Technical Background Paper

Climate Finance for Sustainable School Feeding: Exploring the Options

Developed for the Sustainable Finance Initiative of the School Meals Coalition

Nathaniel Mason, Tony Kamninga, and Maryam Rezaei

November 2024

The Learning Generation | EDC.ORG | Sustainable Financing Initiative | ODI Global

Key messages

School feeding programmes reach 418 million children per day. Their scale means, if done with the principles of sustainability in mind, they have potential to contribute to improving adaptation capacity of food systems. Improving energy sources for cooking the school meals and promoting healthy diet and food waste reduction all could significantly reduce emissions from food production, supply, and consumption, and shape climate-friendly food practices in schools and, potentially, across pupils' lifetimes.

This provides a rationale – albeit one for which evidence is still emerging – for attracting climate finance to augment both coverage and quality of school feeding programmes. This could also contribute to closing the substantial financing gaps inhibiting further expansion of school meals, particularly in low- and lower middle-income countries, and support achievement of socioeconomic outcomes across education, health, and equity, while also strengthening climate outcomes.

However, climate-related finance flowing to projects focused on or featuring school feeding in recent years has been negligible. School feeding does not feature in the international climate policy discourse, nor in the strategies of the major climate funds. More positively, there are a few countries making reference to school feeding in their climate strategies, including nationally determined contributions, and at least some climate-financed projects include school feeding components.

Barriers to increasing climate finance to school feeding include (i) limited evidence and awareness regarding the climate benefits and (ii) challenges in accessing climate finance, and in implementation, exacerbated by specific features of school feeding programmes. There is potential to overcome these challenges through a range of responses, enabling climate finance to contribute to school feeding programmes. However, realism is needed: competition for climate finance is high and its ability to influence food system transformation – including for climate outcomes – depends on the scale as well as numerous other factors.

How to cite: Mason, N., Kamninga, T., and Rezaei, M., (2024) Climate finance for sustainable school feeding: exploring the options. Technical Note 2, developed for the Sustainable Finance Initiative of School Meals Coalition. ODI Advisory Report. London: ODI Global, https://odi.org

Acknowledgements

The authors extend their gratitude to the reviewers for their valuable comments on an early draft – Akanksha Bapna (Senior Research Fellow, Climate and Sustainability, ODI), Amy Bellinger (Director of Programs, Learning Generation Initiative, Education Development Center), Andrea Galante (Senior Policy Advisor for Food Security and Nutrition, Advocacy and External Engagement, World Vision International), and Bertha Argueta (Senior Advisor, Climate Finance and Development, Germanwatch).

We also thank Kevin Watkins for guidance (Visiting Professor of Development Practice at the Firoz Lalji Institute for Africa, London School of Economics), and Katherine Kullman for supporting the project (Associate Project Director for School Health and Nutrition, Education Development Center).

About this publication

This note is one of a series of papers commissioned by the Sustainable Finance Initiative of the School Meals Coalition – a government-led partnership bringing together research groups, UN agencies, and NGOs working to support the expansion of school feeding programmes. The note contributes to SFI's innovative financing work stream, which is supported by the Rockefeller Foundation.

About the authors

Nathaniel Mason is a Senior Research Associate of ODI's Climate and Sustainability Team, working on intersections in climate, environment, and development finance and policy.

Tony Kamninga is a research officer in the development and public finance team at ODI. He works on financing for environmental action and social inclusion.

Maryam Rezaei is a research fellow in the Climate and Sustainability team at ODI. She leads the work on food systems focusing on pathways to sustainability, climate adaptation, and resilience.

Contents

Acronyms

AF	Adaptation Fund
ASAP	Adaptation for Smallholder Agriculture Programme
BR	biennial reports
BUR	biennial update reports
COP	conference of parties
CRS	Creditor Reporting System
CRDF	climate-related development finance
DAC	Development Assistance Committee
EU	European Union
FAO	Food and Agriculture Organization
FNDE	National Fund for the Development of Education (Brazil)
GCF	Green Climate Fund
GDEC	General Directorate of Environment and Climate Change
GEF	Global Environment Facility
GHG	greenhouse gas
HIC	high-income countries
HLPE	high-level panel of experts
ICF	UK's International Climate Finance
IFAD	International Fund for Agricultural Development
IKI	Germany's International Climate Initiative
IPCC	Intergovernmental Panel on Climate Change
LDCF	Least Developed Countries Fund
LT-LEDS	Long-Term Low Greenhouse Gas Emissions Development Strategies
MCF	multilateral climate fund
MDB	multilateral development bank
MLESD	Ministry of Living Environment and Sustainable Development
LAC	Latin America and Caribbean
NAP	National Adaptation Plan
NC	National Communications
NCQG	New Collective Quantified Goal
NDC	nationally determined contributions
NIR	national inventory reports
ODA	official development assistance
OOF	other official flows
OSS	Sahara and Sahel Observatory
OECD	Organisation for Economic Cooperation and Development
PNAE	National School Feeding Program (Brazil)
PNASI	National Integrated School Feeding Programme (Benin)
PSAA	project-specific assessment approach
SCCF	Special Climate Change Fund

UAE	United Arab Emirates
UNESCO	United Nations Education, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change

Executive Summary

This technical note explores whether climate finance could play a greater role in enabling governments to accelerate the expansion of school feeding programmes. Produced for the Sustainable Finance Initiative of the School Meals Coalition, it addresses two questions:

1 Can climate finance offer new and additional resources for school feeding?

2 Can school feeding be an effective entry point to unlock the potential of climate finance to transform food systems?

School feeding programmes feed around 418 million children daily, and coverage is increasing in recognition of multiple socioeconomic benefits across education, health, nutrition, and equity outcomes. Less attention has been given to potential environmental benefits, including for climate change adaptation and mitigation, both in the school context and the wider food system. Food system transformation – the radical and profound shifts needed across all aspects of food production and consumption patterns to improve environmental as well as social and economic sustainability outcomes – is increasingly recognised as essential both for building resilience and limiting global temperature increases. School feeding programmes can contribute to food system transformation to address climate change in various ways, for example, by encouraging plant-based food consumption at school and in the home/in later life, by sourcing food from local farmers to provide predictable incomes that can help strengthen their resilience and encourage climate-smart practices, and by reducing food loss and food waste. School feeding programmes are likely to be particularly influential where they involve large-scale public procurement of food and related supplies, but they can also have broader influence by, for example, educating children about climate and food.

There are signs that this potential has started to be recognised in policy and practice, including in some upper middle-income and high-income contexts, such as Brazil's National School Feeding Program that mandates 30% of food procurement is sourced directly from smallholder farmers, and, in Italy, where the municipality of Milan's green school canteen program has resulted in 43% reduction of CO_2 emissions, 2015–2021.

While our analysis shows some instances of low- and lower middle-income countries (LICs and LMICs) seeking adaptation and mitigation benefits from sustainable school meals, there are generally

greater gaps in both coverage and finance for school feeding programmes in these contexts, as well as significant climate vulnerabilities among school-age children and food system actors. International public climate finance could therefore play a role in providing additional funds and leveraging adaptation and mitigation benefits from existing and expanded school feeding programmes in LICs and LMICs.

In the context of the financing challenges for, and plausible climate benefits of, school meal programmes, this note investigates the potential of climate finance as an enabler of expanded school feeding programmes. We focus in this note on international public flows provided, in the language of Article 9 of the Paris Agreement, by developed countries to developing countries (hereafter referred to simply as 'climate finance'). In the absence of clarity on the definition of developing countries, this means we focus mainly on LICs and LMICs.

The note addresses the research questions through an analysis of whether and how school meals, as well as food systems and education more broadly, have featured in projects receiving climate finance, in the stated priorities of major climate funds, in the international climate policy discourse, and in countries' climate strategies. Through this retrospective analysis, we build an initial picture that captures the limited ways in which school feeding has been featured as a priority for climate action and climate finance and the barriers that appear to be preventing it from being prioritised more. From here, we frame a number of possible responses.

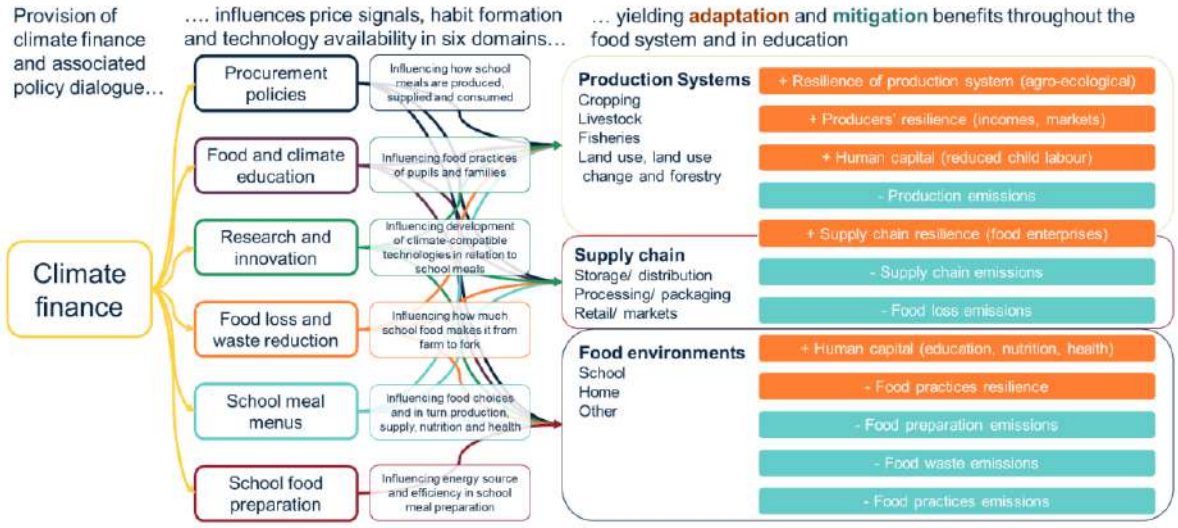
We start by developing a theory of change for how climate finance, and associated policy dialogue, could result in adaptation and mitigation benefits via school feeding programmes. The theory of change is based around six potential pathways. Each in turn has a more discrete scope, moving from the wider food system to school settings:

1. Influencing public procurement and policies to incentivise lower-emission and more climate-resilient approaches across food systems
2. Supporting hands-on education and learning about linkages between food, environment, and human health to shape lifelong climate-aware food practices
3. Enabling research and innovation around climate-resilient and lower-emissions school feeding
4. Addressing food loss and food waste reduction throughout the supply chain
5. Encouraging school menu choices that reduce emissions and enhance resilience

6. Making available more climate-smart methods and technologies for school meal preparation

We also set out the range of climate change adaptation and mitigation benefits that could be derived through these pathways and that span the food system, from production to consumption, via various supply chain components (Figure ES1). The theory of change serves as a reference point for the analysis, for example, in considering which benefits are being linked to within climate finance projects and national climate strategies that mention school meals. It also serves as an organising framework that could guide efforts to test assumptions and improve evidence in the future. One of the key barriers identified is that the evidence base to quantify the climate benefits, and the relative contribution of the various pathways, is still emerging.

Figure ES1. A theory of change: From climate-financed school meals to adaptation and mitigation benefits



The analysis is structured in four parts, describing (i) the architecture for international public climate finance relevant to school meal financing and wider food system reform; (ii) flows of climate finance to school feeding, proxied using the Organisation for Economic Co-operation and Development climate-related development finance dataset and more in-depth analysis of project portfolios of four multilateral climate funds (MCFs); (iii) barriers holding back climate finance to school feeding; and (iv) potential responses that could lower those barriers.

Architecture

We consider the routes through which climate finance flows, how these themes feature in the international legal architecture of the United Nations Framework Convention on Climate Change (UNFCCC), whether and how school feeding has appeared in countries' climate strategies, and whether and how school feeding

features in the guidance and corporate strategies of key MCFs. Key findings include:

- International public climate finance flows through a complex range of multilateral; bilateral; regional; and national channels, funds, and mechanisms, making access and monitoring challenging. The architecture is continually evolving, such as for example, with the establishment of the loss and damage fund and a new goal on climate finance to be adopted at COP29.
- MCFs play a limited role in quantitative terms, but their influence is about more than the funding provided. Multilateral development banks (MDBs) channel the majority of international public climate finance, which was $88 billion per year on average in 2021 and 2022. Donor governments provided $58billion per year, while MCFs, including UNFCCC financial mechanisms such as the Green Climate Fund (GCF), Adaptation Fund (AF), and Global Environment Facility (GEF), channelled $3billion per year, or 3% of the total. However, MCFs channel a higher share to some school meal adjacent areas, such as agrifood in general (12%) and small-scale actors working in agrifood (14%). Moreover, their importance goes beyond the quantity provided, as they play an important agenda-setting role for other funders.
- A link to school feeding does not appear to be being drawn in the international climate policy discourse. School feeding, specifically, does not appear to have been featured either in the formal negotiated decisions made at COPs or in non-negotiated statements (e.g., declarations) made by multiple parties.
- Country climate strategies contain very few mentions of school feeding. Only Burundi's and Malawi's nationally determined contributions (NDCs) outlined specific actions or commitments relating to school feeding. An additional 10 countries connected school feeding explicitly to climate change benefits in climate plans or reports submitted to the UNFCCC. Half the countries making such a connection were LICs or LMICs. The most frequent benefits mentioned were reduced food preparation emissions and increased resilience of pupils through enhanced human capital (e.g., school pupils' educational attainment or nutritional status).
- The four MCFs providing the most funding to areas adjacent to school feeding (education, nutrition, agriculture, fishing, and food security) are the GCF, GEF, AF and the International Fund for Agricultural Development (IFAD), including via its climate fund, the Adaptation for Smallholder Agriculture Programme (IFAD ASAP). No mention of school feeding was found in the strategy or guidance documents of these funds,

and food public procurement was mentioned only by the GCF. The funds do prioritise climate change adaptation and/or mitigation in relation to agriculture and food, but not in relation to education in school settings.

Flows

Assessment of climate finance flows provides a quantitative sense-check of the past extent and future potential of climate finance to support school feeding programmes. We assess how school feeding features at two levels: (i) in projects recorded in the OECD's climate-related development finance (CRDF) dataset and (ii) in more detailed project documents on the GCF, GEF, AF and IFAD websites. We find that:

- It is challenging to definitively identify what proportion of climate finance is new and additional, as it depends on internal funder allocation decisions. It is likely that a substantial share of climate finance flows are repurposed, realigned, or simply rebadged development finance. Recent estimates suggest this is more likely in some sectors, including agriculture, and less likely in others, including education. While CRDF flows form the basis for most estimates of public international climate finance, they overlap with development finance. MCF finance is new and additional, insofar as the funds are mandated to focus on climate change. However, donors may capitalise them by reducing their funding to other priorities. This means that climate finance to school feeding could come at the expense of development finance to school feeding and/or climate finance or development finance going to other priorities.
- Very limited flows go to school feeding. While total CRDF commitments have almost doubled over the last five years of reported data, the share going to school feeding has been negligible. Projects coded by funders to the school feeding subsector averaged 0.005% of total CRDF, or $5.5 million (m) per year from 2018 to 2021, while other projects that nonetheless featured a school feeding keyword in their titles or descriptions averaged 0.03%/ $30m per year. The share to subsectors related, or adjacent, to school feeding programmes made up a larger share, 11.5% and $11.4billion, respectively, per year.
- Within these shares, projects are often targeting other priorities besides climate adaptation and mitigation. Climate adaptation/mitigation was recorded as fundamental to the project for only 3% of the flows targeting school feeding. Although climate was fundamental for close to 40% of flows with a school feeding keyword, this is still much lower than for all CRDF (70%). Funding to school feeding is more likely to be

issued as grants, however, and also to target adaptation over mitigation.

- CRDF to the school feeding subsector and to projects with school feeding keywords has gone mainly to least developed countries (LDCs) in recent years. Among provider types, OECD Development Assistance Committee (DAC) bilateral donors were the largest contributors by share on all measures, committing over 90% of CRDF to the school feeding subsector. Multilateral development banks (MDBs) also contributed a significant share, especially when assessing projects with school feeding keywords and in sectors related to school feeding. No MCFs recorded CRDF to the school feeding subsector or projects with school feeding keywords in titles or the short descriptions provided in the CRDF dataset.
- Review of the four MCFs websites in greater depth shows they have funded few projects with school feeding components, and where they do, school feeding tends to be a small component. We identified 11 projects funded or under review by GCF, GEF, AF, and IFAD that made a clear link from school feeding to climate benefits. Six of these explicitly seek to integrate with existing government school feeding programmes. However, only one focuses mainly on school feeding: It is a concept submitted to the GCF by the World Food Programme (WFP) in December 2023, which aims to transition Benin's National Integrated School Feeding Programme (PNASI) to a low-emission and climate-resilient model, and it appears to be still under review. The most common climate change benefit identified from school feeding elements is enhanced resilience of producers, generally through increased and more secure incomes – mentioned in all 11 projects.

Barriers and Responses

Reflecting on the limited prioritisation of school feeding in the international climate discourse, in the climate strategies of countries and MCFs, and in climate finance flows, we have identified multiple potential barriers, which we have grouped into four clusters, relating to evidence, awareness, access, and implementation.

Evidence: The evidence base on the extent of mitigation and adaptation benefits provided by school feeding programmes is still small, especially for the more systemic climate adaptation and mitigation outcomes that school meal programmes might achieve, for example through food-related procurement and education. Climate finance project proposals require a high standard of evidence of climate benefits, and implementers also face a lack of consistent and reliable metrics for monitoring these during implementation. In response, it may be advantageous to do the following:

- Seek climate finance for relatively discrete climate benefits – for example, to enhance adaptation/mitigation outcomes in established school feeding programmes.
- Incorporate scarce MCF finance as a complement to programmatic development and/or climate finance from bilaterals and MDBs, and/or novel sources, including private finance.
- Tailor proposals to funders' specific conceptualisations for climate additionality and transformative potential.
- Incorporate indicators and/or rapid evaluation of outcomes and cost effectiveness to assess climate benefits of existing school meal programmes, pool learning on proposals and monitoring and evaluation (M&E) frameworks from extant climate finance projects, and commission systematic reviews of the available grey and academic literature.

Awareness: While the evidence base is being strengthened, it may also be possible to address the apparent awareness gap among key climate finance actors regarding *potential* climate adaptation and/or mitigation benefits of sustainable school feeding programmes. This will require addressing institutional silos, for example, between entities responsible for school feeding (e.g. ministries of education or cross-sector coordination bodies) and climate (e.g. ministries of environment or finance). Responses include:

- Target a limited set of countries to elevate the visibility of school feeding in NDCs and other climate strategies. These could be prioritised on the basis of countries already making links between school feeding and adaptation or mitigation benefits, and/or having existing high-coverage school feeding programmes that could better address climate aspects.
- Publicise existing examples of school feeding for climate benefits in party submissions and climate finance.
- Convene multistakeholder dialogues to develop enhanced and shared understanding of climate benefits of school feeding programmes.
- Encourage incorporation of climate from the ground up in the development of integrated school feeding strategies.

Access: Despite efforts to simplify and streamline access to climate finance, access is restricted, especially to MCF funding, and proposal development is risky and costly. For school feeding, this general challenge is exacerbated by (i) the limited number of accredited/ implementing entities with expertise in school feeding and, more generally, in food systems and education and (ii) the institutional disconnection between parts of government leading on engagement with the climate funders and on school feeding. In this context, relevant responses include:

- Take advantage of the expanding range of mechanisms offered by climate funders to facilitate access.
- Broaden the sources of climate finance being targeted (beyond MCFs) that are tailoring sources and finance types to different purposes within climate-oriented school feeding programmes.
- Facilitate a liaison between government agencies leading on climate finance and school feeding programme coordination bodies.
- Encourage more experienced project proponents to share lessons.

Implementation: Where school feeding programmes do receive climate finance, various challenges are likely to arise in their implementation. Projects targeting climate and other sustainability outcomes in the wider food system may face high transaction costs when they seek to engage multiple small-scale farmers and food enterprises; smallholder farmers may face challenges in meeting food procurement standards; and there may be timescale mismatches between project funding and more transformative climate benefits. Climate change and related extreme and slow onset events can also pose operational risks to school feeding projects. In response, project proponents can do the following:

- Initially prioritise enhancing climate benefits of established national home-grown school feeding programmes to increase prospects of achieving longer term/more transformative outcomes.
- Engage existing aggregation mechanisms to reduce transaction costs and increase reach.
- Ensure adequate attention is given to climate-related operational risks in project design.

Reviewing the findings as a whole, the answer to both research questions appears to be ‘yes, in limited ways’.

- *Can new and additional resources be mobilised for school feeding?* The share of climate finance overall that is new and additional remains contested, and competition, given limited availability and huge needs, is high. Ambitions to attract significant climate finance into school feeding should be tempered. Nonetheless, the fact that school feeding does feature in a handful of country climate plans, as well as in climate finance flows to date, including MCF projects, shows there are foundations from which to build.
- *Can school feeding be an effective entry point to unlock the potential of climate finance to transform food systems?* While a focus on school feeding could further elevate the interconnectedness between food systems and climate

change, as well as encourage climate finance to flow to food system transformation, it should be recognised that school feeding programmes account for a modest share of total food production and consumption and for the emissions and climate vulnerabilities arising. The potential for school feeding to be a central element in wider food system transformation, including for climate adaptation and mitigation, then rests on their potential leveraging or catalytic effects on food systems more widely. Various mechanisms have been identified, but the evidence base, especially for adaptation and mitigation benefits over the long term and in lower-income country settings, will need to be improved.

1 Introduction

This technical note, produced for the Sustainable Finance Initiative of the School Meals Coalition, aims to explore whether climate finance could play a greater role in enabling governments to accelerate the expansion of school feeding programmes. Specifically, it considers:

1 Can climate finance offer new and additional resources for school feeding?

2 Can school feeding be an effective entry point to unlock the potential of climate finance to transform food systems?

Under the second question, we give specific focus to the role of school meal procurement in the creation of incentives for sustainable farm practices and the adaptation measures supporting more resilient rural livelihoods. The focus is on international public climate finance.

School feeding programmes offer significant socioeconomic benefits across the education, social protection, health, and nutrition sectors (Verguet et al., 2020). Every $1 invested in school meal programmes has been estimated to generate between $7 and $35 in benefits (Watkins, 2022). The evidence of positive impacts of such programmes is strongest for increased school enrolment and school participation, as well as food security (Asim et al., 2015; Bundy et al., 2024) – but other benefits measured in multiple contexts include learning achievement, nutritional status, and reduced child labour (Watkins, 2022). School meals can also help to address inequality, with particular benefits arising for poor households, for whom the value of school meals is a higher share of household budgets, and for girls (Watkins, 2022).

Although widely deployed, coverage of school feeding programmes is highest in wealthier countries, and it reduces moving from high-income through upper middle-income and lower middle-income to low-income countries (Bundy et al., 2017). This is partly due to fiscal constraints and competing development priorities, and hence lower ability of poorer countries to use scarce domestic funds to finance school feeding programmes. School feeding costs are also a much higher proportion of education costs for poorer countries. In high-income countries, school feeding costs per capita were on average equivalent to 11% of the per capita investments in primary education, compared with 19% in middle-income countries and 68% in low-income countries (Gelli and Daryanani, 2013). Of course, school meal financing is not inherently an education budget cost item, but

the comparisons illustrate the significant fiscal impact of expanding school meals provision.

Beyond the socioeconomic impacts already mentioned, there is also growing recognition that well-designed and funded school feeding programmes could play an important role in food system transformation (Pastorino et al., 2023; Watkins, 2023).

This report considers food system as encompassing all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation, and consumption of food, and the outputs of these activities, including socioeconomic and environmental outcomes (HLPE, 2017). Food system transformation implies a radical and profound shift in all aspects of food production and consumption patterns, towards dramatically improving sustainability outcomes – not only social and economic, but also environmental (Woodhill, 2023). Climate change is among the greatest environmental cost of our current food systems. Food systems are responsible for almost a third of total greenhouse gas (GHG) emissions, with upper-middle incomes contributing the greatest share, high-income countries having the highest per capita emissions, and low-income countries having the lowest share but the fastest rate of emissions increase. At the same time the impact of climate change on productivity, yield, and the functioning of food supply chains has been wrecking the livelihoods and food security in many low- and middle-income countries (Bezner Kerr et al., 2022; Sutton, Lotsch and Prasann, 2024). Actions to transform food systems can contribute to both climate change mitigation and adaptation – from improved water management in crop production to reducing food loss and waste (Fanzo and Miachon, 2023).

In feeding around 418 million children every day (WFP, 2023b), school feeding has the potential to catalyse broader shifts in food production, distribution, consumption, and disposal of waste towards more sustainable and equitable patterns – including addressing climate change adaptation and mitigation. Two particular features provide the potential to leverage wider changes. First, school feeding programmes are often embedded within public procurement systems, with public expenditure reaching around US$48billion worldwide in 2022 (WFP, 2023b).[1] They can thus be an entry point to influence public spending on food systems and policies, to incentivise lower-emission and more climate-resilient approaches, and to build incomes and market linkages for vulnerable small-scale producers and food enterprises – especially where a home-grown school feeding model is adopted.

[1] Domestic budgets have played an increasingly important role, compared to donor finance, in low- and lower middle-income countries, although the overwhelming majority of public spending on school meal programmes still occurs in high- and upper middle-income countries (WFP, 2023b).

Second, using school meals to improve hands-on education and learn about linkages between food, environment and human health – in the classroom, canteens, or school gardens – can help to shape lifelong climate-aware food practices during formative years (Pastorino et al., 2023).

Evidence of direct climate outcomes from school feeding choices, as well as practical guidance, are still evolving. Measures to include healthy options, including offering plant-based food in the menu, sourcing food from local farmers and using the opportunity to build their capacity in climate-smart practices, reducing food waste and optimising energy use, and sourcing for cooking, can all contribute to achieving climate and food security goals at the same time. While examples of countries that have recognised this double win scenario are concentrated among high-income countries (see Box 1), several low- and middle-income country governments are also targeting expanded school feeding programmes to advance their climate as well as education, public health, and food security objectives (dos Santos et al., 2022; Pastorino et al., 2023)

Box 1 Milan – School Canteens Driving Green Food Policy Goals

Sustainability, relevance, and quality of school feeding programs depend largely on building effective partnerships across sectors and between national, subnational, and local authorities. Nearly 80% of food is consumed in urban areas. In an increasingly urbanized world, cities and local governments hold significant influence to shift food production, distribution, and consumption towards sustainable patterns through their influence on food procurement and market dynamics. In 2014, Milan municipality introduced an operational model in school canteens across the city that revolutionized food procurement practices and student eating habits. It resulted in a 43% reduction of the CO_2 emissions between 2015 and 2021 (Mayors of Europe, 2023). Through sustainable sourcing, incentivising environmentally friendly agriculture practices, food waste reduction, and less resource-intensive menu planning, Milan's example demonstrates the transformational potential of school feeding programmes in reducing food systems externalities. Milan's model of sustainable and healthy school meals has been disseminated through a network of more than 270 cities, signatories to the Milan Urban Food Policy Pact (MUFPP) and has inspired many municipalities across Europe and beyond to tailor the model to their contexts and resources (Pastorino et al., 2023).

In the context of the financing challenges for, and the potential climate benefits of, school meal programmes, this note investigates the potential of climate finance as an enabler of expanded school feeding programmes. There is no internationally agreed definition for

'climate finance' (Watson, Schalatek and Evéquoz, 2024), although the UNFCCC Secretariat states that 'climate finance' refers to 'local, national, or transnational financing—drawn from public, private, and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change' (UNFCCC, 2024a). We focus in this note on international public flows provided, in the language of Article 9 of the Paris Agreement, by developed countries to developing countries (hereafter referred to simply as 'climate finance'). Lists of developed versus developing countries were not formally codified in the Paris Agreement, and thus providers and recipients of international public climate finance vary depending on the datasets being analysed (Pauw, Mbeva and van Asselt, 2019; Colenbrander, Pettinotti and Cao, 2022). We thus focus primarily on the use of climate finance to support school feeding programmes in low- and lower middle-income countries. However, examples of school feeding initiatives from upper middle-income and high-income countries are referred to where they demonstrate mobilisation of additional climate-focused financial resources, or attempt to strengthen the link between climate finance and food system transformation.

Box 2 Brazil's National School Feeding Program (PNAE) – Supporting Small-Scale Agrifood Actors with Local Sourcing

Many high- and medium-income countries have prioritised school feeding programs as an effective measure to improve nutrition, healthy habits, and school attendance. Due to the high share of domestic funds in financing these programs, low-income countries have experienced a net decline in the years following the COVID-19 pandemic (Bundy et al., 2024) – an indication of fiscal constraints and the need for external investment.

Among the countries that have taken major steps towards financing and implementing school feeding programs, Brazil's National School Feeding Program (PNAE) is often cited as a successful example of both reach (i.e. coverage) of the program and quality (of the meals). The methodology has influenced school feeding policies in 15 countries across the Latin America and Caribbean (LAC) region, and the outcomes continue to inspire policymakers and researchers across the world (IDB and WFP, 2024).

Established in 1950s, PNAE is the second largest universal free school meals program in the world, reaching 40 million students annually, with at least one nutritious meal a day, in more than 5,500 municipalities (Alves Da Silva, Pedrozo, and Nunes Da Silva, 2023). Local procurement is at the heart of the program, linking family farmers with school feeding programmes and allocating a minimum of 30% of food procurement budgets to direct purchasing from small farmers (IDB and WFP, 2024). The program is anchored in a federal

law that evolves over time in accordance with the national food security and nutrition priorities. PNAE is implemented in close partnership with local governments and municipalities. A rigorous monitoring and evaluation system overseen by the National Fund for the Development of Education (FNDE) ensures timely adjustments, coordination, and communication of information to national authorities, nutrition and health experts, schools, and communities.

PNAE's case demonstrates the power of sustainable school feeding programs in tackling environmental, economic, and social issues in food systems. PNAE owes its success to factors, including the country's robust economic infrastructure, political commitment, long-term funding, institutional support for the school feeding program across multiple sectors and levels of the government, and a favourable ecosystem for local food production. Hence, the replicability of Brazil's program in other countries is highly dependent on context, stakeholders interest and priorities, and the existing enabling environment.

Through development of this note – drawing on programme examples, academic literature, and the priorities of climate finance providers and recipients – we have inductively constructed a theory of change for how school meals can contribute to climate objectives (Figure 1).

The theory of change outlines six pathways through which climate finance, and associated policy dialogue, could shape policy, practice, and infrastructure choices, in turn yielding adaptation and mitigation benefits.[2] These comprise the two pathways already mentioned, which arguably have the greatest potential to influence the wider food system, that is, leveraging food production, supply, and consumption changes through procurement and through food and climate education. We also identify four additional pathways, with each in turn having a more discrete scope, moving from the wider food system to school settings: research and innovation (e.g. around climate-resilient and school-appropriate foods or clean school cooking); food loss and waste reduction throughout the supply chain; school menu choices; and finally the methods and technologies used to prepare meals within schools.

In turn, through transmission mechanisms such as price signals, habit formation, and technology availability, changes in each pathway have the potential to feed through to a range of adaptation (orange) and mitigation (blue) benefits in the food system as illustrated in Figure 1. These benefits span the food system continuum from

[2] With the establishment of the Loss and Damage Fund, loss and damage (the negative effects of climate change that occur despite mitigation and adaptation efforts) have become a third explicit priority for climate finance. Economic and noneconomic losses and damages from climate change arise in relation to both food and education systems, and they could potentially be incorporated into the rationale for climate finance to school meals (Steadman et al., 2022; Laganda, 2023).

production, through other supply chain elements, to food environments (HLPE, 2017).

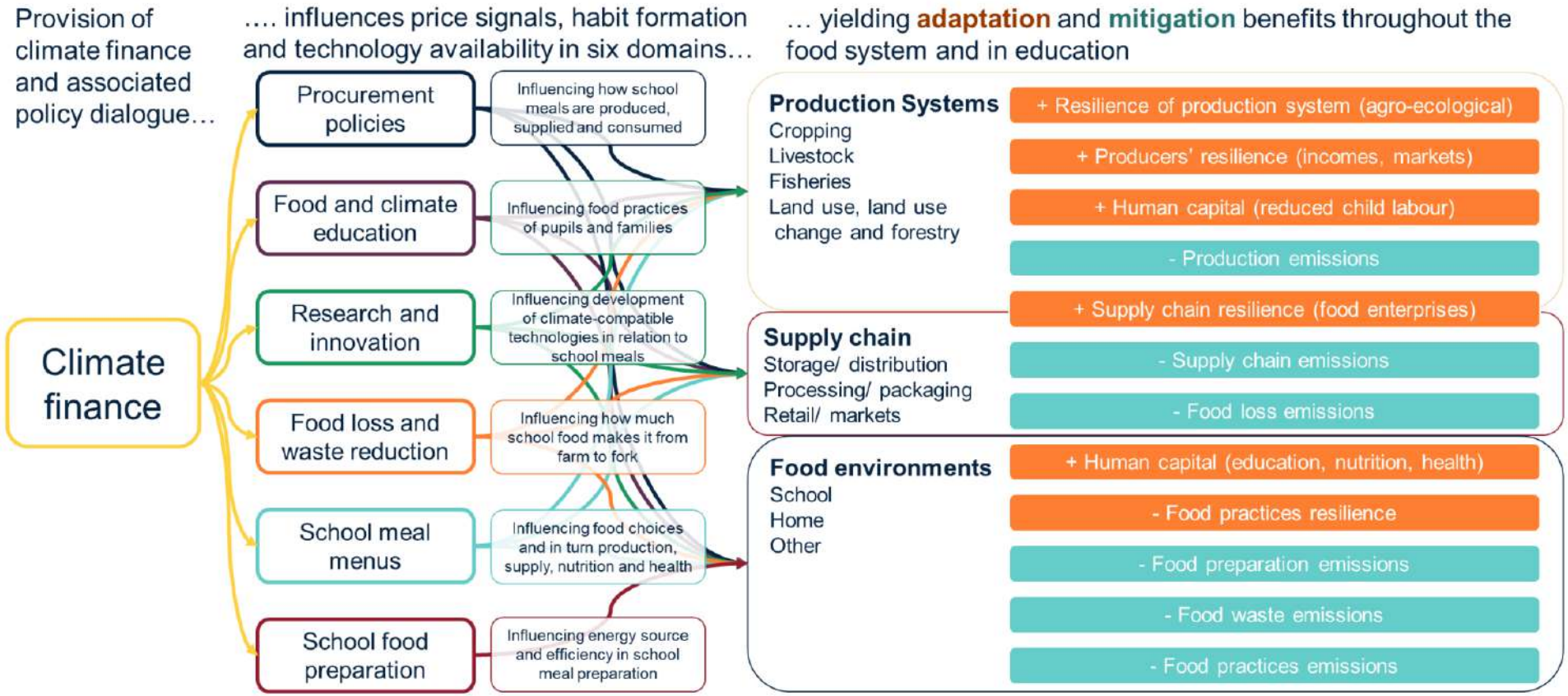
Three caveats should be stressed in introducing the theory of change. First, it remains, in large part, theoretical: the pathways presented in Figure 1 are inferred from a limited literature on climate-positive changes in school meals, much of which comes from high-income country contexts (See for example dos Santos et al., 2022; Kim and Kim, 2023; Pastorino et al., 2023; Roque et al., 2023; André et al., 2024).[3]

Second, the size of potential benefits has only been partially quantified. Pastorino et al. (2023) tentatively quantified potential benefits from changing menus and tackling food waste. This suggests that GHG emissions from school meal programmes worldwide could be reduced by around 13% by halving food waste, 28% by adopting a flexitarian diet, and by 46% and 54% through a vegetarian and vegan diet, respectively. Freshwater use for school meal provision, a proxy for resilience in a changing climate in which water variability and scarcity will increase in many locations, could similarly be reduced 10%, 12%, 18%, and 23% through halving food waste and through the flexitarian, vegetarian, and vegan dietary adjustments. This modelling also suggests that achievability and size of benefits will differ according to context. For example, due to existing dietary patterns and other factors, the various diet scenarios mentioned could reduce GHG emissions from school meal programmes by 14%–40% in LICs compared with 38%–62% in HICs (Pastorino et al., 2023).

Third, there may be trade-offs between climate objectives and other objectives of school feeding programme design and delivery. For example, a review of the environmental and nutritional benefits and challenges of indigenous and traditional food crops in Africa points to potentially higher yields and resilience to climate change, but also longer processing times, bitter tastes, and limiting consumption for some crops (Akinola et al., 2020).

[3] Academic reviews across broad geographies are, thus far, restricted to case study compilations and modelling in Pastorino et al. (2023) and a systematic review of sustainability dimensions included in school feeding policies in dos Santos et al. (2022).

Figure 1 How school feeding programmes can contribute to climate change adaptation and mitigation



The rest of this paper is structured as follows: Section 2 describes the architecture for international public climate finance relevant to school meal financing and wider food system reform. Section 3 uses the OECD's CRDF dataset to derive proxy estimates of flows to school feeding and then dives into specific project examples from selected MCFs with school feeding components. The barriers holding back climate finance to school feeding and their potential solutions are considered in Sections 4 and 5, while Section 6 concludes by revisiting the study's specific objectives/research questions.

2 Architecture

2.1 Introduction

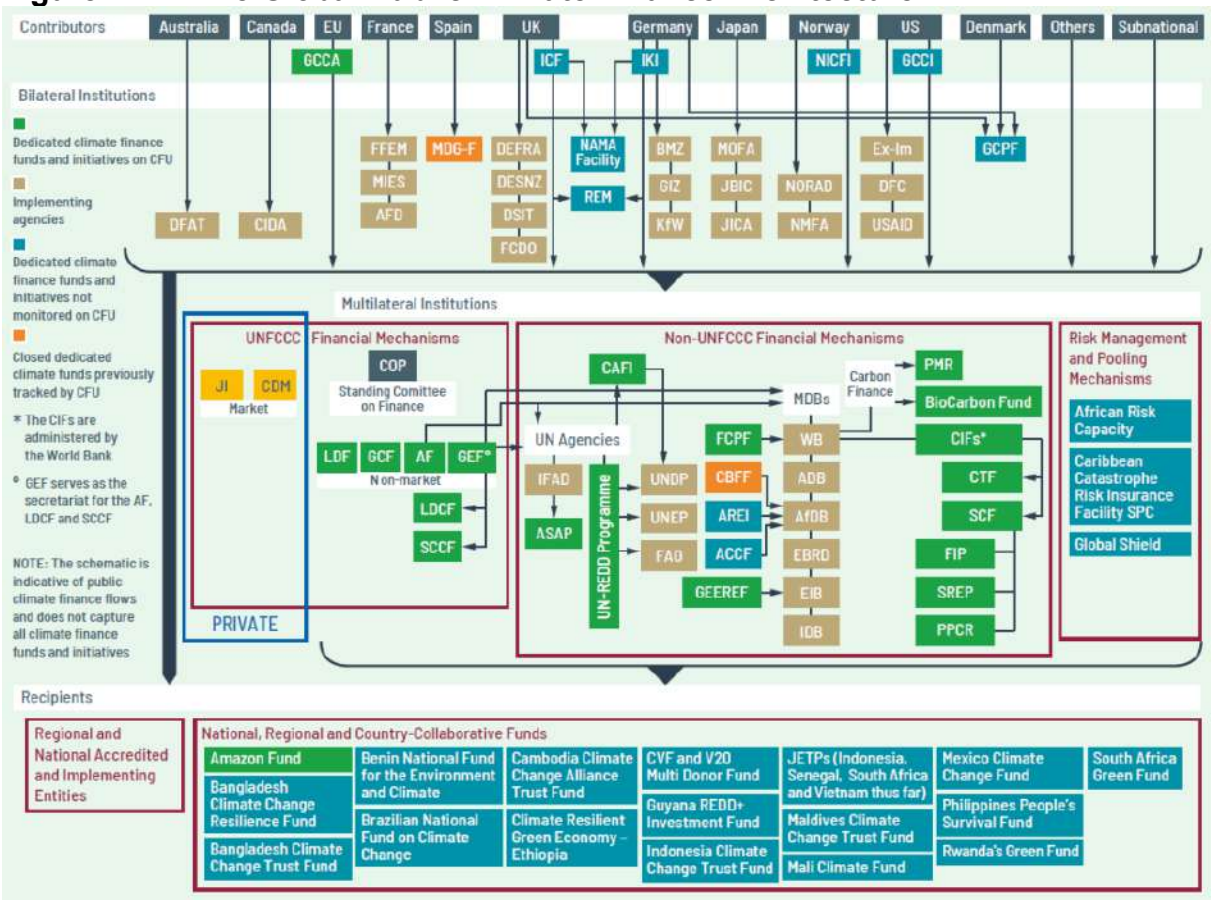
This section provides an overview of the climate finance architecture in general before focusing on what can be inferred about the architecture as it relates to food systems, education, and school feeding specifically. Here, we consider both the routes through which climate finance flows and how these themes feature in the international legal architecture of the UNFCCC. The section then focuses further on school feeding, offering both a demand-side perspective, examining if and how school feeding has appeared in countries' climate strategies, and a supply side perspective in assessing whether school feeding features in the guidance and corporate strategies of key MCFs.

International public climate finance flows through a complex and evolving range of multilateral, bilateral, regional, and national channels, funds and mechanisms (Figure 2). The MCFs, including UNFCCC financial mechanisms such as the Green Climate Fund (GCF), Adaptation Fund (AF), and Global Environment Facility (GEF), play a key demonstration role, but overall they channel a small, if increasing, share of climate finance funds ($3billion per year on average in 2021/2022, with the GCF providing 71% of this). They also tend to have a more equal governance representation between developing and developed country board members. MDBs channel much more – $88 billion per year in 2021–2022. Governments also provide climate finance directly, including via dedicated climate finance funds, as well as via their own development finance institutions, funds, and state-owned financial institutions and enterprises, totalling $58 billion per year in 2021–2022 (while also contributing via multilateral channels). Several developing countries have established national and regional funds and mechanisms to channel international climate finance, as well as contributions from domestic budgets and the private sector, such as the Indonesian Climate Change Trust Fund and Brazil's Amazon Fund (Buchner et al., 2023; Watson, Schalatek, and Evéquoz, 2024).

The complexity of the climate finance architecture and lack of agreed upon definitions make access and monitoring challenging (Watson, Schalatek, and Evéquoz, 2024). On the access side, individual funds and channels have differing procedures for who can propose and implement projects. While this theoretically increases the diversity of options and scope for complementarity, it also increases transaction costs and coordination challenges, especially as the average size of

projects has diminished in recent years, even as providers multiplied (Cichocka and Mitchel, 2022). The key information sources and mechanisms for climate finance monitoring are considered in Box 3.

Figure 2 The Global Public Climate Finance Architecture



Source: Watson, Schalatek, and Evéquoz (2024) – See source for acronyms.

Box 3 Monitoring Climate Finance

The OECD has issued successive reports tracking progress towards the goal, pledged by developed countries at COP15 in Copenhagen in 2009, to mobilise $100 billion for developing countries by 2020 (later extended to 2025). According to its latest estimate, the target was surpassed in 2022, at $116 billion (OECD, 2024). However, key points of contention include what proportion of this finance has been contributed over and above the historic trends and targets for official development assistance; the extent to which 'mobilised' private finance should be counted; and the counting of loans at their full transaction value rather than the grant equivalent (Miller et al., 2023; Oxfam, 2023; Watson, Schalatek, and Evéquoz, 2024).

Other frequently cited estimates of global climate finance are compiled by CPI and the UNFCCC Standing Committee on Finance, which unlike OECD, both attempt to provide holistic estimates that incorporate private and domestic flows as well as international public

climate finance (UNFCCC SCF, 2022; Buchner et al., 2023). Additionally, groupings such as the major MDBs and DFI members of the International Development Finance Club (IDFC) provide estimates of climate finance provided by their membership (EIB, 2023; Stout, Miao, and Strinati, 2023).

Monitoring challenges also vary between different parts of the architecture. While transparency is lowest for private and domestic flows, some international public flows, including south-south and those from state-owned entities, are more opaque (Naran et al., 2022; Chiriac, Vishnumolakala, and Rosane, 2023b). Information at the sector level also varies. For example, specific studies on climate finance are available for various sectors adjacent to school feeding, including agrifood, water, and health (WaterAid, 2020; Alcayna, O'Donnell and Chandaria, 2023; Chiriac, Vishnumolakala, and Rosane, 2023b, 2023a). However, equivalent disaggregated estimates for other sectors highly relevant to school feeding programmes, such as education, are not yet available.[4]

The architecture for climate finance continues to evolve. Some of this evolution is driven by UNFCCC processes. COP27 saw agreement on establishing the Loss and Damage Fund to address the negative effects of climate change that occur in spite of adaptation and mitigation, with some implementation arrangements agreed at COP28 and further deliberation expected at COP29 (Bhandari et al., 2024). The New Collective Quantified Goal (NCQG) to succeed the $100 billion goal from 2025 is also meant to be agreed at COP29. Practical options for negotiating the NCQG are emerging, which could have multiple implications for the climate finance architecture, including who contributes what share, how public international climate finance relates to other flows (e.g. mobilised private finance), and by whom and how finance can be accessed (Pettinotti and Cao, 2023; Robertson and Watson, 2024). Parties also issue guidance to the UNFCCC funds at each COP, which can shape their practices. At COP28, for example, they urged the GCF and GEF/LDCF to consider the global goal on adaptation framework and how to support countries to implement it.

Processes and initiatives outside the UNFCCC are equally important. Recent examples – all seeing mixed progress – include increasing emphasis on climate finance provision and broader 'Paris Alignment' from MDBs and development finance institutions, notably the World Bank Group with its December 2023 'Evolving the World Bank Group's Mission, Operations, and Resources: A Roadmap'; the International Monetary Fund's Resilience and Sustainability Trust, established in 2022 with the objective of helping countries build resilience to external shocks, including climate-related disasters,

[4] A UK government publication states that 0.03% of total climate finance has gone to education, although it is not possible to trace this statistic within the cited CPI publication (UK FCDO, 2022).

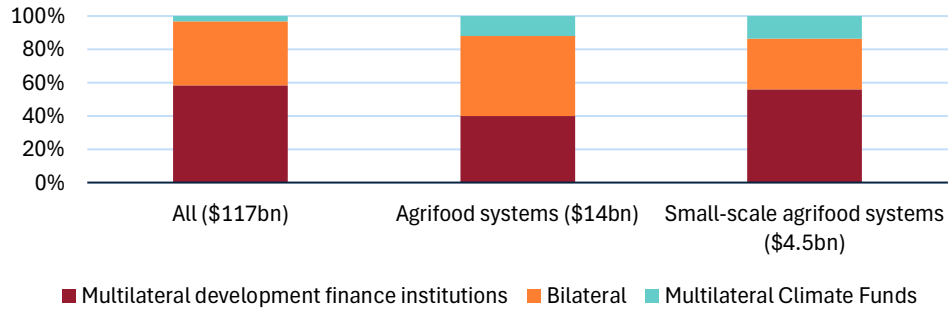
through rechannelling of special drawing rights;[5] and 'country platforms', such as Just Energy Transition Partnerships, which typically feature commitments from multiple donors to provide programmatic funding to a country for renewable energy scale up and coal power phase out, with an emphasis on managing the social impacts of energy transitions (Miller, Pudussery and Rosenfeld, 2023; Simpson, Jacobs and Gilmour, 2023; Larsen and Laxton, 2024).

2.2 The Architecture for Food Systems, Education and School Feeding

Clarity on the architecture for specific sectors or themes largely depends on dedicated studies. For example, Climate Policy Initiative and IFAD have undertaken a series of reports on climate finance to agrifood systems and, within this, small-scale agrifood.

As shown in Figure 3, these show that MCFs channel a larger share of climate finance as the focus narrows from all public international flows to those targeting agrifood systems, and then small-scale elements within these. MDBs play a smaller role in channelling climate finance to agrifood systems than they do for all sectors in general, but they have a similar role in channelling finance to the smaller-scale elements within food systems.

Figure 3 Channels for international public climate finance, 2019-20 - all flows, flows to food systems, and flows to small-scale agrifood systems



Source: Author's analysis of Climate Policy Initiative (CPI) estimates of public international climate finance. CPI's 'multilateral development finance institutions' is assumed mainly to comprise the MDBs (Naran et al., 2022; Chiriac, Vishnumolakala and Rosane, 2023b, 2023a)

Estimates for which types of funders have provided climate finance to the education sector were not identified, although an assessment of projects funded by the GCF's, AF's, and the GEF's adaptation-focused funds found that under 3% incorporated child-responsive activities (Knaute, Pegram and Jenks, 2023). For school feeding specifically – as discussed further in Section 3 – our preliminary estimates suggest that bilateral donors contribute the majority of

[5] As of spring 2024, $30 billion in special drawing rights had been made available to lend, against a target of $36 billion, but only $1.4 billion had been disbursed to nine countries, with a further $3.4 billion to these and an additional eight countries scheduled for 2024 (Hicklin, 2024).

climate finance directly, MDBs channel around a third (at least on one measure), and MCFs under 5%.

In addition to the institutional architecture for routing climate finance flows to specific sectors, there is also a policy and legal architecture, embodied at the international level in the UNFCCC regime. An assessment of how far food systems, education, and school feeding have featured in parties' negotiations and decisions under the UNFCCC provides a further sense of the relative prioritisation of these themes.[6]

Recent COPs have seen a greater discussion of food system issues. More in-depth work commenced with the establishment of the Koronivia Joint Work on Agriculture in 2017, which had a particular focus on 'the vulnerabilities of agriculture to climate change and approaches to addressing food security' (UNFCCC, 2018, p. 19). Its successor, initiated at COP27, is the Sharm el Sheikh Joint Work on Agriculture and Food Security (UNFCCC, 2023b). While negotiations on how to implement this Joint Work at COP28 in Dubai did not progress, the June 2024 meeting of the UNFCCC Subsidiary Bodies (SB60) in Bonn agreed upon a road map towards COP31 in 2026 (UNFCCC, 2024c).

Among negotiated outcomes, COP28 also saw adoption of the UAE Framework for Global Climate Resilience, guiding the Paris Agreement's Global Goal on Adaptation. This included a bespoke target for the world to attain by 2030: "climate-resilient food and agricultural production and supply and distribution of food, as well as increasing sustainable and regenerative production and equitable access to adequate food and nutrition for all" (UNFCCC, 2023a, p. 2). Outside formal negotiations, 159 heads of state and government endorsed a COP28 Declaration on Sustainable Agriculture, Resilient Food Systems and Climate Action (COP28 UAE Presidency, 2023b).

International climate negotiations are also starting to pay closer attention to links between education and climate change. The importance of education in addressing climate change is acknowledged in Article 6 of the UNFCCC itself and also reaffirmed in the Paris Agreement. However, events at COP28 elevated the profile of wider climate education linkages, with a thematic focus and specific day on youth, Children, Education, and Skills, as well as a declaration on the common agenda for education and climate change introduced by UNESCO and endorsed by 45 governments by March 2024 (Bapna, Simpson, and Colenbrander, 2024; UNESCO, 2024).

However, even if the mitigation and adaptation needs in food systems and education are increasingly recognised, a link to school feeding does not appear to be being drawn. School feeding, specifically, does not appear to have been featured either in the

[6] UNFCCC.int searched using Google for school feeding-focused terms as used in dos Santos et al. 2022 (https://www.mdpi.com/2304-8158/11/2/176). Search syntax including the following: 'school meal' OR 'school lunch' OR 'school food' OR 'school feeding' OR 'school nutrition' OR 'school canteen'.

formal negotiated decisions made at COPs or in non-negotiated statements (e.g. declarations) made by multiple parties. As explored further below and in Section 4, this plausibly reflects various silos in countries' institutional architectures for climate change and school feeding, among other barriers.

2.3 Demand-Side Perspective: School Feeding in Country Climate Strategies

Countries set out their climate ambitions through a range of strategy documents, among the most important of which are nationally determined contributions (NDCs). Under the Paris Agreement, parties are required to prepare, communicate, and maintain successive NDCs.[7]

Assessments indicate that climate commitments relating to food systems and component elements do feature in NDCs, but few NDCs target the full food system, and there is a lack of specificity about how actions will be achieved – notwithstanding that NDCs are often high level. An analysis of 37 NDCs submitted by 2019 found that agriculture was the most frequently mentioned "food system element" mentioned in NDCs, followed by livestock (50%), food security (41%), and fisheries (35%), with sustainable diets and food waste mentioned by none of the analysed NDCs (Schulte et al., 2020). A 2022 assessment reviewed how food and land feature in 24 NDCs mainly from G20 members, that is, larger and richer economies. This found that relevant actions were mostly directed to "development of productive and regenerative agriculture, the protection of nature, and the enhancement of broader enabling conditions such as the consideration of gender and access, as well as the improvement of rural livelihoods" (Haverkamp et al., 2022, p. 2) However, less than half of the commitments were backed by targets; one-third by concrete policy measures, and one-fifth by financial information.

Education for children and youth, meanwhile, featured in 31% of the 140 NDCs assessed as of October 2022, while 16 NDCs articulated a need to make education infrastructure greener and more climate resilient, and 5 recognised children's right to education, although not always in relation to climate-related disruptions (Kwauk, 2022). A further study (a review of 181 NDCs submitted by January 2019) found that education was more often referred to as an instrument for adapting to climate change than for mitigation (Goritz and Kolleck, 2024).

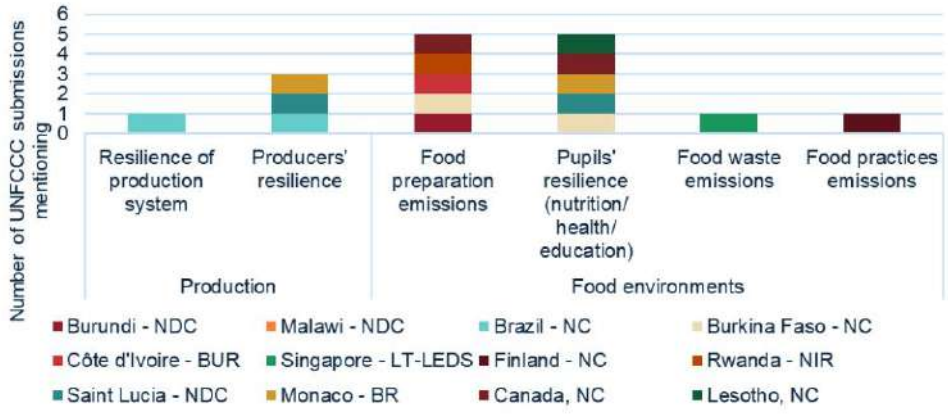
A search of NDCs and other plans and reports required or encouraged under the UNFCCC reveals few mentions of school

[7] The UNFCCC also encourages and supports formulation of other climate plans, such as National Adaptation Plans (NAPs) by LDCs and other developing country parties and long-term low greenhouse gas emission development strategies (LT-LEDS). However, NDCs, through successive submission with enhanced ambition, are at the heart of the Paris Agreement and seen as the key country strategy determining whether the Paris Agreement is achieved (UNFCCC, 2024b).

feeding.[8] Only two NDCs outlined specific actions or commitments relating to school feeding: Burundi's, which included an action (conditional on external support) to install improved stoves in just 14 school canteens, and Malawi, which included a proposed adaptation action to increase and strengthen various social protection measures, including school meals programmes, without specifying how (both first updated NDCs were submitted July 2021). Saint Lucia's first updated NDC (January 2021) mentioned its efforts to combine the national school feeding programme with school gardening programmes, although not as a forward-looking commitment.

A further 16 countries have submitted other types of documents to the UNFCCC mentioning school feeding-related terms, including national communications (NCs), national inventory reports (NIRs), biennial reports (BRs), biennial update reports (BURs) and Long-Term Low Greenhouse Gas Emissions Development Strategies (LT-LEDS). No National Adaptation Plans (NAPs) featuring school feeding-related terms were identified.[9] Only nine of these additional documents made an explicit link to climate change benefits. Two, from Monaco and Canada did so in the context of reporting their support for climate actions internationally. Figure 4 shows that of the 12 countries with UNFCCC submissions that make a link to climate change benefits from school feeding, the most frequent benefits mentioned were reduced food preparation emissions and increased resilience of pupils through enhanced human capital (e.g. school pupils' educational attainment or nutritional status). See Appendix 2 for further details.

Figure 4 Links made to climate benefits from school feeding in party submissions to the UNFCCC



Source: Authors' analysis of data sourced from the Climate Policy Radar Database, https://app.climatepolicyradar.org, and made available under the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

[8] We used Climate Policy Radar's 'UNFCCC' database comprising submissions to UNFCCC, to search official party submissions, including NDCs, LT-LEDs, and other documents, mentioning the school feeding-focused terms as used in dos Santos et al. (2022). We then performed a similar review of the 'policies' database to check for NAPs.r. Climate Policy Radar offers various augmented search functions, including natural language and in-built translation. See https://climatepolicyradar.org/.

[9] For further information on these report types, see https://unfccc.int/reporting-and-review.

2.4 Supply-Side Perspective: School Feeding in Strategies and Guidance of the Multilateral Climate Funds

Although MCFs overall provide a small share of climate finance to agrifood and school feeding, they have an important demonstration role, and their policies and strategic directions can influence the wider provision of climate finance.

Above the level of any single sector, system, or intervention type (such as school feeding) are the general funding and operational procedures, which have a significant bearing on who can access each fund's resources and at what scale and for what purposes. Simplifying access, in particular, remains an area of ongoing work. The AF, for example, pioneered direct access for developing country National Implementing Entities, whereas for the GEF projects are proposed and managed by 16 international and regional agencies, mainly intergovernmental organisations, plus two nationally based entities in China and Brazil only. The GCF has been developing a range of access routes and support programmes to increase access for subnational, national, and regional entities, as well as expanding the number and diversity of accredited entities (GEF, 2014; Watson, Schalatek and Evéquoz, 2024).

To understand in more depth how school feeding features in MCF strategies and guidance, we assessed four MCFs providing the largest volumes of finance to a set of sectors related to school feeding in recent years (see Section 3). These comprise three UNFCCC financial mechanisms – namely the GCF, the GEF, and the AF – and the Adaptation for Smallholder Agriculture Programme of the International Fund for Agricultural Development (IFAD ASAP).[10] We reviewed these funds' current strategic priorities, criteria guiding investments, and accredited entities to assess whether and how food systems, education, and school feeding, specifically, feature. This review revealed the following:

- Climate change mitigation and, especially, adaptation in relation to agriculture and other food system components are an expressed priority for the MCFs. While "food systems" as a whole are referred to in most of the funds' available guidance, the interpretation of what this concept means appears to vary:
    - ASAP focuses more on (smallholder) agricultural production.
    - The Adaptation Fund does not have explicit sectoral or system-level priorities; rather it has project sectors in agriculture and food security.

[10] We include ASAP, launched in 2012 and implemented in two phases, and the enhanced Adaptation for Smallholder Agriculture Programme ASAP+, launched in 2021

    - Both the GCF and the adaptation-focused funds managed by the GEF, the Least Developed Countries Fund (LDCF), and the Special Climate Change Fund (SCCF) include food security as part of their high-level thematic priorities, with LDCF and SCCF also explicitly mentioning agriculture at this level. However in both cases, they are combined with other adjacent sectors or systems – with health and water in the case of the GCF and with health in the case of the LDCF and the SCCF. These combined themes are then one of several – one of eight results areas for the GCF and one of four themes of particular interest in the LDCF and SCCF strategies.

- Several accredited agencies and implementing entities to the funds focus on agriculture, nutrition, and/or food security, indicating that sector or system-specific expertise and networks among project proponents is not necessarily a barrier to increasing the number, size, or efficacy of food system-focused projects.
- While most of the funds make general references to the importance of climate education and skills, climate change adaptation or mitigation in school settings was not a visible priority in any of the funds' strategies or guidance.
- Moreover, there is no mention of school feeding in the strategy or guidance documents reviewed. Underlying mechanisms for school feeding programmes, such as food public procurement, receive scant mention (only in the GCF's dedicated sectoral guide for agriculture and food security). Safety nets are more frequently mentioned in generalised ways, such as social protection for climate risk management.

See Table 1 and Appendix 3 for further details.

Table 1 How MCFs address food systems and school feeding

	Focus on food systems	Focus on school feeding
GCF	• Health, food, and water security is one of eight GCF results areas (one of four aligned with adaptation theme). • Dedicated sectoral guide on agriculture and food security (1 of 10) outlines three 'paradigm-shifting' investment pathways: promoting resilient agriculture, facilitating climate-informed advisory and risk management services, and reconfiguring food systems. • Sectoral guide links mainly to three GCF result areas (of eight): the health, food, and water security result area, vulnerable people and communities (adaptation theme), and forest and land use (mitigation theme). • Current strategic plan (2024–2027) includes 1 targeted result (of 11) on food, referring to beneficiaries 'adopting low-emission climate-resilient agricultural and fisheries practices, securing livelihoods while reconfiguring food systems'. • Eight agriculture-focused accredited entities out of 128 such entities.	• School feeding not explicitly mentioned in strategy/guidance documents. • Sectoral guide's third paradigm-shifting pathway (reconfiguring food systems) lists a range of activities that could include or integrate with school feeding, including farm technologies and practices; supply chains; retail, marketing, and procurement; food loss and waste; and consumption and diets. Pathway 2 (facilitating climate-informed advisory and risk management services) also mentions social safety net programmes.
AF	• Current medium-term strategy (2023–2027) and strategic priorities, policies, and guidelines (2022) do not specify sectoral/system priorities or investment criteria. Emphasis is on country priorities. • According to website (i.e. not official guidance documentation), 2 project sectors of (11) are agriculture and food security, with projects expected to focus on, respectively, climate resilience of production and supply chains. • Seven agriculture-focused implementing (accredited) entities of 56 such entities.	• Current strategy does not mention school feeding (nor food systems, public procurement, or education). • Strategic priorities, policies, and guidelines state that the allocation of resources should take into account 'maximizing multi-sectoral or cross-sectoral benefits' (one of seven considerations).
GEF	• Current replenishment period (GEF-8) Strategic Positioning Framework targets transformation of food systems (one of five systems) with emphasis on nature-positive and carbon-neutral production, circularity principles in supply chains, and supportive national frameworks. • GEF-8 Programming Directions include 1 Food Systems 'Integrated Program' (of 11) supporting interventions in sustainable and regenerative agriculture, livestock management, and sustainable aquaculture.[11] • 'Agriculture, Food Security, and Health' is one of four themes of particular interest to the LDCF and SCCF that focus on climate change adaptation. Specific interventions include social safety nets (e.g. crop insurance); climate-resilient crops, aquaculture, and post-harvest measures; farm digitisation; pest and disease surveillance; and strengthened extension and cooperatives. • Three agriculture-focused GEF agencies of 18 such agencies.	• School feeding or food procurement are not mentioned. • Strategies and guidance make only general references to education.

[11] GEF serves the implementation of several multilateral environmental agreements besides the UNFCCC. As such, climate change is one focal area alongside biodiversity, land degradation, international waters, and chemicals. GEF-8 Integrated Programs are intended to target multiple environmental focal areas.

ASAP	• ASAP explicitly targets climate finance to smallholder farmers. Some finance, although more limited, reference other parts of the food system (food security, nutrition, and certain value chain elements such as processing). • Priorities of ASAP (from 2012) relate to agriculture, water, risk management, infrastructure, and knowledge. ASAP+ (from 2021) supports climate services, natural resource management, women's empowerment, nature-based solutions, and carbon sequestration and emissions reduction. • Implementing entities are generally headed by project management units housed within government.	• No reference to school feeding or public procurement in programme overview documentation. • However both ASAP and ASAP+ emphasise that they seek to scale up successful 'multiple benefit' approaches.

3 Flows

3.1 Introduction

An assessment of climate finance flows provides an important quantitative sense-check of the past extent and future potential of climate finance to support school feeding programmes. Here, we assess how school feeding features at two levels. First, we assess the main repository of data on public international climate finance, the OECD's CRDF dataset. This provides the only source of climate finance data across a wide spectrum of funders, in which specific priorities, such as school feeding, can be identified. However, it is not possible to ascertain conclusively what share of CRDF flows are new or additional compared to existing development finance.

Second, we then focus on the same four MCFs – GCF, GEF, AF, and IFAD's ASAP – as considered in Section 2.4. In principle, these funds, especially the first three as UNFCCC financial mechanisms, have an explicit mission to address climate change. All funding to them is 'new' to the extent that they would not exist without the imperative of addressing climate change, although individual donors contributing to them could, of course, have reduced their funds to other development priorities. Searches of their websites allow us to identify a limited set of projects with school feeding elements for further analysis.

3.2 Broad Trends – Climate-Related Development Finance to School Feeding

The OECD's CRDF dataset is used as the basis for most estimates of public international climate finance. The data have significant limitations – in particular, CRDF does not allow for reliable estimates of what is 'new and additional' (Box 4). However, due to the granularity of the data, including the main sector and subsector targeted by each activity, as well as titles and project descriptions, it is an invaluable source of information for estimating climate finance (or, strictly, CRDF) going to a particular priority such as school feeding. We thus used CRDF data for the last five years for which data are available (2018–2022), excluding export credits but without attempting other provider- or recipient-specific adjustment, to provide a general picture of trends and patterns in provision to school feeding.

Box 4 How to Interpret Climate-Related Development Finance

CRDF data are compiled using OECD Development Assistance Committee's Creditor Reporting System (OECD DAC CRS) data, including only activities tagged as being climate relevant. As such, flows captured as CRDF are mainly official development assistance (ODA) or other official flows (OOF). The CRDF dataset is the only disaggregated compilation of international public climate finance flows across multiple provider types.[12] Reporting entities make a range of adjustments when using CRDF data as a basis to report climate finance.[13] Whatever the adjustments made, however, there remain considerable overlaps between climate finance and development finance.

In the 2009–2019 period, climate finance rose faster than total official flows (Miller et al., 2023). While the question of what is new and additional depends on allocation decisions within individual donor's budgets, at headline level, this suggests that much climate finance is simply repurposed, realigned, or simply rebadged development finance. This is a crucial caveat when considering the first specific question: "Can climate finance offer new and additional resources for school feeding?". At a sector level, or for a specific priority such as school feeding, it may remain logical to focus on climate finance as an 'additional' source', insofar as an increasing share of the public international finance envelope is aligning with and/or focusing on climate change objectives. However, it is important to recognise that climate finance to school feeding could come at the expense of development finance to school feeding and/or climate finance going to other priorities. Importantly for school feeding, ODI analysis suggests that rebadging, realignment, or repurposing of development finance as climate finance has occurred more in certain emissions-intensive sectors, including energy and transport, but also agriculture to a lesser extent. However, it has been less common in traditional development priorities, including education as well as health (Ibid.).[14]

CRDF data have additional limitations: only commitments data are included; loans are not adjusted for the grant element; and – using the 'recipient perspective' data as we have done to understand the

[12] For MCFs, an alternative compilation of pledges and projects is maintained by ODI and Heinrich-Böll-Stiftung: Climate Funds Update.

[13] For example, in reporting their climate finance contributions to the UNFCCC, OECD DAC donors tend to count a differing proportion of an activity's value as climate finance, depending on whether it has adaptation and/or mitigation as a 'principal' objective (which requires that climate change is fundamental to the project design), or a 'significant' objective. Individual donors apply different coefficients in doing so, and some of the overall estimates attempt to reproduce these adjustments donor by donor, as well as adjusting for slight differences in ODA DAC provider/recipient countries vs. categorisations of countries under the UNFCCC (OECD, 2024).

[14] These dynamics vary by sector. Increases in climate finance appear to have come about primarily from increases in the share of investment in energy and transport being designated in climate finance, rather than in the squeezing of international cooperation going to traditional 'development' priorities, such as education and health (Miller, Pudussery and Rosenfeld, 2023).

proximate source of finance, including multilaterals – it does not provide a picture of individual bilateral donor's efforts via their multilateral contributions (see Appendix 1 for further details).

CRDF relevant school feeding can be measured in various ways. Our analysis in this section considers three measures of school feeding-related CRDF over the last five years for which data are available (2018–2022):

1 **Measure 1, "11250":** Where providers have assigned the project/ activity to the specific school feeding subsector (purpose code 11250 – School Feeding; 2018 was the first year this code was available)

2 **Measure 2, "Keyword":** Where school feeding focused terms, as used in dos Santos et al. (2022), occur in the titles and/or descriptions of individual projects or activities listed in the CRDF dataset

3 **Measure 3, "Related":** An additional measure for CRDF to sectors related or adjacent to school feeding, including education, nutrition, agriculture, fishing, and food security[15]

Volumes and Composition

Total CRDF commitments (excluding export credits) have almost doubled over the last five years of reported data, from $76 billion in 2018 to $130 billion in 2022.[16] The share going to the school feeding subsector, (purpose code 11250), has been negligible throughout – averaging 0.005%, while projects featuring a school feeding keyword in their titles or descriptions amounted to 0.03%. The share to subsectors related, or adjacent, to school feeding programmes made up a larger share at 11.5%. On all measures, the share fluctuates from year to year with no discernible trend (Table 2).

[15] We include the following school feeding-adjacent purpose codes: 111xx (Education, level unspecified); 112xx (Basic education); (113xx Secondary education); 12240 (Basic nutrition); 311xx (Agriculture); 313xx (Fishing); 32130 (Agro-industries); 32174 (Clean cooking appliances manufacturing); 43071 (Food security policy and administrative management); 43072 (Household food security programmes); 43073 (Food safety and quality); 52010 (Food assistance). We exclude 72040 Emergency food assistance.

[16] For comparison, bilateral and multilateral flows categorised by OECD as counting towards the $100 billion goal increased from $63 billion to $92 billion.

Table 2 CRDF commitments to school feeding, 2018-22

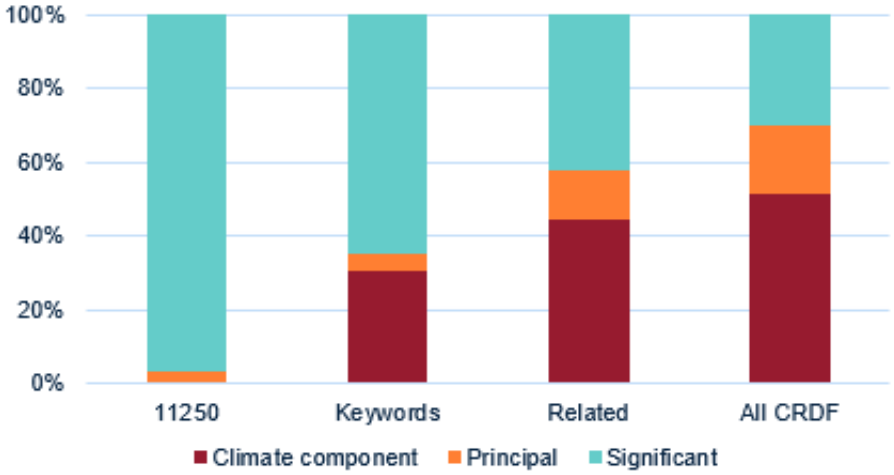
Measure	Value	2018	2019	2020	2021	2022	Total
11250	USD m	0.4	7	11	4	5	27
	Share, all CRDF	0.0005%	0.01%	0.01%	0.004%	0.004%	0.005%
Keywords	USD m	41	23	10	58	18	150
	Share, all CRDF	0.05%	0.03%	0.01%	0.06%	0.01%	0.03%
Related	USD m	9,978	9,538	12,170	9,588	15,752	57,027
	Share, all CRDF	13.1%	10.5%	12.0%	9.8%	12.1%	11.5%
All CRDF	USD m	76,376	90,471	101,557	97,398	130,037	495,838

Source: Authors' analysis of OECD DAC CRDF data

CRDF to school feeding was less likely to have climate adaptation and/or mitigation as a fundamental motivation or design consideration – especially in the case of the limited volumes going to the school feeding subsector (Figure 5). Only 3% of activities coded explicitly to school feeding (11250) had such a designation (climate adaptation and/or mitigation as a 'principal objective'). The share with strong climate focus increases for activities with school feeding keywords, especially since on these measures there are also commitments from MDBs that are generally reported using the 'climate components' designation. These count the value of climate-focused elements of larger projects, so they can, like the 'principal' marker, be understood to indicate funding with a stronger focus on climate change.[17] However, even on the 'keywords' measure, the share with a strong climate focus is lower than it is across sectors related to school feeding and lower still than for all CRDF.

[17] Within the 'Rio Markers' system used by most bilateral and many other providers, 'significant' indicates a weaker focus on climate change mitigation/adaptation than 'principal'. 'Climate components' is ascribed using a separate system by MDBs, and it is meant to ascribe a monetary value to those elements of a wider project that directly contribute to climate adaptation/mitigation. See https://www.oecd.org/dac/climate-related-official-development-assistance.pdf

Figure 5 Share of CRDF commitments with principal or significant climate objectives, or climate components (cumulative, 2018-22)

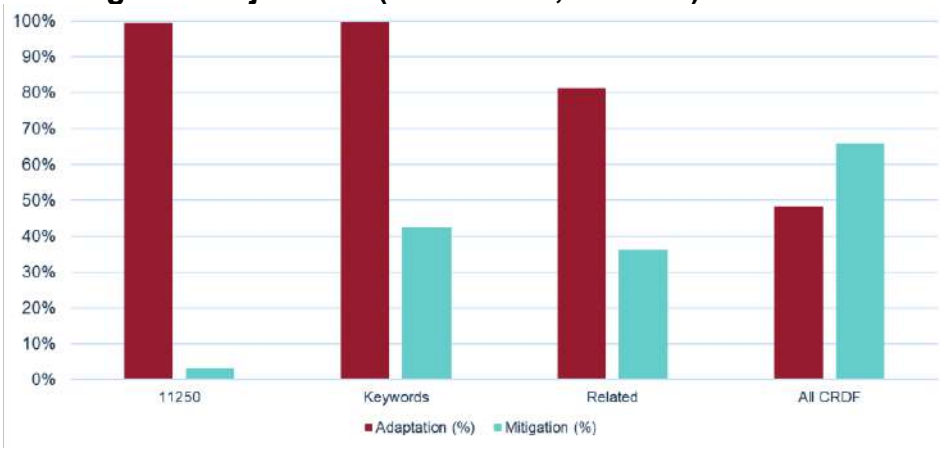


Source: Authors' analysis of OECD DAC CRDF data

CRDF commitments to school feeding were, however, more likely to be issued as grants. Commitments to the school feeding subsector (11250) and to activities with school feeding keywords were entirely made as grants. For related sectors, 55% was committed as grants, with 45% as debt (around half of which was non-concessional debt) and less than 1% as equity. The share of all CRDF committed as grants was 30%.

Commitments to the school feeding subsector targeted adaptation almost exclusively. Commitments to activities with school feeding keywords and related sectors were still more likely to target adaptation, but a considerable proportion had mitigation as an additional or alternative objective (across all CRDF, mitigation was more often an objective, reflecting greater prioritisation of adaptation in sectors deemed adjacent to school feeding, such as education and, especially, agriculture and fishing). See Figure 6.

Figure 6 Share of CRDF commitments with adaptation and mitigation objectives (cumulative, 2018-22)[18]



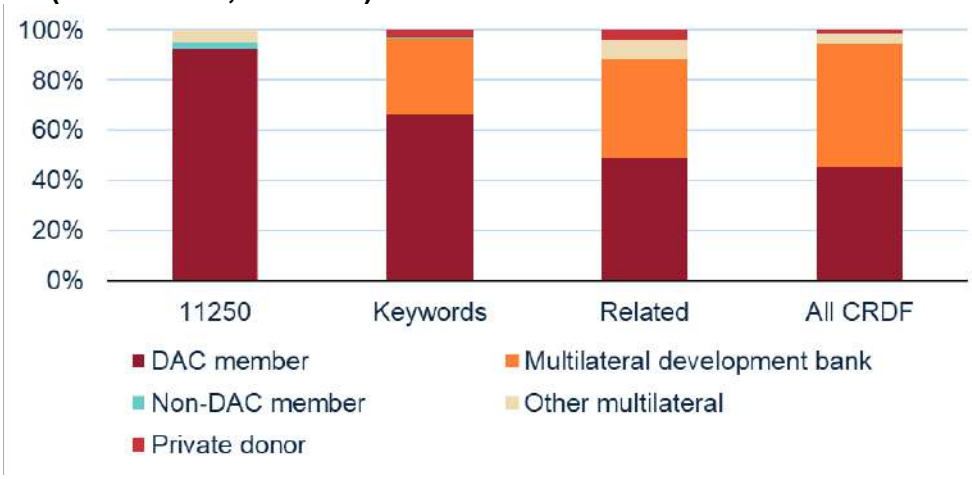
Source: Authors' analysis of OECD DAC CRDF data

Providers

Among provider types, OECD DAC member donors were the largest contributors by share on all measures, committing over 90% of the total to the school feeding subsector. In contrast, no MDBs recorded activities targeting this subsector. MDBs did contribute 30% of CRDF featuring a school feeding keyword, although this was lower than their share of CRDF to related sectors (40%) and of all CRDF (49%). 'Other multilaterals', including MCFs such as the GCF, the GEF, the AF, and IFAD's ASAP, as well as various UN agencies, committed a small share on all measures: 5% of flows to the school feeding subsector, 0.03% of flows with school feeding keywords, and 7% of flows to related sectors (while providing 4% of all CRDF). Within the other multilaterals category, MCFs did not commit any CRDF to the school feeding subsector or to projects with school feeding keywords in titles or descriptions. Non-DAC donors and private philanthropies committed still smaller shares across the various measures (Figure 7).

[18] CRDF activities can be tagged with both adaptation and mitigation objectives, hence totals exceed 100%.

Figure 7 Share of CRDF commitments per provider type (cumulative, 2018-22)



Source: Authors' analysis of OECD DAC CRDF data

The top providers on each measure were Japan (11250), the Inter-American Development Bank (IDB; keywords), and the World Bank (Related). (See Table 3.) In each case, however, the 'quality' of that finance varies. None of Japan's commitments to the school feeding subsector had a 'principal' focus on climate change, although all was committed in grant form. IDB committed all its finance to activities with school feeding keywords as grants, and all had a strong climate focus (i.e. recorded flows are for 'climate components' of projects only). The World Bank's commitments to related sectors all had a strong climate focus, but 53% was committed as grants (14%) or concessional loans/equity. These came from the International Development Association, which provides grants and concessional loans to low-income countries. Nearly half (47%) was committed as non-concessional (i.e. market rate) loans, with the vast majority (90%) coming from the International Bank for Reconstruction and Development, which is the World Bank's lending arm for middle-income and creditworthy low-income countries.

Table 3 Top 5 providers of CRDF commitments per measure (cumulative, 2018–2022)

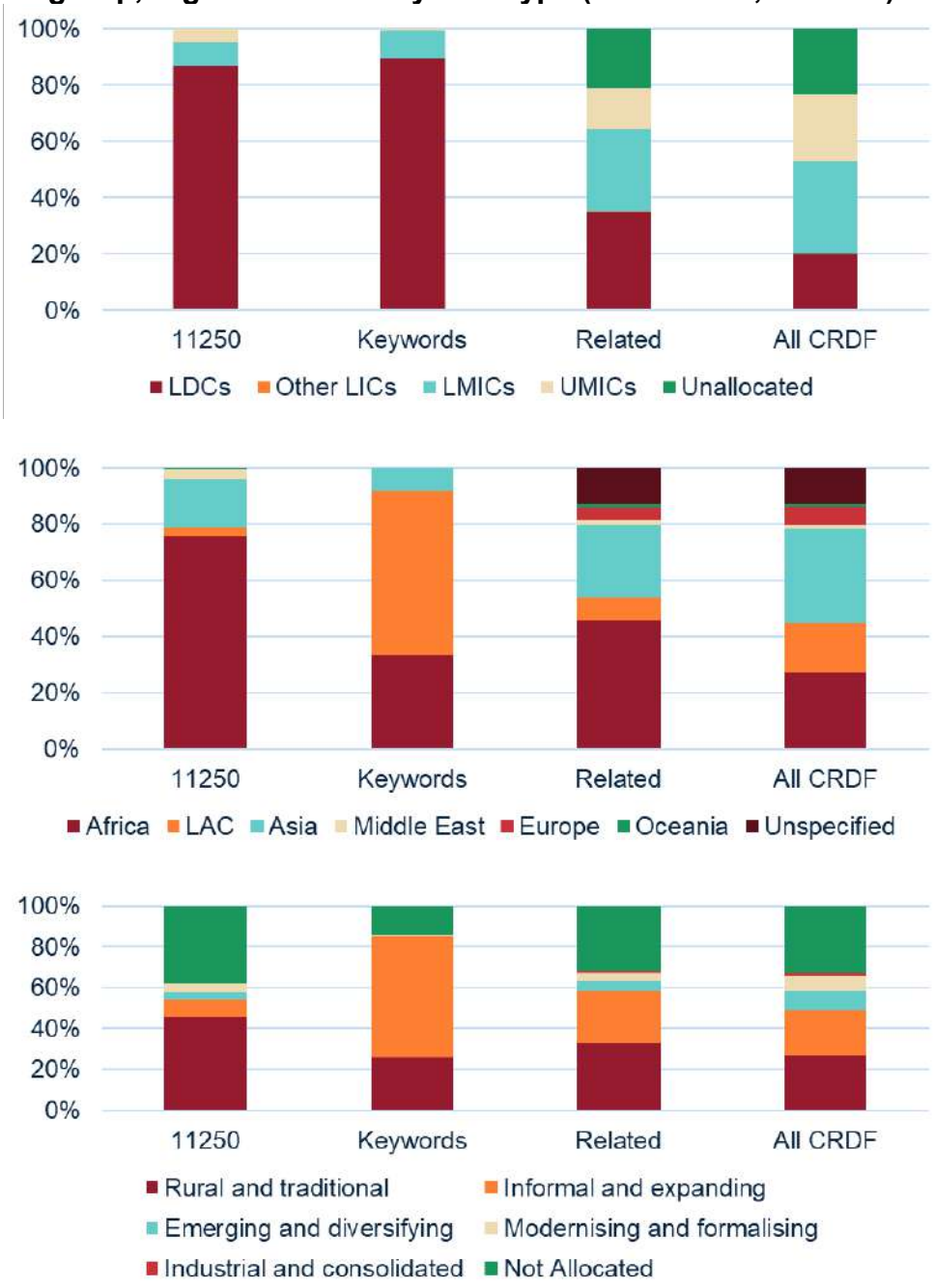
Measure	Provider	Value (US$ million)	Share of total	Strong climate focus	Concessional share
11250	Japan	16	58%	0%	100%
	Canada	6	21%	0%	100%
	Norway	2	6%	0%	100%
	EU institutions (excl. EIB)	1	4%	0%	100%
	FAO	1	5%	0%	100%
Keyword	IDB	46	30%	100%	100%
	Canada	39	26%	0%	100%
	Netherlands	17	11%	0%	100%
	Germany	11	7%	0%	100%
	Japan	10	6%	0%	100%
Related	World Bank	15,973	28%	100%	53%
	EU institutions (excl. EIB)	6,150	11%	20%	100%
	Germany	5,411	10%	19%	100%
	France	2,855	5%	47%	100%
	United States	2,331	4%	18%	100%

Source: Authors' analysis of OECD DAC CRDF data

Recipients

A vast majority of CRDF commitments to the school feeding subsector and to activities with school feeding keywords were made to LDCs, compared with both CRDF to related sectors and all CRDF, where commitments were mainly made to middle-income countries, including UMICs, or were intended to benefit multiple countries ('unallocated'). Regionally, the distribution of CRDF to the school feeding subsector favoured Africa, while a majority of CRDF with school feeding keywords went to LAC. In both cases, relatively little went to Asia, especially when compared with CRDF commitments to related sectors and with all CRDF. Using Marshall et al.'s (2021) classification of food systems into five types suggests most CRDF, on all measures, goes to food systems of the 'rural and traditional' or 'informal and expanding' type, rather than countries with more industrialised food systems – especially with the 'keywords' measure (Figure 8). In such contexts, incorporating the smaller-scale actors typically involved in food production and the supply chain into school feeding may offer opportunities to improve their livelihoods and build resilience. However, logistical challenges and transaction costs may also arise when involving them in climate-financed activities (see Section 4.4 below).

Figure 8 CRDF commitments received per country income group, region and food system type (cumulative, 2018-22)



Source: Authors' analysis of OECD DAC CRDF data

At a more granular level, major recipients of CRDF commitments according to each measure were (i) Somalia, which received nearly a third of the CRDF explicitly tagged to the school feeding subsector 11250 for three specific-purpose programmes, all funded by Japan and managed by WFP and (ii) Haiti, which received over half of CRDF with a school feeding keyword across five project-type interventions funded by Canada, Germany, IDB, and Spain (Table 4).

Table 4 Top 5 recipients of CRDF commitments per measure (cumulative, 2018-22)

	11250		Keywords		Related	
	Value (US$ m)	Share of total	Value (US$ m)	Share of total	Value (US$ m)	Share of total
Africa, regional	1	4%			1,791	3%
Burundi			17	11%		
Developing countries, unspecified					7,261	13%
Ethiopia	2	6%			2,367	4%
Haiti			83	55%		
India					2,345	4%
Madagascar			11	7%		
Mali	4	16%				
Nepal	3	12%				
Nigeria					1,747	3%
Pakistan			8	5%		
Rwanda			4	3%		
Somalia	7	28%				

Source: Authors' analysis of OECD DAC CRDF data

3.3 Deep Dive: School Feeding in Multilateral Climate Fund Projects

As noted, CRDF data showed no MCF projects directly targeting school feeding, either in the school feeding subsector or with school feeding keywords in titles and descriptions. On the 'related' sector measure, the largest MCF providers were IFAD's ASAP (we assume that at least some IFAD CRDF was provided under ASAP),[19] the GCF, the GEF, and the AF (Table 5).

Table 5 Top climate funds supporting sectors related to school feeding (cumulative, 2018-22)

	CRDF – 'Related' (USD millions)	As a share of provider's total CRDF
IFAD's ASAP	1,720	83%
GCF	1,539	15%
GEF	471	12%
Adaptation Fund	188	37%

Source: Authors' analysis of OECD CRDF data

We searched each provider's websites for projects mentioning school feeding-related terms to identify in more detail whether and how key MCFs are addressing school feeding.[20]

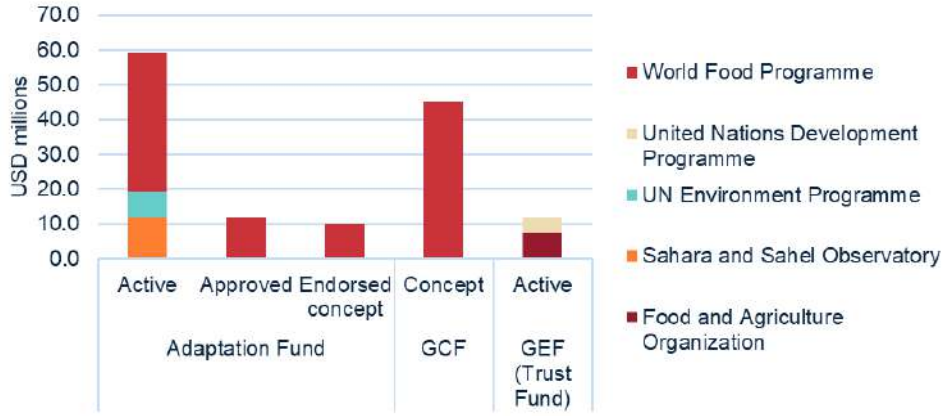
[19] CRDF data for IFAD do not distinguish programmes supported under its provided climate fund.

[20] We used Google's Advanced Search function to search within documents hosted on MCF websites, selecting projects in which the main project document – usually an approved proposal document – includes the school feeding focused terms, as used in dos Santos et al. (2022).

While the search initially identified 33 projects, only 11 were taken forward for further analysis – the remainder appeared to be concepts or proposals that were not ultimately funded (three projects), or where the link to school feeding, and particularly climate benefits of school feeding programmes, was unclear from the main project document.[21]

Of the 11 projects, the largest number are funded by the AF (eight, with an average value of $10million; six active, one approved, and one endorsed concept). The GEF funds two, both active with an average value of $6million), both through the main GEF trust fund rather than the LDCF or SCCF, which the GEF manages and which focus on climate change adaptation specifically. One as-yet undecided proposal has been made to the GCF, with the largest single MCF contribution by far at $45m (Figure 9). While the status of this last project is unclear, it is included because of its strong emphasis on school feeding as a means to achieve climate benefits (Box 5). None of the IFAD-funded projects were analysed further, because they did not clearly integrate school feeding in ways that were expected to lead to climate benefits.

Figure 9 Total MCF contributions, implementing entities and project status for identified projects featuring school feeding elements



Source: Authors' analysis of MCF projects

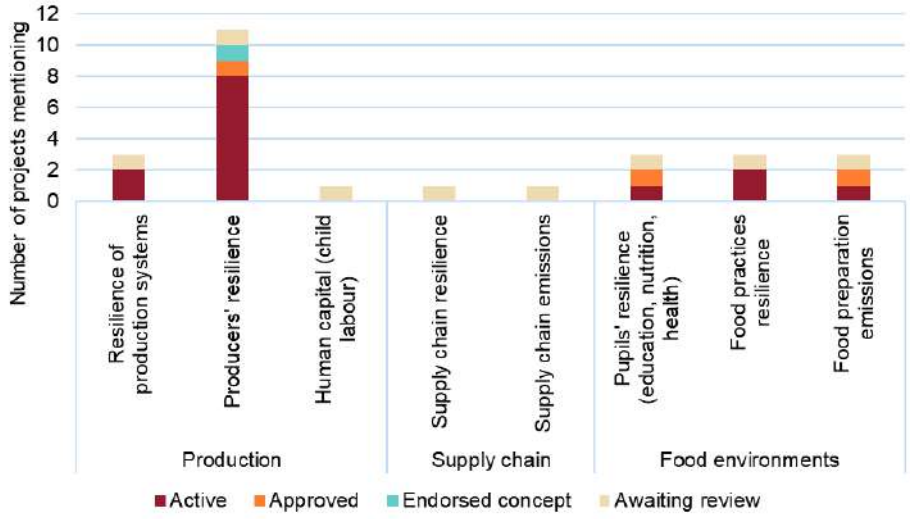
Geographically, all projects are located in Sub-Saharan Africa (8) or LAC (3). The World Food Programme (WFP) is the most frequent implementing or accredited entity (7 projects). While terms and definitions vary by fund, the WFP is typically the entity that is approved to apply for funding, while the entities responsible for executing the identified projects are mainly government agencies. The UN Food and Agriculture Organization (FAO), Sahara and Sahel Observatory (OSS), UN Environment Programme, and UN

[21] All three proposals were made to the Adaptation Fund: Adapting to Climate Change for Improved Food Security in West Nusa Tenggara Province (WFP); Increasing the resilience of vulnerable communities in the agriculture sector of Mandouri in Northern Togo (BOAD); and Integrating climate smart land management options in Namibia: to enhance long term productivity, profitability and resilience (DRFN). Assessment of these project proposals indicated that school feeding featured minimally and only cursory links were made to climate benefits, mainly by implying enhanced resilience of producers through improved farmer incomes and market linkages.

Development Programme also act as implementing or accredited entities for one project each.

Six of the 11 projects explicitly seek to integrate with existing government school feeding programmes. In all but one case, school feeding is a small part of all projects considered, with links to climate change benefits made, in most cases, in a limited number of ways. The exception is the concept for a school feeding project in Benin, submitted by WFP to the GCF (Box 5). Generally the projects mention school feeding in relation to one to three outputs of the entire project (projects generally have several tens of outputs in total). The most common climate change benefit identified from school feeding elements is enhanced resilience of producers, generally through increased and more secure incomes, which was mentioned in all projects (Figure 10). Links to other climate outcomes identified from the literature were less frequently made (see Figure 1), although three projects identified resilience of production, emissions from food preparation (typically wood-fired cookstoves), changes in food practices, and human capital (i.e. enhanced resilience of school pupils through nutrition and/or education) as potential benefits. The submitted concept to the GCF makes the strongest links to the greatest range of climate benefits, described further in Box 5.

Figure 10 Climate benefits targeted through integration of school feeding in identified MCF projects



Source: Authors' analysis of MCF projects

Box 5 WFP's Concept for GCF Funding to Transition Benin's National School Feeding Program to a Low-Emission and Climate-Resilient Model

A concept was submitted to the GCF in December 2023 called 'Home-Grown School Feeding: Locally supplied, climate-resilient, and energy-efficient green school canteens in Benin,' which aims to transition Benin's National Integrated School Feeding Programme (PNASI), launched with WFP in 2017, to a low-emission and climate-resilient model. At the time of writing, the concept, for a $45million GCF grant towards a $50million total budget programmed over five years and seeking to reach 650,000 people directly, appeared to be still under review.

The GCF accepts concept notes prior to development of full funding proposals, with the Secretariat providing review and feedback. There is thus no guarantee that a concept will be taken forward in the same form, or at all, as a full proposal, nor that it would be funded. However, as the only example of a project focusing entirely on school feeding across the four MCFs assessed, WFP's concept offers valuable insights into whether and how a case can be made for a strengthened link between climate finance and school feeding programmes and potentially wider food system transformation.

In this case, WFP proposes to act as the accredited entity, with implementation by the Government of Benin via the General Directorate of Environment and Climate (GDEC) within the Ministry of Living Environment and Sustainable Development (MLESD). PNASI currently reaches 75% of primary schools and aims to achieve 100% coverage in 2024. The project has three interrelated components, namely (i) lowering emissions and increasing sustainability in Benin school canteens; (ii) building resilience for local school canteen value chains; and (iii) building knowledge and behavioural change in schools.

The project targets two of the GCF's adaptation results areas: increased resilience of the most vulnerable people and communities and health, well-being, and food and water security. The concept also makes reference to some climate mitigation benefits (although it should be recognised that agriculture in Benin contributes about 29% of total national GHG emissions, and while Benin's emissions have been increasing rapidly in recent years, this is under 0.01% of the global total). The specific climate change benefits highlighted in the concept include:

- Reducing GHGs from school meal preparation: Reducing emissions associated with inefficient traditional cookstoves

- Reducing health problems associated with school meal preparation, for example, exposure to smoke and heat
- Encouraging climate-resilient farming practices and technologies among participating farmers and reducing deforestation
- Increasing resilience of local school canteen value chains through training and infrastructure (e.g. post-harvest management techniques, cold chain management, and drying and storing)
- Capacity building and awareness raising to encourage climate-responsive behaviour in schools, including waste management, forest and water conservation, and school gardens
- Promoting fruit and vegetable off-season crops to enhance nutritional and health status of school pupils
- Establishing contracts with farmers and providing technical assistance to agrifood supply chain actors to boost profitability and incomes

Importantly, the concept recognises various risks, including the financial sustainability of the national school feeding programme; the ability to target vulnerable small producers or obtain sufficient food supply from them; climate variability, which could affect project results; and a lack of synergy with other projects. Notwithstanding the brevity of the GCF concept template, WFP does appear to seek to address these through, for example, linking to established government programmes and policies, stakeholder consultation, and food sourcing and storage measures to buffer against stock shortages.

In terms of the potential transformational impacts of the proposed project, the concept articulates how activities will support a ‘paradigm shift’ in the school feeding programme and associated value chain, although not the broader food system.

Source: GCF (2023); Gouvernement de la République du Bénin (2022) ; Ritchie, Roser, and Rosado (2020)

4 Barriers to Climate Finance for School Feeding

There remain many priorities for climate finance and a significant shortfall compared to most estimates of need (Allen & Overy and CPI, 2023; UNEP, 2023). In this context, several barriers will need to be overcome if climate finance is to flow to school feeding.

4.1 Challenges in Evidencing Climate Benefits

As noted when introducing the draft theory of change for how provision of climate finance to school meals could generate climate benefits, the evidence base on the extent of mitigation and adaptation benefits provided by school feeding programmes is still small. This is particularly the case for longer-term and broader climate adaptation and mitigation outcomes that school meal programmes might achieve, for example via: (i) influencing wider food system transformation through public procurement, (ii) climate education and long-term food practice changes among school pupils, and (iii) research on climate-resilient and low emissions school meals. This presents challenges both to sufficiently demonstrate the climate rationale when proposing projects and for selecting indicators and frameworks for monitoring and evaluating project implementation.

There have been some efforts to move away from a binary distinction, whereby climate finance must be used only to support clear adaptation and mitigation benefits that go over and above those implied by business-as-usual development. Especially for adaptation, where the importance of poverty reduction, improved health, education, and nutrition for populations' resilience is clear, the advancement of concepts such as 'climate-resilient development' by the Intergovernmental Panel on Climate Change (IPCC) has helped advance a more synergistic and flexible approach (Schipper et al., 2022).

However, key climate financing entities, including the major MCFs, still require project proponents to demonstrate how the activities for which funding is sought go over and above business-as-usual development while continuing to deliberate how that can be practicably done. For example, the GCF has not yet updated

guidance following the work that commenced in 2019 to clarify policies on whether and how it will finance the 'incremental' and/or 'full' cost of activities to address climate change (GCF, 2021b).[22] The Operational Policies and Guidance of the Adaptation Fund require funding proposals to provide a justification 'focusing on the full cost of adaptation reasoning', noting also that 'it is possible to include activities which, taken out of context, could be considered "business as usual" development but these should be justified in the context of achieving the adaptation goals of the project' (Adaptation Fund, 2023).

4.2 Limited Awareness of School Feeding Programmes as a Climate Intervention

Whatever the level of evidence available, our analysis suggests that there may be an awareness gap among key climate finance actors on both the demand and supply side, even regarding *potential* climate adaptation and/or mitigation benefits of sustainable school feeding programmes.

Projects involving school feeding have received a negligible amount of CRDF commitments, and show a lower likelihood of a strong focus on climate change when compared with commitments to related sectors. While several multilateral climate fund projects incorporated school feeding components, in all but one case – an as-yet undecided project concept – it was as a small part of a much larger set of activities. Strategies and guidance of the four MCFs reviewed made no mention of school feeding, and while elements of food systems are on their radar, the role of schools in addressing climate change is even less acknowledged. Only two country climate strategies, meanwhile, made mention of school feeding as part of explicit forward-looking climate commitments: Burundi and Malawi (Section 2.3/ Appendix 2). Despite the efforts to increase capacity in climate change across operations by both bilateral donors and development banks, these are unlikely to benefit school feeding when it remains somewhat 'orphaned', due to a lack of integrated school feeding strategies among most donors and MDBs (WFP, 2023b).

A lack of awareness and understanding of potential climate benefits may also apply within the school feeding community. A 2023 assessment found that 54% of food-based dietary guidelines and 83% of nutrition-related public food procurement policies in a global

[22] 'In Article 4.3 of the United Nations Framework Convention on Climate Change (UNFCCC), it states that developed countries shall provide new and additional financial resources to meet the "agreed full costs" incurred by developing countries in fulfilling the commitments to reporting obligations referred to in Article 12.1 of the Convention. Developed countries shall also provide such financial resources needed by developing countries to meet the "agreed full incremental costs" of implementing measures to meet their commitments, as agreed with an operating entity of the Financial Mechanism of the Convention' (GCF, 2021b, p. 1)

sample made no intentional connection between nutrition and climate (Lok, Colston and Haddad, 2023).[23]

4.3 Access Restricted and Costly

As noted, efforts to simplify and streamline access to climate finance continue. While this is a general challenge, specific aspects of school feeding may exacerbate the issues. As seen, a number of accredited entities/implementing agencies to the four MCFs analysed focus on aspects of the food system, especially agriculture and food security. Notably this includes the Rome-based UN agencies, FAO, IFAD, and WFP, which have all played a role in climate projects with school feeding elements, as well as in IFAD's case, managing a smallholder farmer-focused climate fund. However, national implementing/accredited entities focusing on agrifood tend to be agricultural banks. Commercial finance has played a vanishingly small role in financing school feeding to date (WFP, 2023b), despite the potential for adaptation and mitigation interventions, particularly in the supply chain, to offer returns on investment, for example in food storage and distribution systems (especially involving renewable energy and energy efficiency). Meanwhile there are few, if any, education-focused entities acting as accredited entities/agencies to the MCFs – international, regional, or national.

At country level, coordination of school feeding policy and delivery typically sits with ministries of education, or in some cases, with cross-sectoral ministerial bodies (comprising, for example, health, agriculture, and social protection in addition to education) (WFP, 2023b). In either case, this is unlikely to be or include the entity within the government that is responsible for coordinating climate action – which often also acts as a focal point or designated authority for liaison with the MCFs. Typically, this is the ministry responsible for environmental matters or, especially for the GCF, sometimes ministries of finance (given anticipation of higher levels of GCF funding in future).

To access climate finance from MCFs, then, school feeding lead ministries or coordination bodies will typically need to either engage with or influence their counterparts leading on climate within government and/or seek collaboration with one of the accredited/implementing organisations that can directly apply for and manage funds. The high evidentiary thresholds make proposal development expensive, despite mechanisms such as project preparation grants and feedback on concepts. Incentives to take risks on intervention types with a limited record of attracting climate finance may be limited for all parties, especially given high levels of competition.

[23] Documents were sourced globally from FAO's food-based dietary guidelines database (n = 70; https://www.fao.org/nutrition/education/food-based-dietary-guidelines) and, for food procurement policy documents, WHO's lobal database on the Implementation of Food and Nutrition Action (GIFNA) (n = 162, https://gifna.who.int/).

Bilateral donors and MDBs may offer more options for accessing climate finance, and school feeding lead entities may have existing development financing relationships with them. However, climate-focused bilateral channels, such as the UK's International Climate Finance (ICF) and Germany's International Climate Initiative (IKI), can have their own arduous proposal development and selection processes. The major MDBs, meanwhile, have developed criteria to test and ensure Paris Alignment (World Bank Group, 2024), creating additional requirements for project proponents to comply with, increasingly applied across all operations.

4.4 Implementation Hurdles

National school feeding programmes already embedded in public procurement and education systems present opportunities to harness economies of scale. However, where those programmes are nascent, significant transaction costs and logistical challenges can arise in reaching small-scale and dispersed target groups. Some of the greatest climate adaptation and mitigation needs – and benefits – associated with school feeding programmes arise among actors upstream in food systems, but reaching small-scale actors, such as smallholder farmers and smaller enterprises in the supply chain, may be difficult and costly. The informal and precarious position of many such entities can reduce their capacity to engage with school feeding programmes, despite the potential longer-term benefits to incomes and livelihoods (Chiriac, Vishnumolakala, and Rosane, 2023b). Small-scale food system actors may also struggle to meet school feeding procurement standards without adjustments to increase inclusivity (Swensson, 2018). Such difficulties could grow as additional climate-related criteria are layered on, as well as potentially increasing near-term costs of school food. It may be possible to leverage existing aggregation structures, such as farmer cooperatives, as some MCFs have sought to do in agriculture-focused projects.[24]

For coordinating and implementing agencies, too, there may be capacity and coordination challenges. The limited number of agencies with expertise and experience in MCF-funded projects involving school feeding – most prominently WFP[25] – implies a relatively narrow pool with expertise across both school feeding and climate. Within countries, separation of leadership responsibilities for education, agriculture, and other key line ministries involved in school

[24] See, for example, https://www.greenclimate.fund/story/climate-friendly-farming-preserves-argan-forests.

[25] WFP also features three school feeding-related projects in its June 2024 'Climate Resilience Investment Pipeline', launched in 2023: Planet-Friendly Cooking in Schools Transforming School Meals with Clean Energy: Pathway to Food Security and Sustainable Development (7 countries); Innovative E-cooking Solutions for Tanzanian Schools Leveraging Carbon Revenues to Co-fund the Scaling Up of ecooking in Tanzanian schools (Tanzania); and Enhancing Nutrition and Stepping Up Resilience and Enterprise Investing in Climate-Adaptable Value Chains and Providing Home-Grown School Meals (Somalia).

feeding on one hand and climate on the other, can create challenges for implementation, as well as the already mentioned access hurdles.

There may also be mismatches between the timescales for project implementation and the achievement of targeted climate outcomes. While this is the case for development finance also, some of the more profound climate outcomes of school feeding – especially leveraging changes in wider food systems and food practices – may not be achievable within the typical 4–5 year project duration. Additionally, school feeding programmes are typically intermittent through the year due to school holidays. This may require careful management to ensure a good fit with seasonal production and to ensure producers and supply chain participants have a predictable and consistent revenue stream.

Finally, with climate-related disasters already increasing in magnitude and frequency, there is potential for implementation to be disrupted, irrespective of the individual project's contribution to wider adaptation and mitigation. Embedding resilience into the implementation of school feeding programmes as well as their intended outcomes is therefore important – for example, maintaining suitable sourcing and storage measures to cope with stock shortages in the event of flooding or drought (see Box 5).

5 Possible Solutions

In response to each of the categories of barriers identified above, we can point to the following areas of action to help lower them.

5.1 Improving the Evidence on Climate Benefits of School Feeding Programmes

Given the high-evidence thresholds required to demonstrate climate benefits over and above business-as-usual development, it may be most feasible initially to seek climate finance for relatively discrete adaptation and mitigation components of established school feeding programmes. This is the approach adopted by WFP in its concept to transition Benin's PNASI to a low-emission, climate-resilient model (Box 5). At the same time, it will be important to pool learning on this and other concepts and proposals, irrespective of success or failure. For example, WFP has shared learning from a pilot project targeting electrification of school cooking facilities in Lesotho, including from an independent evaluation (WFP, 2023a).

It is important also to consider the sources of climate finance being targeted, for what purpose, and their different potential evidentiary requirements. The MCFs are emblematic, but they provide a small share of total climate finance, while having some of the highest standards for demonstrating climate impact. Other sources of climate finance can also be targeted – potentially in combination with MCF funding. Programmatic development and/or climate finance from bilaterals and MDBs may remain the finance of choice to build home-grown school feeding programmes from the ground up, with complementary MCF funding sought to specifically address the most substantial climate benefits. Novel sources and mechanisms, such as blended finance involving local banks, may be feasible where there is potential for return on investment, such as some measures addressing energy and food loss in the school feeding supply chain.

There may also be potential to secure carbon credits for certain elements, such as clean cooking, where economies of scale are sufficient. However, this is unlikely to be a significant source of finance in the near term due to factors including delays in agreeing upon the international rulebook for carbon markets under Article 9 of the Paris Agreement; concerns about quality of credits and their climate impact, which affects demand; and the relatively small volumes of finance to date (averaging around $15million per year from the voluntary carbon market for all clean cooking projects globally) (Galt et al., 2023; Payton, 2024).

Irrespective of the climate finance provider, it is important to tailor proposals to specific conceptualisations of climate additionality and transformative potential. For the GCF, for example, this would include its investment criteria and indicators, including the paradigm shift potential, and within this, for the agriculture and food security sector, the types of intervention aligned with the third transformation pathway 'reconfiguring food systems' (GCF, 2021a). Over time, it may be possible to engage in dialogue to test and adapt criteria to the reality of school feeding programmes.

Evidence may also be enhanced at relatively low cost by incorporating indicators and/or rapid evaluation to assess climate benefits (and associated costs) of existing school meal programmes. Taking advantage of the growing attention to health and food within the climate discourse,[26] this could assess, inter alia, the climate and health co-benefits of menu changes in lower-income country school meal programmes and also the resilience and emissions reduction potential of different approaches to school food production and supply.

More intensive efforts, such as systematic reviews to assess available evidence as it builds and/or modelling exercises to estimate potential climate benefits, could also be commissioned.

5.2 Enhancing Awareness of School feeding Programmes as a Climate Intervention

The next round of NDCs, with enhanced ambition, are due in 2025. There may be scope to encourage consideration of school feeding when setting out needs and commitments, although the revision process will already have advanced in many cases. Processes of climate policy and strategy development and implementation are often ongoing, however, so it remains important to build awareness of potential climate benefits of school feeding across both climate and core school feeding constituencies.

This also requires breaking down the silos between the constituencies. Lead ministries and apex bodies for climate policy and finance will receive project proposals from across areas of government and sectors of the economy. They will have limited resources to engage on specific themes. School feeding proponents inside and outside of government will therefore need to ensure that advocacy and awareness building is coordinated across the sectors involved (agriculture, education, health and nutrition, and social protection). Notwithstanding the ongoing need to enhance evidence, it will be important to highlight multiple cumulative climate benefits and value for money. These include opportunities to enhance resilience of actors across the food system but also in educational

[26] See for example the leaders' declarations at COP28 on food and agriculture and on health (COP28 UAE Presidency, 2023b, 2023a) as well as the health and agriculture/food-related targets of the Global Goal on Adaptation.

settings, while similarly reducing emissions. This can be approached in various ways, including:

- Publicising existing examples of strategies and projects where climate adaptation and/or mitigation outcomes from school feeding have been featured (and preferably, been achieved). This could also seek to expand the set of benefits under consideration. For example, our review of MCF projects and party submissions to the UNFCCC suggests that while climate benefits for producers and in food environments are sometimes highlighted, those in the middle of the supply chain are hardly acknowledged.
- Convening events or a platform to facilitate multistakeholder dialogue to develop a shared understanding of the contribution of school feeding programmes to climate adaptation and mitigation goals, alongside other co-benefits. Such dialogues could also provide a collaborative space to test theories of change, share best practices and evidence, agree on indicators, and offer direction to climate finance providers to revise and adjust their funding criteria and processes.
- Encouraging incorporation of climate from the ground up in the development of integrated school feeding strategies by governments, donors, and MDBs.

Prioritisation of awareness-building efforts may increase the likelihood of success. Potential allies among funders include not only the MCFs but also bilateral donors and multilateral development banks. Our analysis of CRDF to school feeding and related areas suggests that Japan, Canada, the World Bank, and IDB have been (comparatively) prioritising these themes in their climate financing – although the School Meals Coalition network will provide other intelligence and opportunities to engage with potential champions among funders.

In prioritising engagement with governments, those already mentioning school feeding in their climate strategies (albeit briefly) may constitute a first cohort of country champions, although other criteria, such as already having established substantial school feeding programmes, could also be relevant. Table 6 presents a possible longlist of candidates by overlaying the analysis of country NDCs and other climate strategies (Section 2.3) with data on coverage of, and public expenditure on, school feeding programmes from the State of School Feeding Worldwide 2022 report (WFP, 2023b). This results in a concentration on countries in Africa – Burundi, Burkina Faso, Côte d'Ivoire, Lesotho, Malawi, and Rwanda – with the addition of Brazil and Saint Lucia. In view of efforts made in the context of the concept note submitted to GCF by WFP, Benin may be another potential champion – although as with funders other routes to prioritisation are possible.

Table 6 Countries mentioning school feeding in climate strategies, with established school feeding programmes

L/MICs mentioning school feeding in climate documents	SMC member	Primary school children coverage	National budget expenditure as share of total school feeding expenditure
Burundi	Yes	23%	14%
Brazil	Yes	143%	100%
Burkina Faso	Yes	108%	89%
Côte d'Ivoire	Yes	25%	Unknown
Lesotho	Yes	85%	61%
Malawi	Yes	60%	1%
Rwanda	Yes	7%[27]	Unknown
Saint Lucia	No	45%	100%

Source: Authors' analysis of data sourced from the Climate Policy Radar Database, https://app.climatepolicyradar.org and made available under the Creative Commons Attribution 4.0 International license (CC-BY 4.0) and WFP (2023b)

5.3 Facilitating Access to Climate Finance for School Feeding

Routes, especially for local-level access, continue to evolve, potentially offering opportunities for the school feeding community. The GCF, for example, has offered 'enhanced direct access' since 2016, in which country-based accredited institutions decide how to programme resources, and in 2023, it launched the pilot phase for a project-specific assessment approach (PSAA) that allows projects to be submitted on a one-off basis without formal accreditation. The GCF and other funds also offer various forms of support for project preparation and readiness. However, progress has, overall, been slow, and the push to improve access continues, including in the context of the NCQG (Robertson and Watson, 2024).

In this context, it will be important to explore a broad range of channels and contributors, thereby expanding the focus well beyond MCFs to include MDBs, bilateral donors (including nontraditional donors), philanthropies, carbon markets, impact investors, and for certain elements, commercial finance. Given the complex climate finance landscape, initial costs of fully assessing feasibility, prioritising options, and navigating the various access routes are likely to be high. In this context, there may be a case to seek funding – perhaps from philanthropy – that can support low-value but potentially catalytic incubation, technical assistance, and knowledge management to help overcome barriers to access. At minimum, it would seem logical to encourage more experienced project proponents to share lessons regarding access, notwithstanding the highly competitive funding environment.

[27] WFP (2023b, p. 70) additionally notes that Rwanda's government 'has already met the commitment announced in 2021 of reaching universal coverage of school feeding.'

On the demand side, school feeding programme coordination bodies can be encouraged to incorporate the government agencies leading the liaison with the climate funds – who often also have a mandate on other aspects of climate finance at the national level. Given high demands on their time and resources, however, some level of light touch liaison (e.g. briefings and meetings) may be preferable.

5.4 Overcoming Implementation Hurdles

As for the evidence barrier, there are likely to be advantages in initially targeting climate adaptation and/or mitigation enhancements within established national school feeding programmes. Where such programmes have an embedded institutional architecture, it can increase the likelihood, at least optically, that longer-term and broader climate outcomes will be achieved beyond any time-bound climate-financed project. They are also more likely to have economies of scale and extant systems for contracting and procurement across small-scale producers and food businesses, reducing relative transaction costs.

Alternatively, or in addition, it may be possible to engage existing aggregation mechanisms, such as farmer cooperatives of food business associations. These could be used to reduce transaction costs and roll out aspects of implementation, such as skills development for climate adaptation and mitigation.

Finally, sound risk management is an essential part of implementing school feeding programmes. Any initiative receiving climate finance should be designed from first principles to be resilient to current and near-term climate variability and extremes.

6 Conclusions

This technical note considers whether climate finance could play a greater role in enabling governments to accelerate the expansion of school feeding programmes. In reappraising the specific research questions, we draw the following conclusions.

Can new and additional resources be mobilised for school feeding?

The share of climate finance overall that is new and additional remains contested, and competition, given limited availability and huge needs, is immense. This provides a context in which ambitions to attract significant climate finance into school feeding should be tempered. On the supply side, this note has focused on MCFs, given their important demonstration and agenda-setting role, while underscoring that they channel a small volume of climate finance, and other providers are critical. This notwithstanding, a review of MCF projects and policies reveals that despite increasing attention to food systems, there is much lower focus on educational settings such as schools and only a handful of small school feeding components in existing funded projects. On the demand side, school feeding likewise has minimal visibility in country climate plans and reports submitted to the UNFCCC, while food systems and education receive some mention but without much specificity.

Nonetheless, the fact that school feeding does feature in a handful of country climate plans, as well as in climate finance flows to date, including MCF projects, indicates there are foundations from which to build. The concept currently being considered by the GCF for Benin's national school feeding programme, PNASI, submitted by WFP, will be a crucial test case for whether a project focused entirely around school feeding can attract climate finance from the 'premier' multilateral climate fund.

Can school feeding be an effective entry point to unlock the potential of climate finance to transform food systems?

There is increasing recognition of the need for food system transformation to limit global temperature increase and cope with the adverse effects of climate change. This presents an open door for a focus on school feeding to further elevate the interconnectedness between food systems and climate change and to encourage climate finance to flow to food system transformation.

However, it is also the case that school feeding programmes are just one part of food systems. Even where most school-age children receive at least one meal per day at school in term time, this accounts for a modest share of the total food production and consumption and for the emissions and climate vulnerabilities arising. For example, school feeding programmes are more likely to create incentives for sustainable farm practices and adaptation measures supporting more resilient rural livelihoods, where farmers and other supply chain actors – often working at a small scale – can access and qualify as suppliers to school feeding programmes, and where it is economically worthwhile for them to do so.

The potential for school feeding to be a central element in wider food system transformation, including for climate adaptation and mitigation, then rests on their potential leveraging or catalytic effects on food systems more widely. Various mechanisms have been identified, especially, that school feeding procurement could provide a strong lever to shape wider public food procurement and thereby food production, supply, preparation, and diets, and that education around food can shape lifelong food practices. Both arguments are highly plausible but the evidence base, especially for adaptation and mitigation benefits over the long term and in lower-income country settings, is still small.

The answer to both questions, then, appears to be 'yes' in limited ways'. We identify barriers in terms of evidence, awareness, access, and implementation. In all cases, there are routes to lower these barriers, as summarised in Table 7.

Table 7 Summary of barriers and options to lower them

Barrier category	Barriers – examples	Responses to barriers
Evidence	High evidentiary thresholds for climate benefits in proposals Lack of consistent and reliable metrics for monitoring climate benefits	Seek climate finance for relatively discrete climate benefits – for example, to enhance adaptation/ mitigation outcomes in established school feeding programmes. Incorporate scarce MCF finance as a complement to programmatic development and/or climate finance from bilaterals and MDBs, and/or novel sources, including private finance. Tailor proposals to funders' specific conceptualisations for climate additionality and transformative potential.

		Incorporate indicators and/or rapid evaluation of outcomes and cost effectiveness to assess climate benefits of existing school meal programmes, including in agrifood systems and for child health and nutrition. Pool learning on proposals and M&E frameworks from extant climate finance projects. Commission systematic reviews of the available evidence.
Awareness	Limited awareness of potential climate benefits of school feeding programmes among climate finance providers and government leads for climate and/or school feeding	Target a limited set of countries to elevate visibility of school feeding in NDCs and other climate strategies. Publicise existing examples of school feeding for climate benefits in party submissions and climate finance. Convene multistakeholder dialogues to develop enhanced, shared understanding of climate benefits of school feeding programmes. Encourage incorporation of climate from the ground up in development of integrated school feeding strategies.
Access	Limited number of accredited/implementing entities with expertise in school feeding and, more generally, in food systems and education Institutional disconnection between the parts of government leading on school feeding and climate finance High cost and risk to develop proposals and assemble evidence	Take advantage of an expanding range of mechanisms to facilitate access. Broaden the sources of climate finance being targeted, tailoring sources and finance types to different purposes within climate-oriented school feeding programmes. Facilitate liaison between government agencies that are leading on climate finance and school feeding programme coordination bodies.

		Encourage more experienced project proponents to share lessons.
Implementation	Transaction costs in programmes involving small-scale entities Capacity gaps, such as for smallholder farmers to meet school food procurement standards Timescale mismatch between project funding and more transformative climate benefits Climate-related operational risks, for example, to food production and supply	Initially prioritise enhancing climate benefits of established national home-grown school feeding programmes. Engage existing aggregation mechanisms to reduce transaction costs and roll out capacity development on climate. Ensure adequate attention to immediate climate-related operational risks in project design.

References

Adaptation Fund (2023) *Draft guidance on optional cofinancing in the context of the Adaptation Fund*. Bonn: Adaptation Fund. Available at: https://www.adaptation-fund.org/wp-content/uploads/2023/10/AFB.PPRC_.32.23_Full-cost-of-Adaptation_Final.pdf.

Akinola, R. *et al.* (2020) 'A Review of Indigenous Food Crops in Africa and the Implications for more Sustainable and Healthy Food Systems', *Sustainability*, 12(8), p. 3493. Available at: https://doi.org/10.3390/su12083493.

Alcayna, T., O'Donnell, D. and Chandaria, S. (2023) 'How much bilateral and multilateral climate adaptation finance is targeting the health sector? A scoping review of official development assistance data between 2009–2019', *PLOS Global Public Health*, 3(6), p. e0001493. Available at: https://doi.org/10.1371/journal.pgph.0001493.

Allen & Overy and CPI (2023) *How big is the net zero finance gap?* London: Allen & Overy. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/09/How-big-is-the-Net-Zero-financing-gap-2023.pdf.

Alves Da Silva, E., Pedrozo, E.A. and Nunes Da Silva, T. (2023) 'The PNAE (National School Feeding Program) activity system and its mediations', *Frontiers in Environmental Science*, 10. Available at: https://doi.org/10.3389/fenvs.2022.981932.

André, E. *et al.* (2024) 'Acceptance of Low-Carbon School Meals with and without Information—A Controlled Intervention Study', *Journal of Consumer Policy*, 47(1), pp. 109–125. Available at: https://doi.org/10.1007/s10603-023-09557-4.

Asim, S. *et al.* (2015) *Improving education outcomes in South Asia: Findings from a decade of impact evaluations*. Available at: https://fid4sa-repository.ub.uni-heidelberg.de/3777/1/South%20Asia%20Education%20Outcomes.pdf.

Bapna, A., Simpson, N. and Colenbrander, S. (2024) *CERF's up! The Climate-Education Research Framework*. London: ODI. Available at: https://media.odi.org/documents/ODI-OM-CERF-WP-Feb24-Proof05.pdf.

Bezner Kerr, R. et al. (2022) 'Food, Fibre, and Other Ecosystem Products.', in *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. 1st edn. Cambridge, UK and New York, NY, USA: Cambridge University Press. Available at: https://doi.org/10.1017/9781009325844.007.

Bhandari, P. *et al.* (2024) 'What Is "Loss and Damage" from Climate Change? 8 Key Questions, Answered', 26 February. Available at: https://www.wri.org/insights/loss-damage-climate-change (Accessed: 10 June 2024).

Buchner, B. *et al.* (2023) *Global Landscape of Climate Finance 2023*. Climate Policy Initiative. Available at: https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2023/ (Accessed: 9 February 2024).

Bundy, D.A. *et al.* (2024) *School Meals, Social Protection, and Human Development: Revisiting Trends, Evidence, and Practices in South Asia and Beyond*. Washington, DC: World Bank. Available at: https://doi.org/10.1596/41431.

Bundy, D.A.P. *et al.* (2017) *Disease Control Priorities, Third Edition (Volume 8): Child and Adolescent Health and Development*. Washington, DC: World Bank Publications.

Chiriac, D., Vishnumolakala, H. and Rosane, P. (2023a) *Landscape of Climate Finance for Agrifood Systems*. London: Climate Policy Initiative. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/11/Landscape-of-Climate-Finance-for-Agrifood-Systems.pdf (Accessed: 7 June 2024).

Chiriac, D., Vishnumolakala, H. and Rosane, P. (2023b) *The Climate Finance Gap for Small Scale Agrifood Systems. A growing challenge*. London: Climate Policy Initiative. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/11/The-Climate-Finance-Gap-for-Small-Scale-Agrifood-Systems.pdf.

Cichocka, B. and Mitchel, I. (2022) *Climate Finance Effectiveness: Six Challenging Trends*. 281. Washington, DC: Center for Global Development. Available at: https://www.cgdev.org/sites/default/files/climate-finance-effectiveness-six-challenging-trends.pdf (Accessed: 10 June 2024).

Colenbrander, S., Pettinotti, L. and Cao, Y. (2022) *A fair share of climate finance? An appraisal of past performance, future pledges and prospective contributors*. London: ODI. Available at: https://media.odi.org/documents/A_fair_share_of_climate_finance.pdf.

COP28 UAE Presidency (2023a) *COP28 UAE Declaration On Climate And Health*. Available at: https://www.cop28.com/en/cop28-uae-declaration-on-climate-and-health (Accessed: 24 June 2024).

COP28 UAE Presidency (2023b) *COP28 UAE Declaration on sustainable agriculture, resilient food systems, and climate action*, *COP28 UAE*. Available at: https://www.cop28.com/en/food-and-agriculture (Accessed: 11 June 2024).

EIB (2023) *2022 Joint Report on Multilateral Development Banks' Climate Finance*. Luxembourg: European Investment Bank. Available at: https://www.ebrd.com/documents/climate-finance/mdb-climate-finance-2022-key-figures.pdf.

Fanzo, J. and Miachon, L. (2023) 'Harnessing the connectivity of climate change, food systems and diets: Taking action to improve human and planetary health', *Anthropocene*, 42, p. 100381. Available at: https://doi.org/10.1016/j.ancene.2023.100381.

Galt, H. *et al.* (2023) *The Role of Voluntary Carbon Markets in Clean Cooking*. Climate Focus and the Modern Energy Cooking Services programme. Available at: https://mecs.org.uk/wp-content/uploads/2023/05/The-Role-of-Voluntary-Carbon-Markets-in-Clean-Cooking.pdf.

GCF (2021a) *Agriculture and food security. Sectoral Guide Consultation Version 1*. Seoul: Green Climate Fund. Available at: https://www.greenclimate.fund/sites/default/files/document/agriculture-and-food-security-sectoral-guide.pdf (Accessed: 24 June 2024).

GCF (2021b) *Policy on incremental cost and full cost methodologies. GCF/B.29/Inf.10*. Seoul: Green Climate Fund. Available at: https://www.greenclimate.fund/sites/default/files/document/gcf-b29-inf10.pdf.

GCF (2023) *Concept Note: Home-Grown School Feeding: locally supplied, climate-resilient and energy efficient green school canteens in Benin*. Seoul: Green Climate Fund. Available at: https://www.greenclimate.fund/sites/default/files/document/30310-home-grown-school-feeding-locally-suppliedj-climate-resilient-and-energy-efficient-green.pdf.

GEF (2014) 'Tracking tool for climate change adaptation projects'. Available at: https://www.thegef.org/documents/gef-climate-change-adaptation-tracking-tool.

Gelli, A. and Daryanani, R. (2013) 'Are School Feeding Programs in Low-Income Settings Sustainable? Insights on the Costs of School Feeding Compared with Investments in Primary Education', *Food and Nutrition Bulletin*, 34(3), pp. 310–317. Available at: https://doi.org/10.1177/156482651303400303.

Goritz, A. and Kolleck, N. (2024) 'Education in international climate pledges – identifying education framings in countries nationally determined contributions (NDCs)', *Environmental Education Research*, 0(0), pp. 1–21. Available at: https://doi.org/10.1080/13504622.2024.2340504.

Gouvernement de la République du Bénin (2022) *Contribution déterminée (CDN) actualisée au titre de l'accord de Paris du Bénin*. Ministère du Cadre de Vie et du Développement Durable, République du Bénin. Available at: https://unfccc.int/sites/default/files/NDC/2022-06/CDN_ACTUALISEE_BENIN2021.pdf.

Haverkamp, C. et al. (2022) *From Global Commitments to National Action: A Closer Look at Nationally Determined Contributions from a Food and Land Perspective*. Food and Land Use Coalition/ Sustainable Development Solutions Network. Available at: https://irp.cdn-website.com/be6d1d56/files/uploaded/FOLUbrief-2022NDCanalysis-FELD-Nov2022-lores.pdf (Accessed: 20 June 2024).

Hicklin, J. (2024) *The IMF's Resilience and Sustainability Trust: How Conditionality Can Help Countries Build Resilience*. Washington, DC: Center for Global Development. Available at: https://www.cgdev.org/sites/default/files/imfs-rst-how-conditionality-can-help-countries-build-resilience.pdf.

HLPE (2017) *Nutrition and food systems*. Rome: High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Available at: http://www.fao.org/3/a-i7846e.pdf.

IDB and WFP (2024) *State of School Feeding in Latin America and the Caribbean 2022*. Inter-American Development Bank and World Food Programme. Available at: https://www.wfp.org/publications/state-school-feeding-latin-america-and-caribbean-2022.

Kim, S.-Y. and Kim, M. (2023) 'What is on plates for school meals: focusing on animal- vs. plant-based protein foods', *Nutrition Research and Practice*, 17(5), pp. 1028–1041. Available at: https://doi.org/10.4162/nrp.2023.17.5.1028.

Knaute, D., Pegram, J. and Jenks, C. (2023) *Falling Short: Addressing the climate finance gap for children*. Children's Environmental Rights Initiative (CERI).

Kwauk, K. (2022) *The Climate Change Education Ambition Report Card*. Brussels: Education International. Available at: https://www.ei-ie.org/file/596 (Accessed: 20 June 2024).

Laganda, G. (2023) 'Responding to loss and damage in food systems', *Nature Food*, 4(2), pp. 133–134. Available at: https://doi.org/10.1038/s43016-023-00702-3.

Larsen, G. and Laxton, V. (2024) 'Development Banks Are Starting to Spark Climate Action. Will They Complete the Task?', 17 April. Available at: https://www.wri.org/insights/mdb-reform-climate-action (Accessed: 10 June 2024).

Lok, C., Colston, J. and Haddad, L. (2023) *Accelerating action and opening opportunities: A closer integration of climate and nutrition*. Global Alliance for Improved Nutrition. Available at: https://www.gainhealth.org/sites/default/files/publications/documents/Accelerating-Action-and-Opening-Opportunities-A-Closer-Integration-of-Climate-and-Nutrition.pdf.

Marshall, Q. *et al.* (2021) 'Building a Global Food Systems Typology: A New Tool for Reducing Complexity in Food Systems Analysis', *Frontiers in Sustainable Food Systems*, 5. Available at: https://doi.org/10.3389/fsufs.2021.746512.

Mayors of Europe (2023) 'Milan implements green food policy in schools', 24 February. Available at: https://mayorsofeurope.eu/news/milan-implements-green-food-policy-in-schools/ (Accessed: 10 September 2024).

Miller, M. *et al.* (2023) *Where has the money come from to finance rising climate ambition?* London: ODI. Available at: https://odi.cdn.ngo/media/documents/DPF_EA_Where_has_the_money_come_from_to_finance_rising_climate_ambition_UEXBuVX.pdf.

Miller, M., Pudussery, J. and Rosenfeld, D. (2023) *The role of IMF financing in a climate-changed world*, *ODI: Think change*. Available at:

https://odi.org/en/insights/the-role-of-imf-financing-in-a-climate-changed-world/ (Accessed: 10 June 2024).

Naran, B. *et al.* (2022) *Global Landscape of Climate Finance: A Decade of Data 2011–2020*. London: Climate Policy Initiative. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2022/10/Global-Landscape-of-Climate-Finance-A-Decade-of-Data.pdf.

OECD (2024) *Climate Finance Provided and Mobilised by Developed Countries in 2013-2022*. Paris: Organisation for Economic Co-operation and Development. Available at: https://www.oecd.org/publications/climate-finance-provided-and-mobilised-by-developed-countries-in-2013-2022-19150727-en.htm (Accessed: 7 June 2024).

Oxfam (2023) *Climate Finance Shadow Report 2023: Assessing the delivery of the $100 billion commitment*. Oxford: Oxfam. Available at: https://policy-practice.oxfam.org/resources/climate-finance-shadow-report-2023-621500/ (Accessed: 7 June 2024).

Pastorino, S. *et al.* (2023) *School meals and food systems: Rethinking the consequences for climate, environment, biodiversity, and food sovereignty*. Monograph. London: London School of Hygiene & Tropical Medicine. Available at: https://doi.org/10.17037/PUBS.04671492.

Pauw, P., Mbeva, K. and van Asselt, H. (2019) 'Subtle differentiation of countries' responsibilities under the Paris Agreement', *Palgrave Communications*, 5(1), pp. 1–7. Available at: https://doi.org/10.1057/s41599-019-0298-6.

Payton, B. (2024) 'Can clean cookstoves ride out the carbon markets storm?', *Reuters*, 15 February. Available at: https://www.reuters.com/sustainability/society-equity/can-clean-cookstoves-ride-out-carbon-markets-storm-2024-02-15/ (Accessed: 23 July 2024).

Pettinotti, L. and Cao, Y. (2023) 'How can the new climate finance goal learn from past mistakes?', *ODI: Think change*, 3 December. Available at: https://odi.org/en/insights/how-can-the-new-climate-finance-goal-learn-from-past-mistakes/ (Accessed: 10 June 2024).

Ritchie, H., Roser, M. and Rosado, P. (2020) *CO_2 and Greenhouse Gas Emissions*, *Our World in Data*. Available at: https://ourworldindata.org/co2/country/benin (Accessed: 18 June 2024).

Robertson, M. and Watson, C. (2024) 'Enhanced Access in the New Collective Quantified Goal on climate finance (NCQG): A case for access done strategically', *ODI: Think change*, 23 April. Available at: https://odi.org/en/insights/enhanced-accsss-in-the-new-collective-quantified-goal-on-climate-finance-ncqg-a-case-for-access-done-strategically/ (Accessed: 10 June 2024).

Roque, L. *et al.* (2023) 'Insights into parents' and teachers' support for policies promoting increased plant-based eating in schools', *Appetite*, 184, p. 106511. Available at: https://doi.org/10.1016/j.appet.2023.106511.

dos Santos, E.B. *et al.* (2022) 'Sustainability Recommendations and Practices in School Feeding: A Systematic Review', *Foods*, 11(2), p. 176. Available at: https://doi.org/10.3390/foods11020176.

Schipper, E.L. *et al.* (2022) 'Chapter 18: Climate Resilient Development Pathways', in *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.).* Cambridge, UK and New York, NY, USA: Cambridge University Press, pp. 2655–2807.

Schulte, I. *et al.* (2020) *Enhancing NDCs for food systems: recommendations for decision-makers*. Berlin: WWF Germany & WWF Food Practice. Available at: https://wwfint.awsassets.panda.org/downloads/wwf_ndc_food_final_low_res.pdf.

Simpson, N., Jacobs, M. and Gilmour, A. (2023) *Taking stock of Just Energy Transition Partnerships: A review of Just Energy Transition Partnerships in South Africa, Indonesia, Vietnam and Senegal, and prospects for country sector platforms*. London: ODI. Available at:

https://media.odi.org/documents/ODI-SM-JustEnergyTransition-PB-Nov23-Proof03.pdf.

Steadman, S. *et al.* (2022) *What do we have to lose? Understanding and responding to climate-induced loss and damage to cultural heritage*. London: ODI. Available at: https://media.odi.org/documents/ODI_What_do_we_have_to_lose.pdf.

Stout, S., Miao, G. and Strinati, C. (2023) *IDFC Green Finance Mapping 2023*. International Development Finance Club. Available at: https://www.climatepolicyinitiative.org/publication/idfc-green-finance-mapping-2023/ (Accessed: 17 June 2024).

Sutton, W.R., Lotsch, A. and Prasann, A. (2024) 'Recipe for a Livable Planet: Achieving Net Zero Emissions in the Agrifood System'.

Swensson, L.F.J. (2018) *Aligning policy and legal frameworks for supporting smallholder farming through public food procurement: The case of home-grown school feeding programmes*. Working Paper 177. Working Paper. Available at: https://www.econstor.eu/handle/10419/200618 (Accessed: 24 June 2024).

UK FCDO (2022) *Addressing the climate, environment, and biodiversity crises in and through girls' education*. London: Foreign, Commonwealth & Development Office, UK Government. Available at: https://www.gov.uk/government/publications/addressing-the-climate-environment-and-biodiversity-crises-in-and-through-girls-education/addressing-the-climate-environment-and-biodiversity-crises-in-and-through-girls-education (Accessed: 7 June 2024).

UNEP (2023) *Adaptation Finance Gap Update 2023 - Adaptation Gap Report 2023*. United Nations Environment Programme. Available at: https://wedocs.unep.org/xmlui/handle/20.500.11822/43832 (Accessed: 9 February 2024).

UNESCO (2024) *The Declaration on the common agenda for education and climate change at COP28 | UNESCO*. Available at: https://www.unesco.org/en/articles/declaration-common-agenda-education-and-climate-change-cop28 (Accessed: 11 June 2024).

UNFCCC (2018) *Report of the Conference of the Parties on its twenty-third session, held in Bonn from 6 to 18 November 2017. Addendum. Part two: Action taken by the Conference of the Parties at its twenty-third session*. United Nations Framework Convention on Climate Change. Available at: https://unfccc.int/decisions?f%5B0%5D=session%3A4102.

UNFCCC (2023a) *Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation referred to in decision 7/CMA.3*. UNFCCC. Available at: https://unfccc.int/sites/default/files/resource/cma5_auv_8a_gga.pdf (Accessed: 15 March 2024).

UNFCCC (2023b) *Report of the Conference of the Parties on its twenty-seventh session, held in Sharm el-Sheikh from 6 to 20 November 2022. Addendum Part two: Action taken by the Conference of the Parties at its twenty-seventh session*. Bonn: United Nations Framework Convention on Climate Change. Available at: https://unfccc.int/decisions?f%5B0%5D=symboldec%3A3/CP.27.

UNFCCC (2024a) *Introduction to Climate Finance | UNFCCC*. Available at: https://unfccc.int/topics/introduction-to-climate-finance (Accessed: 4 June 2024).

UNFCCC (2024b) *Nationally Determined Contributions (NDCs) | UNFCCC*. Available at: https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs (Accessed: 20 June 2024).

UNFCCC (2024c) *Sharm el-Sheikh joint work on implementation of climate action on agriculture and food security: Draft conclusions proposed by the Chair (FCCC/SB/2024/L.2)*. Bonn: UNFCCC. Available at: https://unfccc.int/sites/default/files/resource/sb2024_L02.pdf.

UNFCCC SCF (2022) *Fifth Biennial Assessment and Overview of Climate Finance Flows*. UNFCCC Standing Committee on Finance. Available at:

https://unfccc.int/sites/default/files/resource/J0156_UNFCCC%20BA5_2022_Report_v4%5B52%5D.pdf (Accessed: 9 February 2024).

Verguet, S. et al. (2020) 'The Broader Economic Value of School Feeding Programs in Low- and Middle-Income Countries: Estimating the Multi-Sectoral Returns to Public Health, Human Capital, Social Protection, and the Local Economy', *Frontiers in Public Health*, 8, p. 587046. Available at: https://doi.org/10.3389/fpubh.2020.587046.

WaterAid (2020) *Just add water: a landscape analysis of climate finance for water*. London: WaterAid. Available at: https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/just-add-water-a-landscape-analysis-of-climate-finance-for-water.pdf (Accessed: 7 June 2024).

Watkins, K. (2022) *School Meals Programmes and the Education Crisis. A Financial Landscape Analysis*. Sustainable Financing Intiative for School Health and Nutrition (SFI). Available at: https://educationcommission.org/wp-content/uploads/2022/10/School-Meals-Programmes-and-the-Education-Crisis-A-Financial-Landscape-Analysis.pdf (Accessed: 2 September 2024).

Watkins, K. (2023) *School meal programmes: A missing link in food systems reform*. Sustainable Financing Intiative for School Health and Nutrition (SFI). Available at: https://www.edc.org/sites/default/files/School-meals-Food-Systems.pdf.

Watson, C., Schalatek, L. and Evéquoz, A. (2024) *The Global Climate Finance Architecture: Climate Finance Fundamentals 2*. London and Washington, DC: ODI and Heinrich Böll Stiftung Washington. Available at: https://climatefundsupdate.org/wp-content/uploads/2024/04/CFF2-2024-ENG-Global-Architecture-DIGITAL.pdf.

WFP (2023a) *Shifting to e-cooking in schools Insights from Lesotho*. Rome: World Food Programme. Available at: https://docs.wfp.org/api/documents/WFP-0000154598/download/?_ga=2.74887642.977244840.1719173188-1368085175.1718959812&_gac=1.146468550.1718970494.CjwKCAjwydSzBhBOEiwAj0XN4EUF7dEDO63JJPcjDDGZKkkShADXK1BqLVvchZ9ixFCCgIi_whhvfRoCv9sQAvD_BwE (Accessed: 24 June 2024).

WFP (2023b) *The State of School Feeding Worldwide 2022*. Rome: World Food Programme. Available at: https://docs.wfp.org/api/documents/WFP-0000147507/download/?_ga=2.214942612.2026727574.1718959812-1368085175.1718959812.

Woodhill, J. (2023) 'Why, What, and How: A Framework for Transforming Food Systems', *Foresight4Food*, 24 January. Available at: https://foresight4food.net/why-what-and-how-a-framework-for-transforming-food-systems/#:~:text=A%20transformation%20of%20food%20systems%20is%20needed,nutrition%2C%20reduce%20poverty%2C%20and%20protect%20the%20environment. (Accessed: 2 September 2024).

World Bank Group (2024) *Joint MDB Methodological Principles for Assessment of Paris Agreement Alignment*, *World Bank Group*. Available at: https://www.worldbank.org/en/publication/paris-alignment/joint-mdb-paris-alignment-approach (Accessed: 23 June 2024).

Appendix 1 Interpreting Climate-Related Development Finance

The following caveats should be noted when interpreting climate-related development finance data presented in this report:

- All data are commitments in inflation-adjusted to 2021 US dollar values.
- Loans are valued at the financial transaction amount at the time their commitment is reported, with no additional adjustment made for the 'grant equivalent' amount.[28]
- When reporting data across all providers included in the database, we use the 'recipient perspective' dataset, whereby providers are the main immediate source of funds – e.g. MDBs or MCFs – rather than the original donors who may have capitalised those funds.
- We include those flows categorised for concessionality, as 'concessional and developmental', 'not concessional or not primarily developmental' and 'private concessional' (which principally come from philanthropic foundations). We exclude 'Officially supported export credits', which account for ~2% of total CRDF in the dataset.
- We do not make any other transformations. It should especially be noted that we do not perform transformations for:
    - Significant/ principal coefficients: CRDF overlaps with official development assistance (ODA) and other official flows (OOF). Bilateral donors often report a large proportion of their ODA and OOF as climate finance to the UNFCCC, but adjust amounts according to coefficients on the basis of whether projects target climate adaptation or mitigation as a main objective ('principal') or have climate as a 'significant' objective.[29]

[28] See https://www.oecd.org/dac/financing-sustainable-development/modernisation-dac-statistical-system.htm#:~:text=The%20grant%20equivalent%20is%20the,the%20amount%20of%20money%20extended.
[29] See e.g. https://one.oecd.org/document/DCD/DAC/STAT(2022)24/REV1/en/pdf

- Country classification as provider/ recipient: Several estimates of climate finance assessing progress towards the $100 billion goal for climate finance from developed to developing countries adjust recipient and provider countries in CRDF data, in light of the fact that some Non-Annex I parties to the UNFCCC are not ODA recipients (and vice versa). See e.g. UNEP (2023) and OECD (2024).

Appendix 2 Party Submissions to the UNFCCC Making Link between School Feeding and Climate Benefits

Party	Document title	Document Type	Link to climate outcome made	Forward commitment	Domestic/ international	Mentioned climate benefits from school feeding					
						Producers' resilience	Resilience of production	Food preparation emissions	Food waste emissions	Food practices emissions	Pupils' resilience through human
Burundi	Burundi First NDC (Updated submission)	Nationally Determined Contribution, Adaptation Communication	Yes	Yes	Domestic			Y			
Malawi	Malawi First NDC (Updated submission)	Nationally Determined Contribution	Yes	Yes	Domestic						
Brazil	Brazil. National communication (NC). NC 4.	National Communication	Yes		Domestic	Y	Y				
Burkina Faso	Burkina Faso. National Communication (NC). NC 3	National Communication	Yes		Domestic			Y			Y
Côte d'Ivoire	Côte d'Ivoire. Biennial update report (BUR). BUR 1.	Biennial Update Report	Yes		Domestic			Y			
Singapore	Charting Singapore's Low-Carbon and Climate Resilient Future	Long-Term Low-Emission Development Strategy	Yes		Domestic				Y		
Finland	Finland. National Communication (NC). NC 8.	National Communication	Yes		Domestic					Y	
Rwanda	Rwanda. Biennial update report (BUR). BUR 1. National inventory report.	National Inventory Report	Yes		Domestic			Y			
Saint Lucia	Saint Lucia First NDC (Updated submission)	Nationally Determined Contribution	Yes		Domestic	Y					Y
Monaco	Monaco. Biennial report (BR). BR 4	Biennial Report	Yes		International cooperation	Y					Y
Canada	Canada. Biennial Reports (BR). BR 3. National Communication (NC). NC 7.	Biennial Report, National Communication	Yes		International cooperation			Y			Y
Lesotho	Lesotho. National Communication (NC). NC 3.	National Communication	Yes		Domestic						Y

Appendix 3 How Food Systems and School Feeding Feature in Multilateral Climate Fund Strategies and Guidance

Green Climate Fund

Strategic priorities	Investment criteria:	How food systems and school feeding feature
2 Themes: Adaptation and Mitigation; 8 Result areas [Mitigation]: 1) Low-emission energy access and power generation; 2) Low-emission transport; 3) Buildings, Cities, industries and appliances; 4) Sustainable land use and forest management; 5) Enhanced livelihoods of the most vulnerable people, communities and regions; 6) Increased health and well-being, and food and water security; 7) Resilient infrastructure and built environment to climate change threats; 8) Resilient ecosystems (https://www.greenclimate.fund/themes-result-areas)	1. Impact (Potential of the project or programme to contribute to the achievement of GCF's objectives and results areas); 2. Paradigm shift potential (Degree to which GCF can achieve sustainable development impact beyond a one-off project or programme investment through replicability and scalability); 3. Sustainable development (Wider benefits and priorities: Does the project have wider benefits and priorities? Are environmental and social safeguards and gender equality an integral part of the project?); 4. Recipient needs (Vulnerability and financing needs of the beneficiary country and population: Does the project provide financing needs to the beneficiary country and population? Is there an absence of alternative sources of financing?); 5. Country ownership (Beneficiary country ownership of, and capacity to implement, a funded project or programme (policies, climate strategies and institutions); 6. Efficiency and effectiveness (Economic and, if appropriate, financial soundness of the programme/project: Does the project foster cost-effectiveness and private sector funding mobilisation?). Further indicators elaborated for each criterion (https://www.greenclimate.fund/projects/investment-framework).	Strategic Plan for the Green Climate Fund 2024-2027 includes one targeted result on Food (of 11): "Support for developing countries that results in 190 to 280 million beneficiaries adopting low-emission climate-resilient agricultural and fisheries practices, securing livelihoods while reconfiguring food systems." (https://www.greenclimate.fund/sites/default/files/document/strategic-plan-gcf-2024-2027.pdf). School feeding not explicitly mentioned in Sectoral Guide (Consultation Version 1): Agriculture and Food Security. Includes three 'paradigm-shifting investment pathways': Promoting resilient agriculture; Facilitating climate-informed advisory and risk management services; and Reconfiguring food systems. School feeding not mentioned but third paradigm shifting pathway (Reconfiguring food systems) lists a range of activities that could include/ integrate with school feeding: "avoidance of conversion of high carbon stocks (such as forests, peatlands) due to agriculture; shifts to energy-efficient fertilizer production; use of technologies, agricultural practices, energy sources and infrastructure on farms that reduce emissions and improve resilience to climate threats; reshaping supply chains, food retail, marketing, and procurement; reducing food loss and waste; shifting consumption towards healthier and more environmentally friendly, low-emission diets; and building supply chain resilience through reliable storage facilities". Pathway two (Facilitating climate-informed advisory and risk management services) also mentions social safety net programmes. (https://www.greenclimate.fund/sites/default/files/document/agriculture-and-food-security-sectoral-guide.pdf) Eight agriculture focused accredited entities of 128: National: - Agence pour le Developpement Agricole (ADA) Morocco - La Banque Agricole (formerly Caisse Nationale de Credit Agricole du Senegal) (LBA) - Land Bank of the Philippines (Landbank) - National Bank for Agriculture and Rural Development (NABARD), India Regional: - Instituto Interamericano de Cooperación para la Agricultura (IICA) Multilateral: - Food and Agriculture Organisation of the United Nations (FAO) - International Fund for Agricultural Development (IFAD) - World Food Programme (WFP)

Adaptation Fund

Strategic priorities	Investment criteria:	How food systems and school feeding feature
Project sectors include: Agriculture, Coastal Zone Management, Disaster Risk Reduction, Disaster risk reduction and early warning systems, Ecosystem based Adaptation, Food Security, Forests, Multisector Projects, Rural Development, Urban Development, and Water Management (https://www.adaptation-fund.org/projects-programmes/project-sectors/). Medium-Term Strategy 2023-2027 states that "Country priorities continue to drive project selection and prioritization of funding, which is part of the DNA of the Fund". Identifies three (non-sectoral) 'strategic pillars': 1) Action (Developing countries are supported in undertaking and accelerating high quality, local level and scalable adaptation projects and programmes that are aligned with their national adaptation strategies and processes); 2) Innovation (Modalities for funding the development and diffusion of innovative adaptation practices, tools and technologies expanded, risk taking encouraged, and linkages to learning strengthened.; 3) Learning and sharing (Knowledge and evidence, including local and indigenous knowledge, on effective and innovative adaptation action and finance is generated and disseminated with various stakeholders for application). Plus six 'crosscutting strategic themes': 1) Promoting locally based and locally led adaptation; 2) Enhancing access to climate finance and long-term institutional capacity; 3) Empowering and benefitting the most vulnerable people and communities as agents of change; 4) Advancing gender equality; 5) Encouraging the scaling and replication of results; 6) Strengthening complementarity and coherence, and synergies, with other adaptation funders and actors. (https://www.adaptation-fund.org/wp-content/uploads/2022/12/Medium-Term-Strategy-2023-2027.pdf)	Strategic priorities, policies and guidelines of the Adaptation Fund (SPPG) (Annex I to the OPG) (Amended in October 2022): "In assessing project and programme proposals, the Adaptation Fund Board shall give particular attention to: (a) Consistency with national sustainable development strategies and adaptation planning processes... (b) Economic, social and environmental benefits from the projects and adaptation impact; (c) Meeting national technical standards, where applicable; (d) Cost-effectiveness of projects and programmes; (e) Arrangements for management, including for financial and risk management; (f) Arrangements for monitoring and evaluation and impact assessment; (g) Avoiding duplication with other funding sources for adaptation for the same project activity; (h) Moving towards a programmatic approach, where appropriate; (i) Advancing gender equality and the empowerment of women and girls. The decision on the allocation of resources of the Adaptation Fund among eligible Parties shall take into account: (a) Level of vulnerability; (b) Level of urgency and risks arising from delay; (c) Ensuring access to the fund in a balanced and equitable manner; (d) Lessons learned in project and programme design and implementation to be captured; (e) Securing regional co-benefits to the extent possible, where applicable; (f) Maximizing multi-sectoral or cross-sectoral benefits; (g) Adaptive capacity to the adverse effects of climate change."	Website statements on Agriculture and Food Security project sectors provide limited detail but indicate, respectively, a focus on climate resilience of production and of supply chains ("With increased instances of droughts and extreme rainfall events, and more variability in temperature and rainfall patterns, climate change is threatening agricultural production around the world. The Adaptation Fund finances projects and programmes to help the most vulnerable communities in developing countries cope with these challenges. Fund-financed initiatives include enabling farmers to test climate resilient technologies and practices, from drought tolerant seeds, to improved irrigation systems and more sustainable land management practices. These offer farmers an opportunity to secure their livelihoods before the worst effects are felt"/ "Modern food systems are complex, and there are many points along the supply chains, from production to consumption, that are vulnerable to disruption. Due to the wide-reaching effects of climate change, these systems are becoming vulnerable to increasing disruptions. Ensuring food security is not only a matter of helping farmers adapt to the changing climate, but also of helping governments craft policies and develop institutions that will provide them with the capacities to manage this multifaceted aspect of modern society in the face of future threats." (https://www.adaptation-fund.org/projects-programmes/project-sectors/) Medium Term Strategy 2023-27 does not mention school feeding, procurement, education or food systems. References to agriculture and food do not indicate specific priorities that might inform school feeding oriented programmes (https://www.adaptation-fund.org/wp-content/uploads/2022/12/Medium-Term-Strategy-2023-2027.pdf) Seven agriculture focused implementing (accredited) entities of 56: National: - Agence pour le Developpement Agricole (ADA) Morocco - Banque Agricole du Niger (BAGRI) - National Bank for Agriculture and Rural Development (NABARD) India - The Interprofessional Fund for Agricultural Research (FIRCA) Cote d'Ivoire Multilateral: - Food and Agriculture Organization of the United Nations (FAO) - International Fund for Agricultural Development (IFAD) - UN World Food Programme (WFP)

Global Environment Facility

Strategic priorities	Investment criteria:	How food systems and school feeding feature
The GEF serves the implementation of several multilateral environmental agreements, besides the UNFCCC. As such, climate change is one focal area alongside biodiversity, land degradation, international waters and chemicals. The GEF funds climate mitigation under the main GEF trust fund and funds climate change adaptation under two specialised trust funds which it administers, the Least Developed Countries Fund (LCDF) and Special Climate Change Fund (SCCF). Some local adaptation funding is also provided under the GEF's Small Grants Programme. - GEF-8 replenishment period (2022-26) Strategic Positioning Framework (Theory of Change) targets transformation of natural, food, health, urban and energy systems (https://www.thegef.org/sites/default/files/documents/2022-03/GEF_R.08_28_GEF8_Strategic_Positioning_Framework.pdf) - GEF-8 Programming Directions sets out 11 'Integrated Programs' as "a strategy for harnessing synergies across focal areas", i.e. targeting multiple environmental benefits besides climate change adaptation/ mitigation: Food Systems; Ecosystem Restoration; Sustainable Cities; Amazon, Congo, and Critical Forest Biomes; Circular Solutions to Plastic Pollution; Blue and Green Islands; Clean and Healthy Ocean; Net-Zero Nature-Positive Accelerator; Wildlife Conservation for Development; Greening Transportation Infrastructure Development; Elimination of Hazardous Chemicals from Supply Chains (https://www.thegef.org/sites/default/files/2023-01/GEF-8_Programming_Directions.pdf) - Four themes "of particular interest" in LCDF and SCCF strategy aligned with GEF-8 (2022-26): Agriculture, Food Security, and Health; Water; Nature-Based Solutions; Early Warning and Climate Information Systems; "Beyond these four themes of particular interest, the LDCF and SCCF will also support other adaptation themes and solutions in vulnerable countries to address their urgent priorities including but not limited to climate resilient infrastructure, sustainable alternative livelihoods, ecosystem restoration, forestry and disaster risk management." (https://www.thegef.org/sites/default/files/documents/2022-06/EN_GEF.LDCF_.SCCF_.32.04.Rev_.01_GEF%20Programming_Strategy_Adaptation_Climate_Change_LDCF_SCCF_GEF8_July_2022_June%202026_Operational_Improvements.pdf)	GEF project and program eligibility criteria: Eligible country: Countries may be eligible for GEF funding in one of two ways: a) if the country has ratified the conventions the GEF serves and conforms with the eligibility criteria decided by the Conference of the Parties of each convention; or b) if the country is eligible to receive World Bank (IBRD and/or IDA) financing or if it is an eligible recipient of UNDP technical assistance through its target for resource assignments from the core (specifically TRAC-1 and/or TRAC-2); National priority: The project must be driven by the country (rather than by an external partner) and be consistent with national priorities that support sustainable development; GEF priorities: To achieve the objectives of multilateral environmental agreements, it is required that the GEF support country priorities that are ultimately aimed at tackling the drivers of environmental degradation in an integrated fashion. For this reason, the focal areas (Biodiversity, Climate Change, Land Degradation, International Waters, and Chemicals and Waste) remain the central organizing feature in the GEF-8 Programming Directions and provide countries with the opportunity to participate in selected "Integrated Programs" which aim to address major drivers of environmental degradation and/or deliver multiple benefits that fall under the GEF's mandate (for more details, see the GEF-8 Programming Directions); Financing: The project must seek GEF financing only for the agreed incremental costs on measures to achieve global environmental benefits; Participation: The project must involve the public in project design and implementation, following the Policy on Stakeholder Engagement and the respective guidelines (https://www.thegef.org/projects-operations/how-projects-work) Selection critieria for GEF-8 Food systems 'Integrated program': "The country strategy should be underpinned by science... The enabling policy and regulatory environment are conducive to generating positive results through implementation of the program... Private sector entities with the ability to have on-the-ground impact are interested and willing partners... Promotion of sustainable and effective agricultural production can be shown to better support women farmers and their rights to the land they cultivate... Results from smallholder, farm and landscape can be reasonably sustained and converted into larger scale impact at subnational and national levels... Strong safeguards are in place or can be developed to ensure that the techniques applied do not increase likelihood of negative environmental impacts, or leakage... Ability to adopt food systems value chain approaches that recognize the risks of environmental impacts and zoonotic pathogen transmission... Willingness to factor crop and systems resilience and prevention, reduction, and reuse of food waste along the length of the food systems value chain" (https://www.thegef.org/sites/default/files/2023-01/GEF-8_Programming_Directions.pdf).	Sector-specific guidance not available. General strategies indicate food systems are a priority but make only general references to education, and school feeding or food procurement are not mentioned. See e.g.: - Food systems transformation in the GEF-8 replenishment period (2022-26) Strategic Positioning Framework (Theory of Change)is further elaborated as involving "Nature-positive and carbon-neutral production; Circularity principles in supply chains; and Supportive national frameworks" (https://www.thegef.org/sites/default/files/documents/2022-03/GEF_R.08_28_GEF8_Strategic_Positioning_Framework.pdf). - Food systems integrated program: Specific interventions suitable for GEF support at country level include Sustainable and Regenerative agriculture, Livestock Management and Sustainable Aquaculture (https://www.thegef.org/sites/default/files/2023-01/GEF-8_Programming_Directions.pdf) - Agriculture, food security and health theme in LCDF and SCCF strategy (2022-26): "Specific interventions may include support for social safety nets such as crop insurance; flood- and drought-tolerant crop species that also contribute to meeting nutritional needs; climate-resilient aquaculture and fisheries; post-harvest measures such as grain/fish storage and all-weather access to market; farm digitization; pest and disease surveillance systems; strengthened extension services; and enhanced capacity of farmer/fisher and water user cooperatives" (https://www.thegef.org/sites/default/files/documents/2022-06/EN_GEF.LDCF_.SCCF_.32.04.Rev_.01_GEF%20Programming_Strategy_Adaptation_Climate_Change_LDCF_SCCF_GEF8_July_2022_June%202026_Operational_Improvements.pdf) Three agriculture-focused GEF Agencies, of 18: Multilateral: - Food and Agriculture Organization of the United Nations (FAO) - International Fund for Agricultural Development (IFAD) - UN World Food Programme (WFP)

Appendix 4 Multilateral Climate Fund Projects with School Feeding Component

MCF	Project name	Country	Implementing/ accredited entity	Executing entity	Started	Duration (Years)	Status	MCF funding (USD)	Seeks to integrate with Government SF programme	Targeted climate benefits from school meals components							
										Producers' resilience	Pupils' resilience (child labour)	Resilience of production	Supply chain emissions	Supply chain resilience	Food preparation emissions	Food practices resilience	Pupils' resilience (education, nutrition, health)
GCF	Home-Grown School Feeding: locally supplied, climate-resilient and energy-efficient green school canteens in Benin	Benin	World Food Programme	Ministry of Living Environment and Sustainable Development	N/A	5	Concept	45,000,000	Yes	Y		Y					Y
AF	Building adaptive capacity to climate change in vulnerable communities living in the Congo River Basin	Republic of Congo	World Food Programme	Ministry of Tourism and Environment	2022	5	Active	9,999,909	Not specified	Y					Y	Y	
AF	Climate Change Adaptation of Vulnerable Communities in the Sahel Border Zone of the Republic of Guinea	Guinea Republic	World Food Programme	Ministry of Environment and Sustainable Development	N/A	4.5	Endorsed concept	10,000,000	Not specified	Y		Y					

MCF	Project name	Country	Implementing/ accredited entity	Executing entity	Started	Duration (Years)	Status	MCF funding (USD)	Seeks to integrate with Government SF programme	Targeted climate benefits from school meals components							
										Producers' resilience	Pupils' resilience (child labour)	Resilience of production	Supply chain emissions	Supply chain resilience	Food preparation emissions	Food practices resilience	Pupils' resilience (education, nutrition, health)
AF	Rural Integrated Climate Adaptation and Resilience Building Project (RICAR)	The Gambia	World Food Programme	Ministry of Environment, Climate Change and Natural Resources (MoECCNAR)	2022	5	Active	10,000,000	Yes	Y							
AF	Improving adaptive capacity of vulnerable and food-insecure populations in Lesotho	Lesotho	World Food Programme	Ministry of Energy and Meteorology,Ministry of Forestry, Range and Soil Conservation	2020	4	ds	9,999,894	Yes	Y							
AF	Adapting to Climate Change Through Integrated Risk Management Strategies and Enhanced Market Opportunities for Resilient Food Security and Livelihoods	Malawi	World Food Programme	Ministry of Agriculture, Irrigation and Water Development (MoAIWD)	2020	5	Active	9,989,335	Not specified	Y							
AF	Ecosystem Based Approaches for Reducing the Vulnerability of Food Security to the Impacts of Climate Change in the Chaco region of Paraguay	Paraguay	UN Environment Programme	Environment Secretariat of Paraguay	2019	5	Active	7,128,450	Yes	Y							
AF	Strengthening the adaptive capacities of climate-	El Salvador, Honduras	World Food Programme	El Salvador: Ministry of Environment and Natural Resources (MARN) Honduras:	N/A	5	Approved	12,048,300	Yes	Y						Y	

MCF	Project name	Country	Implementing/ accredited entity	Executing entity	Started	Duration (Years)	Status	MCF funding (USD)	Seeks to integrate with Government SF programme	Targeted climate benefits from school meals components							
										Producers' resilience	Pupils' resilience (child labour)	Resilience of production	Supply chain emissions	Supply chain resilience	Food preparation emissions	Food practices resilience	Pupils' resilience (education, nutrition, health)
	vulnerable communities in the Goascorán watershed of El Salvador and Honduras through integrated community-based adaptation practices and services	(Central America)		Secretariat of Natural Resources and Environment (MiAmbiente+)													
AF	Resilience building as climate change adaptation in drought-struck South-western African communities (Angola, Namibia)	Angola and Namibia	Sahara and Sahel Observatory	[National level] - Angola : ADPP (Ajuda de Desenvolvimento de Povo para Povo); - Namibia: DAPP (Development Aid from People to People), [Regional] ADPP (Ajuda de Desenvolvimento de Povo para Povo)	2022	5.5	Active	11,941,038	Yes	Y					Y		Y
GEF	Integrated Landscape Management in Dry Miombo Woodlands of Tanzania	Tanzania	Food and Agriculture Organization	The Tanzania Forest Services Agency	2021	6	Active	7,368,807	Not specified	Y							
GEF	Seventh Operational Phase of the GEF Small Grants Programme in Brazil	Brazil	United Nations Development Programme	Instituto Sociedade, População e Natureza (ISPN)	2021	5	Active	4,481,210	Not specified	Y	Y	Y	Y	Y	Y	Y	Y