




CoSAI
Commission on
Sustainable
Agriculture
Intensification

Case Study: Finance for sustainable agricultural intensification





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This case study accompanies the report: *Funding Agricultural Innovation for the Global South: Does it Promote Sustainable Agricultural Intensification?* The full report can be found on the CoSAI website: <https://wle.cgiar.org/cosai/innovation-investment-study>

1. Summary

To meet the growing demand for food in the Global South in a sustainable manner, current funding in agricultural innovation will need to be increased exponentially. Some estimates suggest up to USD 320 billion annually is required to help meet the UN SDG Goals for food and agriculture by 2030. Current levels of funding for agriculture and agricultural innovation fall far short of this and hence efforts to induce more funding for these goals, including through the use of new financing instruments¹, is critical going forward.

Funding in market research, fundraising, transaction management, investment management are essential in order to increase the amount of capital deployed through innovative instruments. Different categories of funders, including PE/VC funders, impact funders, development funders make funding in market research to assess funding potential and develop an investable pipeline, spend time to raise funds from LPs (limited partners), incur costs associated with investment transactions (due diligence, legal filings, and so on), and finally incur costs related to managing investments through their fund lifecycle. An assessment of the existing level of these costs is important to understand upstream drivers of innovative funding for sustainable agriculture overall.

The study estimates that between USD 1.8 – 2.5 billion was funded annually in agricultural innovation between 2010-2019 for the Global South through new innovative financial instruments as described in Table 1 below. A large majority of this came from private equity and venture capital players and a smaller fraction came from Development Funders.

The study estimates that between USD 950 million to USD 1.35 billion was funded annually to set up and deploy new financing instruments for agricultural innovation in the Global South between 2010-2019. Out of this, a majority was funded by PE/VC/impact funders and approximately 20% by development funders. A majority of this was towards personnel costs working in these organizations.

2. Introduction

To meet the growing demand for food in the Global South in a sustainable manner, current funding in innovation for sustainable agriculture intensification will need to be increased exponentially.^{2 3 4}

New financing instruments will play an important role in increasing the overall funding for sustainable agriculture. Not only are current levels of funding inadequate, but also many existing investment instruments are not designed to cater to the high-risk potential and below market-rate return of agricultural funding and solve for market failures in specific sub-sectors or technologies. Thus, only large funders such as governments or institutional private investors make up the bulk of the funding towards agricultural innovation and SAI. While philanthropic funding from large multilaterals and bilaterals has the potential to fill the gap, grant and traditional debt finance does not

¹ investment in new innovative financial instruments is a relatively new construct and granular data is missing

² Food and Agriculture Organization of the United Nations (FAO). [How the Feed the World 2050: Global agriculture towards 2050](#) (2009).

³ United States Environmental Protection Agency (2014). [Global Emissions by Economic Sector](#).

⁴ Business and Sustainable Development Commission & Alpha Beta Advisors. [Valuing the SDG Prize in Food and Agriculture](#) (2016).

provide a long-term sustainable solution to fund agricultural innovation. Hence, to fill the funding gap, new financing instruments are required that can attract mainstream investors at scale and fund a wider range of agricultural innovation enterprises and institutions.

3. New Financing for Agricultural Innovation

The case study defines new financing mechanisms as non-traditional financial instruments that promote innovation, share in the outcome risk as well as the upside, and also help catalyze more investments for agricultural innovation. While new financing mechanisms or what is commonly known as “innovative finance” is loosely defined, for the purpose of this case study, we have included a) Funding by PE/VC (private equity / venture capital) investors (equity), b) Equity and debt investments by impact investors, c) The entire range of results-based financing instruments (including impact bonds, guarantees) and blended finance instruments by development funders. See Table 1 for a complete list of instruments.

The dominant sources of funding for new financing mechanisms for agricultural innovation are Private Equity and Venture Capital players, and Development Partners⁵. The most significant funding is by private equity/ venture capital who have been increasingly funding innovative agricultural startups across the Global South. Over the past decade, these investments have been increasing at about 4%; conservative estimates peg these at about USD 2.5 billion in 2019⁶. Large bilateral and multilateral donors such as the World Bank, US Agency for International Development (USAID), UK Department for International Development (DFID), the German Federal Ministry of Economic Cooperation and Development (BMZ) and the Dutch Ministry of Foreign Affairs (DGIS), among other public and philanthropic donors also play a significant role in funding through new financing instruments. For example, the Global Agriculture and Food Security Program (GAFS) is a landmark new financing mechanism funded by multiple governments and IFC, that blends public and development institutional funds to invest in agricultural innovation projects that private investors have avoided in the past, such as early-stage or high-risk projects.⁷ The fund aims at correcting market failures in the entire food supply chain, from farm inputs to logistics and storage, to processing and financing.

Currently, however, the market for new financing mechanisms for SAI remains largely untapped, with only a few examples of each type of mechanism. While there have been a few landmark investments, the innovative finance market for agricultural innovation is still nascent compared to other markets such as microfinance, education, employment, and energy.

⁵ ‘Development partners’ includes large private philanthropic donors, and multilaterals/ bilateral agencies

⁶ Estimates have been made by analyzing trends of investments captured by the tracxn database. These trends were superimposed on estimates of overall PE and VC investments in agricultural innovation in the global south using research reports such as the AgFunder. 2021. “AgriFoodTech Investment Report.”

<https://research.agfunder.com/2015/2015-agfunder-global-report.pdf> and McKinsey&Company. 2019.

“Private Markets Come of Age: McKinsey Global Private Markets Review.”

<https://www.mckinsey.com/~media/mckinsey/industries/private%20equity%20and%20principal%20investors/our%20insights/private%20markets%20come%20of%20age/private-markets-come-of-age-mckinsey-global-private-markets-review-2019-vf.ashx>.

⁷ IFC, Global Agriculture and Food Security Programme (GAFSP).

To catalyze larger volumes of “new financing” for agricultural innovation, it is, thus, important to measure the amount of investment being made in the creation and deployment of new financing instruments. The creation of new financing instruments requires investments by both “asset managers” and also broader ecosystem players across the lifecycle of investment funds and programs. Typical steps include a) Fundraising and the creation of a fund, b) Developing an investment pipeline through research and investment theses, c) Transactions to invest in companies or projects, d) Ongoing management of these investments and investee companies/projects, e) Regular monitoring and reporting, and f) (in the case of commercial funds) Closing the fund. Most of these costs are borne by the General Partners (in the case of PE/VC investors and impact investors) as well as the management teams within development funders (multilaterals, bilaterals, and philanthropies) and cost heads include staff salaries, travel and other admin expenses, external costs linked to due diligence or transaction management. This case study attempts to arrive an overall estimate of the investments in the creation of new financing for agriculture innovation with the understanding that this is a new category of analysis, and these estimates might need revision going forward.

4. Calculating Funding in New Financing for Agriculture Innovation

This case study adopts a three-stage process to calculate the funding in designing, deploying, and managing new financing instruments for agricultural innovation. First, associated costs are developed with managing investment instruments for different funder categories of interest. Second, total assets under management &/or transaction volume within these financial instruments for agricultural innovation is calculated based on available data from OECD and PE/VC databases. Third, cost percentages are applied to the asset volume to determine the total investment for new financing instruments.

New financing instruments for sustainable agriculture are primarily invested-in by development funders as well as PE/VC/impact investors. The case study counts seven categories of financing instruments across development funders and investors. Overall cost estimates are used because sub-head level costs (staffing, market research, transaction related costs) are hard to get.

Table 1. Categories of financing instruments included in this case study

Investor type	Financing Instrument
Development Partners (Multilaterals, bilaterals, and philanthropies)	1. Blended finance instruments
	2. Performance based instruments including impact bonds
	3. Guarantees
	4. Incentive schemes (such as PES)
PE/VC investors & impact investors	5. Equity instruments
	6. Debt instruments
	7. Hybrid instruments

The costs involved with the setting up and deployment of new financial instruments include internal costs (with the asset manager) as well as ecosystem level costs (such as market research). Different

categories of funders – PE/VC investors, impact investors, Development Partners – all incur costs in the designing, deployment, and management of their funds through which they fund agricultural innovation. These costs include team costs, transaction related legal fees and due diligence costs, market research costs, and other overheads associated with managing a fund or a program. Furthermore, these costs are spread across the typical fund lifecycle as well as the deployment. The table below highlights typical cost ranges for these funder categories.

Table 2. Costs to set up and deploy new financial instruments.

Funder category	Typical instruments	Annualized costs (as a percentage of fund size)	Typical fund lifecycle (program lifecycle)	Deployment timeframe ⁸	Total costs (as a fraction of funds deployed) across the fund lifecycle ⁹
PE/VC investors	Equity instruments	2-2.5%	10 years	6 years	29%
Impact investors	Equity + debt instruments	2.5-3%	10 years	6 years	38%
Development funders	RBF instruments (impact bonds, guarantees etc.) and other innovative finance instruments	5-7%	5 years	5 years	44%

5. Investments in New Financing for Agriculture Innovation

Across these funder categories, between USD 1.8-2.5 billion was deployed annually through new financing instruments between 2010-2019. The case study estimates that between USD 1.8-2.5 billion was deployed through these new financing instruments for agricultural innovation. This was led by the PE/VC/impact investor category with USD 1.3-2 billion and with the development sector with approximately USD 500+ million for agricultural innovation¹⁰.

⁸ Investment funds typically make most of their investments in the first 5-7 years of a 10-year fund cycle with the remaining time spent on harvesting the investments

⁹ This includes the management costs through the fund lifecycle as a proportion of the assets deployed in investments. For instance, a USD 100 million fund, might only invest USD 75 million, with the remaining USD 25 million being used to run the fund over the 10 year lifecycle. In this case, the ratio would be 33% (25M/75M). Experts consulted for this case study included investment professionals at Dalberg Advisors, Unitus Capital, Gray Ghost Ventures, and experts with experience working at Lazard.

¹⁰ Dalberg analysis

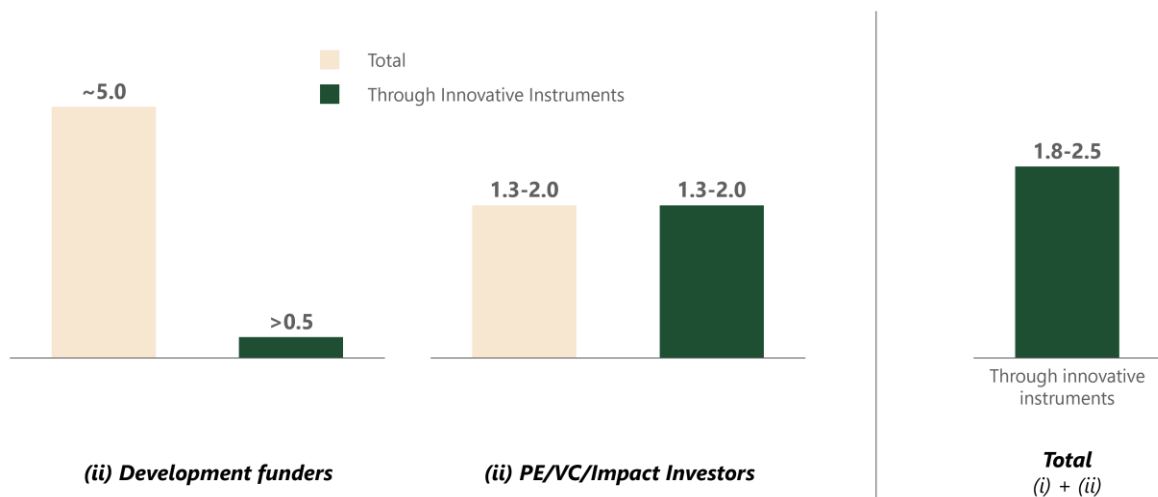


Figure 1. Capital Deployed in Agricultural Innovation USD billion, 2010-2019 (annualized), Constant USD (2019 prices).

The study estimates that between USD 900 million – USD 1.35 billion was funded annually to set up and deploy new financing instruments for agricultural innovation in the Global South between 2010-2019. This represents approximately 2%¹¹ of the total funding for agricultural innovation in the Global South over the same time period. Out of this, a majority of it was spent by the PE/VC/impact investors and approximately 20% was spent by development funders. While detailed information on splits is not available, anecdotally it is known that a majority of these spends are towards the personnel costs working in these organizations as well as transaction specific costs (legal fees, due diligence), market research costs overall, as well as ag-sector development costs (advocacy, knowledge reports, conferences).

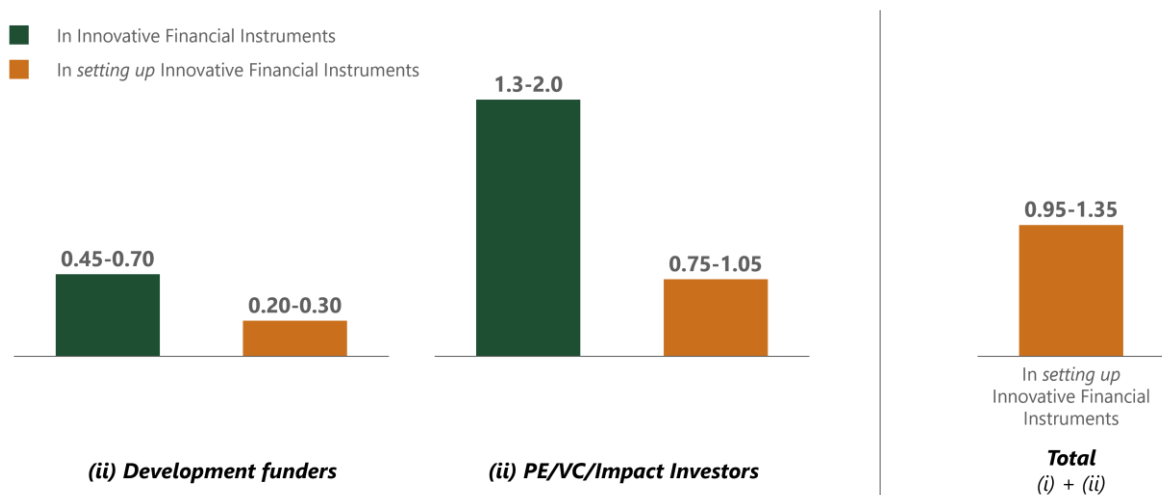


Figure 2. Total investments in innovative financial instruments for agricultural innovation¹² USD billion, 2010-2019 (annualized), Constant USD (2019 prices).

¹¹ Dalberg analysis: Total funding in agricultural innovation for 2010-2019 is ~USD 500-700 billion

¹² “Total investments in setting up innovative financial instruments for agricultural innovation” includes investments that will be made till 2024 to manage existing allocations and funds

6. Conclusion

A considerable amount of funding is being made in innovative financial instruments for agricultural innovation; however, more is still needed and there might be opportunities to improve management overheads and efficiencies through sharing of benchmarks, best practices, and knowledge. Several hundred million dollars annually get spent on designing, deploying, and managing innovative financial instruments for agricultural innovation in the Global South. While most of this is by the PE/VC industry, there is still a significant focus on this within the development sector. However, going forward significantly more funding will be needed to drive sustainable agricultural innovation and consequently more investments in the creation and deployment of these instruments.

The case study offers five ideas to make innovative financial instrument investing more efficient for the agriculture sector:

1. Knowledge sharing between the PE/VC/impact investing sector and the development funders. There might be significant benefits of sharing of investment pipelines, benchmarks, investee monitoring practices between these categories of funders.
2. Formalizing a community of specialists focusing on innovative finance for sustainable agriculture: There would be great advantages in creating a network and a community of professionals focused on this
3. More formalized data and benchmarks: Innovative finance requires accurate assessments of ex-ante risk as well as expected economics of value chains and business models. A shared platform that brings together these benchmarks along with public good market research might reduce the investment overheads for these instruments lower and thus allow greater leverage
4. A formal innovative finance hub for sustainable agriculture: A dedicated hub that experiments, derisks instrument design, as well as creates knowledge would be very useful to catalyze more investments through these instruments.
5. Finally, the creation of standardized investment reporting protocols would help improve data quality and make future analysis easier and also more accurate.



Notes on Methodology and Caveats

The following should be kept in mind while reading analysis in this case study and interpreting results

1. The “investment in new innovative financial instruments” is a relatively new construct and granular data is missing. Information on costs of running a fund is proprietary to most organizations and not much is available publicly overall within even less information being available for different instrument types. The analysis in this case study relies on industry benchmarks, past work done by the authors in setting up large innovative financial instruments and impact bonds, as well as discussions with industry experts with deep experience in setting up and running funds across the industry.

The results in this case study focus on the Investments for Innovative Finance for Agricultural Innovation. This is a very specific frame of analysis and likely excludes many investments and programs that either don't focus on agricultural innovation or don't rely on innovative finance.



The Commission on Sustainable Agriculture Intensification (CoSAI) brings together 21 Commissioners to influence public and private support to innovation in order to rapidly scale up sustainable agricultural intensification (SAI) in the Global South.

For CoSAI, innovation means the development and uptake of new ways of doing things – in policy, social institutions and finance, as well as in science and technology.

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