Funding the Future: What It Takes to Transform Brazil's Food System

Executive Summary

Transforming food systems into sustainable, equitable, and resilient systems is critical for achieving global climate, biodiversity, and health goals. Global food systems contribute to more than a third of greenhouse gas emissions, significant biodiversity loss, and widespread health disparities. These impacts of global food systems – their hidden costs – are estimated to exceed USD 10 trillion annually. To address these challenges, mobilizing and aligning financial flows is essential to bridge the estimated USD 200–500 billion annual investment gap required to transform the global food system by 2050.

Brazil stands out as a critical player in the transformation of food systems, yet its food system policies are characterized by deep contradictions. Brazil is an essential player in the global food system transformation as it is one of the world's largest food producers and the second-largest emitter of agrifood-related greenhouse gas emissions. Its unique assets, including extensive arable land and unparalleled biodiversity, position the country as a global leader in sustainable food systems. Yet Brazil's food system policies are characterized by deep contradictions. While policies like the National School Feeding Program (PNAE) and the Food Acquisition Program (PAA) prioritize family farming and local, minimally processed foods – thereby supporting the shift to healthy diets – tax benefits and subsidies for the production of ultraprocessed foods and agrochemicals undermine efforts to promote sustainability and health.

In addition, some of the country's most pressing food system challenges, such as its decreasing diversity and the high levels of food waste, would require a stronger policy focus. The resilience of Brazil's food systems is hindered by reliance on a narrow range of crops and livestock, which increases vulnerability to climate shocks. Availability of technical assistance is limited, and more focused on the larger supply chains. Food loss and waste remain persistent challenges,

Brazil is an essential player in the global food system transformation as it is one of the world's largest food producers and the second-largest emitter of agrifood-related greenhouse gas emissions.

with Brazil ranking sixth globally in terms of food waste. Initiatives like food banks, public-private partnerships, and the revision of the national strategy for food loss and waste show promise but require scaling and improved coordination.

Enhancing financing for more sustainable and diversified food production would require more funds as well as greater coherence across policy incentives. The financial landscape of Brazil's food system is complex, with rural credit serving as a critical lever for agricultural financing. However, most credit flows are concentrated on large scale agriculture and commodity exports like soy, while financing for sustainable and diversified agriculture remains limited in comparison. Family farmers—who are pivotal for healthy food production—face significant barriers to accessing credit and resources. Encouraging progress has been made with programs like Pronaf, RenovAgro and the National Plan for Agroecology and Organic Production, to support sustainable agriculture, including family farming. Directing more funding to these programs, however, would be insufficient to support at scale the food system transformation the country needs. A comprehensive revision of sustainability criteria applied to subsidized credit, enhanced monitoring systems, and coordination among the multiple existing programs are essential to amplify their impact and ensure coherence in incentives.

To address these challenges, this report recommends a coordinated agenda that aligns financial flows with sustainability objectives. By examining the different financial flows that characterize food systems in Brazil, the report identifies specific recommendations for different actors:

- Priorities for the national and local governments include reforming rural credit policies, strengthening sustainability criteria, and fostering localized supply chains for healthy and affordable diets. Exploring new blended finance models would also be key to mobilize private finance.
- Private finance should scale green bonds, blended finance models, and risk-mitigation instruments while embedding sustainability metrics in decision-making.

Development finance and philanthropy can play catalytic roles by de-risking investments and funding capacity-building programs, particularly for small-scale farmers.

- Supply chain operators must promote sustainable practices by ensuring fair pricing, improving traceability, exploring and fostering better production practices and supporting certification schemes.
- Consumers need increased access to diverse and sustainable food, and to demand better access to transparent information on the health and sustainability aspects of food products, and learn to internalize that information into their choices.

Together, these efforts can mobilize the capital required to transform Brazil's food systems, unlocking economic, environmental, and social benefits that extend far beyond its borders. With the right financial mechanisms, partnerships, and systemic coordination, Brazil has a unique opportunity to lead global efforts in creating a more sustainable, just, and resilient food future.

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Foreword

Patricia Ellen,
FOLU Brazil, Systemiq Brazil

President of Systemiq in Latin America and former Secretary of Economic Development, Science and Technology for the State of São Paulo; specialist in transforming food, energy and technology systems across value chains and emerging economies.

We are living through a defining moment of planetary transition. How we join forces – on how and what we feed ourselves, how we respect planetary boundaries, and how we create safe spaces for cross-sector inquiry into food systems and food security – is critical. This report is a call to action: to be as inclusive as possible when considering all actors in a just, healthy and environmentally viable food value chain.

In Brazil, the scale of the challenge is matched only by the scale of the opportunity. As one of the largest food producers in the world and home to unique natural assets, Brazil plays an essential role in the global food system and is well positioned to lead the transition toward sustainable food systems. The report estimates that the global **hidden costs of greenhouse emissions, biodiversity loss and health disparities amount to more than US$10 trillion annually**. **Brazil's hidden costs amount to around US$ 500 billion per year**, and a credible transformation into a more sustainable, equitable and resilient system could **cut more than US$ 200 billion a year by 2050**.[1] These figures help translate what many already experience in everyday life – and in our economy, affecting the most vulnerable populations the most.

The need to build a prosperous model for people, nature and business became even clearer to me when I served as Secretary of Economic Development for the State of São Paulo. During the COVID-19 pandemic, I experienced one of my biggest awakenings. As we had to take bolder decisions while weighing their systemic impact on our communities on a daily basis, we learned that the effects of climate and health crisis always affect vulnerable communities in a disproportional way. At the same time, that period brought a pause – and a call back to nature and to action, that created a new sense of urgency for leaders from public, private and social sector to give their contribution towards more sustainable, just and resilient land and food systems.

While this report focuses on Brazil, I encourage readers to use it both for local action and as part of global strategy. Today's economic and trade systems are deeply interconnected. May we continue to collaborate on how we finance the future – and pace ourselves with the steadiness required to transform food systems.

Foreword

Dr. Gunhild A. Stordalen,
Co-Founder & Executive Chair, EAT

The food system has immense potential as preventative medicine for both people and planet, but is currently contributing to widespread damage. There is a strong economic rationale for action both at the global and country level, and the updated and expanded EAT-*Lancet* Commission (2025) details the solutions and policy measures that governments around the world can adopt.

Brazil's unique natural assets and global role in food production make it an essential player in transforming global food systems. Together with the other initiatives that the country is taking, including those detailed in its revised Nationally Determined Contribution, transforming food systems requires a clear focus on aligning financial resources in support of the goal of more healthy, sustainable and just food systems.

This report points to concrete steps that different actors, whose expenditures and investments shape the Brazilian food system, can take to ensure that public and private resources are deployed at scale to support the food system transformation. It particularly emphasizes the role that the public sector can play in providing a clear and predictable policy environment to catalyze private investment in the transformation.

Delivering on this agenda will require the same visionary leadership and commitment that Brazil has brought to other areas of policy making. For example, the Global Coalition around Hunger builds on the unique experience of Brazil in creating effective programs that can help the poor and vulnerable meet their food security needs. President Lula has promised to end deforestation and degradation in all Brazilian biomes by 2030, and the new nutritional guidelines break new ground by focusing on the need to avoid ultraprocessed food. Moving from the ambition enshrined in these and other policy initiatives to practical implementation is where the battle to finance a healthy, sustainable, and just future for Brazilian food systems will be won or lost.

About this White Paper

About EAT

EAT is an international science-based platform focused on transforming the global food system to make it more healthy, sustainable, and equitable. EAT brings together experts, researchers, policymakers, business leaders, and stakeholders from various sectors to collaborate on addressing pressing challenges related to food, health, and sustainability. EAT is committed to playing a significant role in shaping the global discourse on healthy, sustainable, and equitable food systems through research, science communication, convening events, and facilitating partnerships among diverse stakeholders to achieve a better food future for all.

About FOLU Brazil

The FOLU Brazil coalition consists of eight core partners: WRI Brasil, Systemiq, CEBDS (the Brazilian Global Network Partner of WBCSD), Coalizão Brasil, Clima, Florestas e Agricultura, Unicafes, AYA Earth Partners. Instituto Regenera, Instituto Comida do Amanhã and Pacto Contra a Fome. By working together, the coalition aims to be one of the main references for food systems transformation in the country, integrating improved food production, environmental protection and socioeconomic development through research, advocacy, and the support of project implementation for scaling. FOLU Brazil's overall objective is to support the Brazilian government and private sector in designing and implementing better science-based policies, tools and commitments to transform its food systems, both locally and globally.

About this Document and Consultation Process

The EAT-*Lancet* Commission (2025) presents a global Planetary Health Diet that is healthy, just and safe for both people and planet. In preparation for the launch of the 2025 report, EAT hosted 'EAT Action Dialogues' to engage with stakeholders in the finance sector and co-create solutions for transforming food systems, in support of the Commission's findings. These dialogues were convened by EAT, co-hosted with the International Food Policy Research Institute (IFPRI), and supported by the Food and Land Use Coalition (FOLU) in October and November 2024.

Building on these discussions, a Stakeholder Brief on Finance was developed offering global recommendations to align financial flows into food systems in support of reaching the targets set by the EAT-*Lancet* Commission (2025). This white paper aims to translate the outcomes of the global dialogue series and the Stakeholder Brief to country-level and context-specific recommendations in Brazil.

1. The Global Consensus on Transforming Food Systems

Global awareness of the need to transform food systems for the health of people and planet has been growing, and there is a rigorous economic case underpinning this argument.

The **Food System Economics Commission** (FSEC) estimated that global food systems are responsible for at least USD 10 trillion hidden costs yearly. In contrast, the net economic benefits of transforming food systems are on average in the **range of USD 5-10 trillion for the period 2020-2050**. Globally, a consumption shift towards the Planetary Health Diet (see page 11), that is a healthy diet less intensive in animal based food, alone could account for over two-thirds of those net benefits, by bringing benefits to human health but also allowing for more sustainable production patterns. Based on a Brazil specific scenario, it has been estimated that the hidden costs of Brazil's food system, which currently amount to about 500 billion a year, could be cut by **more than 200 billion USD annually** over the period to 2050.

While specific analyses differ, there is a global consensus that a transition to healthy, environmentally sustainable and just food systems calls for an integrated agenda, addressing the following policy priority areas:

Consumption of Healthy Diets

Addressing all forms of malnutrition, including overweight and obesity, encompasses both food security and affordable diets for all. This approach aims to address the undernourishment of almost 1 in 10 people and the lack of affordable healthy food experienced by more than 3.1 billion people worldwide.

Convergence towards the Planetary Health Diet (see page 12), recommended by the **EAT-*Lancet* Commission** (2019, 2025), would imply adjustments of different magnitude for different groups of populations and across different geographies. Crucially, this change in consumption patterns alone could deliver at least two thirds of the benefits of transforming food systems overall, given how changes in demand would help transform the supply-side of food systems. Beyond changes in diets, addressing the inequities that constrain food access despite more ample global food production would be required to deliver fully on this agenda.

Environmentally Sustainable Production Throughout the Food System

Food systems account for about a third of global emissions, with conversion of land to agriculture and agricultural production responsible for much of that amount, notably in the form of methane emissions from ruminant livestock and rice production. Food systems are also contributing significantly to biodiversity loss and pollution. Farming practices exist that emphasize environmental performance along with production and offer pathways for maintaining and/or increasing yields while reducing environmental degradation and in some cases mitigating food system contributions to planetary boundaries.

Strong Livelihoods and Justice Throughout the Whole Food System

Higher incomes and better jobs (including working conditions) and representation of workers and actors across the food system. Addressing injustice requires reducing inequalities across the entire food system, through for example the mobilization of finance and knowledge sharing from those most responsible for food system's negative impacts to those most affected.

Protection of Intact Land and Restoration of Degraded Land

Ensuring the ecological sustainability of food systems requires halting or limiting the expansion of agriculture into remaining intact ecosystems and wilderness areas. Restoration of degraded lands can help essential environmental socioeconomic services recover and flourish, including the regulation of climate and water cycles, and support for sustainable and healthy food systems. Improving traditional community's access to technology and social innovations for sustainable forest management and food production is also essential to reconcile improving the human wellbeing with the protection of natural resources in the Brazilian biomes.

Addressing injustice requires reducing inequalities across the entire food system...

Planetary Health Diet in Brazil

The Planetary Health Diet (PHD) is defined as a healthy diet with a low environmental impact, with the potential to reduce deaths attributable to non-communicable chronic diseases (NCDs). They are particularly relevant in the Brazilian context, where obesity and NCD rates are high and increasing, while the consumption of ultra-processed foods has risen in recent years. The PHD recommendations could be adapted to the Brazilian context through a set of interventions aimed at integrating them with the current healthy eating guidelines in the respect of the country's biodiversity and food culture while reinforcing and enhancing well-established public policies.

The Brazilian Dietary Guidelines are the main reference for promoting healthy eating in the country. The guidelines are widely recognized internationally for their pioneering recommendations, which include the consideration of food processing levels. The golden rule of the Guidelines is to prioritize fresh or minimally processed foods and their culinary preparations while avoiding the consumption of ultra-processed foods. Additionally, the Guidelines emphasize practices such as commensality and the development of cooking skills, reinforcing their holistic approach to healthy and sustainable eating.

The recommendations of the PHD have great potential for integration with the Brazilian Dietary Guidelines. Recent data, however, show that on average the Brazilian diet, characterized by high red meat consumption and low intake of fruits and vegetables, scores only 30% on a scale measuring adherence to the PHD. This is despite widespread consumption of traditional foods of the Brazilian culture, such as beans and cassava (also known as manioc or yuca). Food processing represents a significant challenge for adherence to the PHD recommendations. Approximately 20% of the Brazilian diet consists of ultra-processed foods, a figure that has increased over the past 10 years. While this percentage is lower than in other countries such as the United States and England,it is concerning because the consumption of ultra-processed foods is directly associated with lower adherence to PHD recommendations.

Brazil's rich biodiversity and its potential for diverse agriculture, combined with the fact that more than half of the population's calorie intake comes from fresh or minimally processed foods, offers a unique opportunity to adapt the PHD to the local context. This can be achieved by emphasizing native and traditional foods, such as beans, cassava, and unconventional food plants, while reinforcing the clear message that ultra-processed foods are not recommended. Red meat, deeply rooted in the country's food culture and regional dishes and associated with celebration and success, should see a gradual reduction in consumption, allowing the necessary dietary shifts toward sustainability to respect the population's culinary traditions.

In addition, integrating the PHD with the Brazilian Dietary Guidelines calls for encouraging sustainable agriculture, promoting foods from family farming, respecting regional dietary habits, and valuing Brazil's culinary diversity while strengthening tax and subsidy systems that allow for better access to health and sustainable foods. Additionally, it is crucial to strengthen programs and public policies already aligned with these practices, such as the National School Feeding Program, the New Food Basket, the National Food Supply Plan and the Food Acquisition Plan. The Health Education program within the context of the Unified Health System also plays a strategic role in promoting healthy habits, preventing diseases, empowering citizens to make informed health decisions, and strengthening the bond between communities and healthcare services. Finally, the translation of the recommendations of the guidelines into effective changes in dietary patterns would require addressing the poverty and chronic undernourishment of particularly vulnerable groups, such as the indigenous populations of the Amazon and the great majority of the rural poor in the Northeast.

Sources: the EAT-Lancet Commission (2019, 2025); Leandro Teixeira Cacau, Maria Laura da Costa Louzada, Ricardo Abramovay, Carlos Augusto Monteiro "Contribution to the Consultation on Financing the Food System Transformation in Brazil" mimeo, Center for Epidemiological Research in Nutrition and Health, University of Sao Paulo (Nupens/USP), Brazil; VALENTIM, J. F. In: SEMINÁRIO FORUM DO FUTURO, 2024, Oslo, Noruega. SUSTAINABLE SOLUTIONS COMING FROM THE TROPICS Will there be Climate, Food and Peace without Tropical Peoples' access to Science, Quality of Life and Social and Technological Inclusion?: annals. Brasília, DF: Forum do Futuro, 2024. p. 96-98. Available here.

More Circular Food Systems with Reduced Food Loss and Waste

Food loss and waste can either be prevented at source or mitigated through circular economy measures. An estimated 66 kg of food (dry matter) per capita is currently lost or wasted, and current trends indicate such waste to increase by as much as 16% by 2050, reaching 76 kg per capita.

Resilient Food Systems that Maintain Food and Nutrition Security in the Short and Long Run

Consuming healthy diets, providing higher incomes and better jobs, protecting and restoring land, and diverse food systems producing in an environmentally sustainable fashion, all help to give food systems the capacity to cope with sudden shocks. Their resulting resilience is particularly important for protecting the most vulnerable; measures that create more redundancy and adaptability in food systems and reduce the impact of shocks are therefore an essential component of food system transformation. Accelerating the transition from current predominantly single species towards biodiverse crops and livestock production systems is also an important element of the resilience agenda, as it has been powerfully argued in the case of Brazil.

Aligning financial flows with the objectives of the food system transformation and scaling up resources complements underpins the feasibility of all other aspects of the food system transformation. The Food System Economics Commission (2024) estimated that implementing the comprehensive agenda discussed above could cost an additional 200-500 billion USD a year until 2030. Of these, 200 billion USD covers investments in rural infrastructure, the protection and restoration of forests, the reduction of food loss and waste, and support for dietary shifts and agricultural research and development. The remainder of the costs cover the safety net support needed to keep food affordable for the poorest, especially in the earlier phases of the food system transformation.

Brazil has unique potential to contribute to the global food system transformation. Brazil is already a key player in production and exporting of basic food system related commodities such as soy, corn and cattle. At the same time, it is the second biggest emitter of greenhouse gas (GHG) emissions associated to the agrifood system, with the biggest factors contributions being net forest conversion, enteric fermentation, manure and agrifood systems waste disposal. The country, however, has unique potential to contribute to the global food system transformation, including its extensive capacity for regenerative agriculture, unparalleled biodiversity, and the potential to integrate sustainable practices into large-scale food production systems. Furthermore, addressing the chronically low efficiency of the beef sector could significantly decrease pressures on land conversion, particularly high in the market for domestic consumption. The World Bank estimates that Brazil is the country with the biggest cost-effective potential to reduce GHG emissions from demand-side measures and from agriculture, forestry, and other land use.

Brazil faces significant challenges in transforming its food systems, including high levels of chronic undernourishment, and significant financial barriers for farmers to adapt. An estimated six million people experience chronic undernourishment and 18,4% of the country's population face moderate or severe food insecurity, while the country ranks sixth in the global ranking for food waste. Lack of finance is a major constraint for four fifths of Brazilian farms. The revised Nationally Determined Contributions (NDC) sets a goal to reduce GHG emissions by 59% to 67% by 2035, compared to 2005 levels. While this commitment is more ambitious than the previous NDC and includes notable improvements, Brazil's Climate Observatory considers that the goal was not ambitious enough to comply with IPCC recommendation to limit global warming to 1,5°C.

High ambition is needed to address the challenges and regional disparities that continue affecting the country. Food inequalities are deeply rooted in structural and social disparities, disproportionately affecting vulnerable populations and limiting their access to nutritious and affordable food. High levels of income inequality – Brazil ranks sixth globally in the Gini index – are reflected in regional disparities and limit equitable access to resources, including food. Moreover, spatial and economic dynamics significantly influence healthy eating patterns, as the case of food deserts found in urban peripheral areas or small cities with lower social indicators. In these regions, limited access to fresh food often forces residents to rely on ultra-processed foods, exacerbating nutritional disparities and health challenges.

Brazil specific scenarios identify the elements of a food system transformation integrated agenda, and underscore the role that addressing financing constraints play in that transformation. The FSEC Food System Transformation pathway for Brazil suggests that ending illegal deforestation, incentivizing sustainable resource use, improving access to finance particularly for small farmers and ensuring a fair transition to sustainable, equitable and resilient food systems are strategic priorities for transforming Brazil's food system. The focus on family farmers is seen as strategic for multiple reasons. These farmers are very vulnerable to climate change and extreme events and cannot invest in adaptation without supporting incentives and public investments. In addition, by representing a large share of the rural population these farmers are key to the poverty reduction and food security agenda, fostering more diverse food production and availability.

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2. Shaping the Landscape of Food System Financing: Opportunities and Challenges

While the word "financing" might bring to mind only sophisticated financial operation from large scale investors, food systems are shaped by a variety of different flows, including everyday consumption decisions by consumers and government tax incentives.

The financial flows shaping food systems are summarized in Figure 1. They include two financing flows internal to food systems, that is consumer expenditures and how those remunerate food chain operators and shape their expenditures, investments and saving; and four financing flows external to food systems, that is international development finance (concessional and non-concessional loans, grants, and other financial support from multilateral development banks, bilateral aid agencies, and philanthropic groups), national government budgets (expenditures and revenues), banking system operations and capital market finance.

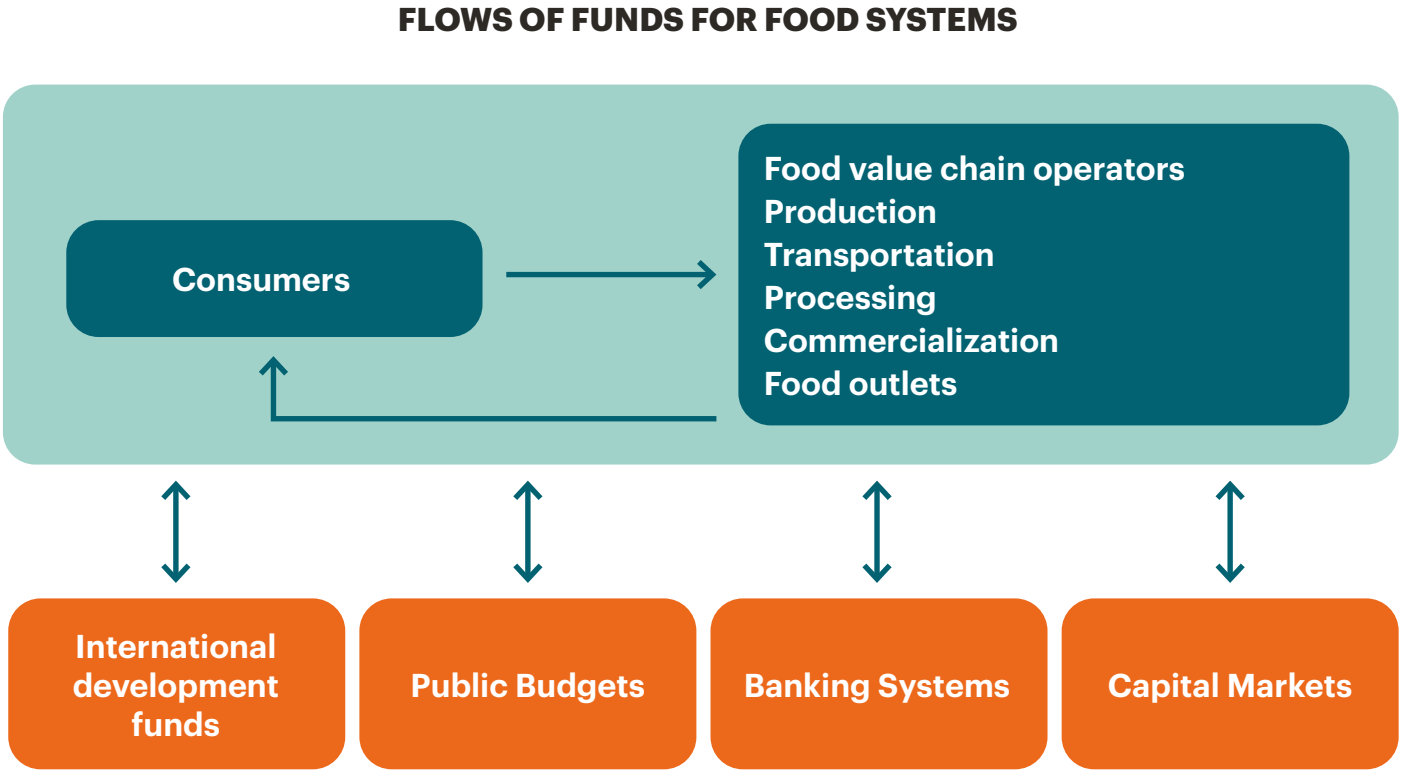

Figure 1 Source

The following subsection mostly draws on the Landscape of Climate Finance for Land Use in Brazil 2021–2023, by the Climate Policy Initiative, as the most comprehensive source on food system related financing in the country.

The main characteristics of these flows over the last few years include:

- A growth in consumption in ultraprocessed food at the expense of traditional diets. The share of ultraprocessed food in family food consumption is estimated to have risen from 14 to 19% over the period 2003-2018.

- A growth in public finance directed at sustainable food systems even though the majority of financing is not allocated based on sustainability concerns. Rural credit, the key tool for food system financing, has been growing since 2020 but only a limited share is allocated based on sustainability criteria. The latter are not defined clearly and are monitored through weak mechanisms.

- The amount of climate finance allocated for land use for agrifood systems has been growing – between 2021 and 2023 it amounted toUS$17.1 billion on average compared to US$6.6 Billion average from 2015 to 2020. Over three quarters of the total were directed at food (crops and cattle) with bioenergy, forests, and multi-sector initiatives accounting for the balance. Crops received the largest share at US$12.7 billion of food financing, with cattle accounting for US$0.6 billion.

- 70% (US$11.9 billion) of financing for land use is financed by Private National sources, mainly financial institutions, corporations and rural producers. Public national sources account for 27% (US$4.6 billion), provided mainly from the Federal State and state level governments and the National development bank (BNDES) though public controlled banks (e.g. Banco do Brasil, Banco da Amazonia, Caixa) also play a role

- While public national sources are much smaller than private ones, the main instrument of disbursement is Rural Credit, directed by the federal Safra Plan, at an average of US$9,9 billion annually (58%), followed by Risk Management with US$2.6 billion (15%), responsible for promoting adaptation with programs such as The Rural Insurance Premium Subsidy Program, PROAGRO, and Crop Guarantee Fund, to be further analyzed in the following sections.

- Public international flows account for only 3% of financing (US$ 0.53 billion), while private international flows are very limited (US$0.02 billion, that is 0,1% of the total). The international sources include multilateral development banks like BID and World Bank (US$0.33 billion), international governments like Germany and Norway (US$0.16 billion), climate funds (US$0.04 billion) and philanthropies (US$0.01 billion). While the role played by international financial flows in financing food system sustainability is relatively minor, it is a strategic one. Initiatives such as the World Bank's investment in the Sustainable Development of Family Agriculture in Mato Grosso and the promotion of agroecology in Pernambuco are good examples of crucial resources delivered to groups that would otherwise be underserved.

- Capital markets and other financial instruments for land use, while holding significant potential, remain challenging to analyze due to limited data transparency and standardization. Among the most relevant instruments for food systems are Thematic Bonds, with approximately 20% of their allocation directed toward crops and cattle.

- Blended finance aimed at promoting a more sustainable food production system without land conversion are still in their developing stage in Brazil. However, they hold significant potential to become key instruments for attracting private investment and bridging the financial gap needed to support sustainable agriculture, particularly for small-scale producers. Examples include &Green, a global Impact Investment Fund, Agri3, a global trust fund and technical assistance initiative towards sustainable agriculture, and the Responsible Commodities Facility, that issues green bonds to finance responsible soy production. The main challenges faced by these initiatives include the traditional low-risk appetite of investors, high transaction costs, difficulties in scaling projects, and the need for better coordination among the diverse stakeholders involved in blended finance.

A variety of factors, ranging from policy incentives to preferences and tastes, to profitability has shaped these flows. This section maps the policy incentives and resources shaping financial flows into each of the policy priority areas described above -- consumption of healthy diets by all, an environmentally sustainable production throughout the food system, strong livelihoods and justice throughout the whole food system, protection of intact land and restoration of degraded land, more circular food systems with reduced food loss and waste, and resilient food systems. This exercise forms the basis of the policy recommendations to increase financing of the food system transformation in Brazil offered in next section.

Consumption of Healthy Diets

Ultraprocessed foods have become cheaper than fresh and minimally processed foods in Brazil, contributing to fueling their consumption. The decline in relative prices of ultraprocessed food might be related to the ultraprocessed food industry's capacity to adapt formulation according to market changes, and the economies of scale associated with major industry players. In addition, as agricultural production is focused on commodity exports, the internal food market might be more subject to international price variations, putting pressure of farmers to switch from the production of healthy foods such as fruit and vegetables to commodities such as soy.

Tax exemptions can play a significant role in supporting healthy food consumption choices, by making healthy foods cheaper than others, but in the case of Brazil their design is not aligned with the nutritional guidelines. From a fiscal point of view, these tax exemptions are a subsidy that the government distributes to producers and consumers of tax-exempt products. While several food items are subject to tax-exemptions in Brazil, it is not clear that such exemptions act in support of healthy diets. In 2024, the federal government updated the list of basic food items as a guideline for public policies, excluding ultraprocessed foods and prioritizing fresh and minimally processed foods. These updated guidelines have the potential to influence the ongoing tax reform discussions, shaping special tax conditions, including tax exemptions for these fundamental food items. However, in the process of definition of items subject to a selective tax, designed to additionally tax items that are harmful to health, ultraprocessed foods were not included, despite recommendations from the Ministry of Health, and there is also a possibility that sugary beverages may be exempted.

Lower prices for healthy food through tax exemptions could complement the negative incentive already provided by the mandatory front label pattern introduced in 2022 to flag high content of added sugars, sodium or saturated fat. A survey indicated that 46% of consumers decided not to buy or planned to reduce their consumption of the newly flagged products. Companies have also made alterations in ingredients to avoid having the label warning, indicating the positive impact of the measure.

In addition to shaping incentives, the government supports programs that combine the promotion of healthy diets with the support of **agroecological practices and elements of social justice**, such as PAA (Food Acquisition Program) and PNAE (National School Feeding Program). The PNAE program, initiated in 1979, ensures healthy and adequate food in public schools, requiring at least 30% of the food to be sourced from family farming, fostering local and sustainable production and strengthening rural economies. The program benefits over 40 million people and it's considered globally one of the biggest and most well-established school feeding programs. The PAA program, initiated in 2003, includes the direct purchase (without the need for public bidding) of food from family farming to people facing food insecurity, social assistance network and philanthropic education institutions. In doing so, the program strives to ensure food security and nutrition, promote sustainable production, and support small-scale farmers by providing access to institutional markets.

Environmentally Sustainable Production

Rural credit is the main source of food system finance and is steered by government policy, both directly through programs and indirectly through mandates on the provision of credit; its focus on sustainable production has increased over time. Initially institutionalized in 1965, rural credit was designed to drive economic development and enhance agricultural productivity. The Plano Safra (which can be translated to "Harvest plan") is annually determined by the federal government since 2003 and establishes incentives, values, lines of credit and agricultural policies. Credit provided is divided into family agriculture and agribusiness, and into investment, cost financing, and commercialization. Programs under Safra Plan include Pronaf (National Program for Strengthening Family Farming, since 1996), RenovAgro (Financing Program for Sustainable Agricultural Production Systems, first version started in 2010), ModerFrota (Program for the Modernization of Agricultural Tractor Fleets, Associated Implements, and Harvesters since 2000), Proagro (Agricultural Activity Guarantee Program since 1973), among others. Plano Safra also establishes better financing conditions for producers that follow certain sustainability criteria, such as analyzed and active CAR (Rural Environmental Registry). RenovAgro Financing Program for Sustainable Agricultural Production Systems has dedicated lines targeting recovery of degraded pastures, no-till farming, ILPF (Crop-Livestock-Forest Integration) and agroforestry systems, forests, environmental regularization, soil management, among others.

Rural credit has been growing significantly over the last five years, though the growth in climate related rural credit has been lower and might be overestimated. Central to the classification of rural credit as sustainable is adherence to a set of self-declared sustainability measures. Changes in the measures recorded and the weakness of the monitoring might have driven the recent increases.

Although initiatives promoting sustainability have grown in recent years, the majority of **rural credit remains heavily concentrated on traditional monoculture commodities for export.** For example, the RenovAgro (formerly known as ABC, Low-Carbon Agriculture Program), amount has grown 54% from 2021/22 to 2024/25, but the 2024/25 value is only 2% when compared to the total amount of rural credit for commercial agriculture. Additionally, when analyzing the applications of overall rural credit in 2023, 54% of all credit is concentrated on three items: soy (24%), cattle (20%), and corn (10%). There is also a concentration of value and location: 58% of the credit amount in 2023 was granted to South and Central-West regions, even though they represent 38% of the number of contracts, indicating larger amounts per contract. This dynamic is further amplified by the migration of large investors to commodity futures markets and the leasing of extensive land areas, which accelerates the transformation of land and food into financial asset classes.

In addition, subsidized financing remains available to farmers whose production has negative environmental impacts, raising questions on the adequacy of the sustainability criteria used to screen beneficiaries and the programs' monitoring processes. Data from 2020-2022 reveals that 31% of the property owners that promoted deforestation (either legal or illegal) during this period also received subsidized credit, a value that represents 15% of all subsidized credit. Although these cases represent only 7% of all subsidized credit recipients, they account for a significant share of deforestation. Notably, 74% of the deforestation linked to subsidized credit is concentrated in the largest 5% of properties. One possible explanation is that the criteria for denying credit do not adequately address deforestation. Properties with embargoes for illegal vegetation suppression are ineligible for subsidized credit, but less than 5% of recently deforested areas have been subject to such embargoes. This means that a significant portion of areas remains eligible for subsidized credit despite contributing to deforestation. This highlights the importance of strengthening clear sustainability criteria to align financial flows with sustainable practices. More effective and transparent criteria enhance the reliability and attractiveness of public and private investments.

Beyond credit programs, other policies and regulation contribute to unsustainable practices. Compared to international standards, Brazil's regulations are considered less stringent, allowing the use of substances banned in other countries due to their harmful effects. For instance, 41.5% of the active pesticide ingredients approved for agricultural use in Brazil are prohibited in the European Union, 39.6% in Canada, and 25.6% in the United States. In addition, tax exemptions are applied to agrochemicals, considered an essential input for agriculture (in the same category as seeds and bioinputs), regardless of associated health risks and sustainability impact.

New and existing efforts to improve traceability seek to ensure that resources are directed at more sustainable practices **in key commodities such as soy and cattle.** The Soy Moratorium is a voluntary agreement among major soy traders to prohibit the purchase of soy grown on lands deforested in the Amazon biome after 2008. Since its implementation, studies indicate that 97.1% of soy production expansion in the Amazon biome has occurred without contributing to deforestation. Similarly, the Cattle Agreements, established in 2009 by the Federal Prosecution Service (MPF), hold major market players accountable for ensuring their supply chain activities are free from deforestation and other socio-environmental violations. However, complex supply chains and difficulties in data monitoring make the measure of actual reduction of deforestation still inconclusive. Given international investors interest in investing in more sustainable and deforestation free cattle, it has been estimated that the Cattle Agreements could lead to an 88% growth investment in the sector up to 2050. Recently, the state of Pará has announced a mandatory individual traceability policy for cattle, an important tool to provide transparency and accountability in along the supply chain and ensuring that the cattle production was not associated with deforestation areas. Analysis expect that this could also increase the market value of the product, increase productivity and reduce informal markets.

Strong Livelihoods and Justice Throughout the Whole Food System

Programs to strengthen food system livelihoods focus on family farming considered a big contributor to sustainable and healthy food production country wide. Family farming accounts for 77% of agricultural establishments in the country and 67% of rural employment. Programs in support of family farming aim to remove constraints in access to credit and other inputs, as well as to support more sustainable production. Pronaf (National Program for Strengthening Family Farming) includes targeted initiatives for land regularization, which is crucial for empowering small farmers, as well as dedicated credit lines for women, youth, and those engaged in agroecological practices, fostering inclusivity and sustainability within the sector. However, despite increased participation in rural funding in recent years, access remains limited and unevenly distributed. An estimated 15% of producers receive credit, with concentration of funding in the South and Central-West and on high-value products such as soy and cattle. Additional challenges include issues with land certificates, limited banking and internet access, and barriers to securing credit.

Other forms of support to family farming are provided by programs that focus on nutrition. Beyond the PAA (Food Acquisition Program) and PNAE (National School Feeding Program) programs mentioned above, PLANAPO (National Plan for Agroecology and Organic Production) is focused on agroecological transition, sustainability, and environmental conservation. It integrates financial incentives, strengthening of organic production chains, research, innovation, and the inclusion of social groups such as women, youth, indigenous peoples, and quilombolas in family farming. The plan was first launched for the period 2013–2015 and is now in its third version, covering 2024–2027. Additionally, Constitutional Funds are a financial instrument established in 1989 to promote development in the regions of lower social economic indicators (North, Northeast, and Central-West). A fixed percentage of national tax revenue is allocated to provide accessible credit for producers and businesses operating in key productive sectors, including agriculture. The policy prioritizes smaller producers, ensuring they receive preferential access to resources that support economic growth and reduce regional disparities.

Cooperatives also play a complementary role in addressing financial gaps for smallholding agriculture, offering credit and support to family farmers, who make up over 70% of their membership. By leveraging collective organization, cooperatives facilitate access to public and private credit programs, reduce transaction costs, and provide tailored financial solutions for small producers. They also act as intermediaries, enabling access to subsidized programs like Pronaf and fostering investments in sustainable practices such as agroecology and regenerative agriculture. Representing nearly 50% of Brazil's agricultural GDP, cooperatives enhance productivity, sustainability, and rural growth while empowering family farmers to access markets, build resilience, and support local food security.

Another key aspect of promoting justice in food production in Brazil is access to technical assistance through programs like Pronater (National Program for Technical Assistance and Rural Extension). The program is designed to enhance sustainable agricultural production, particularly benefiting family farmers, quilombola communities, Indigenous peoples, and settlers. However, since 2016, investments in rural technical assistance have significantly declined, limiting its reach and effectiveness. Beyond public technical assistance programs directed at farmers, investments in strengthening capacity are needed by the private sector, and in universities and other civil society organizations. International cooperation can also play a role (such as it started already with China).

Protection of Intact Land and Restoration of Degraded Land

Brazil's land use is central to the country's efforts to reduce its green-house emissions. By restoring the two thirds of pastural land that is considered degraded (about 100 million hectares) pressure to further convert natural habitats can be curtailed. A number of programs address degraded lands in particular, and past experiences show that they can be strengthened, for example through greater coherence of policies and programs, more funding, and better monitoring.

Brazil has made major commitments to halt deforestation and restore degraded land. A goal of zero illegal deforestation by 2030 was established by the federal government in 2021, reflected also in the revised Nationally Determined Contribution published in 2024. In 2023, the Brazilian Government established the National Program for Conversion of Degraded Pastures into Sustainable Agricultural and Forestry Production Systems. This program has the objective of promoting and coordinating public policies aimed at converting up to up to one third of the close to 100 million hectares of degraded pastures or in the process degradation into sustainable agricultural and forestry production systems. The strategy is to condition reduced tax rates to adoption of required and optional adoption of best agricultural, livestock and forestry technical and social innovations, with a view to promoting carbon capture at a level higher than that of degraded pastures. The program seeks external funding and will not depend on subsidies from the federal government.

The RenovAgro (Financing Program for Sustainable Agricultural Production Systems) is organized into several subprograms designed to protect intact ecosystems and restore degraded land. Initiatives include recovery and conversion of degraded pastures, the adoption of non-till farming practices, integration systems (agroforestry, crop-livestock-forest integration), and environmental compliance and land recovery regularization.

However, case studies question the effectiveness of the subsidized credit initiative in promoting actual regeneration and the results achieved when compared to the intended goals. Studies from CPI indicate that the ABC program's (RenovAgro predecessor from 2013 to 2020) credit line that focused on recuperation of degraded pastures accounted to only 2,5% of the goal to recover 15 million hectares by 2020, when taking into consideration the conversion of pastures to other uses. While the program achieved 179% of the targeted area, the resulting mitigation of GHG emissions reached only 35% of the expected goal, highlighting gaps in effectiveness relative to climate objectives. Shortcomings in the program included implementation issues, lack of alignment of the program objectives with other policies and insufficient funding.

Other initiatives, including innovative ones such as the Amazon Fund also support conservation and restoration of degraded lands. Other initiatives that mobilize capital include BNDES (National Bank for Economic and Social Development) Climate Fund, that provides long-term financing for sustainable practices in agriculture and recovery of degraded areas and deforestation, and Amazon Fund, that secures donations mainly from international governments for grant-based investments in projects that include reforestation efforts, and agroforestry systems. The Amazon Fund is recognized as a pioneering instrument for securing international funding for conservation initiatives, tied to the achievement of pre-agreed goals established in collaboration with donors. Public-private partnerships are also mobilized to provide financial mechanisms, as the case of SAFF (Sustainable Agriculture Finance Facility), a fund that provides accessible credit for producers that implement ILPF strategy.

More Circular Food Systems with Reduced Food Loss and Waste

UNEP estimates that Brazil wastes over 20 million tons of food a year. Food loss and waste emerge all along the value chain, though almost 50% of it is estimated to occur during processing and transport. The complexity of the problem, which would require actions across the spectrum of food systems, such as improving cold chains, infrastructure, packaging etc. means that the solution will require multiple interventions and coordination across the whole spectrum of food value chain actors.

Public initiatives towards reduction of food loss and waste include the 2024 revision of the Intersectoral Strategy on Food Loss and Waste by the Ministry of Social Development and Assistance, Family, and Combat Against Hunger containing action plans and guidelines to foster collaboration among multiple stakeholders, public and private, in addressing food loss and waste and increasing impact of actions. Other initiatives include Food banks (private and public), that receive food donations and directs them to social assistance institutions, and public investment programs to modernize their equipment.

A UNEP-supported Public-Private Partnership (PPP) seeks to reduce food waste, improve food redistribution systems, and support hunger relief efforts across Brazil by bringing together key stakeholders, including government bodies, multinational and domestic food businesses, civil society organizations, and donors. These partnerships aim to leverage $500,000 in seed funding to mobilize systemic action, avoid duplication of existing efforts, and foster collaboration among initiatives focused on combating hunger such as Pacto Contra a Fome (a civil society initiative supported by the Federal government) and Todos à Mesa (coalition of companies and organizations).

Promotion of a more circular food system depends on **innovation and capacity building** aimed at reducing food loss and waste. Brazilian Agricultural Research Corporation (Embrapa), a public institution under Brazil's Ministry of Agriculture and Livestock, is focused on research and innovation in agriculture, promoting efficient and sustainable production. Regarding food loss and waste reduction, Embrapa promotes initiatives in partnerships with the public sector, NGOs and international organizations in sustainable consumption awareness campaigns, circular urban food systems projects, technology for reduction of post-harvest losses, and optimization of packaging. Partnerships involving the private sector can be exemplified by the Ellen MacArthur Foundation's Big Food Redesign Challenge, which offers grants of up to 30,000 GBP for projects that develop food products based on circular design principles. This initiative has also mobilized major Brazilian food companies such as Unilever, Danone, Ambev, and BRF.

Resilient Food Systems

With moderate or severe food insecurity at around 30%, Brazil needs to improve its food system resilience, especially as many parts of the country are quite vulnerable to climate change. The country already has a well-established safety net supporting food consumption, but other programs are needed to address vulnerability of food production, particularly of fruit and vegetables.

An important challenge to resilience which has recently been very visible in policy debates is the **reliance on a few species of crop of foreign origin.** Diversity is considered an important factor for more resilient food systems, and even though Brazil concentrates up to 20% of world biodiversity and 30% of world edible vegetable species, most of the food consumed is concentrated in a few species of foreign origin. This trend of food monotony leads to the underutilization of diverse native species, limiting their potential to enhance shorter supply chains, sustainability, and resilience. It favors homogeneous agriculture, which is more susceptible to extreme climatic events and demands higher use of agrochemicals to control pests and diseases. These practices exacerbate soil and water contamination, damage ecosystems, and increase health risks. There have been, however, successful examples of reversal from mono-cropping to biodiverse pastures based on mixtures of grasses with native legumes and in the Amazon and Atlantic Forest biomes, though they remain limited.

Mechanisms in place to achieve resilient food systems include sustainable agricultural practices, such as the implementation of the Agricultural Zoning for Climate Risk (ZARC). This tool supports agricultural producers by providing guidance based on climatic and soil suitability, reducing risks through information such as recommended planting timeframes aligned with cultivation cycles and soil types. Another important mechanism for sustainable territorial planning is Ecological-Economic Zoning (EEZ). The EEZ is an instrument of the National Environmental Policy regulated by decree nº 4,297/2002. It has been used by the public authorities with projects carried out at different scales of the national territory. Municipalities, states of the federation, and federal bodies have implemented EEZs and advanced the connection between the products generated and public policy instruments, with the aim of implementing territorial environmental planning actions in urban and rural areas.

An important challenge in the promotion of resilient food systems is to provide support for small producers, given their greater vulnerability to risks. Technology and capacity building need to be equitable and accessible to these producers, along with guarantees of access to adequate rural credit, infrastructure for commercialization and essential inputs such as water and resilient seeds. Concerns for family farmers are currently being integrated in the sectoral adaptation plans as part of the preparation of the Plano Clima, and these topics will be center stage at COP30.

Public mechanisms of adaptation include Garantia Safra (Harvest Guarantee), part of the Pronaf Program, a guarantee fund for familiar agriculture producers, especially with low income, that benefits producers of certain regions in case of loss associated with climatic events. PSR (Rural Insurance program) is another initiative that promotes risk management practices by subsidizing insurance for rural producers to cover their crops and livestock losses associated with climatic events, or diseases. The coverage of these policies and programs needs to be expanded to all the 27 million people who, in 2023, lived in rural areas in conditions of poverty (from the current level of 49%).

3. Recommendations

The breadth of changes necessary in food systems, both globally and in Brazil, means that all actors involved in financing food systems can contribute to this effort.

Not all actions require large amounts of financial resources to be successful and indeed repurposing existing financial flows is a major element of the agenda. Actions need to be supported by a willingness to forge new partnerships across the public and the private sector to translate scientific targets into credible pathways and investable propositions.

In this section we summarize the priorities for different actors to increase food system financing aligned with the needs of transforming food systems towards healthy, environmentally sustainable and just outcomes.

Priorities for the National Government

The national government can play a major role by aligning the full breadth of government policies in support of transforming food systems, including by supporting local farmers and producers through public procurement. The discussion in the previous section highlights several specific ways of doing so:

Reviewing the full range of incentives provided through rural credit and tax policies to ensure alignment with food system transformation objectives, while carefully balancing the socioeconomic impacts of changes to the current system and allowing grace periods for proper adaptation especially by small producers. This involves for example:

- Providing incentives for sustainable agricultural inputs and disincentives for agrochemical use based on environmental and health impacts.
- Fully aligning tax exemptions with the nutritional guidelines to support healthy diets.
- Strengthening the conditionality in accessing subsidized credit and incentive programs through initiatives like sustainable taxonomy, green certifications, ZARC, mitigation and adaptation plans and enhanced monitoring systems, while ensuring that small producers can meet the requirements and are not negatively affected by stricter policies.
- Integrating the efforts of the Global Alliance Against Hunger with Brazil's strategies and resources to address climate challenges and protect biodiversity effectively.

Strengthening the monitoring, implementation and enforcement of existing programs and policies in support of the food system transformation

- Strengthening the oversight and monitoring systems in programs that support environmentally sustainable practices.
- Enforcing regulations to prevent deforestation, promote sustainable land use practices, and restore degraded lands.
- Enforcing Central Bank regulations on credit restrictions on projects that don't comply with the recommendations of the Task Force on Climate Related Disclosures.
- Aligning agricultural expansion with zero-deforestation commitments and explore carbon market incentives to support climate-smart farming practices.
- Including robust impact assessments for programs like RenovAgro and implement cattle traceability systems to ensure compliance with environmental goals.

Expanding programs that are proving effective in steering food systems towards more healthy, sustainable and just outcomes:

- Expanding access to credit for family farmers and support long-term financing for sustainable initiatives, such as regenerative agriculture, soil restoration, and reforestation, as well as expand direct procurement from family farming, such as through the PAA and PNAE programs.

Addressing food system challenges which have not received sufficient attention so far:

- Fostering shorter, localized supply chains to improve access to fresh, minimally processed foods and reduce transportation emissions.

- Enhancing systems to track and reduce food loss and waste through better data collection, public-private partnerships, and circular food systems like composting and nutrient cycling.

In addition to policy and programs, the government should open new spaces of engagement with the finance sector to tilt the level playing field towards sustainable, just healthy food system investments.

Priorities for the Private Financial Sector

For the private financial sector to support the financing of the food system transformation:

Decisions need to be guided by sustainability and health metrics to manage their risks and support new solutions.

- Private financial institutions need to be able to evaluate the financial implications of non-sustainable practices and provide funding incentives for sustainable alternatives. This might require also advocating for and collaborating with others around the development of new science-based metrics of impact and risk.

- The Green Inventory from the Federation of Brazilian Banks is a first step to support green investments. More should be done to identify and promote investment opportunities that enable private players to engage in the transformation of food systems.

Private financial sector actors should also engage and collaborate with others around advocacy and policy engagement for a transformation towards healthier, just and more sustainable outcomes, as it now happens in other arenas.

- In particular, institutional investors should follow their fiduciary duty to engage with companies to decrease their impacts on nature, climate and human health.

Finally, new financing models should be developed. This might include:

- Collaborating with public and philanthropic sectors to structure blended finance models that leverage private sector capital.

- Expanding the use of green bonds and impact investment funds to drive capital towards sustainable food system initiatives.

- Developing financial instruments to mitigate risks associated with financing sustainable agriculture and food system projects.

Development Finance and Philanthropies

International concessional funding plays a relatively limited role in Brazil's food systems, but an important one. It could strengthen its catalytic role by:

- Developing blended finance models to derisk sustainable agricultural and food system projects.
- Providing patient capital to scale long-term sustainable initiatives, such as reforestation, ecosystem restoration, and regenerative agriculture.
- Funding initiatives that build the capacity of smallholders and communities to adopt sustainable practices.
- Exploring innovative financing mechanisms like pay-for-success models or sustainability-linked loans to incentivize impact.

In addition, development finance institutions could focus on innovation in areas such as mainstreaming health and nutritional impacts in food system investments or grants and supporting the development of new standards and the harmonization of existing ones to foster greater transparency in the market.

Supply Chain Operators

Supply chain operators can play an important role in promoting sustainable practices, by:

- Working in partnerships with farmers, especially family farmers, by offering long-term contracts to minimize risks for those who are striving to adapt to new practices.
- Implementing standardized sustainability reporting frameworks to provide transparent information to consumers and stakeholders across the food chain.
- Investing in technology to enhance traceability, monitor environmental impacts, and optimize resource use.

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