases: Associated with pre-investment phases (start-up, seed and early stages)

Possible finance forms: Challenge funds (returnable grants or loan-based), design-stage grants, technical assistance funds.

Useful vehicles: Incubators and accelerators

Grimaldi and Grandi (2005) identified three main types:

- **Public incubators** aim to reduce costs, by pooling logistics and technical expertise. They live on public funding and service fees.
- **Private incubators** aim to reduce time spans until market entry, in turn for equity shares. Apart from logistic and technical assistance, access to networks and intangible assets became more important. Accelerators enter at later stages, and mix less with design and management decisions.
- **University incubators** are like a hybrid form, since they rely on fees and public funding, but their main objective is to support knowledge-based companies. They usually do not engage much in the daily business, and are less "time-sensitive" than the private venture incubators.

3. Deal matchmaking platform(s)

Projects with SME and smallholders usually have limited potential to scale, since they offer deals with small ticket sizes, high transaction costs, high perceived risks and perform in highly fragmented markets. This is not financially attractive to most investors. Venture capital, in turn, will usually try to sell quickly, leaving the projects little time to mature sustainably. Matchmaking platforms can serve as aggregation tools at the necessary scale. They can help to build investment-ready portfolios of bankable projects with diversified blended finance structures, across the core theme of food systems, and to match these investable opportunities to a wider pool of investors with different risk-return profiles (and with different ticket sizes). Thus, they can also offer higher-risk products to public/philanthropic and/or impact investors with greater risk appetite, whilst still allowing investors with lower risk appetite to participate in transactions.

im: Connecting aggregated portfolios of the identified pipelines with private investors.

Function: Aggregating food systems investment portfolios with different blended finance structures, matching these to investors' risk-return profiles.

Phases: Associated with early investment phases (early and growth stages)

Useful concepts: Effective matchmaking

Chan et al (2019) suggest three key characteristics for effective match-making: intentional activity, structured facilitation and encouraging collaboration between investors and entrepreneurs. Further, they identify 4 main formats and instruments:

- Networked convenings: Structured learning programs, large scale events, curated events with targeted speakers and/or refined participant lists, learning journeys
- Competitions and pitching events: B2B rotations, dragons' den/business plan competitions, pitch/demo days
- Technology enhanced platforms: Technology platforms, mobile applications
- Bespoke introductions: Introductions facilitated by commercial brokers, introductions facilitated by non-commercial brokers

Finally, the matchmaking theory of change says that early and frequent matchmaking activities across multiple stages of the business growth will increase trust and knowledge flows between investors and investees, resulting in more successful matches and

Possible finance forms: Technical assistance funds, transaction design or preparation grants. A system based on membership- fees can be feasible if the data is of sufficiently good quality to satisfy the private sector needs.

Virtual Design Thinking Workshop – the concept

The current concept outlines the cornerstones for a virtual workshop to design **"Mechanisms for scaling sustainable finance"**, to accelerate the transformation of our food systems in the face of climate change and global crises. This workshop will be co-organized by CCAFS and the Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan

Workshop details

Objective: Selected finance sector representatives are convened to tackle the discussed bottlenecks, by designing elements and/or prototypes of the needed mechanisms.

Strategy: A professional facilitator will guide teams of 3-5 participants each through a step-wise, creative but micro-timed design thinking process. Each team will address one of the 4 mechanisms ("design challenges").

Output: At the end of the work shop(s), a low-resolution prototype (sketch, description, representation) is available for each addressed design challenge (=mechanism).

Focus: Out of the three lenses of innovation, this workshop will focus on user desirability as a first iteration.

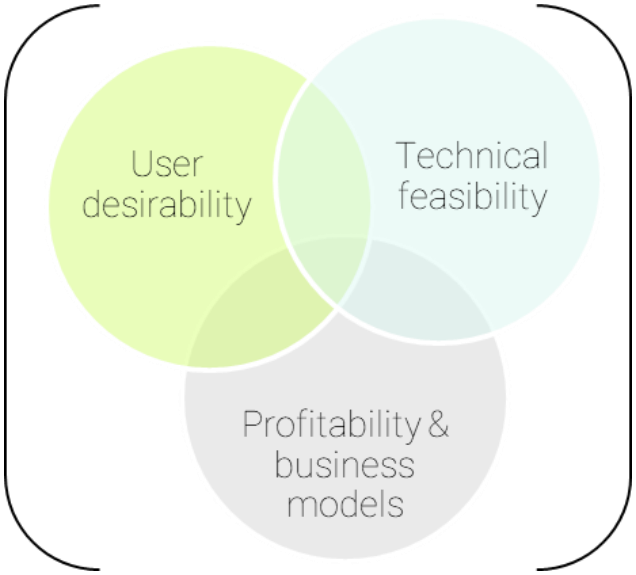


Figure 3: Three lenses of innovation, Circular Thinking 2020

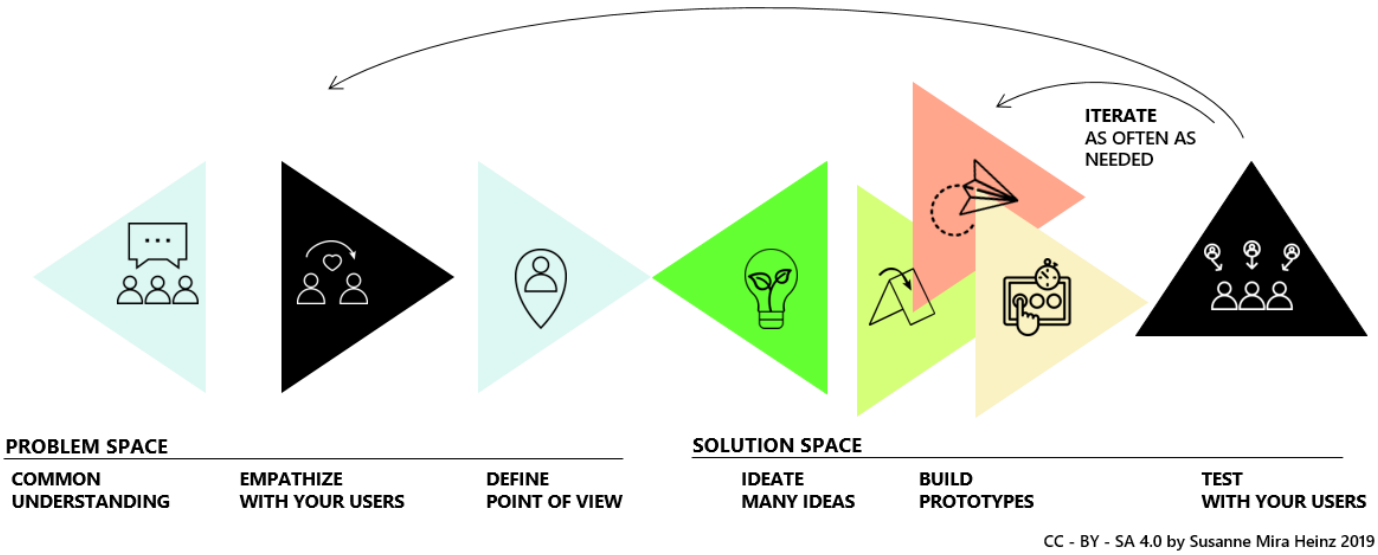
Participants:

- Selected sustainable finance market participants;
- representation of Asia region (for time zones);
- involving a range of high-level stakeholders as resource persons, tester and sounding boards.

Duration: Each team virtually convening "3x3" (3 times a 3 hours); between November 2020 and January 2021.

Tools: Mix of software (virtual whiteboard, video conference tool, joint cloud folder).

DESIGN THINKING PROCESS



References

- Chan T, Camus J, Coulter R. 2019. *Matchmaking between businesses and investors. A practical guide for technical assistance providers on how to integrate matchmaking best practices into programmatic activities*. Eschborn, Germany: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
- Convergence. 2020. Retrieved from https://www.convergence.finance/blended-finance, 10th August 2020
- FOLU. 2019. *Growing Better: Ten Critical Transitions to Transform Food and Land Use*. The Global Consultation Report of the Food and Land Use Coalition.
- GIIN. 2020. *Annual impact investor survey 2020*. The Global Impact Investing Network. Report.
- Grimaldi R, Grandi A. 2005. Business incubators and new venture creation: an assessment of incubating models. *Technovation* 25:111 – 121.
- Herrero M, Thornton P. 2020. What can COVID-19 teach us about responding to climate change? *Lancet Planet Health* 4(5):e174. DOI:10.1016/S2542-5196(20)30085-1
- Lakemond N, Bengtsson L, Laursen K, Tell F. 2016. Match and manage: the use of knowledge matching and project management to integrate knowledge in collaborative inbound open innovation. *Industrial and Corporate Change* 25(2):333–352.
- Limketkai B, Guarnaschelli S, Millan A. 2020. *Financing the Transformation of Food Systems Under a Changing Climate*. CCAFS & KOIS Invest. https://cgspace.cgiar.org/handle/10568/101132
- Koerner J, Dinesh D, Nagano A. 2020. *Designing knowledge-matching facilities for scaling climate-smart agriculture: A proposal for accelerating food systems' transformation in a changing climate*. CCAFS Info Note. Wageningen, Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). https://cgspace.cgiar.org/handle/10568/107866
- Koerner J., Dinesh D., Firmian I., Corner-Dolloff C. 2020. *Accelerating innovation development and scaling processes for agricultural transformation - Insights from the Side Event on Scaling, 5th Global Science Conference on CSA, 2020*. CCAFS Info Note Series. https://cgspace.cgiar.org/handle/10568/106949
- Valoral Advisors. 2018. *Impact investing in the global food and agricultural investment space*. Investing profitably whilst fostering a sustainable and thriving agriculture. Report.

This Info Note is the continuation of CCAFS and its partners' efforts to accelerate the transformation of food systems. It combines multi-stakeholder initiatives that followed the 5th Global Science Conference on climate-smart agriculture in Bali, 2019, and the Workshop on Scaling Sustainable Agriculture organized by the Meeting of Agricultural Chief Scientists (MACS) of the G20 in Tokyo 2019, organized by the Japanese Ministry of Agriculture, Forestry and Fisheries. The activities are funded by ACIAR and the Ministry of Nature, Agriculture and Food Quality of the Netherlands.

On the authors:

Jana Koerner (j.korner@cgiar.org) is the CCAFS global innovation manager and member of the CGIAR/GIZ Task Force on Scaling.

Akiko Nagano (akiko_nagano720@maff.go.jp) is the Deputy Director for Climate Change Negotiations, Environment Policy Office at the Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan

Dhanush Dinesh (d.dinesh@cgiar.org) is the head of partnerships and outreach of the CCAFS.

About CCAFS Info Notes

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) brings together some of the world's best researchers in agricultural science, development research, climate science and Earth system science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security. Visit us online at **https://ccafs.cgiar.org**.

CCAFS is led by the International Center for Tropical Agriculture (CIAT) and supported by: