

12

Sustainable Finance for the Transformation of Food Systems

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Highlights

- Development finance actors and the private sector will need to work cohesively to reduce the funding gap, reorient current financing, and increase capital resources for food-system transformation.
- Utilising innovative financing instruments and mechanisms to create attractive investment opportunities can catalyse food-system transformation through both public- and private-sector capital.
- Building the capacity of financial intermediaries to accurately assess risk and deploy appropriate risk-mitigation mechanisms can improve risk perception and lower the transaction cost for deploying capital.
- Robust, science-based metrics, cost-effective data collection, and monitoring systems are critical to mobilising capital and safeguarding sustainable finance against greenwashing.¹

12.1 Introduction

One of the main challenges for transforming food systems relates to successfully scaling adaptation and mitigation actions (Chapter 2). Here, governments and public institutions play a key role in creating an enabling environment (Chapter 11) for overcoming funding barriers and scaling climate-resilient, low-emission approaches.

To better understand these barriers, a large market consultation with more than seventy public and private investors was carried out, to identify the key market failures that prevent investors from financing food-system transformation. This led to the first strategic sustainable finance roadmap for food-systems transformation, ‘Financing the Transformation of Food Systems Under a Changing Climate’ (Limketkai et al., 2019). The roadmap highlights a diverse set of policy options,

innovative financial solutions, and strategies for how stakeholders can support the transformation to low-carbon and resilient food systems.

This chapter considers sustainable finance for the transformation of food systems. We consider the key barriers to engaging sustainable finance and how actors within the development finance landscape can address these. Thereafter, we focus on the three core mechanisms for mobilising sustainable finance: (1) creating investment opportunities attractive for mainstream investors, (2) building the capacity of financial intermediaries to accurately assess risk, lower transaction costs and deploy risk-mitigating mechanisms, and (3) utilising robust, science-based metrics and standards to catalyse capital, attribute accountability, and safeguard impacts, to overcome the barriers finance actors face in deploying sustainable finance for food-systems transformations.

12.2 Barriers to Deploying Sustainable Finance for Food-System Transformation

The cost of implementing 11 high-priority actions under four key areas to transform food systems – re-route, de-risk, reduce, and realign – is estimated to be US\$1.3 trillion annually through the decade (Chapter 2), with current financing falling woefully short.

To transform our food system, we need to target the current major sectoral sources of finance and identify new funding sources. There is a clear need to reorient current financing and mobilise more capital resources to reduce food systems' vulnerability to the effects of climate change and minimise their negative impacts on climate change. Beyond the funding gap, the longer-term goal is to institutionalise and mainstream sustainable finance throughout the financial ecosystem, whereby environmental, social, and governance (ESG) aspects are considered when making investment decisions in the financial sector. This in turn can lead to more long-term investments in sustainable economic activities and projects.

In the case of food systems, institutionalising sustainable finance within the financial ecosystem could contribute to country-based environmental objectives, increase the flow of capital towards such endeavours, and avoid harming other environmental objectives. However, investing in sustainable food systems in developing countries is challenging owing to several barriers. These include: (1) high country- and sector-specific risks, (2) poor primary data and information asymmetries between financial institutions and potential borrowers, (3) the mismatch between investment needs and different pools of capital, and (4) high transaction costs in conjunction with small ticket sizes, that is, the amount of money a single investor invests. These barriers result in the lack of deep pipelines for bankable projects that are attractive for mainstream investors.

Two important streams to increase climate mitigation and adaptation finance to transform food systems have been identified (Limketkai et al., 2019). Firstly, we must embed climate considerations into the underlying financial system architecture, through effective government policy and regulatory frameworks. Secondly, we must address core market challenges to create new sustainable investment opportunities that incentivise private capital flows and strengthen the underlying economics of making financial systems climate-conscious. Figure 12.1 illustrates the development finance landscape and highlights the interdependency of the financial and development sectors in achieving mutually beneficial outcomes.

The supply-side of capital consists of two categories, namely, the capital owners, and the capital managers, or financial intermediaries. Both consist of private and public players, who rely on each to de-risk investments as well as to reach sufficient scale. However, different types of capital flows and return expectations create systemic complexity, which requires structured approaches and clear alignments on objectives.

The demand-side of capital is made up of private companies, retail finance companies, and individual end users. Private companies meet investment targets, retail finance companies provide private companies and individuals with financial services, and individuals are the consumers of financial products and services. In development agriculture, the core challenges to investment in the demand-side of capital are the high transactions costs and individuals' comparatively low purchasing power. The following sections consider these flows in the context of three core solutions to overcome the barriers finance actors face.

12.3 Creating Investment Opportunities Attractive for Mainstream Investors

Although there has been a shift in business and investor communities towards considering climate change and its implications, the gap between high-level interest and concrete investment opportunities – and, more importantly, action on the ground – still exists. To date, one of the biggest challenges to private-sector investment in food-system transformation is the identification of bankable projects with attractive risk-adjusted returns.

There are several pathways through which the ecosystem of actors operating in the food systems sphere can create more attractive investment opportunities. Corporates should continue to internalise and implement ESG commitments across their supply chains and operations while setting higher sustainability standards for business-as-usual investments. Green financing that is explicitly linked to climate outcomes can be scaled up, such as green bonds, carbon markets, climate-linked insurance, concessional loans, and grants to achieve climate adaptation or

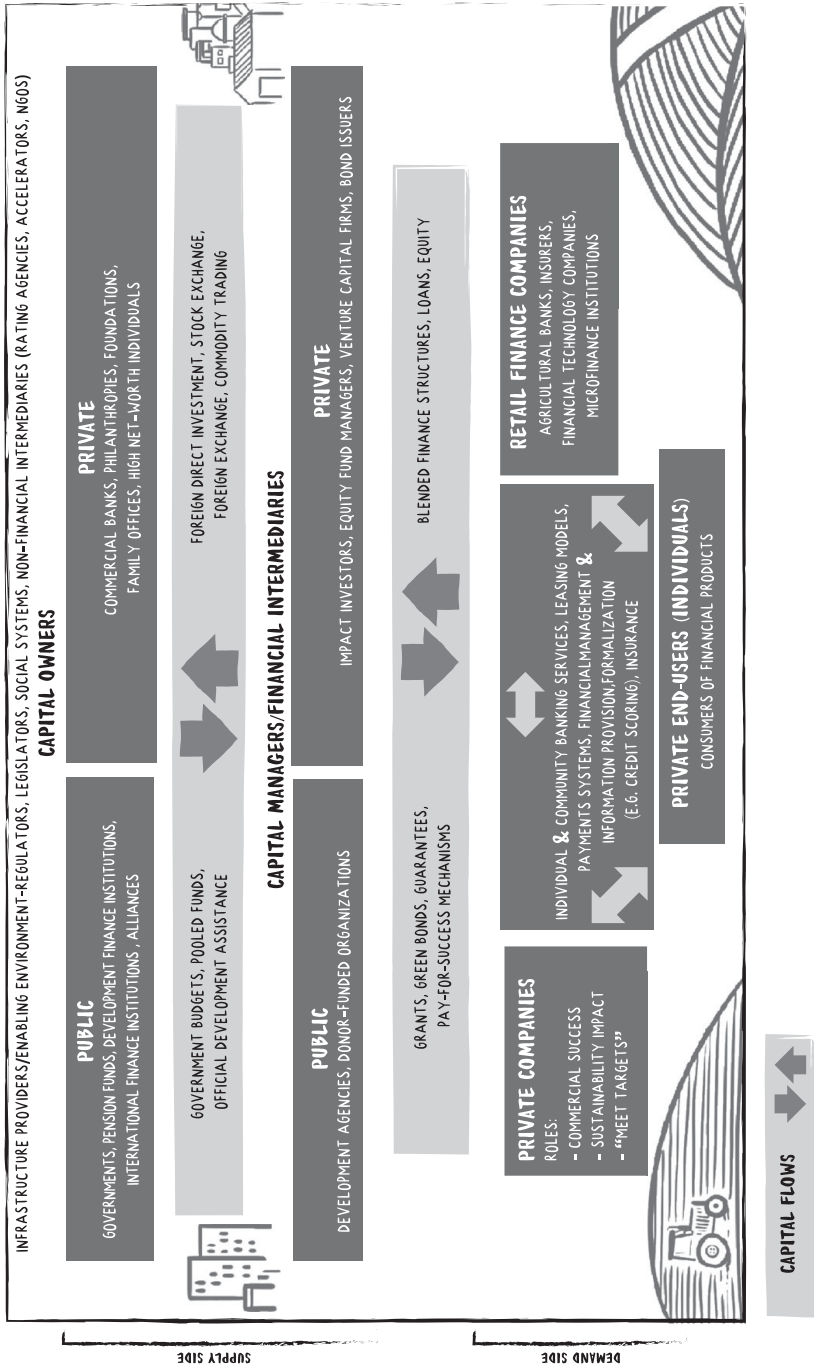


Figure 12.1 Development finance landscape: Categories, players, and flows

mitigation objectives, as well as guarantees for adequate risk-adjusted returns in climate-focused investments. Governments can propel subsidy reform to stop those harming the environment and reorient this capital to focus on positive environmental actions. They can create market incentives for new sustainable opportunities and support this burgeoning market through levers such as taxation and regulation, while also ensuring that decision-making explicitly incorporates the costs of unsustainable food systems (Limketkai et al., 2019). Table 12.1 outlines examples of the types of innovative financing instruments and mechanisms that should be scaled up (see also Chapter 4, Table 4.1 for select financial mechanisms to support the sustainable management of high-carbon ecosystems).

Innovation in how finance is mobilised is needed, such as blended finance structures. These approaches can help overcome the high costs and risks often associated with sustainable finance investments. Investment opportunities need de-risked structures, given the often-high country and borrower risk, which is further intensified by uncertain economic returns of many sustainable production models. Strategically blending public funding and philanthropic capital with private-sector resources can overcome some of these challenges, allowing the scaling of sustainable investments. The blended-finance approach utilises the large resources of the private sector and banks, in combination with impact financing – the public catalytic concessional finance – which can only come into effect when blended with commercial finance. Blended finance can assist in creating investment opportunities for investors through the actions below (Apampa et al., 2021):

1. Promote bankable projects: Utilising blended finance mechanisms will increase capital flow, and investment in bankable projects, and can upgrade near-bankable projects to become bankable.
2. Demonstrate a track record: Successful blended-finance investments will have a demonstrable effect, which should reduce the perceived investment risk of private investors, leading to more investments.
3. Phased out over time: Once sustainable food-system investments have passed the ‘proof of concept’ stage by becoming profitable, and once the reduction of credit risks is achieved at scale, more commercial capital will become available without the need for concessional capital. As such, blended finance can be phased out.

Blended finance requires a multi-stakeholder, partnership approach between the food and agriculture industry, NGOs, financial actors, donors, investors, and the technology sector to create an enabling environment. By promoting partnerships among ‘unusual suspects’, the combined knowledge, capabilities, and financial resources of all of these actors can be harnessed towards a common goal. Research organisations have an important role to play in developing tools and frameworks that can lower the transaction costs for investors, improve risk assessments, and

Table 12.1. *Examples of innovative financing instruments and mechanisms*

Financing instrument/mechanism	Description	Example
Green bonds/ climate bonds	A green bond or climate bond is a type of fixed-income instrument, which functions mainly the same way as a regular bond. The major difference is that proceeds are earmarked for investments that will positively impact the environment or climate change. The bond can be issued by governments or private actors such as banks and corporates.	Green Bond Issuance by FIRA – Development bank of Mexico. In 2018, FIRA issued Mexico's first green bond focused on agriculture, worth MXN2.5 billion, or US\$130 million. The proceeds will be used for financing 11 shade houses and 28 greenhouses that emit fewer greenhouse gases than open agriculture.
Carbon credits/ carbon offsets	Carbon credits and carbon offsets are market mechanisms for the minimisation of greenhouse gases (GHGs). Carbon credits are measurable, verifiable emission reductions from verified projects.	Anourok Cambodia Forestry Project Anourok, a Forest REDD+ conservation project, prevents deforestation of a unique and biodiverse region under significant pressure from illegal logging and poaching. The project is certified under the Verified Carbon Standard.
Guarantees or risk insurance instruments	Guarantees or risks insurance instruments are credit-enhancing mechanisms, where a third party acting as a guarantor assumes responsibility for a debt should a borrower default.	The Swedish International Development Cooperation Agency (SIDA) Guarantee to Mali agriculture and women entrepreneurs. SIDA provides guarantees as a financial instrument to mobilise additional capital for development projects. One such project is the guarantee provided to the Bank of Africa to enable the bank to lend to agriculture sectors and women entrepreneurs in Mali.
Pay for success tools/results-based financing instruments	According to Social Finance, 'Pay for Success' is a set of innovative outcomes-based financing tools that measurably improve outcomes by driving	Ashaninka impact bond for sustainable cocoa and coffee production in Peru. The Ashaninka impact bond is the first in Latin America and was raised to support

Table 12.1. (cont.)

Financing instrument/mechanism	Description	Example
	resources towards results. Examples include social impact bonds, development impact bonds, and outcome-based contracts, contracts.	sustainable cocoa and coffee production within the indigenous Ashaninka community living in the Peruvian Amazon.
Payment for ecosystem services (PES)	PES is a financial mechanism whereby the beneficiaries of an ecosystem service, such as watershed protection, carbon sequestration, or forest conservation, make payments to the provider of these services.	Payment for carbon sequestration by the Norway government. The government of Norway incentivized farmers in the region of Rogaland, Trondelag, and Nordland to plant spruce on fallow agricultural land. It refunded farmers for the costs incurred to plant spruce and allowed farmers to keep the income from the harvest once the trees reached their annual mean growth.

safeguard impacts, particularly when the target beneficiaries are smallholder farmers, including women and youth (see Box 12.1).

12.4 Building the Capacity of Financial Intermediaries

Investing in the capacity building of financial intermediaries to accurately assess risk, lower transaction costs, and deploy risk-mitigating mechanisms is key to scaling up financing. One of the biggest barriers for mobilising finance in the sector in low-income and developing countries is not necessarily high return expectations but rather high actual or perceived investment risk and/or high transaction cost. For example, disseminating large-ticket investment sizes to financially benefit and commercialise low-income end users is costly and acts as a deterrent to finance being committed to such projects. Similarly, high investment risk can be a result of inappropriately incorporating climate-change impacts and unsustainable practices in the risk assessment and management process of financial intermediaries. Furthermore, since the central role of banks includes protecting capital entrusted to them, regulated financial institutions are

Box 12.1

The First Science-Based ‘Climate Smart Food Systems Fund’ Is Launched

CGIAR and prominent asset manager, responsAbility, joined forces to unlock sustainable finance potential, designing an innovative blended investment fund that can channel capital to transform food systems in developing countries. It aims to do so in a commercially and financially attractive manner, while also delivering science-based transformational impact. The Fund will be the first to integrate a science-based food-system approach into a fund investment strategy and actively target the main drivers of climate change. The Climate Smart Food Systems Fund will provide long-term, expansion-debt financing to 20–30 small-to-medium enterprises (SMEs) operating in Asia Pacific, Latin America, and Africa, which will all contribute to healthier diets and promote climate-change adaptation and mitigation in their food systems. CGIAR’s science and research expertise allows the Fund to integrate a science-based prioritisation strategy to identify companies with the highest impact potential. The Fund will implement climate-smart interventions to help its investee companies transition to a sustainable food system. Grant-based funds for the technical assistance facility will be provided by governments, philanthropic actors, and foundations, and support investees and smallholder farmers to strengthen their capacities to implement robust climate-smart agriculture solutions. The Fund will provide financing and technical assistance climate-smart interventions, such as regenerative agriculture in the value chain, reduced food loss post-harvest, more energy- and water-efficient processing, and improved logistics. The Fund will also incorporate a gender investment strategy. Its end goal is to demonstrate investment viability in sustainable food systems to catalyse more capital at scale.

subject to heavy monitoring, creating a ‘risk appetite’ that limits committing funding to high-risk countries or sectors. Moreover, farmers who wish to innovate in food-system transformation, for example by using reforestation approaches or silvopastoral practices, are perceived as higher risk owing to deviating from ‘business as usual’.

Investment is needed to strengthen the innovation ecosystems that enable the scaling of private-sector solutions and to overcome several barriers related to high investment risk and high transaction costs. This includes taking a system-wide view of risks and costs and recognising the roles of policymakers, infrastructure, and industry standards. By building capacity to accurately assess risk and deploy appropriate risk-mitigating mechanisms, as well as by equipping investors with data and risk tools, risk assessment can be improved, investments de-risked and private capital catalysed (Box 12.2). The development and sharing of primary data

Box 12.2

The First Climate-Adaptation Credit Facility for Agriculture in Africa

CGIAR set out to overcome some of the financial barriers to climate-smart agriculture by partnering with an Impact Investor in East Africa to launch Africa's first climate-adaptation credit facility for agriculture, ADAPTA.EARTH. The key innovation is a climate-scoring algorithm and agriculture- and risk-management framework that can be embedded into local and regional banks' risk assessment process to transform how agricultural risk is assessed and managed. Through a simple dashboard, the automated Climate Score Model will provide an overview of risks associated with a potential borrower, based on a commodity and/or location-specific risk assessment, alongside guidance on a potential action plan to address climate-change-derived risks. Firstly, the Climate Score Model will leverage satellite-derived data sets and others measuring vegetation, soils, hydrology, climate, energy, and water efficiency, as well as social and gender dimensions, to assess risk and identify adaptation options within value chains. Secondly, by working with primary producers and agri-SMEs to assess their climate-change risks and resilience, the financial institution can embed an adaptation plan into their growth strategies. It may also indicate whether a project carries unsurmountable climate-change-derived risks and, as such, should not be pursued further. Lastly, an automated portfolio management monitoring system will provide the borrower/ investee with information about the action plan implementation, weather-related climate risks, hydrology, soil, pests, and harvest information, etc. The goal is to reduce the need for regular physical monitoring while creating a transparent communication channel for all parties.

can reduce information asymmetries, build benchmarks for investor due diligence, and create publicly verifiable investment data platforms. Investor due diligence can facilitate public and private investors to assess risk-return profiles and incorporate climate considerations into the investment process more accurately (Limketkai et al., 2019). The public sector can play a leading role by strategically funding technical assistance, to facilitate the development of viable business models. In partnership with entrepreneurs, this can de-risk markets to help businesses access follow-on financing. The public sector can also aid in developing tools and frameworks to enable the collection, assessment, monitoring, and sharing of data to assist in de-risking investments and to create a viable, sustainable finance ecosystem for both public- and private-sector actors (ClimateShot, 2021).

Local and regional financial intermediaries such as banks, micro-credit providers, insurance providers, and venture capital funds investing in digital services business models all provide a pathway to scale funding and services to smallholder farmers. For example, bundling climate information services or

technical assistance on climate-smart practices with loans provides a cost-effective approach for financial intermediaries to deploy risk-mitigating mechanisms. Lastly, leveraging digital solutions is key to reducing risks, costs, and building data hubs for finance and decision-making. This includes harnessing digital technologies to obtain more granular farmer-level views of impact and risks, addressing the cost barriers to be overcome to reach underserved communities, developing alternative credit scoring systems, strengthening formal property rights, and creating alternative forms of collateral (ClimateShot, 2021).

12.5 Robust Science-Based Metrics and Standards

Robust, science-based metrics and cost-effective data collection and monitoring systems are crucial. Firstly, metrics and data help channel and attract more funding from larger and wider sources of capital. New regulatory requirements and ESG-based commitments, as mentioned above, are instigating alignment within the industry on definitions and classifications, to provide ubiquitous reporting and narrative on sustainable finance (Table 12.2). It is hoped that the data and metrics gathered as a result of such regulations will help mobilise further capital. One major hindrance is the lack of reliable, harmonised, and cost-effective metrics within food systems. Investors who are sector agnostic or indifferent to climate-finance mitigation or adaptation are more likely to invest in renewable energy, for example, as it is far easier to quantify outcomes and calculate the impact of their capital. Additionally, the high costs associated with collecting data to measure impact add to the operating cost of asset managers and financial institutions.

Secondly, there is currently no adequate valuation of natural capital, that is, the world's stock of natural resources, which includes geology, soils, air, water, and all living organisms (Natural Capital Forum, 2021). Inadequate valuation leads to an underestimation of nature's role in the economy and human well-being, meaning that the services natural capital provides are often traded away without due consideration or appropriate cost-benefit analysis. Similarly, there is no generally accepted appraisal methodology to measure climate outcomes and the value provided to – or removed from – businesses. This lack of a market-accepted climate valuation methodology prevents investors from embedding climate considerations into investment decision-making, as underlying business valuations cannot justify the additional costs of sustainable practices (Limketkai et al., 2019).

Thirdly, although there is a great need for sustainable finance for small-scale farmers to large corporates, we must consider whether financing and commitments are genuinely contributing to sustainability goals. As ESG investing becomes mainstream, many asset managers are marketing new 'green' products, raising the risks of 'greenwashing'. In the agriculture and food sector, utilising robust science-

Table 12.2. *Example initiatives used across the financial ecosystem addressing impact and ESG metrics*

Initiative	Description
International Finance Corporation (IFC) performance standards	The IFC's Environmental and Social Performance Standards define IFC clients' responsibilities for managing their environmental and social risks.
UN Principles for Responsible Investment (UN PRI)	An UN-supported international network of investors working together. Its goal is to understand sustainability implications for investors and support signatories to incorporate these issues into investment decision-making and practices.
IFC Operating Principles of Impact Management (OPIM)	These make up the international organisation's framework to provide regulations, transparency, and trust in the global impact investment market. The principles stipulate specific ways to assess the impact management of financial institutions.
IRIS+ by the Global Impact Investing Network	The IRIS+ Thematic Taxonomy document describes the generally accepted definitions of Impact Categories and Impact Themes, providing a shared language for describing, assessing, communicating, and ultimately comparing impact performance.
Social Performance Task Force (SPTF)	The SPTF engages with stakeholders to develop, disseminate, and promote standards and good practices for social performance management and reporting. It encourages sectoral self-regulation to improve the credibility and effectiveness of inclusive finance.
Carbon Disclosure Project (CDP)	The CDP is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states, and regions to manage their environmental impacts.
The Sustainability Accounting Standards Board (SASB)	The SASB provides a complete set of globally applicable, industry-specific standards that identify the minimal set of financially material sustainability topics and their associated metrics for the typical company in an industry.
Global Reporting Initiative (GRI)	An international independent standards organisation that helps businesses, governments, and other organisations understand and communicate their impacts on issues such as climate change, human rights, and corruption.

Table 12.2. (cont.)

Initiative	Description
Harmonised Indicators for Private Sector Operations (HIPSO)	The Harmonised Indicators MoU reflects the commitment of 28 development finance institutions towards long-term collaboration and, most importantly, a focus on better serving their clients.
Global Impact Investing Rating System (GIIRS)	GIIRS is a rating system that tracks the level of impact of investors' money. Using additional criteria, it builds on the IRIS Catalogue of Metrics to generate an overall fund score for a variety of business models in which the fund invests, allowing investors to objectively understand the environmental and social impacts.
Taskforce on Climate-Related Financial Disclosures (TCFD)	The Financial Stability Board created the TCFD to improve and increase reporting of climate-related financial information. It can more effectively evaluate climate-related risks to companies, their suppliers, and competitors.
Climate Disclosure Standards Board (CDSB)	The CDSB is an international consortium of business and environmental NGOs committed to aligning the global mainstream corporate reporting model to equate natural capital with financial capital.
Taskforce on Nature-Related Financial Disclosures (TNFD)	The TNFD will deliver a framework for organisations to report and act on evolving nature-related risks, to support a shift away from nature-negative outcomes.
Partnership for Biodiversity Accounting Financials (PBAF)	The PBAF Standard enables financial institutions to assess and disclose loans and investments impact and dependencies on biodiversity.

based metrics, reporting, and verification systems that can inform investors and corporates on their investments' and projects' environmental impacts can help overcome some of these concerns. To create transparency for investors, the public sector can introduce regulatory requirements for adherence by actors across the financial industry. The public sector can also provide funding to assist the design and development of low-cost monitoring, reporting, and verification solutions. The sustainable finance community needs to prioritise the following actions:

- Clearly define green investments: Regulation can help form a universal understanding of definitions, classifications, and how actions are understood and

considered. An example is the new European Union Sustainable Finance Disclosure Regulation, which, will require all financial actors to disclose how green their investments are based on the EU taxonomy.

- Innovate in impact measurement and verification, to develop new ways and cost-effective solutions: This involves collecting data on multiple impacts beyond those covered by traditional ESG metrics, including on adaptation and natural landscapes; working with existing initiatives to contribute towards global best practice on impact measurement and priority-impact metrics.
- Strike a balance between the range of reported metrics and associated data-collection costs: Metrics should not be so burdensome that they become uncommercial and detract investment.
- Promote transparency and accountability in impact reporting: This should aim to account for impacts in ways that resonate with farmers, consumers, and all key stakeholders, as well as provide support to initiatives that seek to improve impact accountability.
- Support harmonisation of impact standards: Impact standards should be simplified to increase the reporting efficacy and attract additional impact-focused financing.

12.6 Way Forward

Sustainable finance has great potential to fund the necessary food-system transformation and innovations under a changing climate. To effect this transformation, current major sources of finance in the sector need to be targeted, new sources of funding identified to mobilise additional capital resources, and current financing reorientated to reduce the food system's contribution and vulnerability to climate change. To achieve this, three core areas should be focused on. Firstly, attractive investment opportunities for finance actors must be created, to deploy sustainable finance through leveraging innovative financial instruments and mechanisms. Secondly, the capacity of financial intermediaries to accurately assess risk and deploy risk-mitigating mechanisms must be built, to mobilise additional capital. Thirdly, robust, science-based metrics and cost-effective data collection and monitoring systems should be championed, to safeguard positively impactful finance.

Notes

- 1 Greenwashing is defined as behaviour or activities that make people believe that a company is doing more to protect the environment than it really is (Cambridge English Dictionary, 2022).

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