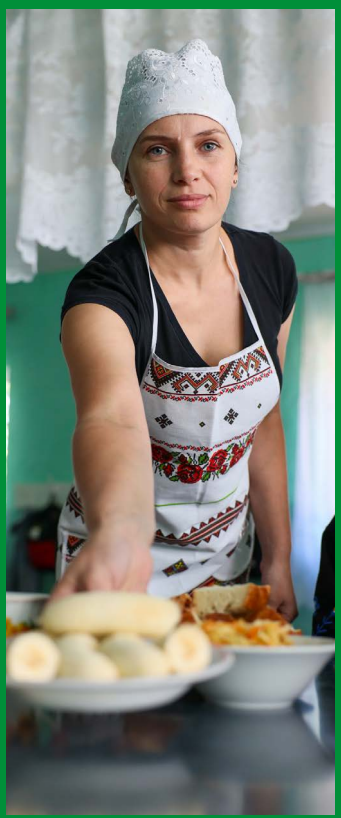
UCL IIPP Institute for Innovation and Public Purpose

A Mission-Oriented Approach to School Meals

An opportunity for cross-departmental and multi-sector industrial strategy

Professor Mariana Mazzucato and Sarah Doyle

September 2025



A Mission-Oriented Approach to School Meals: An opportunity for cross-departmental and multi-sector industrial strategy

IIPP Policy Report 2025/04 — September 2025

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About the Institute for Innovation and Public Purpose

The Institute for Innovation and Public Purpose (IIPP) at University College London (UCL) brings together cutting-edge academic theory with teaching and policy practice to rethink the state's role in tackling some of the biggest challenges facing society.

The IIPP works with partners to develop a framework that challenges traditional economic thinking, with the goal of creating, nurturing and evaluating public value to achieve growth that is more innovation-led, inclusive and sustainable. This requires rethinking the underlying economics that have informed the education of global public servants and the design of government policies.

The IIPP's work feeds into innovation and industrial policy, macroeconomic and financial reform, institutional change and sustainable development. A key pillar of the IIPP's research is its understanding of markets as outcomes of the interactions between different actors. In this context, public policy should not be seen as simply fixing market failures but also as actively shaping and co-creating markets. Re-focusing and designing public organisations around mission-led, public purpose aims will help tackle the grand challenges of the 21st century.

The IIPP is uniquely structured to ensure that this groundbreaking academic research is harnessed to tackle real-world policy challenges. The IIPP does this through its high-quality teaching programme, along with its growing global network of partners and ambitious policy practice programme.

The IIPP is a department within UCL and part of The Bartlett, which is ranked number one in the world for architecture and the built environment.

About the World Food Program

The World Food Programme is the world's largest humanitarian organization saving lives in emergencies and using food assistance to build a pathway to peace, stability and prosperity, for people recovering from conflict, disasters and the impact of climate change.

This report was commissioned by the World Food Programme (WFP), as a contribution to the School Meals Coalition's evidence generation efforts and its overall objective of improving the quality and efficiency of school health and nutrition programmes globally.

The School Meals Coalition is a government-led and partner-supported effort that aims at ensuring that by 2030 every child worldwide can receive a healthy meal in school. Led by Brazil, Finland and France, the Coalition was one of the most impactful and successful initiatives coming out of the UN Food Systems Summit in 2021. Since governments around the world are increasing their investments in school meal policies, this report was commissioned to explore the role of school meals – given their multisectoral and far-reaching benefits – in advancing industrial strategy and economic policy, an area in which UCL IIPP has strong expertise. It is part of a longer-term research and operational agenda, designed to explore the contribution of school meal programmes to various sectors, which WFP is advancing with the help of various academic partners. The specific collaboration between UCL IIPP and WFP for this report is based on an existing long-term agreement between WFP and UCL Consultants on services for nutrition research.

The findings and recommendations presented in this paper are those of the individual authors and do not necessarily reflect the views and position of WFP, its Executive Director, its Executive Board, or its partners, nor those of the School Meals Coalition and its members. The mention or omission of specific companies or organizations, their products or brand names does not imply any endorsement or opinion whatsoever on the part of WFP, the School Meal Coalition or its members. The designations employed and the presentation of material in the paper do not imply the expression of any opinion on the part of WFP concerning the legal or development status of any territory, country, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

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Mariana Mazzucato (PhD, CBE) is Professor in the Economics of Innovation and Public Value at University College London (UCL), where she is Founding Director of the UCL Institute for Innovation & Public Purpose. She is winner of international prizes including the Grande Ufficiale Ordine al Merito della Repubblica Italiana in 2021, Italy's highest civilian honour, the 2020 John von Neumann Award, the 2019 All European Academies Madame de Staël Prize for Cultural Values, and 2018 Leontief Prize for Advancing the Frontiers of Economic Thought. She is a member of the UK Academy of Social Sciences (FAcSS) and the Italian Academy of Sciences Lincei. In 2025, she was appointed Commander of the British Empire (CBE) for services to economics in the King's Birthday Honours List. Pope Francis appointed her to the Pontifical Academy for Life for bringing 'more humanity' to the world.

Her award-winning books include: The Entrepreneurial State: debunking public vs. private sector myths (2013), she is the author of The Value of Everything: Making and Taking in the Global Economy (2018), Mission Economy: A Moonshot Guide to Changing Capitalism (2021), and most recently The Big Con: How the Consulting Industry Weakens our Businesses, Infantilizes our Governments and Warps our Economies (2023). She advises policymakers around the world on innovation-led inclusive and sustainable growth. Her policy roles include: Chair of the World Health Organization's Council on the Economics of Health for All, Co-Chair of the Global Commission on the Economics of Water, a member of the South African President's Economic Advisory Council, Co-Chair of the Brazilian 2024 Group of Experts to the G20 Task Force for the Global Mobilization against Climate Change, and Special Representative of President Ramaphosa to the 2025 G20 Taskforce 1 on Inclusive Economic Growth, Industrialization, Employment, and Reduced Inequality.

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EXECUTIVE SUMMARY

To achieve the second United Nations Sustainable Development Goal (SDG 2) – to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture" (United Nations, 2024a) – the global food system must transform. This will require cross-sectoral innovation and investment. For governments, it will require cross-departmental cooperation backed by new economic thinking.

In its current form, the global food system is unsustainable. It is failing to reliably feed billions of people and, as the world's population grows, food insecurity, hunger and malnutrition will become more acute. The global food system is also responsible for an estimated one-third of global greenhouse gas (GHG) emissions, is the primary driver of biodiversity and ecosystem loss, and is a major contributor to land degradation and the global water crisis (United Nations, 2024b; FAO et al., 2024; FAO, 2023; Climate Action, 2024; Mazzucato et al., 2024).

These challenges are social and ecological, but also economic. How food is produced, processed, distributed, consumed and disposed of is contributing to changes in temperatures and weather patterns, extreme weather events, land degradation, disruptions in the global hydrological cycle, and food waste, all of which are undermining long-term productivity. These challenges are exacerbated by a market in which corporate consolidation and a focus on short-term shareholder profits are prevalent (Keenan, Monteath and Wójcik, 2023).

Governments can translate food system challenges into market opportunities for companies that are willing to innovate and invest alongside governments. A powerful and widely overlooked lever for doing this is school meal procurement. A growing number of countries are implementing school meal programmes, which now reach about 466 million children, making them one of the most widespread social safety nets in the world (WFP, 2024).

School meal procurement can be designed to create market demand for food that is healthy, sustainable, tasty and accessible, instead of only seeking the lowest-cost options. By requiring private sector bidders to invest and innovate, well-designed food

procurement can change the structure of local economies and food value chains, leading to a more diverse, competitive, innovative and values-aligned supplier pool. In pursuing this approach, governments should be prepared to confront the vested interests of corporations that are profiting from the current structure of the global food system, while working collaboratively with those that are willing to help transform it.

School meals have the potential to be instrumental in provoking food system transformation, but only if they are designed as an instrument of an ambitious, mission-oriented industrial strategy. To realise this potential, departments across government – including those responsible for industry, climate, and finance – must help scale up investments in school meals and take a stake in their design, recognising that they not only improve education, health and equity outcomes for children, but can also catalyse and direct sustainable, inclusive economic growth.

This report explores how an industrial strategy oriented around a food mission could leverage school meals, in concert with other industrial strategy tools, to shape a more resilient, sustainable food system capable of feeding the world's growing population. The report draws on case studies from Brazil, Sweden and Scotland, as well as global insights and a growing body of research on the multifaceted benefits of school meals.

Summary of Recommendations

This report recommends that governments around the world, recognising their unique contexts, consider how best to:

1. **Adopt mission-oriented industrial strategies that seek to direct growth, not just accelerate it:** Instead of implementing industrial strategies that seek to drive growth by "picking winners" (specific companies, sectors, or technologies), governments could advance mission-oriented industrial strategies that transform social and environmental challenges into market opportunities (Mazzucato, Doyle and Kühn von Burgsdorff, 2024). Such an approach can catalyse the innovation and investment needed to tackle the challenge, while also contributing to increases in productivity and growth; this could potentially lead to a multiplier effect, where the impact on GDP is greater than the original investment (Deleidi and Mazzucato, 2021). In this way, governments can influence not only the pace but also the direction of growth, and unite the welfare state with the innovation state (Mazzucato, 2021).

2. **Reframe school meals as an investment, not a cost:** Governments could reframe school meals as an investment with the potential to drive economic growth, rather than a cost, and scale up school meals to reach all school-aged children.

3. **Launch an industrial strategy mission focused on SDG 2:** Countries with industries that are part of the food value chain could identify a mission related to SDG 2 as a focal point of their industrial strategy. For example, a mission could commit that, by 2030, all school-aged children (or all citizens) will have access to healthy and sustainable food at least twice per day, with at least one-third of the food being locally sourced.

4. **Take a whole-of-government approach to mission implementation:** Recognising that responsibility for food system transformation is shared by all departments, including departments of industry, finance, climate, agriculture, health, and education, governments could create formal mechanisms to support a whole-of-government approach to mission delivery, such as a mission board housed in the centre of government, backed by the president or prime minister, charged with ensuring that the mission remains a cross-departmental priority, coordinating cross-departmental action, and monitoring and unblocking progress.

5. **Redesign school meal procurement:** Instead of taking an administrative approach that prioritises price and risk minimisation, governments should design school meal procurement to maximise public value, including by using it to create cross-sectoral market opportunities that align with mission goals and with broader social, environmental and economic policy objectives, to diversify the supplier pool, including by enabling the participation of local producers, and to incentivise investment and innovation that will contribute to mission goals (Mazzucato, Spanó and Wainwright, 2025). The form this takes will vary by country, ranging from amendments to national procurement law, to local-level innovations in procurement practice, to the development of digital platforms that simplify supplier–purchaser interactions.

6. **Integrate school meal procurement with other mission-oriented industrial strategy tools, including public finance:** Ensure that willing farmers and businesses have access to the support they need to scale up production of food that is sustainable, healthy and accessible to those who need it – in other words, to transform in line with mission goals. In particular, repurpose existing subsidies and design new public financial instruments to provide patient finance that prioritises the mission, rather than focusing only on risk-return or leverage ratios.

7. **Foster reciprocal public–private collaboration oriented around the shared ambition of tackling SDG 2:** Governments could place conditions on access to school meal procurement and related financial incentives aimed at maximising public value (Mazzucato and Rodrik, 2023) – for example, related to access and affordability, sustainability, decent work, economic inclusion, and reinvestment in innovation – and ensure that agrifood data is governed according to 'common good' principles (Mazzucato, Eaves and Vasconcellos, 2024a). At the same time, governments could design policy tools to create a seamless, user-friendly experience for farmers and businesses that are willing to contribute to mission goals.

8. **Engage stakeholders in mission and tool design:** Governments could embed opportunities for community, student, farmer, business and worker engagement in the development and implementation of the food mission to ensure uptake, build broad-based public support, and foster bottom-up innovation. For example, students can be consulted on school meal menus and engaged through a curriculum related to sustainable, healthy school meals.

9. **Foster the dynamic public sector capabilities needed for successful mission implementation:** Governments could invest in capacity building that is relevant to the implementation of the mission across departments and levels of government, empower these actors to learn by doing, and share lessons about what works and what does not across the government system. This could be complemented by a robust approach to monitoring and evaluation a robust approach to monitoring and evaluation that prioritises learning and adaptation.

10. **Reform global trade and finance to enable progress towards SDG 2:** WTO member states could work to adapt global trade rules to enable countries to use food procurement to achieve SDG 2, supported by global governance structures that foster a collaborative approach to pursing SDG-aligned industrial strategies. This could be done, for example, through a new global facility for industrial strategy coordination housed within a reformed WTO, as recommended by the G20 Group of Experts to the Taskforce for a Global Mobilization Against Climate Change (G20 TF CLIMA Group of Experts, 2024). World leaders could also seek to reform the architecture of global finance to create more fiscal space for countries to invest in industrial strategies aimed at promoting food system transformation, including to align the mandates of multilateral, regional and national public development banks around SDG 2 (Mazzucato, 2025b).

1. INTRODUCTION

The global food system[1] is not sustainable in its current form. Global population growth is placing increasing pressure on a system in which billions of people already face persistent hunger, food, and nutrition insecurity. Meanwhile, agrifood industries are contributing to climate change and ecological degradation, which is undermining their long-term productivity. These interlinked challenges create a social, environmental, and economic imperative for food system transformation.

Transforming the global food system means changing what we eat, what farmers cultivate, how food is produced and processed, how it is transported, stored, and distributed, and how waste is managed. This will require cross-sectoral innovation and investment. For governments, it will require cross-departmental cooperation.

Governments have the levers to translate food system challenges into market opportunities that can catalyse investment, innovation and public–private collaboration oriented around ending hunger, achieving food and nutrition security, and promoting sustainable food systems. One of the most powerful levers is school meal procurement.

A growing number of countries are implementing programmes to feed children in schools, buoyed by evidence that universally accessible school meals improve health, learning and equity outcomes. In 2024, an estimated 466 million children received school meals (WFP, 2024). One hundred and eight countries have joined the School Meals Coalition hosted by the World Food Program, signing a declaration that commits them to scaling up school meals as part of a shared vision that, by 2030, every child will have the opportunity to enjoy a healthy, nutritious meal in school (SMC, 2024; 2025). The Global Alliance Against Hunger and Poverty, which was launched under Brazil's 2024 G20 Presidency, with the aim of more than doubling the number of children receiving school meals in low- and lower-middle-income countries by 2030,

1 The UN Food and Agriculture Organization defined the global food system as follows: "Food systems encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products. Food systems comprise all food products that originate from crop and livestock production, forestry, fisheries and aquaculture, as well as the broader economic, societal and natural environments in which these diverse production systems are embedded" (FAO, n.d.c).

is contributing to this momentum. School meal programmes are among the most widespread social safety nets in the world (WFP, 2024).

Public procurement of school meals can create market opportunities along the food value chain, thereby acting as a lever for advancing food system transformation and a driver of sustainable and inclusive economic growth; however, this potential remains under-realised. While some governments are leveraging school meals to foster local economic development, the dominant focus has been on tackling hunger and improving children's education and health outcomes. To date, departments beyond education and health – such as those responsible for industry, finance, and climate – have been minimally engaged (Mazzucato, 2025a).

To realise this potential, school meal programmes must be designed not only as instruments of education and health policy but also as instruments of green industrial strategy.

1.1 Food system transformation: A social, environmental and economic challenge

The United Nations Sustainable Development Goals (SDGs), agreed to by 193 countries, include a commitment to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture" (United Nations, 2024a). Achieving this goal (SDG 2) will require a transformation of the world's food system.

Currently, the global food system fails to meet the basic needs of people and workers and contravenes planetary boundaries. Nearly 600 million people are expected to be chronically undernourished by 2030, while 2.4 billion people live with moderate to severe food insecurity and over 3.1 billion people cannot afford a healthy diet (United Nations, 2024a and 2024b; FAO et al., 2024). Without an overhaul of the global food system, these crises will worsen. The world's population is expected to reach 10 billion by 2050, up from approximately 8 billion today. Estimates suggest that a 35–60 per cent increase in global food production will be needed to meet the food needs of the world's population (most benchmarked to 2010 or 2011 levels) (Ranganathan et al., 2018; van Dijk et al., 2021; Chan, 2023; Sands et al., 2023). However, current farming and business practices are undermining productivity (Savary et al., 2019).

The agrifood system is responsible for approximately one-third of global GHG emissions. This makes it a major driver of climate change, which is causing weather to become less predictable and extreme weather events to be more intense and frequent. In the 1970s, approximately 100 disaster events occurred globally each year; in the last 20 years, this figure has risen to around 400 per year. Approximately $3.8 trillion USD – or 5 per cent of annual agricultural GDP – has been lost in the last 30 years in crop and livestock production as a result of disasters (FAO, 2023).

The agrifood system is also the primary driver of biodiversity and ecosystem loss and a major contributor to land degradation and the global water crisis (Climate Action, 2024; Mazzucato et al., 2024). Expansion of agricultural land is the leading cause of land use change, which has had the greatest negative impact on terrestrial and freshwater ecosystems in recent decades (Mazzucato and Kühn von Burgsdorff, 2025; Secretariat of the Convention on Biological Diversity, 2020). These challenges are in turn limiting agricultural production.

Exacerbating this productivity problem is the fact that a large percentage of the food produced globally is never eaten. More than 13 percent is lost before reaching

retail shelves and an additional 19 percent of the food available to consumers is wasted in retail, food service and households (FAO, n.d.a; UNEP, 2024).

Agrifood industries employ or provide livelihoods for over a quarter of the world's working population, but most of these workers lack adequate social and labour protection and 90 percent are in informal employment – the highest of any sector – which is generally linked with decent work deficits and poverty (ILO, 2023).

These industries are also not immune to wider financialisation trends; that is, the growing influence of financial actors and markets on channels of capital accumulation. Investments from pension funds, hedge funds, asset management firms, private equity firms and private investors have turned land and food resources into assets that shareholders expect to deliver high returns (FoEI, 2019). The resulting focus on short-term profit over long-term value creation has impacted the structure of agrifood industries, leading to financial speculation that is increasing market volatility for food commodities and to corporate consolidation.

Over the past few decades, power within the global food system has become increasingly concentrated in the hands of fewer and fewer firms, as financialisation incentivises firms to pursue mergers and acquisitions (M&As) to increase market share and shareholder value (Keenan, Monteath and Wójcik, 2023). Consolidation is occurring across the food value chain. For example, consolidation in the manufacturing and drinks industries, which are positioned in the middle of the food value chain, means that large firms in these industries can act as gatekeepers, restricting competition and the bargaining power of farmers, smaller firms and workers, and dictating how products are farmed and processed, what consumers have access to and how products are priced. This is particularly concerning given that these subsectors are heavily engaged in the production, sale and marketing of processed and ultra-processed foods, which carry higher profit margins (Keenan, Monteath and Wójcik, 2023; Hendrickson et al., 2020; Clapp et al., 2021). This consolidation goes hand in hand with a shift towards rentiership-based returns driven by acquiring ownership of intangible assets, downsizing, and distributing savings to shareholders, and away from generating returns based on investment. Consolidation is also making the food system more vulnerable to shocks, such as those caused by the COVID-19 pandemic and Russia's invasion of Ukraine (Clapp, 2023). Horizontal shareholding (that is, holding shares in companies that are competitors) may be further eroding competition in the agrifood system (Keenan, Monteath and Wójcik, 2023; Clapp and Isakson, 2018). These trends have positioned a few large firms and financial actors to play an outsized role in influencing the range of policy solutions under consideration (Clapp et al., 2021).

While these trends are bad for people and the planet, they are also economically problematic. Without a change in course, the future will see declining, rather than increasing, food system productivity. For the first decade since the 1970s, average annual growth in global agricultural output has dropped, from 2.7 per cent in 2001–2010 to 1.9 per cent in 2011–2022 (USDA, 2025). This decline is linked to slower growth in total factor productivity (TFP), which refers to a sector's total output relative to its total inputs of land, labour, capital and materials. In 2011-20, global agricultural TFP growth slowed to half of what it was in the previous decade, due to a mix of factors including lagging investment in research and development (R&D) and climate change (USDA, 2025; Fuglie, Morgan and Jelliffe, 2024). One study estimates that climate change reduced global agricultural TFP by approximately 21 per cent between 1961 and 2015 and by about 26–34 per cent in the Global South (Ortiz-Bobea et al., 2021).

The challenges of tackling hunger and food insecurity, mitigating climate and environmental degradation, and ensuring a resilient economic future for agrifood businesses and workers, are inextricably connected. Overcoming these challenges and achieving SDG 2 requires more than stronger social and environmental policies; it also requires cross-sectoral innovation and transformation backed by new economic thinking. To shape thriving, resilient agrifood industries that are capable of feeding the world's growing population, more food will need to be produced on less land, using more sustainable practices and more diversified and equitably designed supply chains.

2. THE NEED FOR NEW ECONOMIC THINKING

The power of governments to change how the world's food systems are structured is curtailed by theories that limit the role of the state to fixing market failures and derisking markets so that it is easier for private sector actors to invest. Instead, the transformation that SDG 2 calls for requires states to actively shape markets, stimulating innovation aimed at solving specific problems, co-creating value with willing private sector actors, and directing growth that is sustainable and inclusive (Mazzucato, 2013a; 2018; 2021; 2023).

The Green Revolution of the 1960s–80s allowed the world to produce more food per square meter than had previously been possible and is credited with saving a billion lives. However, the innovations in crop efficiency that drove this productivity boom — in areas such as plant breeding, pesticide, and irrigation — as well as the business models that have become dominant, have run their course. They are contributing to the environmental degradation and financialisation that are now undermining agricultural productivity. A new wave of innovation and productivity gains is needed to achieve SDG 2, but it will only gather momentum if governments advance economic policies founded in new economic thinking (Mazzucato, 2021 and 2025).

Altering the current trajectory of worsening hunger and food insecurity, and environmental degradation would run counter to the financial interests of the actors that are profiting from the current structure of the global food system, including large agrifood companies and their shareholders, and is likely to encounter political obstacles. To make headway, governments will need to confront these vested interests, while also creating economic opportunities for firms that are willing to innovate and invest alongside governments.

Governments have the tools to turn challenges like hunger, food insecurity, and ecological degradation into market opportunities that can catalyse public and private investment, contributing both to tackling these challenges and to driving economic growth.

2.1 Setting a direction for economic growth

The close relationship between the social, environmental and economic challenges that stem from the current structure of the global food system underline that if efforts to tackle these challenges are pursued in isolation, they will fail. Governments around the world are fixated on accelerating economic growth. But if they pursue this objective without regard for how sectors and economies grow or who benefits and who loses, then any short-term gains may exacerbate challenges such as food insecurity and climate change, ultimately undermining growth. Instead, to transform food systems in a way that promotes sustainable and inclusive economic growth, governments must intervene in both the pace and direction of growth (Mazzucato, 2021).

Governments are increasingly turning towards industrial strategy to drive growth. However, they tend to be constrained by old models that focus on "picking winners" – specific companies, sectors, or technologies – and view industrial and innovation policies as separate from social and environmental policies. Such a tendency perpetuates economic policies that undermine social and environmental policy goals, and sustains the myth that prioritising social and environmental gains must come at the expense of economic investments.

In contrast, a well-designed mission-oriented industrial strategy aims to transform social and environmental challenges into market opportunities, while governing the resulting public–private collaboration to serve the public interest as well as private interests. Missions signal a long-term commitment to specific priorities, providing greater certainty to investors about the direction of growth (Mazzucato, Doyle and Kühn von Burgsdorff, 2024).

2.2 Mission-oriented industrial strategy

A mission-oriented approach to industrial strategy identifies clear, ambitious, measurable goals ("missions") that correspond with domestic and global market opportunities, as well as with pressing social or environmental policy challenges, such as those highlighted by the SDGs (see Box 1 and Figure 1) (Mazzucato, 2021). This approach leaves open the question of how the mission will be achieved, seeking to spur cross-sectoral innovation and investment oriented around achieving the missions (Mazzucato, Doyle and Kühn von Burgsdorff, 2024).

This approach has traditionally been limited to space and military applications. Famously, the Apollo Program's mission was to land a man on the moon and bring him back again,

which required engagement from sectors across the economy to develop the many solutions (from miniaturised electronics to space food to fire-resistant fabrics) that were integral to the mission's success, which in turn generated myriad innovation spillovers and an economic multiplier effect (Mazzucato, 2021). This approach can and should be brought to bear on social and environmental challenges – including the SDGs. Applied to the SDGs, mission-oriented industrial strategy can connect access with innovation, uniting the welfare state with the innovation state.

Box 1: Mission-oriented industrial strategy

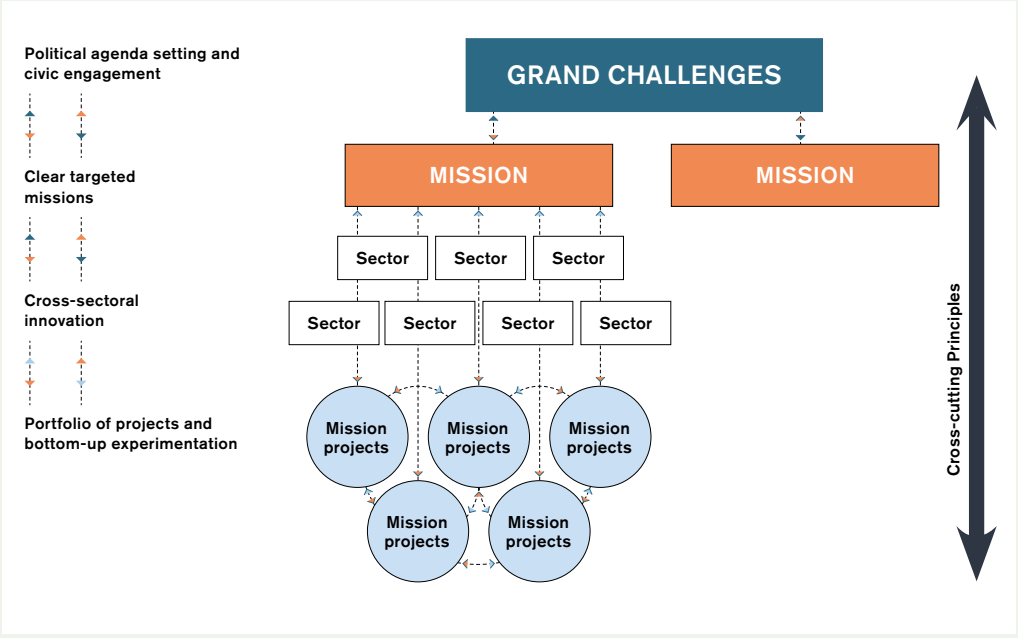


Figure 1: A mission map (Mazzucato 2019)

Grand challenges are difficult but important, systemic, and society-wide problems that do not have obvious solutions. For example, the United Nations' SDGs, to which all 193 United Nations member states signed on, represent an attempt to articulate the world's 17 most pressing challenges.

Missions are concrete goals that, if achieved, will help tackle a grand challenge. They should be bold and inspirational, measurable and time-bound, ambitious but realistic, and conducive to bottom-up innovation that engages multiple disciplines, sectors and actors. Missions set a clear direction for the different actors and sectors whose investment, innovation and effort is required to develop solutions. To mobilise as much cross-sectoral collaboration as possible, missions should

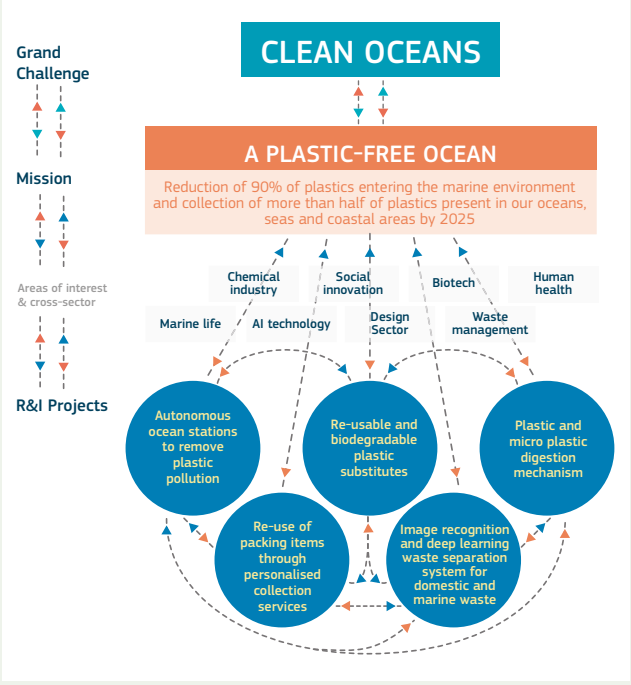
focus less on economic outcomes and more on societal and environmental outcomes. Missions can help transform complex challenges, such as the SDGs and their 169 targets, into clear investment pathways (Mazzucato, 2021 and 2019).

Sectors are the economic sectors that need to be involved in developing solutions to specific missions, generally in collaboration with one another.

Projects are activities or programmes that solve particular problems and, in so doing, help to achieve the broader mission.

Principles can guide how missions are implemented – including how projects are developed, how stakeholders are engaged, and how partnerships are designed. Principles can impact every component of mission implementation. They could be derived, for example, from human rights-based principles, or from stakeholder consultation.

Key enablers, such as effective digital tools and transportation networks, cut across all missions. They are critical elements of infrastructure required to tackle a mission. Moreover, missions can catalyse advancements in these areas, as advancements will often be necessary to achieve the missions (Mazzucato, Doyle and Kuehn von Burgsdorff, 2024).



For example, in line with SDG 14, one of the European Union's "Restore our Oceans and Waters" missions is to reduce plastic litter at sea by at least 50 per cent by 2030 (European Commission, 2023). Advice from the UCL IIPP recommended an even more ambitious version of this mission, illustrating how a mission map can be applied to a specific challenge (see Figure 2).

Figure 2: Illustrative mission map (Mazzucato, 2018)

2.2.1 The multiplier effect of mission-oriented industrial strategy

Well-designed missions can generate a multiplier effect. Specifically, they can generate a larger positive effect, both in terms of crowding in private R&D investment and generating a fiscal multiplier that increases GDP, than more traditional public expenditures. They can do this by creating and shaping markets in ways that provoke structural change and transformation. Mission-oriented policies direct economic activity towards solving problems that require investment and innovation from multiple sectors. Their cross-sectoral character can increase their spillover effects by stimulating private-sector R&D investment in multiple sectors and fostering cross-sectoral collaboration, helping innovation diffuse to other sectors. Mission-oriented policies involve public–private co-investment, including to finance up-front infrastructure costs, research activities, and R&D workers' salaries. By sharing the costs and risks of innovation oriented around well-defined objectives, governments can catalyse private sector R&D, generating a positive, lasting impact on GDP (Deleidi and Mazzucato, 2019 and 2021; Ciaffi et al., 2024).

Industrial strategy comes into conflict with the logic of austerity, which continues to impede government spending in countries around the world. Industrial strategy relies on the understanding that public investment is critical to drive growth. Austerity policies seek to limit government spending to keep the debt-to-GDP ratio in check. However, they often do so in ways that lead to stagnating growth, which can lead to this ratio remaining the same or even increasing. Instead of focusing on reducing spending, governments should focus more on what they are spending on. By investing in drivers of productivity and growth, governments can bring down the debt-to-GDP ratio by expanding the economy's productive capacity. This is what mission-oriented industrial strategy seeks to achieve (Deleidi and Mazzucato, 2021; Mazzucato, Doyle and Kuehn von Burgsdorff, 2024).

SUMMARY OF RECOMMENDATIONS FROM SECTION 2

Governments should consider how best to:

1. **Adopt mission-oriented industrial strategies that seek to direct growth, not just accelerate it:** Instead of implementing industrial strategies that seek to drive growth by "picking winners" (specific companies, sectors, or technologies), governments could advance mission-oriented industrial strategies that transform social and environmental challenges into market opportunities (Mazzucato, Doyle and Kühn von Burgsdorff, 2024). Such an approach can catalyse the innovation and investment needed to tackle the challenge, while also contributing to increases in productivity and growth; this could potentially lead to a multiplier effect, where the impact on GDP is greater than the original investment (Deleidi and Mazzucato, 2021). In this way, governments can influence not only the pace but also the direction of growth, and unite the welfare state with the innovation state (Mazzucato, 2021).

3. IMPLEMENTING MISSION-ORIENTED INDUSTRIAL STRATEGY

Realising the potential for a multiplier effect requires a different approach to policy design, outcome-oriented public institutions and policy tools, a redefined relationship between the public and private sectors, meaningful stakeholder engagement, and investment in the dynamic capabilities of the public sector (as set out in Table 1). This section explains what rethinking each of these areas means for governments.

Policy design	From market fixing to market co-creation and shaping
Institution/tool design	Outcomes-oriented tools (e.g., public procurement) and institutions (e.g., public banks)
New social contract	Symbiotic public–private partnerships guided by purpose
Co-creation and participation	Community engagement and participation
Dynamic capabilities	Strengthening the ability of government to implement bold policies and be a good partner

Table 1: Implementing mission-oriented industrial strategy (authors' construction).

3.1 Mission-oriented policy design

From picking sectors to picking missions

By focusing on missions instead of high-potential sectors or technologies, governments can catalyse cross-sectoral innovation and investment oriented around solving pressing policy challenges. This approach helps the government avoid concentrating its big bets in one sector or technology, instead creating market opportunities that are attractive to a wide range of sectors and may call for the development and deployment of a wide range of technological and non-technological innovations. This approach can promote the economy-wide transformations that are needed for a government to align its economic growth strategy with its social and environmental policy goals.


ELITISM
-production (robots)
-consumers (spread diets)
CARBON SINK
FOREST + SOIL
BIODIVERSITY
SOIL HEALTH
WATER HEALTH
CLIMATE AIR
ENVIRONMENT
CLIMATE
TRANSFORMATION OF THE
AGRICULTURE
CULINARY SKILLS
FOOD PREPARATION
NUTRITION

While sectors are not the focal point, they matter to the design of mission-oriented industrial strategies. Missions can be calibrated to create market opportunities that reflect the specific sectoral composition and the research and industrial strengths of each country. While sector-based subsidies risk increasing profits without increasing investment, mission-oriented industrial strategy is designed to push sectors across the economy to transform in line with mission goals. Therefore, the capacity of these sectors to transform matters and different sectors will require different types of support to do so – such as enabling infrastructure, worker retraining, or regulatory reform. Similarly, different categories of firms may require tailored supports to enable them to contribute to the missions and benefit from the opportunities they create.

In a mission-oriented industrial strategy, missions replace sectors and technologies as the vertical aspect of industrial strategy, while targeted supports enable a diverse array of firms and sectors to participate and horizontal policies establish economy-wide conditions for success, such as a connected innovation ecosystem and robust talent pipelines (Mazzucato, 2021; Mazzucato, Doyle and Kuehn von Burgsdorff, 2024).

A whole-of-government approach

Well-designed missions help coordinate the actions of multiple departments, ensuring that the whole is greater than the sum of its parts. Mission-oriented industrial strategy should be seen as an engine for economic growth that all departments are responsible for advancing.

To overcome government silos and intergovernmental coordination challenges, new governance structures may be needed. This could, for example, take the form of a central government body overseen by the president or prime minister tasked with setting missions and facilitating cross-departmental and intergovernmental coordination, supported by well-resourced cross-departmental "mission boards" empowered to advance individual missions, remove roadblocks, ensure that feedback loops support learning and adaptation, and oversee a portfolio of projects. Missions should also be integrated into budget processes and reporting cycles. In particular, treasury and finance departments should be directed to consider budget allocations through the lens of prioritising and enabling long-term mission success (Mazzucato, 2021; 2023d; MOIIS, 2019; Mazzucato, Doyle and Kühn von Burgsdorff, 2024).

3.2 Mission-oriented tools and institutions

To realise the potential of mission-oriented industrial strategy, governments should align key tools and institutions with mission goals. This includes tax policy, regulations and standard setting, public procurement, public financial institutions, and state-owned enterprises. While the most important tools and institutions will vary depending on the specific missions and the country context, public procurement and public financial institutions will always play a critical role (Mazzucato, 2021; Mazzucato, Doyle and Kuehn von Burgsdorff, 2024; MOIIS, 2019).

Mission-oriented public procurement

Public procurement accounts for a significant portion of government spending, amounting to 20–40 percent of central government spending in almost all OECD countries and to about $13 trillion per year globally, which represents approximately 15 per cent of global GDP (OECD, 2023; Open Contracting Partnership, 2020; European Commission, 2023). Public procurement can function as a powerful tool for creating market opportunities that align with public policy priorities. By creating demand for products and services that solve a particular challenge, such as access to healthy and sustainable food or GHG emissions reduction, procurement can catalyse innovation and investment aligned with tackling this challenge. In this way, it can push sectors to transform and catalyse wider economic benefits, in the form of productivity gains, jobs and economic growth (Mazzucato, Doyle and Kuehn von Burgsdorff, 2024; Mazzucato, Spanò and Wainwright, 2025).

While some countries are using procurement strategically in specific policy areas, the dominant paradigm constrains governments to prioritise minimising price and risk and ensuring fair, transparent and efficient processes. Other policy considerations may be permitted but are generally secondary (Mazzucato, Spanò and Wainwright, 2025).

This paradigm leads to a tendency for supplier pools to be dominated by a few large incumbent firms with longer track records that are therefore seen as less risky and can use their market position to offer lower prices. As a tool of industrial and innovation policy, on the other hand, procurement can be designed to diversify supplier pools and encourage local production, fostering more innovative and competitive markets that are capable of delivering products and services aligned with policy goals. By making opportunities accessible to smaller businesses, procurement can help scale up such businesses (Mazzucato, Spanò

and Wainwright, 2025). For example, the United Kingdom (UK) Government Digital Service's procurement reforms resulted in a more diverse, innovative and competitive market that was better able to respond to government priorities at lower cost, replacing the previous market in which a few big information technology (IT) firms won the vast majority of government contracts, which tended to be large, long-term and hard to manage (see Figure 3) (Kattel and Takala, 2021; House of Commons Public Administration Select Committee, 2011).

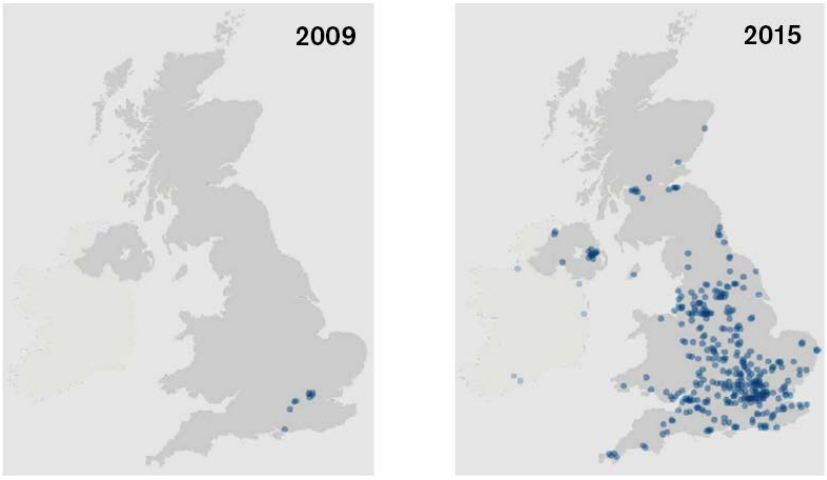


Figure 3: UK Government IT Suppliers in 2009 and 2015 (Gov.uk, 2020).

Governments have, in limited ways, pushed the boundaries of procurement. For example, public procurement for innovation can create more agile, outcome-oriented relationships between suppliers and government, including through "functional procurement" approaches that encourage bidders to invest in developing new products that meet a clearly defined need, instead of defining a specific product. However, while this approach has been enabled and even encouraged in a number of countries, it remains marginal and has typically been restricted to defence applications, with a notable example being the US-based Defense Advanced Research Projects Agency (Mazzucato and Wainwright, 2024).

Many countries have enabled sustainable public procurement, which seeks to advance wider environmental, social and economic impacts, sometimes linked with the SDGs. In Brazil, a law introduced in 2021 emphasised sustainable development as a goal of procurement (Spanó et al., 2022). In the UK, this has taken the form of the Public Services (Social Value) Act 2012, which requires consideration of the extent to which procurement decisions will deliver broader social value (see Box 2). In some cases, procurement policies give preference to

certain types of suppliers, including local suppliers or historically disadvantaged groups (such as rural, women, Indigenous). However, the core objective of minimising cost often continues to dominate, and these approaches tend to fall short of strategically aligning procurement with industrial strategy missions. Instead, procurement is treated as an administrative function for purchasing goods and services, with social and environmental factors considered on an ad hoc, peripheral, box-checking basis (Mazzucato, Spanó and Wainwright).

Box 2: Limitations of the UK Social Value Act

The United Kingdom's Public Services (Social Value) Act 2012 (currently undergoing updates to align with the Procurement Act 2023) requires government bodies to consider a wider array of factors beyond price, related to potential positive spillovers that could impact local economic, social and environmental well-being. A social value-based approach signals an important development beyond traditional approaches to procurement. However, the approach has a number of limitations: commitments from suppliers are often peripheral to the contract, meaning they are subject to less monitoring and are more likely to be negotiated away if circumstances change; commitments tend to be ad hoc and not strategic, meaning that commitments secured by a commissioning body do not necessarily drive their core policy goals; and commitments are overly focused on easily measurable outcomes, meaning that they are often seen as a tick box to complete rather than requiring deeper values alignment (Mazzucato and Wainwright, 2024).

To embrace the full potential of procurement as a lever of mission-oriented industrial strategy, a 'new economics' of procurement is required (summarised in Table 2). This approach would specify the desired outcome rather than the solution, allowing for adaptation. It would consider long-term, dynamic value encompassing a range of economic, social and environmental impacts and spillover effects rather than relying on a static valuation of a narrower set of impacts, measured at a point in time on the basis of cost-benefit analysis, and it would prioritise public value creation over cost minimisation. Mazzucato and Ryan-Collins (2022) defined the concept of public value as value that is co-created by public, private and civil society actors in the service of a clear public purpose, enabled by governments leaning into their role of shaping markets and directing growth. Markets are not neutral, intrinsic, self-regulating entities;

instead, they are social constructs that result from interactions between these different actors (Mazzucato and Ryan-Collins, 2022; Mazzucato, Spanó, and Wainwright, 2025). Procurement is a tool that can shape these interactions, and the markets that result.

Procurement policy generally seeks to treat all suppliers as interchangeable, emphasising neutrality and blind evaluation; however, procurement practices are never truly neutral, often privileging larger suppliers unintentionally. Instead, a new economics of procurement would articulate the types of suppliers the government wants to procure from, fostering the conditions for these suppliers to thrive and prioritising collaborative relationships with suppliers focused on shared goals, values and learning (Mazzucato and Wainwright, 2024; Mazzucato, Spanó, and Wainwright, 2025). This approach would deploy procurement in an intentional, integrated way with other policy tools, such as public finance, to achieve transformative, government-wide industrial strategy missions.

	Old practice	New practice
Goals	Each service area focuses on its own outcomes	A whole-of-government approach in which each service or department frames its activity from the perspective of the mission outcomes
Contract management	Key performance indicators are set and data is collected to measure whether providers are on track; financial incentives are built in to ensure compliance	Commissioners and providers use quantitative and qualitative data (including user research) to constantly learn about the problem, and iterate their approach; providers are not held to account for outcomes that are not in their control, but the quality of their learning processes may be assessed
Supplier ecosystem	Commissioners procure from whoever the most suitable supplier at the time is; they are agnostic about the composition of the market or the characteristics of their providers, as long as the quality of the good or service they are procuring is high	Commissioners recognise that a diverse ecosystem brings greater resilience and flexibility to meet their needs; they proactively seek opportunities to enable smaller organisations to compete
Value	Commissioners emphasise measurable forms of social value and negotiate on a contract-by-contract basis; there is a clear framework for measuring, assessing and comparing social value contributions	Commissioners see each act of procurement in the context of how it contributes to the mission specifically and the common good generally; broad forms of co-created public value, such as citizen input and quality processes, are legitimised; comparing different forms of value is recognised as an inherently values-based discussion
Public-private partnership	Private sector companies are delivery partners of government, but there is little or no attempt to influence their business practices	Commissioners set strong conditionality requirements on private sector partners to shape and co-create markets towards the common good – from how they treat workers to how they use profits
Evaluation	Providers are evaluated individually and against a narrow set of metrics that only consider the service being delivered	Commissioners evaluate the health of the system as a whole and the wider economic outcomes of the service, as well as the extent to which the service itself has met its goals

Table 2: A new economics of procurement (Mazzucato, Spanó, and Wainwright, 2025; adapted from Mazzucato and Wainwright, 2024)

Mission-oriented public finance

Mission-oriented public finance can complement mission-oriented public procurement, enabling supply- and demand-side tools to work in concert. Public finance (such as grants, loan guarantees, and debt and equity instruments) has the potential to shift capital to underfunded areas that align with industrial strategy goals. In doing so, it can stimulate follow-on investment and change how markets are structured. To realise these second-order effects, however, investment decisions must be founded in a clear articulation of the policy goals, or missions, that are being targeted (Mazzucato, 2013b; Deleidi and Mazzucato, 2021; Mazzucato and Vieira de Sá, 2025).

The structure of public finance matters, not just its amount. Mission-oriented finance requires a departure from treating public finance in a similar way to private finance, with an emphasis on financial return maximisation and risk minimisation, which tends to channel capital towards lower-risk projects that could be viable under commercial terms. It also requires a departure from treating public finance as a tool for derisking private finance, with an emphasis on leverage ratios. Instead, public financial institutions should be empowered as lenders of first resort, focused on directing public and private finance to contribute to the government's missions. Well-designed public finance can catalyse long-term structural transformation, expand the productive capacities of an economy and generate public value (Mazzucato 2023b, Mazzucato and Macfarlane, 2023; Lazonick and Mazzucato, 2013).

Public financial institutions can take a portfolio approach to mission-oriented investments. By sharing in the upside, they can reinvest profits from successful investments in new opportunities and cover losses when some investments inevitably fail. However, this can only be done if risks and returns are shared fairly (Mazzucato 2013b; Mazzucato and Macfarlane, 2018).

3.3 Public–private collaboration

Mission-oriented industrial strategy aims to create attractive market opportunities for businesses that align with public policy goals, thereby forming "coalitions of the willing" around these goals (Mazzucato, 2021). To bring private and public interests into alignment, governments must make it relatively easy for willing businesses to navigate relevant public sector policies and programmes. Governments must also design procurement opportunities, public investments and other policy tools to maximise public value, not only private profit.

In the context of mission-oriented industrial strategy, governments have significant power to reshape how markets function. By investing to change the structure of the economy and create new market opportunities, governments provide significant benefits to private sector actors – benefits that should be made conditional on the willingness of these actors to contribute to achieving policy goals (Mazzucato, Doyle and Kuehn von Burgsdorff, 2024).

Conditions can be placed on access to grants, loans, loan guarantees, equity investments, procurement contracts, tax incentives, bailout packages, regulatory advantages, land and water rights, and other benefits. These can be embedded in eligibility criteria, contract terms, and incentives or penalties that motivate ongoing compliance. For example, conditions can aim to ensure equitable and affordable access to products and services, require that recipients' business practices are aligned with policy goals such as fair treatment of workers or reducing GHG emissions, set technology sharing or local content requirements, restrict eligibility to certain types of suppliers, or require firms to reinvest profits in R&D, worker training or other productive activities, while restricting unproductive ones like shareholder buybacks (Mazzucato and Rodrik, 2023).[2] Conditions on access to public finance can also enable governments to benefit from the upside, for example, by requiring profits over a certain threshold to be shared, converting grants to repayable finance or winding down access to concessional finance if certain profitability thresholds are achieved, or allowing equity or royalty rights, or a portion of intellectual property rights, to be retained (Mazzucato and Rodrick, 2023; Mazzucato 2013b; Mazzucato and Macfarlane, 2018).

This is fundamentally about designing public–private collaboration to be symbiotic; in other words, to focus on shared goals and produce shared value (Mazzucato, Doyle and Kuehn von Burgsdorff, 2024; Mazzucato and Rodrik, 2023).

3.4 Community engagement

Mission-oriented industrial strategy should not be a purely top-down exercise. Its success requires meaningful engagement of a wide array of stakeholders, including regional and municipal governments and civil society actors. While missions benefit from clear national-level direction, well-designed missions are

2 Conditionalities associated with IMF and World Bank loans in the post-Washington Consensus period were donor-imposed and tended to force recipient countries to adopt reforms aimed at, for example, opening domestic markets to trade and foreign investment, financial liberalisation, fiscal austerity, and privatisation. In contrast, conditionalities set by national and sub-national governments can be a tool for designing reciprocal public–private partnerships aligned with national policy priorities.

not prescriptive about how they will be achieved; instead, they create space for bottom-up innovation that reflects different local realities, and for user-centred design with relevant stakeholders. Empowering local actors helps improve effectiveness, ensure uptake, and build support as the benefits will be more visible. How missions translate into implementation, and what support is needed to enable implementation, will look different in different places. Ideally, lessons from approaches that emerge at the local level should be shared so that best practices can be replicated or scaled up (Mazzucato, Doyle and Kuehn von Burgsdorff, 2024).

3.5 Public sector capabilities

Designing and implementing mission-oriented strategies requires investing in the capabilities of the public service across all levels of government. To develop and implement mission-oriented industrial strategy, governments will need to work in a more dynamic, proactive, iterative and networked way. This includes shifting towards focusing on outcomes instead of outputs in the design of tools, institutions, digital infrastructure, and partnerships, as well as working collaboratively across government instead of within silos. It means confidently seeking to maximise public value when negotiating contracts with private sector actors instead of focusing on being "open for business", and engaging citizens, businesses and other end-users in policy and service design. Importantly, it also means taking risks, iterating on solutions, and learning from what does not work, supported by monitoring and evaluation that enables adaptation, instead of following a linear, risk-averse approach to implementation (Mazzucato and Kattel, 2020; Mazzucato, Doyle and Kuehn von Burgsdorff, 2024).

Building these capabilities requires learning by doing, which means not outsourcing the design and implementation of these strategies to consulting firms. Governmental over-reliance on big consulting firms – in particular the "Big Four" of Deloitte, EY, KPMG, and PwC – has undermined the ability of governments to learn by doing, given that these companies are not incentivised to help clients learn (Mazzucato and Collington, 2023; Mazzucato and Kattel, 2020). Public innovation labs are one approach that can help governments learn by doing, enabling new ways of working to be adopted within a contained, purpose-built unit (see Box 3).

Box 3: Public innovation labs

Some governments have set up public innovation labs to enable new capabilities to be developed and applied in defined areas. These labs, such as the Chilean Government's Laborarotorio de Gobierno, established in 2015 as a state agency under the Chilean Ministry of Finance, are set up to 'sandbox' innovative policy development and programme design approaches. Such a model can help to create a safe space for experimenting, for collaborating with citizens, businesses and other parts of government in an outcome-oriented way, and for learning by doing (Mazzucato, 2022). However, over the last decade a number of governments have created 'labs' that are not empowered to advance government priorities or well-integrated into the machinery of government, and therefore operate on the fringes of core policy processes. Importantly, labs are not a replacement for system-wide investment in capacity building; they can, however, be designed to support a wider transformation by demonstrating the potential of new ways of working (ibid.).

4. SCHOOL MEALS: AN OPPORTUNITY FOR INDUSTRIAL STRATEGY

A well-designed mission-oriented industrial strategy can potentially turn school meals into a tool for catalysing and directing inclusive and sustainable growth. This section explores the opportunity to leverage school meal procurement in the context of an industrial strategy focused on a food mission. It draws on examples and insights from around the world, particularly on case studies from Brazil, Sweden and Scotland (which are summarised in Appendix A).

The scale and reach of school meal programmes means that their procurement budgets represent a significant market opportunity for farmers and businesses across the food value chain, and a powerful lever for incentivising food system transformation. A growing number of countries are getting on board with school meals and many are expanding access. For example, Ethiopia's school meal programme reached 1.4 million children in 2022 and 6.9 million in 2024, a four-fold increase in coverage (WFP, 2024). Meanwhile, Indonesia began rolling out its Free Nutritious Meals programme in January 2025. With plans to reach 78.3 million school-aged children by 2029, it is set to become one of the largest school meal programmes in the world (Global Alliance Against Hunger and Poverty, 2024). Coverage rates vary by country. While primary school coverage is estimated at 80 percent in high-income countries, it only reaches 27 per cent in low-income countries (WFP, 2024). Momentum is continuing to build, with further expansion expected – for example, in Canada, which began rolling out its first national school meal program in late 2024 accompanied by a commitment to work towards universal school meals.

Countries often set multiple goals for school meals, with education and health goals being most common. Many governments have also integrated a focus on strengthening local agrifood industries. In some cases, the potential for improved educational outcomes driven by school meals to generate improved employment outcomes is recognised as a long-term objective. For example, Sierra Leone's 2021 National School Feeding Policy highlights the role of nutrition in fostering a more

educated and employable workforce (Sierra Leone Ministry of Basic and Senior Secondary Education, 2021).

However, few programmes explicitly link school meals to national economic growth or industrial strategy. An exception is Indonesia's Nutritious Meals programme, which is recognised as part of the country's economic stimulus package and is expected to add two percentage points to Indonesia's growth (Cabinet Secretariat of the Republic of Indonesia, 2025; Reuters, 2025).

While the market opportunity will vary by country, there is significant potential for school meals to drive innovation, investment and structural change oriented around increasing food system productivity and sustainability, reinforcing food sovereignty, and improving the accessibility and affordability of healthy food.

4.1 The social, ecological and economic benefits of school meals

The positive benefits of school meals are well documented, particularly for universal programmes, which help remove social stigma and increase uptake. A number of studies have shown the impact of school meals on education outcomes, such as test scores and attendance (Alderman, Bundy, and Gelli, 2024; SFI, 2023); as well as health-related impacts, such as decreased consumption of ultra-processed foods, height and weight increases, improved nutrition intake, and reduced pressure on healthcare systems (Wang et al., 2021; Locke et al., 2024; Impact on Urban Health, 2022; Parnham et al., 2023). There is also evidence of health-related spillovers. For example, some studies have shown improved nutrition among children whose siblings participated in a free school meal programme, through income effects (Alderman, Bundy and Gelli, 2024). Intergenerational spillovers have been found in terms of improved health of children whose parents received school meals in India's Mid-Day Meal programme (Chakrabarti et al., 2021). School meals can also impact consumption patterns in local communities as the availability of nutritious local food increases (Singh and Fernandes, 2018).

School meals and food procurement more widely have also been recognised for their potential to contribute to climate, biodiversity, and other environmental sustainability goals. For example, reducing food miles and limiting food and packaging waste is recognised as a byproduct of prioritising local farming and production in some programmes, while others are more deliberate in giving

priority to climate-friendly or organic foods (GCNF, 2024).[3]

The local economic impacts of school meals on incomes and employment are well documented. School meals have been shown to improve incomes, both during the programme for families, and over the lifetime of participants who were exposed to school meals during their primary years (Cohen et al., 2021; Lundborg, Rooth and Alex-Petersen, 2022). Studies have shown positive effects for smallholder farms related to increased market access and incomes, and increased and more diversified production (Drake et al., 2016; Kelly and Swensson, 2017; WFP Rwanda, 2020; Bliss, 2017; Giunti et al., 2022; FAO and WFP, 2018). One estimate, based on data from a subset of countries, suggests that for every 100,000 children fed by national school meal programmes, at least 1,600 new direct jobs are created, as well as many more across the entire farm-to-fork supply chain, from farming to processing and packaging to transportation to food preparation, safety and quality inspections, monitoring, and administrative

3 However, evaluation of these impacts remains less common. See, for example, Cerruti et al., 2017; Sundin et al., 2024.

roles (WFP, 2024; GCNF, 2024).[4] A number of studies point to the economic multiplier effect of school meals at the local level, based on sourcing from local food suppliers and catering staff who subsequently re-spend part of their income within their local economies (Kłoczko-Gajewska, et al., 2023; Tregear et al., 2022; Muratori, Juarros and Valderrama, 2023).[5]

School meal investments demonstrate high value for money. The estimated return on investment ranges from about 1.7:1 to 35:1 for every dollar spent, depending on factors such as whether or not the programme is universal, the outcomes and sectors considered, and unique country or regional characteristics (SFI, 2023; Verguet et al., 2020; Sittimart et al., 2024; Impact on Urban Health, 2022; Ruetz and Fraser, 2019; WFP, 2024). However, these estimates probably underestimate the full effect of school meals. The argument in their favour becomes even more compelling if they are designed and assessed on the basis of their potential to contribute to a wide array of public value indicators, including second–order, economy-wide effects (Mazzucato and Ryan-Collins, 2022).

School meals policies are being shaped primarily with a view to improving the education and health outcomes of students, and not to achieve economy-wide outcomes. This makes it harder for governments to justify increased spending. Despite overwhelming evidence supporting their value, school meal programmes struggle with insufficient funding. This is true in countries at all income levels, although the challenge is most acute for low-income countries. While most countries have some form of school meals programme, few have achieved universal coverage (GCNF, 2024; WFP, 2024).

Instead, school meals should be viewed as an investment that – if well-structured – can become a driver of economy-wide growth, generating an economic multiplier effect where the positive impact on GDP is greater than the original public investment (Deleidi and Mazzucato, 2019). Through thoughtful design, in the context of a wider mission-oriented industrial strategy, school meals can help to stimulate innovation spillovers, cross-sectoral structural transformation, improved productivity, and growth.

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4 An outsized percentage of the paid jobs associated with school meals are in India, which boasts the world's largest school meal programme; while many lower income countries rely on large numbers of volunteers (GCNF, 2024).

5 For example, one evaluation of school meals in five countries (the UK, Italy, Croatia, Serbia, Greece) found local economic multipliers ranging from 1 to 2.46 based on additional economic value generated to local areas from public food procurement spending going to local farm inputs and hiring local labour, particularly local food services, which have a significant impact due to their more labour-intensive nature (Tregear et al., 2022). Similarly, another study (using a Keynesian-based 'Local Multiplier 3' or LM3 method) estimates a substantial multiplier effect of LM3>2, with revenue remaining largely in local economies (Kłoczko-Gajewska, et al., 2023).

Case study insights: Realising the multifaceted benefits of school meals in Brazil, Sweden and Scotland

Case studies from Brazil, Sweden and Scotland demonstrate the potential of school meal procurement as a driver of social, environmental and economic outcomes, but also highlight that their potential to contribute to economy-wide growth and food system transformation will remain under-realised unless they are deliberately integrated into a national mission-oriented industrial strategy.

Brazil's National School Feeding Program, the Programa Nacional de Alimentação Escolar (PNAE), has been recognised as a tool for achieving one of the missions in the country's 2024 mission-oriented industrial strategy, which aims to develop sustainable and digital agri-industrial chains for food, nutritional and energy security. PNAE is universal and is one of the world's largest school feeding programmes, present in about 150,000 public schools across the country, serving over 50 million meals daily during the school year, and benefitting over 40 million students (Brasil, 1955; MEC, 2023a). An increase in 2023 brought its total annual budget to R$ 5.5 billion (MEC, 2023b). PNAE aims to combat child hunger, improve nutrition and education outcomes, foster local economic development and promote the inclusion of family farmers in the national food market.

It is likely that recognition of PNAE as an industrial strategy tool and driver of sustainable economic growth helped secure the increased funds that were recently allocated to the program. Nevertheless, further work is required to broaden the program's scope from its current focus on local economic development to also include a focus on stimulating the innovation and investment needed to advance the industrial strategy's food mission. Realising the potential of school meal procurement to contribute to Brazil's industrial strategy will also require coordination with other policy instruments, including with public finance instruments aimed at helping farmers adopt new technologies and practices, advancing climate objectives, and supporting innovation across the food value chain (Mazzucato and Spanó, forthcoming).

Sweden's universal school meals programme, which serves approximately two million meals daily (Skolmat Sverige, n.d.), has its roots in the principles of 'folkhem', which sees the welfare state as responsible for building a home for the nation, in which the state, like the family, provides for the nation's health, education and care. It has also been influenced by Sweden's aim of becoming the first fossil-free welfare nation in the world, in line with the goal of achieving

zero net emissions by 2045 while continuing to enhance wellbeing (Fossil Free Sweden, 2021). While Sweden's school meals programme prioritises nutrition, student wellbeing and learning, and sustainability, a connection to national-level economic objectives is less evident.

In 2018, Vinnova, Sweden's national innovation agency, worked closely with the Swedish Food Agency (Livsmedelsverket) to launch a mission of delivering healthy, sustainable and tasty school food. This mission aimed to position school meals as an opportunity for catalysing a wider, systemic transformation of Sweden's food system to prioritise health, social equality, and environmental sustainability. The mission used a prototype-based approach to foster bottom-up innovation, with municipalities acting as key delivery partners supported by a wider network of government and non-government actors. Vinnova and the Swedish Food Agency issued a call for municipalities interested in transforming their approach to school food, and brought in Swedish design agency Antrop to co-design a set of prototypes with the four selected municipalities (Hofors, Karlstad, Munkedal, and Vallentuna). These prototypes brought together over ten different government agencies, delivered meaningful impact on the ground, catalyzed changes to local curricula, school environments, school meal menus, and procurement practices, and influenced national policies.

National-level policy impacts include the 2025 National Guidelines for School Meals, which articulate national goals for sustainable school meals; the adoption of missions by Sweden Food Arena, a public innovation and research agency focused on the food sector; and Sweden's new National Food Strategy 2.0, which highlights the procurement potential of public meals, including school food, for local economic development. However, adoption of more integrated approaches to school meals remains uneven, and Sweden's emphasis on local economic resilience could benefit from a deeper strategic connection to sustainable economic growth at the national level. This signals an opportunity to better connect the dots between Sweden's national economic and industrial policy agendas and innovations in school meal design advanced by its powerful local governments (Mazzucato and Hill, forthcoming).

In Scotland, while school meals have successfully brought health, education, and equity goals into alignment, their potential to contribute to economic and environmental objectives has received less attention. The evolution of the country's school meals programme has occurred in parallel with its economic policies, including the development of its recent Green Industrial Strategy, which aims to "realise economic growth opportunities from the global transition to net zero" (Scottish Government, 2024f). While this strategy recognises the need for

a more coordinated approach to the government's policy tools, school meal procurement has so far been overlooked.

Despite a commitment to universal school meals, financial constraints have meant that the programme's rollout has been slower than anticipated. Free school meals for P1 to P3 students were piloted in a few local authorities in 2007–08, but were not rolled out nationwide until January 2015, and plans to extend universal school meals to all primary school students (and eventually to secondary school students) have been widely criticised for repeated delays, which have seen this commitment pushed out beyond 2026 due to funding constraints (STV News, 2024; STV News, 2025; Brennan et al., 2022). This underfunding of school meals is linked to the austerity policies of the UK government during this period, which limited transfers to the Scottish government. It is likely also a consequence of both the Scottish and UK governments failing to recognise school meals as a driver of economic growth. This reframe could help to position school meals as a long-term investment rather than a cost (Mazzucato and Macfarlane, forthcoming).

The cases from Sweden and Scotland emphasise that the opportunity for school meals to contribute to sustainable economic growth may be missed absent an industrial strategy oriented around a clear sustainable food mission, as in Brazil. This is true even in a country like Scotland that is advancing a green industrial strategy, or a country like Sweden that is advancing a national food strategy.

These case studies illustrate key design features that can help governments leverage school meals as an instrument of mission-oriented industrial strategy, as well as limitations that can inhibit their ability to do so, which are explored in the subsequent sub-sections.

4.2 Designing a food mission

To accelerate progress towards SDG 2 (which seeks to end hunger, achieve food security and improved nutrition and promote sustainable agriculture), countries with industries that could contribute to this SDG could consider defining a mission oriented around tackling this challenge, as one focal point of their industrial strategy. School meal procurement could then be leveraged to shape markets in line with this mission. For example, a mission-oriented industrial strategy focused on SDG 2 could commit that, by 2030, all school-aged children will have access to healthy and sustainable food twice per day, at least one-third of which will be locally sourced (as illustrated in Figure 4).

Box 4: An illustrative school meals mission

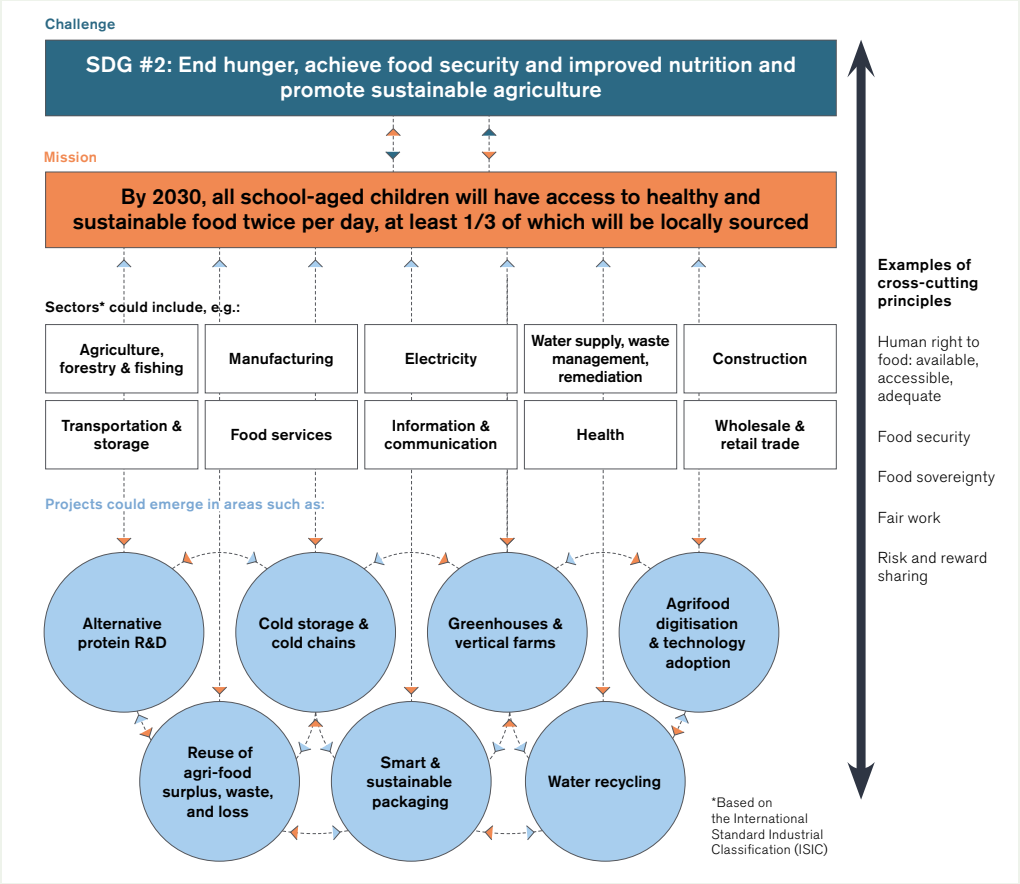

Figure 4: Indicative school meals mission map

Achieving this mission would require innovation and investment from many different sectors, in areas ranging from R&D aimed at developing alternative proteins that are more land- and water-efficient than animal-based proteins to the infrastructure required to safely bring local food products to children. Emerging areas of innovation where public and private investment could contribute to mission success are described in Section 3.2.1.

The principles of the right to food, defined by the United Nations, should inform how food-related missions are implemented. These principles specify that food must be available, accessible (which means it must be affordable and physically accessible by all people), and adequate (which means it must satisfy dietary needs, and be healthy, safe, and culturally acceptable) in order for the right to food to be met. Other principles that could shape implementation include promoting food security, food sovereignty,[6] fair work and partnerships that share risks and rewards.

Alternatively, countries could set broader missions, as Brazil has done with its 2024 industrial strategy mission to build sustainable and digital agri-industrial chains for food, nutritional, and energy security, or with its 2003 "Zero Hunger" mission, which made significant progress towards eradicating hunger and extreme poverty in the country (despite subsequent backsliding due to changes in government). Getting the mission language right is important in order to make it clear and compelling for farmers, businesses, innovators, investors, government actors and citizens (see Box 5).

Box 5: Framing mission language

Industrial policies may get bogged down in technocratic language that fails to resonate with people or to create a clear north star for cross-sectoral investment, innovation and collaboration. For example, the first mission in Brazil's industrial strategy is "sustainable and digital agro-industrial supply chains for food, security, nutrition and energy" and its corresponding target for 2033 is to "increase the share of the agro-industrial sector in agricultural

6 According to FAO's definition, food security exists "when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 2001). Food sovereignty refers to an alternative model for agricultural production and agrifood trade in which peoples have control over the food they consume and its production model, including the degree to which it enables self-reliance, prioritises domestic or community-based production, contributes to sustainable development, and is appropriate – culturally, economically, ecologically and socially – in their context (FAO, 2004).

GDP to 50% and achieve 70% mechanisation of family farming establishments, with the supply of at least 95% of the market for nationally produced machinery and equipment, ensuring environmental sustainability" (Government of Brazil, 2024). While this mission brings together economic, wellbeing, climate and security goals, its framing may not be clear and inspiring in terms of its relevance to people and communities, or in terms of the transformation required to achieve this target across sectors. It could be reframed as, for example, "every Brazilian will have access to three meals a day that are healthy and sustainable", a goal that would require investment and innovation across sectors (for example, agri-food, transportation, energy, information and communications technology, and manufacturing), investment in key enablers (such as mechanisation of farms) and redesign of key policy tools (for example, public procurement of school meals). This mission could result in improved health and wellbeing outcomes, contributions to climate and sustainability goals, and increased productivity and growth, but the likelihood of success could increase if it was framed to spark widespread interest and engagement and to speak directly to the needs of people.

Extract from Mazzucato, Doyle and Kuehn von Burgsdorff, 2024.

Missions could also be framed to focus on a specific aspect of the challenge that is most resonant with national policy priorities and industrial strengths. For example, countries concerned about agricultural water and land use could adopt missions such as improving water productivity by reducing water usage in agriculture by a third, while increasing crop yields by 2030; bringing 50 per cent of global cropland under regenerative agriculture systems by 2050; or replacing 50 per cent of meat-based products with plant-based proteins by 2030 (Mazzucato and Kühn von Burgsdorff, 2025; see Box 6).

By defining an ambitious mission that innovation is required to achieve, and making market opportunities, subsidies and other support contingent on contributions to the mission, governments can push private sector actors to invest and transform.

Box 6: A mission map for improving water productivity in food systems

Water use in the global food system is unsustainable. Agriculture is responsible for approximately 70 per cent of freshwater withdrawals globally, and about 55 per cent of global food production takes place in regions where water availability is unstable (Khokar, 2017; Mehta et al. 2024). While reduction of water waste

through adoption of approaches and technologies for improving water efficiency is possible, this requires governments to bring markets into alignment with the goal of improving water productivity. Reducing water usage in agriculture does not need to undermine agricultural productivity; in fact, it is necessary to meet growing food demand, preserve soil moisture and stabilise the hydrological cycle. In a recent report developed for the Global Commission on the Economics of Water, the following mission is proposed: "[b]y 2035, improve water productivity by reducing water usage in agriculture by a third, while increasing crop yields" (Mazzucato and Kühn von Burgsdorff, 2025; see Figure 5).

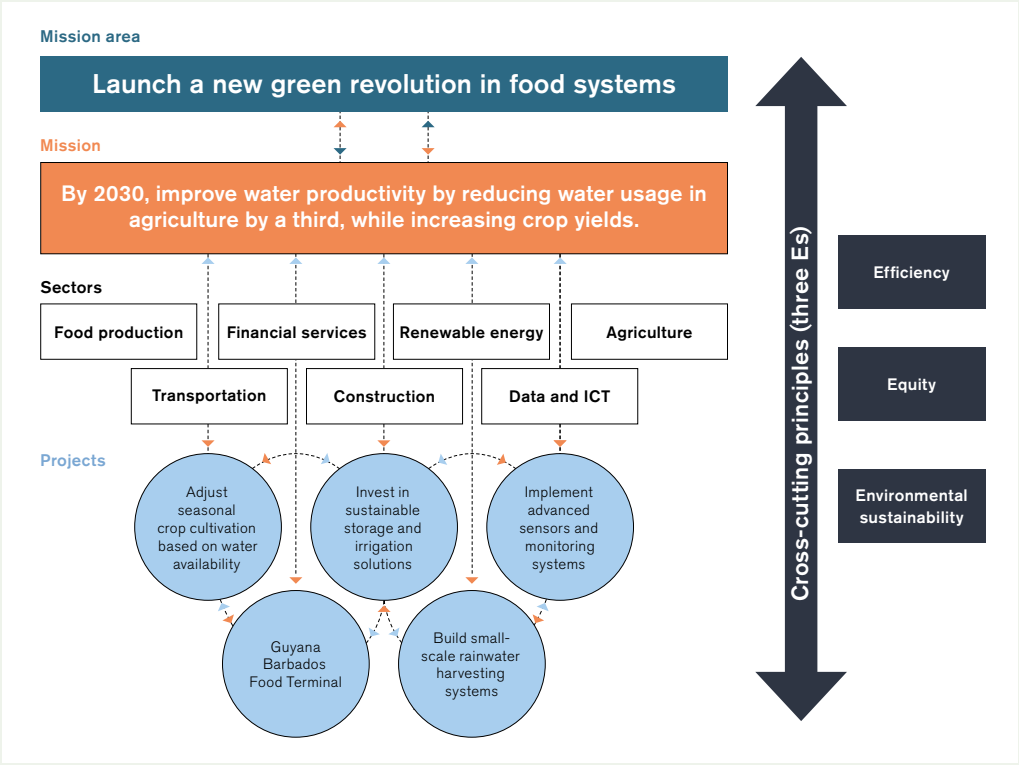

Figure 5: A mission map for improving water productivity in the global food system (Mazzucato and Kühn von Burgsdorff, 2025).

Figure 5 shows the range of sectors beyond agriculture that would need to be engaged in achieving this mission. This mission could spark investments in areas such as advanced irrigation and water management and storage methods (including drip and micro-spray systems, and advanced monitoring and data analyses) and climate-resistant seeds that can increase yields while reducing water use (such as Temasek Rice) (Mazzucato and Kühn von Burgsdorff, 2025).

Tackling SDG 2 will require innovation and investment from multiple sectors, and from multiple departments and levels of government. Mission-oriented industrial strategy offers a path forward for enabling cross-sectoral and whole-of-government coordination.

4.2.1 A cross-sectoral market opportunity

A mission focused on access to school meals, or on access to nutritious and sustainable food more broadly, would help to catalyse transformation across the entire food system. While sectoral engagement would vary by country, these missions would require changes across the food supply chain, from production and processing, to packaging and distribution, consumption and disposal. This would require engagement, investment and innovation from multiple sectors – for example, from agriculture, forestry and fishing; food manufacturing; transportation and storage; information and communication technology; food retail; food services; and water and waste management. School meals can function as a lever for engaging these different sectors in food system transformation (see Figure 6).

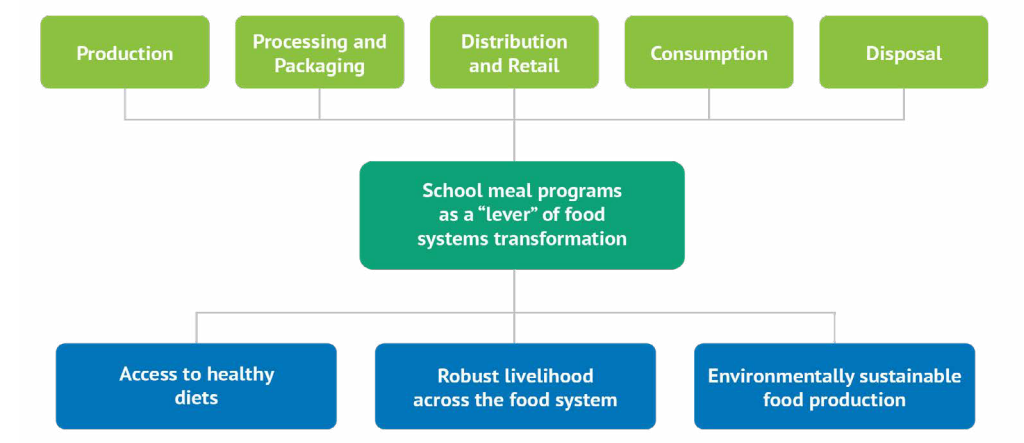

Figure 6: School meal programs as a lever of food system transformation (Global Child Nutrition Fund, 2024).

Food systems account for approximately 12 per cent of global GDP and 40 per cent of all employment; however, there is significant variation across countries, including in terms of the mix of industries contributing to food value chains and the structure of these industries (Strauss, 2025). Therefore, a mission-oriented industrial strategy that aims to disrupt the food system will need to be tailored to reflect the policy priorities and industrial mix of each country and may not make sense for all countries.

To date, the market shaping potential of school meals has been largely confined to creating opportunities for local smallholder farms. For low-income countries, where agriculture, forestry and fishing account for about 26 per cent of GDP (World Bank, 2025a), using school meals to create market opportunities for local food producers can be a powerful contributor to local economic development, creating economic opportunities for smallholder farmers while also promoting agrobiodiversity and increasing food sovereignty (WFP, 2024; Fernandes et al., 2016; Singh, 2021; Sumberg and Sabates-Wheeler, 2011). Brazil's National School Feeding Program, for example, has succeeded in increasing the proportion of school meals procured from family farms, leading to an increase in the average income of participating family farmers (see Figure 7). This potential may be most salient in countries where agriculture is dominated by small landholdings and where food production capacity is relatively high (Singh, 2021).

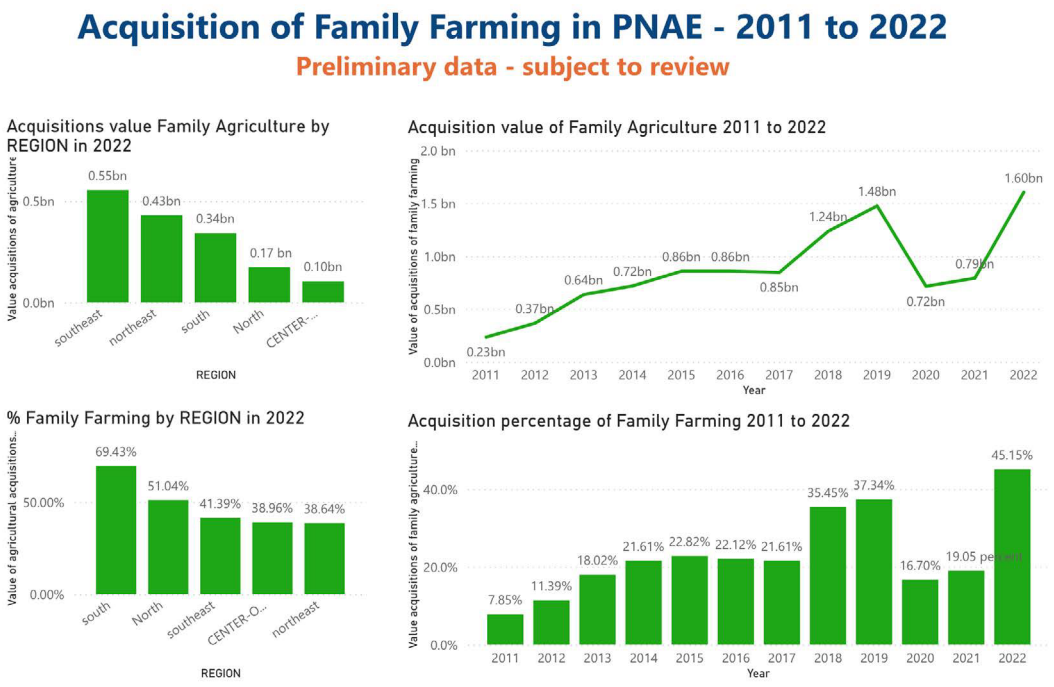

Figure 7. Purchases from family farmers at the PNAE, 2011–2022 (FNDE, n.d.).

The benefits of this approach are not restricted to low and middle income countries; they are relevant to countries of all income levels. In high-income countries, larger, industrialised farms tend to dominate and school meal programmes tend to rely on established supply chains involving farms of all sizes; however, some middle and high-income countries do include provisions for local

smallholder farms. While 61 per cent of low-income countries align school meal programmes with agricultural objectives, this figure still reaches 35 per cent in high-income countries (GCNF, 2024).

School meals also have the potential to create market opportunities for sectors beyond agriculture and to generate economy-wide effects. By creating domestic market demand for sustainable, healthy, affordable food, complemented by financial and technical support, governments can incentivise companies from a wide range of sectors across the food value chain to invest, innovate, and expand into emerging domestic and global markets. There are many emerging opportunities for innovation in the food system, some of which are outlined in Box 7.

Box 7: Promising avenues in agrifood innovation

Regenerative agriculture: Regenerative agriculture goes beyond limiting harms and actively seeks to restore nature and improve planetary health, recognising that agriculture is dependent on planetary health and that extractive approaches that yield short-term profits undermine long-term productivity. Revisiting centuries-old knowledge from pre-industrial agriculture, including from Indigenous peoples, can improve long-term productivity. For example, crop diversification, minimal soil disturbance, and agroforestry methods can improve soil health, increase water infiltration and drought resilience, and decrease deforestation (Abdallah et al. 2021; World Bank 2023; Rainforest Alliance, 2023; The Nature Conservancy, 2023).

Controlled Environment Agriculture (CEA): CEA encompasses greenhouses, vertical farms and any other method of growing crops in a controlled, enclosed space. These methods can enable year-round farming, reduce weather-related uncertainty, and reduce water and pesticide use. In vertical farming, for example, crops are stacked vertically, which dramatically improves land use efficiency, eliminates the need for pesticides, and enables urban and community-based farming. Compared to traditional farming, this approach uses 95 per cent less water and 98 per cent less land to produce an equivalent volume of food. While the energy-intensive nature of vertical farming can drive up costs and impact sustainability, this challenge can be mitigated through use of renewable energy sources. This is a promising area for achieving high-density, year-round production at different scales – from large commercial, export-oriented facilities to small household, school or community-based applications (Behm, n.d.).

Alternative proteins: There is a growing market for alternative proteins that are more climate-friendly. The global market for alternative proteins was recently valued at US$91B and projected to grow to US$417.1B by 2034 (R&M 2025a; 2025b). To achieve climate targets and improve water efficiency, livestock production – which is land- and water-intensive and responsible for about 20 per cent of global GHG emissions – will need to dramatically decrease, further expanding the market for alternative proteins. Another estimate suggests that if governments around the world collectively invest US$10.1 billion annually in alternative protein R&D and commercialisation, this market segment could generate US$700B in economic value by 2050 (GFI, 2023a).

Plant-based proteins include products that mimic meat and dairy: plant-based meat analogues/alternatives (PBMA) and plant-based dairy analogues/ alternatives (PBDA). Over 40 per cent of the companies active in this area are focused on PBMA and PBDA products. To refine plant-based protein products and lower their price, innovation is being pursued in areas ranging from production technology aimed at developing structures that mimic animal-based foods, to crop breeding and genome editing. Cellular agriculture R&D is leading to new meat and animal products that are lab-cultivated from cells. Food products based on edible insects are also attracting significant investment, as insects have a higher protein content than animal meat and require far fewer resources. 3D printed meat is another area of active innovation. Bioprinting (which integrates 3D printing with tissue engineering) is used to create fibres and microfibers from stem cells that mimic the texture of meat. Osaka University scientists used this method to create 3D printed meet that reproduces the structure, taste and texture of Wagyu beef (Abdul Aziz et al; R&M, 2025a and b; GFI, n.d.; Akhtar and Isman, 2018; Orkusz, 2021; Kang et al., 2021; Lurie-Luke, 2024).

Agritech: The global market for agritech was estimated at US$24.42B in 2024 and is expected to grow to US$48.98B by 2030. Notably, digital tools, data and automated machinery, which increasingly leverage artificial intelligence (AI), are being deployed across the food value chain to improve productivity and sustainability. These tools are being used to, among other things, inform decision making through crop monitoring, forecasting and pest prediction; optimise livestock and crop health and production through “precision agriculture” (which uses drones and sensors, big data analytics, and automation to optimise practices and reduce resource use); manage smart irrigation systems; automate processes for safety and quality control; automate resource allocation across Internet of Things (IoT)-connected greenhouses based on growth patterns; improve post-

harvest storage; automate manufacturing processes; streamline supply chains; enforce regulations (for example, those governing industrial waste discharge); enhance traceability for food safety and sustainability verification; and track GHG emissions (R&M, 2025a; Alberta Innovates, n.d.).

Waste reduction and circular economy: A large portion of food is wasted along the supply chain: over 13 percent is wasted between farms and retail shelves, and an additional 19 percent of the food that shows up on retail shelves is never eaten due to waste in retail, food service and households. Food packaging is another source of waste, leading to landfill overflow and environmental pollution. Food accounts for 50 per cent of fossil-fuel-derived plastics used across the packaging industry. This material takes a long time to degrade and breaks down into microplastics that may be eaten by animals, thereby entering the food chain. Some governments are regulating food waste and packaging and some companies are innovating to limit food and packaging waste. For example, innovation is being pursued in the areas of: "smart packaging" (using sensors); sustainable and biodegradable packaging (drawing on innovations in material science); streamlining supply chains to reduce food waste; tracing products through AI, robotics and blockchain technologies; and reuse of agri-food surplus, waste, and loss generated during crop production, transportation, storage, and processing (for example, in the form of biomass sustainable recycling systems, or production of bioactive compounds for food or pharmaceuticals) (Rodrigues et al., 2022; Lurie-Luke, 2024).

These innovation avenues engage a wide array of disciplines and sectors. They are not mutually exclusive and this summary is far from exhaustive.

4.2.2 The need for a whole-of-government approach

To realise the potential of school meals, departments across government will need to help scale up investments in school meals and take a stake in their design, recognising that they not only improve education, health and equity outcomes for children, but can also catalyse and direct sustainable economic growth.

School meals programmes are typically spearheaded by departments of education, often with involvement from health departments and sometimes agriculture departments, but with minimal engagement from departments responsible for industry, innovation, climate, finance and the treasury. For example, Scotland's school meals policy has been informed by collaboration between the departments responsible

for health and education. While this has enabled a "whole school approach" (explained in Box 8), the policy has so far not benefited from a whole of government approach.

According to a GCNF survey (2024), 91 per cent of school meal programmes engage the country's education department, 67 per cent engage the health department and 58 per cent engage the department responsible for agriculture. Forty-four per cent engage the department of finance, but the extent of this engagement is unclear and may not go much beyond accessing funding for programme delivery. This limited cross-departmental engagement is undermining the potential of school meals to act as drivers of economy-wide growth and food system transformation. School meals should not be seen as the sole responsibility of departments of education, any more than industrial strategy should be seen as the sole responsibility of departments of industry.

A mission focused on school meals or on access to healthy and sustainable food should be governed from the centre of government, with engagement from a wide range of departments and public sector agencies (such as those shown in Figure 8). Responsibility for making key funding decisions and for designing the policies, tools, institutions, and partnerships critical to the mission's success lies with various departments. This includes the role of departments of education in delivering school meals and embedding lessons on nutrition and sustainable food across the school curriculum, the role of departments of health in establishing nutrition standards, the role of departments of industry in galvanising the cross-sectoral innovation and investment needed to expand access to healthy and sustainable food, and the role of departments of environment in setting ambitious, cross-sectoral decarbonisation targets and supporting a shift towards regenerative agriculture. Conversely, discrepancies between the objectives of different government institutions can lead to conflicting policies, undermining success.

Brazil's National School Feeding Program has taken deliberate steps to address challenges related to interdepartmental and interagency coordination, including establishing formalised, purpose-built governance structures. While challenges still exist, the programme has been more successful than most in bringing social, economic and environmental goals into alignment (see Box 8).

Cooperation across levels of government is also critical. National-level leadership can set the overall direction for food system transformation and connect school meals to a mission-oriented industrial strategy. However, sub-national levels of government (e.g., state or provincial governments, school districts, and municipal governments) may be responsible for key policy areas within these national

strategies – pertaining, for example, to education, health and local economic development – and will generally have a deeper understanding of how to foster bottom-up solutions tailored to local realities. In all countries, but particularly in a federated context, it is important for the national government to take a lead role in directing, coordinating and supporting the work of sub-national governments, including by providing sufficient resources, investing in capacity building, and gathering and sharing best practices, while leaving room for local-level adaptation (see Box 9).

Clear political leadership is vital in order to coordinate action across these different government actors and to ensure that the mission remains a priority, particularly given that food system transformation could conflict with powerful corporate interests.

A food mission board housed within the centre of government, reporting to the president or prime minister, could enable a whole-of-government approach by keeping attention focused on the shared mission, coordinating actions across government, and monitoring and unblocking progress.

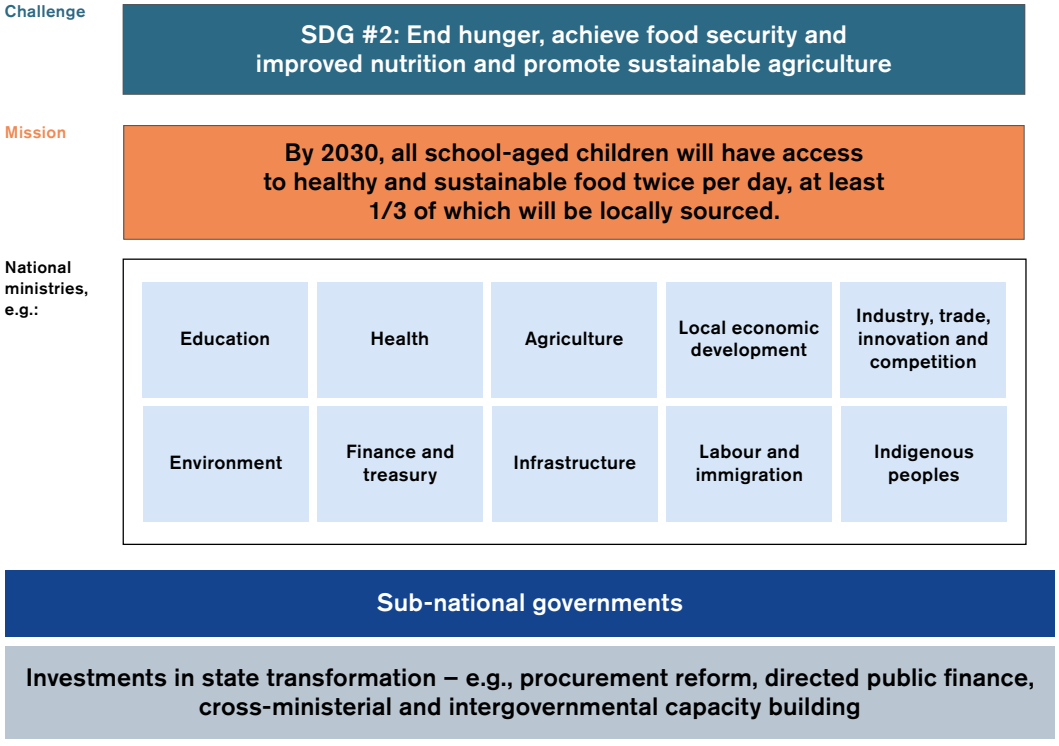

Figure 8: A whole-of-government approach to a healthy and sustainable food mission.

Box 8: Case study insights: Interdepartmental coordination of school meals in Brazil, Sweden and Scotland

Interdepartmental cooperation has been both a challenge and a key success factor for Brazil's National School Feeding programme. The program was designed to bring social and economic goals into alignment through an integrated approach that has benefited from cross-ministerial engagement. However, levels of engagement vary across ministries, with relatively limited involvement to date from departments responsible for industrial strategy, innovation and climate. Collaboration has historically been informal and dependant on interpersonal relationships, making it vulnerable to changes in personnel, budgetary priorities and political transitions. Interagency collaboration is also variable across local and state governments (Mazzucato and Spanò, forthcoming).

A number of steps have been taken to improve strategic coordination. For example, in 2007, a partnership between the ministries of health and education was formalised in the context of the School Health Programme, which promoted greater interministerial cooperation (Silva, 2019; Lima et al., 2023). Interministerial protocols and technical cooperation agreements are helping to formalise interagency roles in school meals programme delivery, defining areas of shared responsibility, supporting operational continuity and improving mechanisms for joint planning and monitoring. More recently, interministerial bodies have been established at the federal level to reinforce horizontal coordination in the context of the government's wider economic agenda. Notable among these are the Interministerial Commission for Innovations and Acquisitions of the Growth Acceleration Programme (CIIA-PAC) and the Interministerial Commission on Public Procurement for Sustainable Development (CICS), which are responsible for advancing a more coordinated, whole-of-government approach to strategic procurement. Their mandates encompass procurement related to Brazil's industrial strategy mission to create "sustainable and digital agro-industrial supply chains for food, security, nutrition and energy", to which school meal procurement will contribute (Mazzucato and Spanò, forthcoming; Mazzucato, 2024).

In Sweden, Vinnova's mission-oriented approach helped to raise the collective ambition for school food across the government system, expanding engagement in a school meals policy beyond the National Food Agency and giving rise to interdepartmental and intergovernmental collaborations that had not previously existed; for example, between the National Food Agency and the agencies responsible for public health and education. It also enabled national agencies

to gain new insight into local-level realities. In addition to Vinnova, the initiative engaged the National Food Agency, Environmental Protection Agency, Board of Agriculture, Public Health Agency, Agency for Youth and Civil Society Affairs, Procurement Authority, School Agency, and Association of Local Authorities and Regions, in addition to the municipalities of Hofors, Karlstad, Munkedal and Vallentuna.

Vinnova was able to play a convening, coordinating and steering role during the initial phase of the initiative, acting as a middle-ground between multiple system actors. This first phase also encouraged and enabled the Food Agency to build new innovation capacity and capability, such that it can now continue to develop the mission. However, Vinnova's cross-disciplinary and multi-agency convening capability, and its economic and industrial innovation agenda, is now less present. A dedicated mission board at the centre of government would have helped to ensure a more consistent translation of local-level insights into national-level policy, and to secure cross-agency support, engagement and integration (Mazzucato and Hill, forthcoming).

Scotland's school meals policy was informed by a 2003 report called 'Hungry for Success', which called for a "whole school approach". Instead of designing school meals for the sole purpose of addressing hunger, the report advocated for a more holistic approach to integrating nutrition and long-term health and wellbeing into all aspects of school life, including school curriculum, with students involved in menu planning. This influential report was consistent with the history of school meals in Scotland, a key impetus for which was Scotland's poor and starkly unequal health outcomes. While this more holistic approach has helped to integrate health and education priorities in school meals design, engagement of other departments – notably those responsible for economic and climate policy – has so far been limited (MacLardie et al., 2008; Mazzucato and Macfarlane, forthcoming).

These case studies underscore the value of formalised mechanisms for cross-departmental mission governance housed at the centre of government.

Box 9: Case study insights: Local-level innovation in decentralised school meal delivery models in Brazil, Sweden and Scotland

Decentralised implementation of school meals can foster local-level innovation and adaptation to local realities, including tailoring menus to correspond with regional food supply and stronger connections with local producers. However, decentralised models benefit from national government leadership to set a clear direction, enable coordination, ensure equitable access to resources, and invest in capacity building and sharing of best practices.

In Brazil, implementation of the National School Feeding Program is largely decentralised to the local level, which is responsible for purchasing, contract management, staff training and logistical support. Standards and guidelines are set nationally and procurement of certain industrialised food products remains the responsibility of the federal government. This has created space for local level innovations in programme implementation. For example, the Brazilian state of Alagoas developed an initiative called the Cooperative Catalogue, which maps agricultural cooperatives and helps fill agricultural data gaps at the state level and improve food procurement planning, while the Brazilian state of Paraná introduced a mechanism for procuring food groups instead of specific food products, giving farmers more flexibility to adjust supply volumes based on seasonal and weather variations (see Box 13). However, while supporting bottom-up innovation, this decentralised model has also exposed the programme to regional inconsistencies that depend on local capabilities, financial resources, and infrastructure (Mazzucato and Spanò, forthcoming).

Swedish municipalities, which have significant autonomy, are responsible for the provision of school meals. Vinnova's school meals initiative successfully fostered local-level innovation in school meals design through a series of prototypes led by municipalities in partnership with national agencies. In addition to the development of a new digital platform for connecting food suppliers and purchasers called SKAFF (described in Box 13), notable prototypes include Karlstad's decision to make small, healthy and sustainable 'energy shots' (such as overnight oats, smoothies, fruit shots, raw food balls) available throughout the day to boost student energy and concentration, and to offer an alternative to candy and fast food snacks from nearby stores. These energy buffets rely on a collaboration with local supermarkets in which fruits and vegetables that would normally be discarded at the end of the day are instead donated to become ingredients for the energy shots. This innovation has helped reduce food waste while improving

student health. Teachers report that student mood has improved before and after lunch, and the school nurse has reported fewer requests for headache tablets, likely due to better eating habits.

Vinnova's approach has enabled national agencies to become more deeply involved in place-based innovation. However, while some successful prototypes are being replicated and are influencing national policies, the impact of these prototypes has been limited by a reliance on bottom-up innovation without sufficient engagement of national, top-down policy to support a more joined-up, coordinated approach (Mazzucato and Hill, forthcoming).

In Scotland, each local council is responsible for managing its own procurement budget and school meals programme in line with national laws and guidelines. Some councils have implemented initiatives that prioritise sustainable production and shorten supply chains or make it easier for smaller local producers to bid on school food contracts. These include Argyll and Bute Council's use of smaller contract lots, supplier engagement events, and streamlined procurement processes. Other councils have pursued partnerships with industry bodies such as Quality Meat Scotland and the National Farmers Union of Scotland. However, the degree to which environmental and economic policy objectives are prioritised varies widely across regions, pointing to gaps in national policy coordination (Mazzucato and Macfarlane, forthcoming).

4.3 Aligning key tools and institutions with a food mission

To take advantage of school meals as an instrument of industrial strategy, they should be deliberately integrated with a wider set of industrial strategy tools. Which public sector tools and institutions are most important to the success of a food mission will vary by country, but in all cases, public procurement and public finance play critical roles. This section focuses on these areas.

4.3.1 Mission-oriented procurement of school meals

School meal procurement represents a sizable and growing market. In 2024, an estimated $84 billion USD was allocated to school meals globally, a large portion of which is spent on public procurement of food products and services. This represents a US$36 billion increase since 2022 (WFP, 2024).

School meal programmes procure food through four main channels: domestic purchases, imports, in-kind donations or foreign food aid. Domestic procurement dominates, with 93 per cent of programmes sourcing a portion of food from national markets. Approximately one-third of countries surveyed by the GCNF (2024) reported that 100 per cent of school meals food was purchased domestically, and the average across all countries was 69 per cent. Food imports are more common in high-income countries, which source 51 per cent of their food from abroad.[7]

The traditional approach to public procurement, which prioritises price and risk minimisation, neutrality, transparency and efficiency, tends to privilege larger incumbent suppliers that are able to offer lower prices and higher quantities, and to deprioritise wider policy objectives. In food procurement, this approach tends to disadvantage smallholder farmers and local producers, who may struggle to navigate lengthy procurement processes, meet standards and documentation requirements, and guarantee regular supply at required volumes (Swensson, 2015; Mazzucato and Spanó, forthcoming). This was the case in Brazil until a change to procurement law was made in 2009 to waive competitive bidding requirements to facilitate access to public markets for family farmers and small-scale producers (Mazzucato and Spanó, forthcoming; see Box 10). An emphasis

7 Governments and schools may procure food directly from farmers or farm organizations, or from third-party producers and distributors, and they may contract out to private sector companies for food processing, catering, supplies and equipment, waste disposal and technical assistance. The degree to which these functions are managed by public or private actors differs across different contexts (GCNF, 2024).

on the lowest cost option in procurement decisions can lead to the selection of less nutritious food options, unless health is deliberately established as a priority that trumps price. In the UK, based on data from 2008–2017, 61 per cent of primary students' and 71 per cent of secondary students' calories from school meals came from ultra-processed foods (Parnham et al., 2022). Food and service quality can also suffer, with lower prices sometimes being associated with poor contract performance and lower satisfaction (Maietta and Gorgitano, 2016).

A number of countries have departed from this traditional approach, designing public food procurement to prioritise wider policy goals, notably by sourcing nutritious "home grown" food (De Schutter, 2015; Swensson et al., 2021; WFP and FAO, 2018). Some countries have implemented rules requiring that a proportion of food acquired through public procurement must meet specific requirements (for example, related to sustainability and local production) or align with certain values. In France 50 per cent of food in publicly procured meals must be sustainable and 20 per cent organic (Bridging the Gap, 2023; Campbell, 2023). Brazil's National School Feeding Programme requires that 30 per cent of school meals budgets be spent on food from family farms. Similarly, Japan has a goal of 30 per cent of school lunch food being procured locally (Izumi et al., n.d.). In Chile, a Local Procurement Policy requires suppliers to meet minimum quotas for purchasing from local producers, including family farms, artisanal fishermen, and small agro-industrial processors (FAO, n.d.b). Kenya has a policy whereby 30 per cent of public food procurement contracts are reserved for women-led farms (Hintz, d'Addario and Defranceschi, 2021).

Similar approaches can also be found at sub-national levels of government. The London Borough of Camden in the UK is advancing reforms to its £500 million annual procurement budget to shift from the UK's social value approach (see Box 2) to one that maximises public value creation and supports achievement of the Borough's missions, including its mission that "by 2030, everyone eats well every day with nutritious, affordable, sustainable food", based on advice from the UCL Institute for Innovation and Public Purpose (Tussell, 2022; Camden Renewal Commission, 2021; Mazzucato and Wainwright, 2024). In the United States (US) District of Colombia, schools receive a $0.05 reimbursement per meal when at least one component is comprised entirely of unprocessed products grown in the District of Columbia, Maryland, or Virginia. Copenhagen and Vienna have required a proportion of publicly procured food to be organic (Hintz, d'Addario, Defranceschi, 2021).

While these examples are encouraging, school meal procurement could go further by deliberately encouraging innovation and requiring alignment with a

broader industrial strategy mission. Mission-oriented school meal procurement would encourage bidders to invest and innovate by requiring products and services to meet more ambitious, mission-aligned standards (for example, in terms of sustainability and nutrition). This can increase market certainty, helping to lower the risk of investing in the development or adoption of new products and processes.

Box 10: Case study insights: Procurement in Brazil's National School Feeding Program (PNAE)

Brazil's PNAE has a federal budget of R$5.5 billion (about US$1 billion) (MEC, 2023) and serves approximately 40 million students, making it one of the world's biggest school feeding programmes (FNDE, 2023). In 2022 alone, school districts spent R$1.6 billion (US$290 million) on products from family farmers, representing 45 per cent of the total programme budget (Mazzucato, Spanò and Wainwright, 2025).

PNAE requires that at least 30 per cent of federal funds be used to purchase food from family farmers, with a special focus on local, traditional, Indigenous, quilombola and women producers (Paula et al., 2023). This requirement is intended to prioritise local economic development, integrate smaller producers into national food value chains, respect the eating habits and agricultural potential of each locality, and prioritise fresh (as opposed to processed) foods. Sustainability goals are also incorporated, with procurement officials permitted to spend more on food that meets organic or agroecological production standards. In practice, however, organic products are easier for procurement officials to prioritise due to mandated standards and labelling. Broader sustainability standards have not been prioritised to-date as standard labelling of products as "agroecological" (a term that incorporates wider concepts of just and sustainable food systems) is not yet widespread – although the Brazilian government's Green Seal Program, introduced in 2024, aims to standardise and certify products and services based on sustainability criteria and may make it easier to prioritise sustainability in food procurement in future (Planalto, 2024). Health is prioritised through a requirement that 75 per cent of food purchased for school meals must be minimally processed.

Part of the reason PNAE has been successful in expanding local markets for Brazilian agrifood producers is the conscious changes made to procurement policy. This includes a decision to waive the competitive bidding requirements enshrined in national procurement law through the creation of a procurement mechanism, the Chamada Pública (Public Call), that simplified the bidding process

for family farmers and small-scale producers (Lima et al., 2023). This mechanism prioritises social and regional criteria, and aims to strengthen local food systems and improve access, and to promote sustainable agriculture and food security.

Small producer engagement still varies significantly across Brazil's regions, but has been growing on average. Adoption of more strategic approaches to procurement is also inconsistent across regions, and price minimisation remains a dominant consideration.

Brazil's experience demonstrates the power of school meal procurement to create a domestic market opportunity that leads to increased production and income for domestic producers, job creation, and local economic development, and its power to provoke structural changes in the economy. It also suggests that to realise the full potential of school meals to contribute to food system transformation, complementary initiatives are needed to build regional capacity, help farmers and companies navigate the desired transformation, and develop robust sustainability standards and labelling to enable procurement officials to prioritise sustainable products. More broadly, while PNAE has been successful in promoting local economic development, further changes may be needed to better align school meal procurement with Brazil's national industrial strategy (Mazzucato and Spanó, forthcoming).

A supportive legal and regulatory environment is necessary (but not sufficient) to align procurement with wider policy goals (Swensson and Tartanac, 2020; Molin et al. 2024; Swensson, 2019; Swensson, 2015). Public procurement rules determine what can and cannot be purchased, how bids should be evaluated, and how payment conditions should be structured.

For example, preferential treatment allows bids from certain supplier groups to be evaluated more favourably. This can be achieved through price preferences, whereby a specific percentage (a margin of preference) is added to or subtracted from a bid price to disadvantage certain bidders (such as foreign suppliers) and give an advantage to bidders that align with a defined policy goal; through set-asides or reservation schemes, which restrict procurement opportunities to a specific supplier group or require that a minimum percentage of food be procured from this group (such as local suppliers, women-owned businesses or Indigenous-owned businesses); or through higher weighting of non-price criteria (such as sustainability, quality, or community benefit). Among school meal programmes that use competitive bidding processes, 29 per cent report giving preferential treatment to small-scale farmers (GCNF, 2024).

Hard requirements or exclusions can also be established, such as requiring all food procurement for school meals to meet defined health and nutrition standards, or all suppliers to meet certain sustainability or labour standards. In Scotland, the government has enabled procuring authorities to only contract with suppliers who pay their workers at least the real living wage, in line with its Fair Work Framework, and it intends to extend the application of other Fair Work principles to public procurement (Mazzucato and Macfarlane, 2025). Menu requirements or exclusions can be integrated into food procurement design, for example to require that halal or traditional Indigenous foods be offered to students, or to limit menus to be meat-free or meat-light to align with climate goals as is the case in Malmö, Sweden (Ruetz et al., 2024).

Alignment with policy goals can also be facilitated by requiring bidders to have a plan in place for meeting sustainability standards, hiring local workers, or investing a certain percent of profits in R&D, without specifying minimum standards. Contractual remedies can be used to encourage compliance with these plans post-award; however, this softer, bidder-led approach may fall short of maximising public value and result in greater inconsistency.

Changes to procurement policy can be an important enabler of strategic procurement. However other approaches to changing procurement practice have also proven effective, either as a complement to legislative change or in place of legislative change where this may be less feasible. For example, a new digital, dynamic purchasing system called SKAFF is in development in Sweden that aims to more effectively connect local farmers and suppliers with school meal purchasers (Mazzucato and Hill, forthcoming) (see Box 11). Similarly, the recent development of a digital public marketplace, "Contrata+Brasil", by Brazil's Ministry of Management and Innovation in Public Services, aims to streamline procurement and make it more accessible for smaller producers (MGI, 2025; Mazzucato and Spanó, forthcoming).

Innovations in practice at the local level can also push the boundaries of procurement, for example by facilitating a relationship-based approach with suppliers. This is already prevalent in school meal programmes, especially in lower-income settings. In Italy, 'biodistricts' enable collaborative relationships between the procuring entity and local farmers and allow for seasonal menu customisation (Kraljevic and Zanasi, 2023; additional examples are included in Box 9). Sixty-one per cent of school meal programmes globally engage with farmers either directly or through farmer organisations (GCNF, 2024).

Governments around the world are successfully applying these approaches to school meal procurement to advance multiple policy goals. A noteworthy example is

the state-level implementation of Brazil's School Feeding Programme in Paraná, which has managed to procure 100 per cent of school meals from small- and medium-scale family farms, increased the power of women in the farming sector, and reached the goal of 25 per cent of current purchases being organic with a 2030 target of reaching 100 per cent, enabled through technical support and free certification (see Box 12).

While many counties are experimenting with adapting procurement laws, practices and digital tools to achieve policy goals, price minimisation often continues to dominate procurement decisions. This has been true even in Brazil (see Box 10) and Scotland (see Box 13), despite deliberate and ambitious policy changes aimed at advancing strategic procurement. Moreover, there is little evidence of school meal procurement being designed to stimulate innovation, or (with the notable exception of Brazil) of efforts to embed it within a broader industrial strategy.

Box 11: Case study insights: A new digital platform for school meal procurement in Sweden

In Sweden, the municipalities of Karlstad and Vallentuna, in partnership with the Swedish Environmental Protection Agency and Swedish National Agency for Public Procurement, have developed a prototype for a digital dynamic purchasing system called SKAFF. SKAFF has taken a user-centred design approach to more effectively connect food suppliers with food procurers through a simplified process that reduces the administrative burden for both. It enables local farmers and other suppliers to submit real-time bids detailing the food they can provide to municipalities – for example, the number of kilos of eggs they have available – which a municipality can then opt to procure. In this way, SKAFF can create new market opportunities for local suppliers, reduce food waste and emissions (by reducing food miles), and support local food sovereignty. SKAFF will be further developed through 2025–26 with a view to scaling it up beyond the original prototype.

This tool was developed partly as a work-around to avoid restrictions on the ability of municipalities to explicitly prioritise local products. Stringent food quality criteria have also been used to indirectly privilege Swedish production, but these criteria can be complicated for Swedish farmers and producers to navigate (Mazzucato and Hill, forthcoming).

Box 12: Case study insights: A model for expanding family farming and organic agriculture in Paraná

Among the Brazilian states that have successfully integrated family farming into the PNAE, Paraná stands out as a reference for best practices in procurement, farmer inclusion and incorporating sustainability criteria. As one of Brazil's leading agricultural states, Paraná has a high concentration of small- and medium-scale family farming, providing a strong foundation for sustainable food procurement. The state has achieved one of the highest percentages of purchases from family farmers, with 100 per cent of federal funding allocated to this segment, and a high percentage of organic products.

A key innovation adopted in Paraná has been the use of more flexible procurement contracts that specify groups of food products, rather than rigid contracts for specific products. This model enables farmers to adjust supply volumes based on seasonal variations while reducing financial and production risks associated with unexpected extreme weather events. By allowing diversified food categories, producers can maintain supply stability and expand their market participation throughout the year.

Additionally, Paraná has been at the forefront of gender inclusion efforts within the PNAE. The state introduced a regulatory mechanism prioritising women-led cooperatives and associations, using gender-based criteria as a tie-breaker in procurement decisions. As a result, the number of women actively participating in family farming cooperatives has increased, reshaping traditional decision-making structures within farming communities. Prior to this policy, men would typically represent households in cooperative meetings, while women remained at home with children. Once women gained formal recognition as cooperative members, they acquired voting rights, which led to them having increased participation in governance discussions and economic decision-making.

Another distinctive feature is the state's efforts to advance a sustainable food system transformation, with 25 per cent of current purchases being organic and a target of reaching 100 per cent by 2030. This goal is supported by initiatives such as Paraná Mais Orgânico, a state-level programme that facilitates the certification and technical support needed for family farmers to transition to organic production. The programme leverages the expertise of state universities to provide free technical assistance and partners with Tecpar, a state-owned enterprise, to offer free organic certification to family farmers. In terms of cross-

sector collaboration, the food safety division of the State Health Department also contributes by testing products to ensure they are pesticide-free.

Other initiatives further demonstrate the state's commitment to improving school meal quality and accessibility. Paraná has implemented the *Mais Merenda* (More School Meals) programme, offering voluntary extra meals to students. The programme was developed by the state government with the Department of Education and the Paranaense Institute for Educational Development (Fundepar), and aims to enhance the quality and quantity of school meals. It provides up to three meals per day for students in regular education and five for those in full-time education.

By prioritising the purchase of food from family farmers and organic producers, the programme not only improves nutritional outcomes for more than one million students in the state but also strengthens local and sustainable food systems (Mazzucato and Spanó, forthcoming).

Box 13: Case study insights: School meal procurement in Scotland

In Scotland, public procurement has undergone significant shifts, moving from cost minimisation to prioritise wider economic, social, and environmental outcomes. However, while school meal procurement has incorporated clear nutrition standards, economic development and sustainability goals have, so far, been a secondary consideration in policy design and implementation.

The Procurement Reform (Scotland) Act 2014 introduced the 'Sustainable Procurement Duty', which requires public bodies to consider how procurement can improve economic, social, and environmental wellbeing according to a set of defined factors (see Table 3), facilitate participation by small and medium sized enterprises (SMEs) and third sector organisations, and promote innovation. This Act also requires public bodies to consider integrating community benefit requirements into contracts valued at £4 million or more; for example, to guarantee local opportunities for employment, training, or subcontracting to SMEs. A subsequent procurement reform in 2015 specified that contracts cannot be awarded on price alone, but must instead be awarded based on a price:quality ratio using criteria relevant to the specific contract, with success measured on the basis of a set of outcomes defined in Scotland's National Performance Framework and aligned with the SDGs.

However, a review of the Sustainable Procurement Duty found that it is not being applied consistently across Scotland, and that it is promoting sustainable procurement "as an add-on rather than a core element of practice" – in line with the limitations of the UK Social Value Act (Scottish Government, 2023d; see Box 2).

Economic Factors	▪ Availability of suitable and high-quality jobs ▪ Measures to encourage access to procurement for local small businesses ▪ Addressing fair work practices, including paying at least the real Living Wage ▪ Efficient and effective transport links ▪ Lifelong learning ▪ Training and skills development
Social Factors	▪ The promotion of good quality and affordable housing ▪ Access to education and skills ▪ The encouragement of the voluntary sector ▪ Looking after the most vulnerable ▪ Activities to promote equality of opportunity and foster good relations
Health Factors	▪ Promotion of good physical, social and mental health ▪ Developing and promoting policies that have a positive impact on health outcome
Environmental Factors	▪ The removal of objects considered hazardous to health ▪ Protecting communities against the threat of climate change ▪ Improving and promoting biodiversity and accessibility to nature

Table 3: Factors influencing wellbeing in the Sustainable Procurement Duty (Scottish Government, n.d.)

Scotland Excel manages about £83m in national procurement of specific food categories annually, enabling councils to benefit from bulk buying, and making it easier to meet food standards and to align procurement with sustainability goals. Following public criticism in 2017 of Scottish councils' heavy reliance on food imports in food procurement, *Scotland Excel* took steps to make food procurement more accessible to Scottish SMEs, including by making it possible to bid for the supply of food only, rather than for distribution as well, and to bid for smaller, more specific contracts, and by introducing Protected Geographical Indication (PGI) requirements to prioritise meat produced in Scotland. As a result, spending by local authorities on Scottish products through Scotland Excel rose from £8.8M in 2016 to £15.8M in 2021, reaching 36 per cent of total food spend (BBC News, 2017; Scotland Excel, 2021).

Local sourcing of sustainable and nutritious food is also encouraged through voluntary schemes such as the Soil Association's Food for Life Programme, which is funded by the Government of Scotland. For example, East Lothian Council has

collaborated with this programme to source locally grown fruits and vegetables (potatoes, tomatoes, berries, root vegetables, etc.) for school meals with the aim of shortening supply chains, supporting local farmers, and reducing carbon emissions (East Lothian Council, 2019), while Argyll and Bute Council piloted the inclusion of locally sourced wild venison. However, only 18 of 32 councils hold Food for Life accreditation (Soil Association, n.d.).

In practice, school meal procurement remains fragmented and inconsistent across regions. While the legislative context allows councils to integrate sustainability and local economic development considerations into school meals contracts, budget pressures lead many councils to prioritise price. Because local authorities are not required to publish information on school food contracts, there are limited data on the extent to which school meals procurement aligns with economic and environmental objectives.

To date, the potential of school meal procurement to act as a lever for reshaping food supply chains in Scotland has been limited. However, Scotland's existing procurement and industrial strategy policies provide a strong foundation for such a shift. Notably, if the government recognises it as an important lever in the implementation of its recently launched Green Industrial Strategy, it could create market opportunities for Scottish farmers and food processing, logistics and transportation companies, while incentivising innovation aligned with the Strategy's net zero goals. With £238M spent on free school meals in 2023 alone, the programme represents a major – and currently underused – lever for shaping markets in favour of domestic producers (Mazzucato and Macfarlane, forthcoming).

There is huge potential for school meal procurement to become a driver of food system transformation and sustainable development, as recognised in the WFP's latest State of School Feeding report (WFP, forthcoming), and a strong track record from which to build. However, this potential will only be fully realised if school meal procurement is designed to support a mission-oriented industrial strategy that incentivises farmers and businesses across the food value chain to shift towards new practices, products and technologies, and if it is deliberately integrated with complementary measures that help willing bidders transform in line with mission goals, including technical support and well-designed public finance.

4.3.2 Financing food system transformation

Well-designed school meal procurement can create a market opportunity, but farmers and businesses will need complementary supports to seize this opportunity. Public finance institutions can increase the flow of patient capital directed towards food system transformation, helping farmers and businesses across the food value chain improve sustainability, nutrition and access while increasing yields. This can be done through such means as subsidies for R&D investment, loans to support the adoption of new technologies, regenerative agriculture practices, or diversified production that includes higher-value and more nutritious products, and debt and equity investments in infrastructure. However, these institutions will only do this if they are mandated to prioritise well-articulated policy goals over risk-return or leverage ratios (Mazzucato 2023b, Mazzucato and Macfarlane, 2023; Lazonick and Mazzucato, 2013; Liguori et al., 2024).

There is no lack of finance for agrifood industries. While the global agrifood system currently receives at least $638 billion per year in public support (based on 2016–18 data, for 79 countries for which data was available), much of this support is not facilitating food system transformation, and may be reinforcing practices that harm the environment and people (Gautam et al., 2022). More of this support could be repurposed to provide stronger incentives for farms and businesses to transform in line with a healthy and sustainable food mission, which could, in turn, yield long-term productivity gains.

Where the financial support offered to farmers is aligned with sustainability and other policy goals, it is generally not well integrated into a broader industrial strategy or coordinated with demand-side tools like procurement. Mission-oriented industrial strategy can help to align public finance with public procurement and other policy tools around a shared food mission.

There are examples of public finance being directed towards food system transformation, including to incentivise more sustainable land use practices (see Box 14), and to advance innovation and increase market share in emerging food markets (see Box 15). These examples illustrate what is possible when public finance is aligned with agrifood policy goals, but fall short of the potential of public finance to provoke a food system transformation in the context of a wider mission-oriented industrial strategy.

Box 14: Climate-oriented agrifood and land use finance in Brazil

In Brazil, public finance through BNDES, as well as from federal and state initiatives, is directing capital towards climate policy goals related to agriculture and land use. This includes financing from the Amazon Fund, Climate Fund, Brazilian Platform for Investments in Climate and Ecological Transformation (BIP), and Eco Invest Brazil, as well as rural credit and agricultural risk management instruments.

Between 2015 and 2020, total climate finance for land use (including forestry and agriculture) in Brazil amounted to US$6.6 billion per year, 95 per cent of which came from domestic sources. Approximately one-third of this amount came from federal and state governments and BNDES, while the remainder came from private sources that were directed by public policies (Chiavari et al., 2023; BNDES, nd., Secretaria de Comunicação Social, 2024; Caram, 2025).

The total amount of climate finance has grown dramatically since 2020. Causes include the launch of the BIP in 2024; the injection of up to BRL 10.4B in additional funding into BNDES' Climate Fund in 2024, making it one of the largest climate funds in the world; the launch of Eco Invest Brazil in 2024 with an auction in 2025 focused on raising BRL 10B in public and private financing for recovering land with low productivity and expanding food production without increasing deforestation; and the government's decision early in its current mandate to scale up agricultural subsidies contingent on sustainable land use practices (Planalto, 2024; Caram, 2025; Campos, 2025).

Through these initiatives, Brazil is mobilising and shaping financial flows in accordance with national priorities related to sustainable agrifood development.

Box 15: Public investment in agrifood transformation: alternative proteins

Public investment in alternative proteins is on the rise. Germany's 2024 federal budget committed about US$45M (€38M) to plant-based meat alternatives and other alternative, sustainable proteins (GFI, 2023b). The Canadian government created Protein Industries Canada in 2022,

responsible for managing just under US$400M (CAD 500M) in innovation investments with the aim of making Canada a global leader in plant protein (Protein Industries Canada, n.d.). Globally, governments committed about US$510M USD in new funding for alternative proteins in 2024, bringing the cumulative public sector commitment to approximately US$2.1B, with the EU, the US, Canada and Denmark leading. The level of investment was relatively consistent from 2022 to 2024, but is up significantly from 2021 (Battle et al., 2025).

Figure 2. Public investment in alternative proteins by governments
Investments announced before 2024 in green, new funding announced in 2024 in yellow

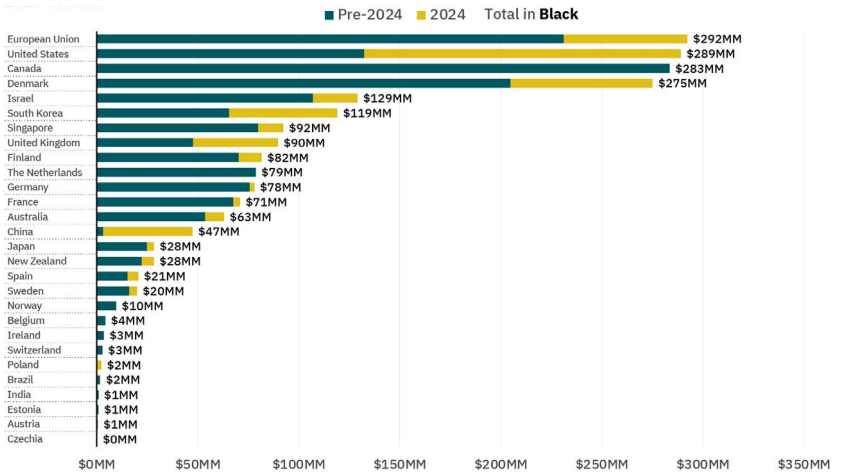

Figure 9: Public investment in alternative proteins by governments (Battle et al., 2025).

4.4 Mission-oriented collaboration across the food value chain

4.4.1 Public–private collaboration

Food system transformation will require coordinated collaboration between governments, farmers, firms and research institutions. Most importantly, it will require the public and private sectors to work together in a new way that prioritises long-term resilience, equitable access to nutritious food, and sustainability over short-term profit. This shift will not happen on its own.

As described in Section 1, the global food system is heavily financialised, dominated by short-term profit seeking and consolidation that is limiting competition and concentrating power in the hands of a few large firms. Mission-oriented industrial strategy has the potential to reshape the global food system, but only if a food mission is designed ambitiously such that private sector actors are required to invest and innovate in order to access market opportunities and government support. Realising this potential also requires tools such as procurement and public finance to be deliberately designed and governed to disrupt current power structures and profit models by encouraging competition among a more diverse array of market actors and by maximising public value through well-designed conditionalities.

Conditions placed on access to school meal procurement contracts, and to loans, grants and other public incentives aimed at stimulating food system transformation could aim to keep prices down for consumers; ensure fair pay and decent work; reduce GHG emissions and encourage sustainable land and water use; prioritise businesses that are local, rural, woman-owned or Indigenous-owned; require reinvestment of profit in food R&D and sustainable infrastructure (for example, for water recycling and efficient irrigation); and prohibit shareholder buybacks (Mazzucato and Rodrik, 2023). The conditions that are appropriate in any given case will depend on a number of factors, such as the government's priorities, the contract size, the nature of the businesses that are bidding, and the availability of clear standards or certifications. A number of countries are already placing conditions on access to food procurement contracts and agrifood financial support, related to local economic development, health and sustainability. Governments should learn from these examples, replicating and scaling up approaches that work, and aligning conditions with industrial strategy missions.

Resetting public–private relationships across the food value chain will also require a thoughtful approach to data governance. As in other areas of the economy, data is growing in importance in agrifood industries as companies adopt big data and AI-powered tools for optimising processes. Data are also important for monitoring water and land use to facilitate adaptation and innovation oriented around sustainability goals, for traceability, and to ensure compliance with environmental regulations (GCEW, 2024; R&M, 2025a). A thoughtful approach to data governance is critical to avoid increasing the competitive advantage and potential monopolistic market power of a few dominant firms by enabling them to privately control large amounts of data. Governments can counter this risk and promote data sharing amongst market actors by investing in digital public infrastructure characterised by open and interoperable standards, open-source licenses, and adaptability to different use cases, governed according to "common good" principles: purpose-orientation, co-creation with key

stakeholders, collective learning, open access and reward-sharing, and transparency and accountability (Mazzucato, 2023a; Mazzucato, Eaves and Vasconcellos, 2024). For example, Brazil's Rural Environmental Registry, which gathers, monitors, and manages data on rural land use has the potential to be designed as digital public infrastructure (Mazzucato, Eaves and Lanzuolo, 2024).[8] Where relevant, governments could embed these principles alongside data reporting requirements as conditionalities in procurement and financing agreements.

It is equally important for policy instruments intended to help industries transform to be structured in a way that works for businesses. For example, to succeed in shaping markets, school meal procurement processes should be streamlined from a user perspective. For small farms, producers or food service providers, the bidding processes is often overly burdensome (see Section 4.1 for an example from Brazil). For larger companies, the size of the market opportunity must be sufficient to prompt any investments needed to supply the desired food products and services. This may require pooled national procurement and advanced market purchase mechanisms. If the conditions on procurement contracts require suppliers to invest in scaling up or changing their operations, access to public finance and technical support aimed at enabling these transformations becomes important. Policy instruments should be designed to offer a seamless experience to firms that are willing to contribute to mission goals; for example, with consistent and streamlined criteria across the innovation continuum, and 'single window' application processes. Notably, supply- and demand-side tools should be integrated, with investments in mission-oriented R&D connected with public procurement opportunities wherever possible. Mission-oriented industrial strategy can help to foster a more coordinated and coherent ecosystem of industry supports.

By rethinking how the public and private sectors engage in the context of the food system, governments can help catalyse the cross-sectoral transformation necessary to make the global food system more sustainable and just.

4.4.2 Stakeholder engagement

Community engagement is important to ensure that an industrial strategy oriented around a food mission delivers tangible benefits for communities, including families, students, farmers, businesses and workers.

Many school meal programmes are managed to some extent at the local level, and some include deliberate mechanisms for fostering community engagement.

8 The potential for Brazil's Rural Environmental Registry to be designed as digital public infrastructure, in alignment with industrial and environmental policy goals, is explored in detail in Mazzucato, Eaves and Vasconcellos (2024b).

This is an important feature that should be retained in the context of a wider industrial strategy. Notably, over half (60 per cent) of school meal programmes globally report that they integrate students' food preferences into programme design (GCNF, 2024; see Table 4). Some consider student preferences through taste testing and student feedback. Examples include the Los Angeles Unified School District, where menu items must receive a 75 per cent approval rating or higher in order to make it on the menu (Urban School Food Alliance, 2022), as well as some municipalities within Sweden and Scotland (see Box 16).

Box 16: Case study insights: Student involvement in school meals design in Sweden and Scotland

In Sweden, the food mission led by Vinnova and the National Food Agency aimed to provide food to students that was tasty, as well as healthy and sustainable. This meant that consultation with students and adaptation based on student input were required for the mission to succeed. Across all funded prototypes, in all participating municipalities, students were deeply involved in co-designing the programme, from the physical environment in which food was made available, to the menu and dishes, to the programme's role in health, learning and environmental sustainability. This engagement increased how much they valued and ate school food. A number of prototypes also incorporated school meals into the school curriculum, connecting sustainability education with school meals and informing the content of a wide range of courses, including home and consumer studies, physical education, health, art, and social studies. Some prototypes also engaged students in redesigning their cafeteria spaces, to make them more inviting, improving students' perception of and engagement with school meals (Mazzucato and Hill, forthcoming).

In Scotland, challenges with uptake – with almost three out of 10 children not eating the school meals they are entitled to – have been attributed in part to 'not liking the food' or 'preferring other food', while engagement of students in menu design – for example through student consultations, tasting events and piloting of new dishes to gather feedback – was shown to increase school meal uptake (McKendrick and Cathcart 2021; McKendrick, 2022). This reinforces that universal provision does not mean universal reach, but also points to the importance of engaging students in menu design and of offering food that is not only nutritious and sustainable, but also appetising, catering to different tastes and cultural backgrounds (Mazzucato and Macfarlane, forthcoming).

Taking student preferences into account in programme design can improve satisfaction, increase consumption and decrease waste (WFP, 2022, FAO and WFP, 2018, Foster et al., 2024). Student engagement can be further strengthened by embedding the mission across the school curriculum; for example, to foster a deeper understanding of nutrition, of local and national food system economics, and of the importance of regenerative agriculture.

Wider community engagement also supports effective programme design, and is reported by 77 per cent of school meal programmes globally (GCNF, 2024; see Table 4). In Brazil's National School Feeding Programme, municipal and state-level School Feeding Councils tasked with overseeing programme implementation are responsible for engaging local communities to strengthen social accountability (Brasil, 1994; Lima et al., 2023). These councils are creating space for public deliberation to inform programme design and implementation. Similarly, in Bolivia, school feeding councils made up of teacher and parent representatives have enabled community engagement (FAO and WFP, 2018). In Pisa, Italy, parents and civil society have been involved in the governance of school meal programmes through 'Canteen Committees', which have promoted trust and fostered innovations in programme design that would not have occurred otherwise (Galli et all., 2014). In the context of a wider industrial strategy, national governments could embed community engagement requirements in the conditions placed on access to public support, for example requiring that larger firms with significant place-based operations enter into community benefit agreements.

In countries with Indigenous populations, an industrial strategy oriented around healthy and sustainable food should be designed with Indigenous communities.

This can be done by such means as prioritising food sovereignty for Indigenous communities, investing in the local food production capacity of Indigenous communities, giving preference to Indigenous-owned firms in procurement and financing deals, enabling ownership of relevant infrastructure, and engaging Indigenous voices in school meal programme governance and menu planning.

Workers and labour unions should be engaged in informing the nature of the jobs that result from industrial strategy investments, in terms of pay, security, safety and other considerations, and the training and other supports available to workers whose jobs may be affected. This is particularly challenging in the context of a healthy and sustainable food mission given both the reliance of agrifood industries on workers who lack adequate social and labour protection, including those in informal employment and temporary foreign workers, and the job loss that may accompany productivity enhancements (ILO, 2023). Governments could incentivise decent work in the agrifood system by embedding decent work conditionalities in procurement and public finance agreements, while also investing in social safety nets and retraining for workers who may lose their jobs due to the adoption of technologies that automate farming and manufacturing processes, and advancing policies outside of industrial strategy such as economy-wide minimum wage requirements, modernised labour laws that increase protections for informal workers, and sectoral bargaining.

		Community engagement	Integrated students' preferences
Region	Sub-Saharan Africa	92	56
	South Asia, East Asia & Pacific	78	60
	Middle East & North Africa	67	67
	Latin America & Caribbean	72	72
	Europe, Central Asia & North America	53	58
Income Group	Low Income	96	55
	Lower Middle Income	84	63
	Upper Middle Income	77	62
	High Income	48	60
All		77	60

Table 4: Community engagement and consideration of students' preferences (per cent of programmes) (GCNF, 2024, p. 84).

4.5 Public sector capabilities for food system transformation

Investments in public sector capacity are important in order to enable an industrial strategy oriented around a food mission to succeed. Capacity needs are likely to differ across different levels of government. For example, a food 'mission board' within the centre of the national government should be equipped to work dynamically, learning and adapting, unblocking progress and enabling others to advance solutions that align with mission goals, ideally with technical advice from agrifood industry, civil society and academic experts.

Delivery at the local level will require capabilities ranging from effective stakeholder engagement and user design (with farmers, companies, school staff, students, parents, etc.), to basic food safety (Liguori et al., 2024). Capacity building investments should not only focus on innovative new approaches. In Indonesia, where an ambitious national school meal programme began rollout in January 2025, quality control to ensure compliance with food safety standards has been a challenge due to coordination and capacity limitations at the local level (Ewe and Samosir, 2025).

While decentralisation can enable implementation tailored to local realities, it can also lead to inconsistencies in programme quality and access and in the application of nutrition, food safety and other guidelines, and challenges related to differing local capabilities (Izumi et al., n.d., Giunti et al., 2022). In countries like Brazil and Scotland, where a strategic approach to school meal procurement is being actively enabled, implementation capacity varies widely across regions and communities, which underlines the need for national governments to invest in capacity building support for all levels of government (see Box 17).

Robust monitoring and evaluation can be designed to support capacity building at all levels of government, and to capture success stories. Ideally, school meals should be evaluated on the basis of a dashboard of social, environmental and economic indicators that reflect the wider industrial strategy mission and principles, and monitoring of these indicators should facilitate learning, course correction, and accountability (WHO Council on the Economics of Health for All, 2023; Mazzucato, Doyle & Kuehn von Burgsdorff, 2024).

Box 17: Case study insights: Subnational implementation capacity in Brazil, Sweden and Scotland

The decentralised structure of Brazil's National School Feeding Programme has enabled local-level adaptation and innovation, but has led to disparities in programme success across regions, with some lacking the capacity to design and publish procurement calls that prioritise local, sustainable production or to comply with national guidelines. Uncertainty about how to implement national directives is also inhibiting innovation. Municipal and state budgets are intended to supplement federal funding, which means that more financially constrained regions struggle to hire and retain qualified personal, maintain adequate infrastructure, and achieve consistent programme delivery and meal quality. Capacity constraints in some municipalities are leading to outsourcing of meal provision, which tends to under-prioritise nutrition and sustainability relative to cost, and raises concerns about quality control and accountability. However, capacity-building initiatives are helping to address these challenges. For example, Collaborative Centres for School Food and Nutrition provide research, training and technical assistance to build the capacity of local-level stakeholders, such as school nutritionists (Lima et al., 2023). These centres are working with municipalities to increase compliance with national guidelines and enable lessons to be shared between municipalities. Recently introduced technical cooperation agreements are also helping to address intergovernmental coordination challenges, including through joint capacity-building (Mazzucato and Spanó, forthcoming).

In Sweden, Vinnova's prototype-based approach has provided a hands-on opportunity for national government agencies and participating municipalities to learn by doing. Participants have pointed to the long-term impact of this initiative in terms of building dynamic innovation capabilities that had not previously existed, related to experimentation, inter-agency and national-local collaboration, and participatory approaches that engage diverse stakeholders. These capabilities are relevant beyond the initiative and beyond school meals. The prototypes helped to refine practices, which in turn refined public sector capabilities. However, replication and scaling of successful prototypes have been hampered by insufficient impact measurement and evaluation, which makes success stories harder to perceive and sustain, and lessons harder to share across municipalities and levels of government (Mazzucato and Hill, forthcoming).

In Scotland, budget constraints over the past decade or more have eroded the capacity of local authorities. While recent efforts to strengthen procurement

capabilities are promising, further investment will be needed in training, capacity building, and tools to support local authorities in implementing national sustainable procurement directives (Mazzucato and MacFarlane, 2025).

SUMMARY OF RECOMMENDATIONS FROM SECTION 4:

Within their unique contexts, governments should consider how best to:

2. **Reframe school meals as an investment, not a cost:** Governments could reframe school meals as an investment with the potential to drive economic growth, rather than a cost, and scale up school meals to reach all school-aged children.
3. **Launch an industrial strategy mission focused on SDG 2:** Countries with industries that are part of the food value chain could identify a mission related to SDG 2 as a focal point of their industrial strategy. For example, a mission could commit that, by 2030, all school-aged children (or all citizens) will have access to healthy and sustainable food at least twice per day, with at least one-third of the food being locally sourced.
4. **Take a whole-of-government approach to mission implementation:** Recognising that responsibility for food system transformation is shared by all departments, including departments of industry, finance, climate, agriculture, health, and education, governments could create formal mechanisms to support a whole-of-government approach to mission delivery, such as a mission board housed in the centre of government, backed by the president or prime minister, charged with ensuring that the mission remains a cross-departmental priority, coordinating cross-departmental action, and monitoring and unblocking progress.
5. **Redesign school meal procurement:** Instead of taking an administrative approach that prioritises price and risk minimisation, governments could design school meal procurement to maximise public value, including by using it to create cross-sectoral market opportunities that align with mission goals and with broader social, environmental and economic policy objectives, to diversify the supplier pool, including by enabling the participation of local producers, and to incentivise investment and innovation that will contribute to

mission goals (Mazzucato, Spanó and Wainwright, 2025). The form this takes will vary by country, ranging from amendments to national procurement law, to local-level innovations in procurement practice, to the development of digital platforms that simplify supplier–purchaser interactions.

6. **Integrate school meal procurement with other mission-oriented industrial strategy tools, including public finance:** Willing farmers and businesses should have access to the support they need to scale up production of food that is sustainable, healthy and accessible to those who need it – in other words, to transform in line with mission goals. In particular, governments could repurpose existing subsidies and design new public financial instruments to provide patient finance that prioritises the mission, rather than focusing only on risk-return or leverage ratios.

7. **Foster reciprocal public–private collaboration oriented around the shared ambition of tackling SDG 2:** Governments could place conditions on access to school meal procurement and related financial incentives aimed at maximising public value (Mazzucato and Rodrik, 2023) – for example, related to access and affordability, sustainability, decent work, economic inclusion, and reinvestment in innovation – and ensure that agrifood data is governed according to 'common good' principles (Mazzucato, Eaves and Vasconcellos, 2024a). At the same time, governments could design policy tools to create a seamless, user-friendly experience for farmers and businesses that are willing to contribute to mission goals.

8. **Engage stakeholders in mission and tool design:** Governments could embed opportunities for community, student, farmer, business and worker engagement in the development and implementation of the food mission to ensure uptake, build broad-based public support, and foster bottom-up innovation. For example, students can be consulted on school meal menus and engaged through curriculum related to sustainable, healthy school meals.

9. **Foster the dynamic public sector capabilities needed for successful mission implementation:** Governments could invest in capacity building that is relevant to the implementation of the mission across departments and levels of government, empower these actors to learn by doing, and share lessons about what works and what does not across the government system. This could be complemented by a robust approach to monitoring and evaluation that prioritises learning and adaptation.

5. GLOBAL COOPERATION ON FOOD SYSTEM TRANSFORMATION

The food system is global in nature. This means that achieving food system transformation will require global action. This should encompass not only redistributive initiatives like humanitarian aid, but also pre-distributive strategies to change how global economic and financial structures shape global systems of production.

Problematic trends in food production have been reinforced by the structure of trade rules. The World Trade Organization's Government Procurement Agreement aims to "mutually open government procurement markets among its parties" and prohibits members from discriminating against suppliers from other member countries. While many signatories have specific exemptions, including for goods from smallholder farms, these generally only apply to small procurements under a certain threshold (FAO, 2022; WTO, n.d.). Bilateral and regional trade agreements can also limit a country's right to give preference to local producers. Guidance from multilateral institutions is mixed. While the United Nations has championed procurement as a tool for sustainable development, its Model Procurement Law emphasises value for money, which is often interpreted narrowly as achieving the lowest cost, with limited information on how to incorporate sustainability and socio-economic objectives (Arrowsmith, 2010; UNCITRAL, 2014; WTO n.d.). These limitations can curtail the policy space available for using food procurement to achieve broader policy goals and promote food system transformation in line with SDG 2 (Garton et al., 2021; Malik, Josepa and Balogun, 2023).

However, a number of governments are recognising the power of school food procurement to support the SDGs. For example, the African Union's Climate Change and Resilient Development Strategy and Action Plan (2022–2032) identifies "enhancing the role and influence of public procurement in food purchasing to support diverse and nutritious diets for example home-grown school feeding" as a priority. Meanwhile, EU Procurement Directives allow for non-price criteria to be considered for food and catering services and, as part of the EU Green Deal, the Farm to Fork Strategy encourages sustainable food procurement in schools

and hospitals (African Union, 2022; Rossi and Šajn, 2024; EC: Directorate-General for Environment and ICLEI, 2016).

Reform of trade rules is particularly pressing given that industrial strategies that leverage trade barriers and give preference to domestic products are on the rise globally, particularly in high-income countries. Against a background of such rules being applied more rigidly to low and middle income countries relative to high-income countries, this could exacerbate the view that global trade rules privilege the interests of high-income countries (African Climate Foundation, 2023; G20 TF CLIMA Group of Experts, 2024).

In addition, new global governance structures could enable countries to pursue mission-oriented industrial strategies while emphasising global equity and shared ownership, in a way that fosters collaboration around shared goals, such as the SDGs, and is not distortionary. As an example, the G20 Group of Experts to the Taskforce for a Global Mobilization Against Climate Change recommends the creation of a new global facility for industrial strategy coordination, potentially within a reformed WTO (G20 TF CLIMA Group of Experts, 2024).

Global financial reform is also important to enable industrial strategies oriented around the SDGs – including SDG 2. Countries need the fiscal space to invest in mission-oriented industrial strategies. This requires reforms across the global financial system, including to tackle the sovereign debt crises, in line with the recommendations of the Bridgetown Initiative. For example, a specific debt relief tool that could be considered in relation to SDG 2 is debt-for-food security swaps (Van Nieuwkoop, 2024). There is an opportunity to increase the finance available for tackling SDG 2 by aligning the mandates of multilateral, regional and national public development banks around shared missions that flow from the SDGs (Mazzucato, 2025b; Mazzucato, 2023b). This could enable countries to access global finance that they could reinvest in food system transformation, which, in turn, could crowd in private finance directed towards SDG 2. While many discussions and initiatives have focused on mobilising finance to tackle the SDGs, they have generally focused on leverage ratios and filling perceived financing gaps, rather than on directing and shaping multilateral finance, public finance and private finance to align with the SDGs (Mazzucato, 2025b; Mazzucato and Vieira de Sá, 2025).

President Lula of Brazil brought hunger to the forefront of G20 deliberations in 2024, and is hosting the School Meals Coalition Global Ministerial Summit in September 2025. This presents an opportunity to build momentum around the potential of school meals, not only as a worthwhile investment to improve

education and health outcomes, but also as an industrial strategy tool that can promote food system transformation in line with SDG 2. Global forums that bring together ministers responsible for finance and economic policy, as well as climate policy, could also put the role of school meals in food system transformation on the agenda, and work to enable industrial strategies oriented around tackling SDG 2.

SUMMARY OF RECOMMENDATIONS FROM SECTION 5:

Within their unique contexts, governments should consider how best to:

10. **Reform global trade and finance to enable progress towards SDG 2:** WTO member states could work to adapt global trade rules to enable countries to use food procurement to achieve SDG 2, supported by global governance structures that foster a collaborative approach to pursing SDG-aligned industrial strategies. This could be done, for example, through a new global facility for industrial strategy coordination housed within a reformed WTO, as recommended by the G20 Group of Experts to the Taskforce for a Global Mobilization Against Climate Change (G20 TF CLIMA Group of Experts, 2024). World leaders could also seek to reform the architecture of global finance to create more fiscal space for countries to invest in industrial strategies aimed at promoting food system transformation, including to align the mandates of multilateral, regional and national public development banks around SDG 2 (Mazzucato, 2025b).

6. CONCLUSION

The goal of ending hunger, achieving food security and improved nutrition and promoting sustainable agriculture (SDG 2) will not be achieved without ambitious economic policies aimed at driving cross-sectoral investment, innovation and structural transformation of the global food system. School meals can become a catalyst for this transformation, but only if they are designed as part of a wider, mission-oriented, industrial strategy.

The pressures on the global food system are immense. Food production will need to increase dramatically to feed the world's growing population, in the context of a system in which short-term profit-seeking inhibits equitable and reliable distribution, nutrition and sustainability, and in which long-term productivity is undermined by unsustainable land and water use, food waste, and extreme weather events caused by climate change, for which the food system carries significant responsibility.

The interlinked challenges of feeding the world's population, improving nutrition, and achieving a more sustainable food system are generally understood as social and environmental challenges, but they will remain insurmountable unless they are also recognised as economic challenges. A resilient, sustainable and just food system requires governments to advance economic policies backed by new economic thinking.

Governments can translate these challenges into market opportunities through green industrial strategies that galvanise cross-sectoral investment, innovation and transformation oriented towards ensuring widespread access to healthy and sustainable food. School meals are one of their most promising tools for doing this. School meal procurement can be designed to shape market opportunities for farmers and businesses along the food value chain that are willing to transform to become more sustainable, and to prioritise nutrition and access. In this way, they can become a driver of innovation, improved productivity, and sustainable, inclusive economic growth.

The Global Alliance Against Hunger and Poverty launched under Brazil's 2024 G20 Presidency as well as upcoming ministerial meetings at the School Meals Coalition's second Global Summit, IMF and World Bank meetings, G20 meetings, and COP meetings should become opportunities to not only accelerate the expansion of school meal programmes, but to also build momentum around the their potential as an industrial strategy tool that can bring the world closer to achieving SDG 2.

APPENDIX: CASE STUDY SUMMARIES

School Meals in Brazil

Context:

Agriculture plays a central role in Brazil's economy, accounting for approximately 8.4 per cent of the country's GDP, 16.2 per cent of employment, and 40 per cent of all exports, while the country's agrifood sector – including agriculture, agribusiness, and agrifood services – accounts for about 22 per cent of GDP and about 30 per cent of national GDP growth in 2023 (World Bank, 2025b). While agriculture is dominated by large-scale, export-oriented businesses, smallholder and family-run farms still account for the majority of agricultural establishments and are responsible for a significant share of the country's local food production. Agrifood is responsible for approximately 26 per cent of Brazil's GHG emissions (Paviot, 2025).

While Brazil has experienced significant economic growth in recent decades, it continues to have one of the highest levels of income inequality globally. The last 20 years have seen huge strides in tacking hunger and malnutrition, but these challenges persist (PENSSAN, 2022). Notably, President Lula's Zero Hunger initiative, launched in 2003, coordinated efforts from across the government's different ministries and institutions to achieve this shared goal. This mission-oriented initiative included two food procurement programmes: PNAE, which already existed but was reinforced, and the new Food Acquisition Programme, which aimed to promote family farming by procuring food for distribution to parts of the population that were experiencing food insecurity and creating strategic food reserves (Vasconcelos, 2005; Silva, 2019; Lima et al., 2023). The Zero Hunger mission helped to lift around 20 million people out of extreme poverty between 2003 and 2015. Between 2019 and 2022, during President Bolsonaro's tenure, Brazil backslid and was again put on the UN's Hunger Map. However, recent efforts, including under the current administration's Brazil Without Hunger Plan, have restored positive trends in tackling hunger and food and nutrition insecurity (World Bank, 2016; Lima et al., 2023).

Case summary:

The Government of Brazil launched the *Campanha de Merenda Escolar* or School Feeding Campaign, Brazil's first national school meal initiative, in 1955. Between its inception and the present day, the programme has undergone many changes,

evolving to become what is now known as the *Programa Nacional de Alimentação Escolar* (PNAE) or the National School Feeding Programme. PNAE is one of the world's largest school feeding programmes, present in roughly 150,000 public schools across the country, serving over 50 million meals daily during the school year, and benefitting over 40 million students (Brasil, 1955; MEC, 2023a). An increase in 2023 brought the total annual budget to R$5.5 billion (MEC, 2023b).

Programme goals:

While the goals have varied over the years, in general, PNAE and its predecessors have aimed to combat child hunger; improve nutrition, learning, and eating habits, while reducing absenteeism, grade repetition, and school dropout; and foster local economic development and promote the inclusion of family farmers in the national food market.

Programme design:

PNAE is universal and present across all states and municipalities and across all levels of education, from early childhood to adult education (Silva, 2019). It is backed by a constitutional mandate and has continued, in different forms, under multiple administrations from 1955 to the present.

Implementation of PNAE is largely decentralised to the local level, which is responsible for local purchasing, contract management, staff training, logistical support, and ensuring alignment with national guidelines. Standards and guidelines are set nationally and procurement of industrialised food products remains the responsibility of the federal government. Depending on the capabilities and structure of each state and municipality, implementation models vary; for example, spanning school-level procurement to more centralised state-level food distribution.

The design of procurement processes has been integral to the success of PNAE. Since 2009, the programme has required that at least 30 per cent of federal funds be used to purchase food from family farmers, with a special focus on local, traditional, Indigenous, quilombola and women producers (Paula et al., 2023). Procurement officials are also permitted to spend more on food products that are sustainable (organic or agroecological).

Since the 1960s, PNAE has included a focus on food and nutrition education. Over time, the design of the programme has evolved to place greater emphasis

on nutrition, such as creating a role for nutritionists in programme implementation and mandating the creation of municipal and state-level School Feeding Councils tasked with overseeing implementation, including with respect to compliance with national nutritional guidelines (Brasil, 1994; Lima et al., 2023). As of 2020, at least 75 per cent of PNAE food purchases must be fresh or minimally processed (Lima et al., 2023).

Challenges:

The programme has contended with a number of implementation challenges and made several important shifts.

Scope: PNAE has evolved from providing emergency food aid with targeted access, unreliable funding and limited coverage to a nationwide, universal programme with relatively stable funding and coverage of all regions.

Local production: The programme shifted from reliance on imported foods, notably from the US in the form of food aid, to prioritisation of culturally appropriate and locally produced foods. From 1966 onward, Brazil began prioritising the purchase of food from national industries due to the reduction in donations from the US and increased motivation to align the programme with national development goals. This shift initially faced some barriers, including lobbying pressure from large agrifood business, but is now an established element of the programme (Silva, 2019).

Access for small producers: Small producers, particularly those from more vulnerable or remote contexts, have struggled to access PNAE market opportunities. While small producer engagement varies significantly across Brazil's regions, it has, on average, been growing. Some family farmers have faced challenges navigating lengthy procurement processes and complex documentation requirements, ensuring regular supply, accessing infrastructure, and meeting national standards. More established farmer cooperatives are better able to navigate these challenges. Explicit mechanisms have been developed to support small producers. This includes a waiver of competitive bidding requirements to establish a new, simplified procurement mechanism – Chamada Pública (Public Call) – aimed at facilitating access to public markets for family farmers and small-scale producers (Lima et al., 2023). In one region, contracting to purchase categories of food rather than specific foods has provided more flexibility to farmers to adjust to seasonal and weather changes while maintaining supply. A recent development that may help to further mitigate this challenge

is the development of a digital public marketplace (Contrata+Brasil) by the Ministry of Management and Innovation in Public Services that aims to streamline procurement (MGI, 2025). Further efforts may be needed to address bureaucratic complexity, certification barriers, and logistical limitations, such as through technical support, which could include support for cooperative structuring, and public infrastructure investments to support agricultural production, food processing and distribution.

Industrial strategy: In 2024, Brazil launched its New Industrial Strategy, oriented around six missions, the first of which is to develop sustainable and digital agri-industrial chains for food, nutritional, and energy security. PNAE has been recognised by the Government of Brazil as an important tool for implementing this mission. This means that it is seen not only as a social expenditure that is required to achieve important education and health outcomes for kids, but also as a driver of economic growth. This positioning has been accompanied by increased investment in PNAE. However, PNAE has yet to undergo programme design changes to maximise its contribution to this mission. These could include scaling up the local purchasing requirement, embedding stronger sustainability conditionalities in the programme, and better integrating the programme with other industrial strategy policy instruments, for example with Brazil's programme for supporting technology adoption by smallholder farms, and with existing loan programmes that incentivise sustainable land use practices.

Procurement: Brazil's procurement policies have undergone deliberate changes to make it easier for smallholder farmers to access market opportunities, establish nutrition standards, and enable procurement officials to pay more for sustainable products, in alignment with the goals of PNAE. However, procurement practices are still primarily driven by cost efficiency rather than by broader public policy goals, and vary across different municipalities and states. This situation continues to inhibit the programme from reaching its full potential to contribute to food system transformation.

Sustainability: Although PNAE has incorporated some sustainability goals into its design, these have so far been a lower priority. Procurement officials are allowed to pay more for products that are organic or 'agroecological'. While organic products are easy to identify based on mandated labelling, agroecological products are more difficult to identify because standard labelling is not yet widespread. The term 'agroecological' incorporates the promotion of just and sustainable food systems, ecosystem conservation, food sovereignty and nutrition, biodiversity, and social inclusion, and was codified in Brazilian public policy in response to the environmental degradation caused by the Green

Revolution. The Brazilian government's Green Seal Programme, introduced in 2024, aims to standardise and certify products and services based on sustainability criteria and may make it easier to prioritise sustainability in food procurement (Presidência da República, 2024). Sustainability goals would also benefit from complementary policies to help food producers transition to more sustainable practices.

Decentralisation: While PNAE's decentralised model enables the programme to adapt to local realities, it exposes the programme to regional inconsistencies depending on available capabilities, financial resources and infrastructure. In particular, there are disparities in terms of local capacity to design and publish procurement calls, and comply with national guidelines. Challenges in intergovernmental coordination have also led to gaps or overlaps in responsibilities between different levels of government, and to uncertainty at the state and municipal levels about how to implement national directives and about what is permitted, which can result in reluctance to innovate. Municipal and state budgets are intended to supplement federal funding, which means more financially constrained regions struggle to hire and retain qualified personal, maintain adequate infrastructure, and achieve consistent programme delivery and meal quality. The Collaborating Centres for School Food and Nutrition, introduced by the ministries of health and education, and technical cooperation agreements are helping to build capacity, share lessons between municipalities, and improve intergovernmental coordination challenges.

Whole-of-government approach: Interministerial cooperation has been both a challenge and a key success factor for the programme. PNAE was designed to bring social and economic goals into alignment, through an integrated approach that has benefited from cross-ministerial engagement. Levels of engagement vary across ministries, however, and in many cases collaboration is informal and dependant on interpersonal relationships, making it vulnerable to changes in personnel and political shifts. Interagency collaboration is also variable across local and state governments. In 2007, a partnership between the ministries of health and education was formalised in the context of a new School Health Programme, promoting greater interministerial cooperation (Silva, 2019; Lima et al., 2023). More recently, federal committees have been created to reinforce horizontal coordination, including in the context of Brazil's wider procurement policy reforms. Technical cooperation agreements have also helped to define areas of shared responsibility and support operational continuity.

COVID-19 adaptation: During the COVID-19 pandemic, while schools were closed, the food purchased with PNAE funds was authorised to go directly to

students' families. However, the universality of the programme was challenged during this period due to operational constraints. Technological barriers also hindered farmer participation in remote procurement.

Impacts:

In addition to benefiting over 40 million students – reducing hunger as well as food and nutrition insecurity, and contributing to improved education and health outcomes – PNAE has contributed to increased domestic food production, a 32.6 per cent increase in family farm gross production value (GPV) between 2013 and 2017, job creation, higher household incomes among participating producers, more diverse markets, and wider adoption of sustainable practices.

This example draws from a longer case study explored in Mazzucato and Spanó, forthcoming.

School meals in Sweden

Context:

Since creating the *'folkhem'* welfare state model in the early 20th century, Sweden has progressively created a free school food programme, distributed across all schools in the country. Driven initially by the development logic of a transforming nation, the goals of the programme are still largely oriented around an equitable approach to nutrition for children, a social justice agenda common to the Nordic Model. By 2018, however, policy experts at Livsmedelsverket, the Swedish national food agency (LMV) were aware that school food was not addressing broader systemic challenges such as sustainability, health, and engagement with the curriculum. Simultaneously, Vinnova, the Swedish government's innovation agency, had embarked on a new programme of mission-oriented innovation pilots, and had chosen to collaboratively explore these new practises by working directly with mobility and food systems. A school food mission quickly emerged and has grown in scale, diversity and ambition over five years. Sweden's governance and service delivery, particularly regarding school food as part of its broader 'public meals' system, is heavily loaded towards municipalities. Thus, a place-based approach, which could scale to a national mission, was seen

to be full of possibility. The recent geopolitical context in the Baltic states has led to a significantly increased focus on 'preparedness' and sovereignty, including around food systems, which also inflected the school food mission.

Case summary:

The school food mission brought together a broad and diverse coalition comprising national, regional and local actors, including the LMV, Vinnova, Environmental Agency, Agency for Youth and Civil Society Affairs, Board of Agriculture, Public Health Agency, Association of Local Authorities and Regions, Procurement Authority, and School Agency. Commercial actors were also involved in origination and delivery, including Swedish food industry's representative body, Sweden Food Arena.

Hofors, Karlstad, Munkedal and Vallentuna municipalities were the lead actors in the first wave of 'systems prototypes'. Participation 'on the ground' involved students and food retailers as much as school cooks, municipalities or national agencies. Menus, restaurants, food waste, school architecture, procurement systems, and curriculums were redesigned. Many smaller commercial actors were involved in the prototypes, ranging from design agencies and school architects to local food producers and digital innovators. The broader 'innovation platform for sustainable food' that resulted, led by Vinnova and the Swedish Agency for Economic and Regional Growth, involved numerous private, public and third-sector actors. Sweden Food Arena was inspired, and subsequently guided by the food mission team, to create its own missions for the sector. All of these activities can be seen as part of a collaborative and harmonious ecosystem of activities stimulated by the mission-oriented innovation process undertaken.

Ultimately, the programme's goals were achieved, in that a broad and diverse array of prototypes was co-designed, developed, and tested, in and around the school food systems in municipalities. These were mapped against leverage points to ensure a systemic approach, and many have continued to progress, producing real change. Equally, an emerging impact on policy and regulation can be discerned, from new healthy food guidelines to completely new national food strategies, to new agreements with EU legislation and funding programmes. Finally, clear, observable changes in state capacity and dynamic capabilities can be identified across the multiple public sector agencies involved, particularly the innovation agency and food agency.

Programme goals:

Vinnova's initiative aimed to create a portfolio of innovation projects to develop school meals within Sweden, with a view to making them more healthy, sustainable and equitable, through cross-sector collaboration between students, local food producers, municipalities, national government agencies, and others. The goal is for the food system to reorient around the concept of 'more than the food on the plate', targeting outcomes related to public health, sustainability (including emissions, biodiversity, land-use, etc.), equity and social justice, economic development, resilience, food sovereignty and more.

The broader goal of Vinnova's mission-oriented innovation agenda was to design, develop and deliver new dynamic capabilities for the public sector in Sweden. Its theory of change involved highly participative place-based prototypes scaling and spreading to become systems demonstrators, each capable of producing insights for policy and regulation, new services and spaces, new governance models and practises, more resilient and innovative economies, and so on. Crucially, the mission's role is not only to deliver impactful short- and long-term change 'on the ground' and throughout the system, but also to transform system capabilities, ensuring that Sweden's multi-faceted innovation system is 'fit for the future'. In practice, this reorientation 'beyond the food on the plate' also allows a transformational shift from silo-based, '20th century' governance models to a model more attuned for '21st century' systemic challenges, building state capacity and dynamic capabilities.

These goals should work symbiotically, such that the systemic prototypes and demonstrators cultivate new capabilities, and vice versa.

Programme design:

As described in-depth in Vinnova's 'playbook', 'Designing Missions' (2022), working with missions means a new focus on ambitious, systemic, experimental, and outcomes-oriented approaches to innovation. The missions were articulated as diverse portfolios of actions that achieved shared goals from cross-disciplinary and cross-sector collaboration. They focused on 'upstream' approaches, such as exploring how food might produce rather than diminish public health, social equality and environmental sustainability outcomes, recognising the Swedish state's need to reverse spiralling healthcare costs while achieving its climate goals and producing local resilience.

This approach involved the creation of participative systems prototypes that could grow and spread activities to become systems demonstrators, at scale. This required a broad coalition of partners, as opposed to the bounded remits and sectoral barriers of traditional government agencies. The prototype-led approach allowed for municipalities to participate as key delivery partners, after a nationwide call coordinated by Vinnova and LMV, while local teachers, school pupils, universities, and companies were directly engaged in prototype design and delivery.

The mission's shared agenda and sense of purpose allow for what Vinnova called the 'snowball method', starting with multiple small, 'bottom-up' local activities that can quickly 'get rolling', gathering data, insights, participants and scale as they go, helping build consensus for an ambitious national mission. Flipping the traditional agency model inside-out by taking place-based approaches allows new insights, networks and momentum to emerge, and for new capabilities to develop.

Rather than imposing a mission definition 'from above', the initial phase of the food mission work brought together several hundred public-, private- and social-sector 'actors' across multiple workshops, interviews, and engagement sessions in co-design processes. Using system mapping to unravel the threads knitted together in the school food system revealed the broader food system 'behind the food on the plate in the canteen'. Careful analysis of the co-design process's 'systems canvases' produced deep understanding of Sweden's complex food environment, as well as clues to where meaningful interventions might be made and who might be involved.

This also allowed for a strategy of leveraging the existing 'pre-installed' school food system to produce different or enhanced outcomes. Because the SEK 7M annual budget for school food in Sweden is twice that of the national innovation agency's budget, such innovation activities might be best embedded within these existing budget lines, reorienting existing investments, policies and resources towards the mission.

A broad array of systems prototypes emerged. By ensuring that the mission-based platform of national agencies remained close to these locally deployed prototypes, policy and regulatory insights could be captured and understood, and are now transforming into new policy, regulatory and organisational change. The mission-oriented approach, as interpreted by Vinnova, focused as much on this transformational change in dynamic capabilities as on the innovation projects themselves.

Challenges:

As expected, several major challenges arose during the mission timeline. Even Sweden's relatively well-resourced and capable municipalities were not spared from a near-global pattern of inflationary pressures and sometimes found it hard to engage in innovation activities, occasionally leading to sporadic action. However, the key flaw of an early prototype-led approach may not have been the lack of action but the lack of *measurement* of the *impact* of the action. Measurement and evaluation were a clearly stated leverage point from the start of the project, which should have encouraged an early discussion of what new metrics to measure, and how. However, there is no in-depth record of detailed impact from the first few years of the mission. There is a clear sense of positive impact across the board, and such measurement is now being put into place, following and supporting the new school meals guidelines, with their more holistic and ambitious metrics.

Equally, the typical annual work planning and budgeting culture of national government agencies sometimes hindered the longer-term commitment that missions demand, even though each partner was committed and mission goals were typically framed in terms of a timeline towards 2030. Funding was extended several times, but unpredictably. A longer runway associated with greater certainty of funding, over the medium- to long-term horizon, would have unlocked a deeper, broader mission without precluding the dynamism and agility that the prototyping culture generated. Alongside this, the usual staff movement around and beyond the systems in question sometimes meant that momentum stalled for other organisational reasons.

These insights pose the question of how to best implement mission-oriented financing involving systemic change approaches, which imply long-term endeavours over unpredictable timeframes and activities, which simultaneously benefit from short-term agility and responsiveness. They cannot easily be bound to the annual budget cycles and plans of government agencies, any more than they can be neatly prescribed to fall within electoral cycles.

Finally, whilst the mission team featured most of the key government agencies, the lack of a dedicated and high-level 'mission board' meant that project insights only sporadically transposed into policy insights. However, this lack of policy *transformation* did not seem to prevent meaningful action from occurring, given the particular context of Sweden's high-trust social contract, which can often allow for meaningful changes to be produced *without* legal direction. Ultimately,

significant policy change did occur, both directly and indirectly informed by the mission activities. However, many on the core mission team believe that linking governance more coherently, particularly to the political layers of local and national government, would allow for greater policy and regulatory refinement over time.

Impacts:

The mission was articulated through an imaginative array of prototypes, producing tangible insights that are inspiring schools and municipalities across Sweden and beyond. These were enabled via new methods and perspectives, practised by public agencies, allowing for ongoing innovation within the sector. They include co-designing state school cafeterias like high-quality restaurants. Elsewhere, all-day buffets were adopted with smoothies and energy shots made with discarded fruit and vegetables from nearby supermarkets. Teachers suggest that these new spaces and services are transforming students' health and learning. Other prototypes include playful taste tests that diversify the palette, and reimagined curricula built around food. New digital tools for procurement could significantly reinforce local food producers and resilient economies, transforming approaches to public procurement. These prototypes are described in detail in LMV's recent summary of mission, *'Ett nytt recept för skolmåltider—Att arbeta med skolmåltider ur ett innovations- och systemperspektiv'* (Livsmedelsverket 2025).
The prototypes included:

- Portable learning environment, Munkedal Municipality
- Eat what you want, when you want, Karlstad Municipality
- Food waste, Karlstad Municipality
- Vallentuna food market
- SKAFF procurement prototype, Karlstad Municipality, Vallentuna Municipality, Swedish Environmental Protection Agency, Swedish National Agency for Public Procurement
- Cookbook for school meal environment, Karlstad Municipality
- The restaurant as the school's heart, Munkedal Municipality
- Accessible learning environments in dining halls, Vallentuna Municipality
- Outdoor day with focus on sustainable food, Munkedal Municipality
- ExplorEAT, Vallentuna Municipality
- Educational program, Hofors Municipality

- Food market in the schoolyard, Munkedal Municipality
- Student cooks and student inspirers, Munkedal Municipality
- App and lunch box, Hofors Municipality
- Method for meal councils, Karlstad Municipality
- Foodfluencer, Munkedal Municipality
- Student cooks and student inspirers, Munkedal Municipality
- Food council based on the Meal Model, Vallentuna Municipality

More broadly, these projects have led to shifts in education, health and industrial policy connected to school food, with new agreements and guidelines across multiple agencies. These include: LMV revising its national guidelines for school food, taking a far more ambitious, holistic approach; LMV and the Public Health agency (Folkhälsomyndigheten) developing the first national targets for healthy and sustainable food consumption; Vinnova's broader 'A New Recipe for the Food System' innovation platform emerging from the mission, featuring three project areas connecting policy lab activities with school food; The Education Agency (Skolverket) updating its national guidelines for school food with LMV; Board of Agriculture has now allowed Sweden to participate in the EU School Fruit programme; School food incorporated as a key lever in the new 'National Food Strategy 2.0' issued in March 2025 (Regeringskansliet 2025).

According to LMV, the mission-oriented approach significantly raised the collective ambition for school food within Sweden. It built new collaborations across the system that had not previously been possible, enabling national agencies to gain new insight into municipalities' needs and identify what might scale while allowing municipalities to gain access to new forms of knowledge and practice.

Most fundamentally, while the mission resulted in new solutions for target groups in the short-term, the emphasis has been on preparing the ground for long-term systemic change by building new dynamic capabilities in Sweden's public sector. Vinnova, the Swedish Government's innovation agency, significantly enhanced its capabilities and positioning through these mission-oriented innovation pilots. LMV has retrained many of its staff in dynamic capabilities such as service design and foresight, and created the first designated roles for innovation within the organisation, retraining leadership in new models for innovation and governance, and developing an organisational culture that includes more 'permissive' and experimental working methods. New alliances have been constructed between LMV, the School Agency, the Public Health Agency, and others. Finally, there is recognition across these partners that these new capabilities might also be

deployed more generally, across other system challenges including those of preparedness and food sovereignty in the context of recent geopolitical events across the Baltic region.

This example draws from a longer case study explored in Mazzucato and Hill, forthcoming.

School meals in Scotland

Context:

When the Scottish Parliament was established in 1999, Scotland faced some of the poorest health outcomes in Europe. Often referred to as the 'sick man of Europe,' the country's poor diet was widely acknowledged as a major factor contributing to its health challenges. Scotland also experienced stark economic and health inequalities, with life expectancy in the most deprived areas up to 10 years lower than in the most affluent (MacLardie et al., 2008). The preceding decades had seen successive UK governments move away from the universalist foundations of the welfare state, replacing it with means-tested provision and privatisation – resulting in reduced access and declining nutritional standards. When control over education and social policy was devolved to the Scottish Parliament in 1999, improving children's diets was viewed as a core mission across the political spectrum.

In 2003 the publication of a landmark report, entitled 'Hungry for Success: A Whole School Approach to School Meals in Scotland', set the stage for a transformation in school nutrition (Scottish Executive, 2003). The report called for a 'whole of school' approach that integrates health and nutrition into all aspects of school life, embracing a holistic approach focused on fostering the long-term health and wellbeing of children. The report kickstarted an overhaul in the provision of school meals, with schools being required to put a far greater emphasis on health, wellbeing and nutrition. Although the 2008 Global Financial Crisis, and subsequent UK Government austerity programme, delayed the implementation of universal free school meals, the policy was finally introduced in 2015 for the youngest school children, and has since been gradually expanded.

Case summary: Following the trialling of successful local pilot schemes in 2007-08, the Scottish Government introduced universal free school meals for Primary

1–3 pupils (aged four to seven) in 2015 (Brennan et al., 2022). Since then, the policy has been expanded twice to include Primary 4 and 5 pupils (ages eight to nine), and plans are underway to extend the policy to all primary school children. Although Scotland's universal free school meals programme has faced challenges related to funding and uptake, it remains widely supported and integral to the Scottish Government's aim of creating a fairer and more inclusive society.

While Scotland has taken steps to better align procurement spending with social, economic, and environmental outcomes, the universal free school meals policy is still primarily viewed as a tool of social policy, aiming to improve health and tackle inequalities. In contrast, the opportunity to use school meal provision as a strategic lever to shape markets, support economic growth and transform supply chains remains less well explored.

Programme goals:

The primary goals of Scotland's universal free school meals policy to date have been to: Improve health – Tackle growing concerns about childhood obesity, poor nutrition, and low life expectancy by increasing access to fresh, healthy food among children; Tackle inequalities – Address Scotland's long-standing economic and health inequalities, and reduce poverty and food insecurity, by ensuring all children have access to healthy, nutritious food; and Reduce stigma – One of the most persistent barriers to uptake of means-tested free school meals in Scotland was the perceived social stigma. As such, the introduction of universal free school meals sought to address this by making free school meals available to everyone, regardless of income or background. The Scottish Government's commitment to free school meals has formed part of a wider effort to establish a distinct social contract from the rest of the UK, with a more universalist approach to welfare and a greater focus on tackling inequality and poverty.

Program design:

The Scottish Government funds all 32 local authorities to provide free universal school meals. As of 2024, this includes all three- and four-year-olds in early years settings and all Primary 1–5 school children (ages four to nine). For Primary 6 and 7 pupils and secondary school students, free meals are provided based on household receipt of specific welfare benefits; however, plans are underway to extend universal free school meals to all primary school children. During holiday periods, eligible children also receive cash or voucher payments for meals, and a

holiday activity and food programme is funded for families most in need.

Each of Scotland's 32 local councils is responsible for managing its own procurement and for purchasing food to provide school meals in their area. All meals must adhere to strict nutritional standards outlined in the 'Healthy Eating in Schools Guidance', based on scientific research and national dietary guidelines (Scottish Government, 2021). These standards cover energy, protein, and key nutrients, as well as limits on certain food types. Each local authority is responsible for menu creation, often employing nutritionists and engaging with pupils for feedback.

Although local authorities are responsible for procuring food for school meals, practice must adhere to procurement regulations that apply to the whole public sector. These rules have undergone a significant shift over the past decade, moving beyond cost minimisation to prioritise broader economic, social, and environmental outcomes. The Procurement Reform (Scotland) Act 2014 introduced a Sustainable Procurement Duty, requiring authorities to consider how procurement can improve economic, social, and environmental wellbeing, facilitate SME and third-sector involvement, and promote innovation. Major contracts (£4 million or above) must also consider the inclusion of community benefits, such as providing employment and training opportunities or greater opportunities for SMEs. Conditionalities are deployed through the Scottish Government's 'Fair Work First' framework, which mandates payment of at least the real living wage in public procurement contracts, and encourages other fair work criteria such as trade union membership and investment in workforce development (Scottish Government, 2023).

When procuring food for school meals, local authorities use a mix of national frameworks, regional collaborations, and direct local contracts for food procurement – although the emphasis on each varies widely across the country (Brennan et al., 2022). National contracts are managed through a formal tendering and contractual process by Scotland Excel, Scotland's national procurement organisation for local authorities. It provides collaborative food procurement frameworks that councils can join to benefit from bulk buying power, centralised quality standards, and compliance with food regulations and sustainable procurement goals (Scotland Excel, 2021). Scotland Excel operates six food and drink frameworks, which together amount to £83m of spending a year, which typically include provisions for community benefits and must adhere to the Fair Work First conditionalities described above. In response to criticism that Scottish schools were relying heavily on imported food, in recent years Scotland Excel has taken steps to encourage the use of Scottish suppliers

and SMEs, including 'supply-only' lots and Protected Geographical Indication requirements (BBC, 2017).

These large-scale framework agreements are supplemented by local purchasing decisions made by individual local authorities. While all councils are required to follow the Sustainable Procurement principles outlined above, these principles apply broadly across all areas of public procurement rather than being tailored specifically to school food. As a result, specific approaches to school food procurement vary significantly across the country. Voluntary initiatives like the Soil Association's Food for Life Programme, funded by the Scottish Government, aim to promote local sourcing, fresh ingredients, and sustainable practices (Soil Association, n.d.). To date, however, only 18 out of Scotland's 32 local authorities have achieved accreditation, meaning these standards are not universal. While climate goals must be considered under the Sustainable Procurement Duty and the Climate Change (Scotland) Act 2009, there are no specific requirements to publish data on the climate impact of school meal procurement.

To date, most councils have only provided limited public information on their specific food procurement practices, and there has been little systematic effort to use free school meals as a strategic lever to reshape food supply chains. As such, while universal free school meals in Scotland are widely appreciated in terms of their social benefits, their potential to support economic growth and sustainability goals have been less well explored.

Challenges:

Scotland's universal free school meal policy has faced several challenges:

Expanding access and eligibility: Repeated delays in expanding universal free school meals to older primary pupils (P6 and P7) have received significant criticism. This has largely been due to funding constraints, particularly the UK Government's austerity program impacting the Scottish Government's budget, and recent inflation increasing meal costs. Infrastructure limitations and workforce shortages (exacerbated by Brexit and COVID-19) have also hindered expansion.

Declining uptake: Despite universal provision, uptake rates have declined from a peak of 81.5 per cent in 2016 to 71.0 per cent in 2024, falling sharply during the COVID-19 pandemic (Scottish Government, 2024b). As such, nearly three in 10 eligible children do not consume free meals they are entitled to. Evidence indicates that key barriers include lack of awareness among parents about

eligibility, children disliking food options, and long waiting times in canteens (McKendrick, 2022).

Maximising opportunities for Scottish businesses: Despite the introduction of the Sustainable Procurement Duty, evidence indicates that a large proportion of food for school meals is still sourced from outside Scotland. To date, there has been a limited focus on using school meal procurement to stimulate private investment and grow domestic supply chains, with local sourcing instead encouraged primarily through voluntary accreditation schemes. Procurement capacity and capabilities also pose a challenge, with the Sustainable Procurement Duty not consistently applied as a core element of practice across all local authorities. The Scottish Government's new Green Industrial Strategy provides an opportunity to catalyse a wider change in Scotland's procurement landscape, ensuring that Scotland's universal free school meals policy not only promotes social goals – but also builds more inclusive and sustainable supply chains and supports growth and job creation (Mazzucato and Macfarlane, 2025).

Wider economic context: Scotland's universal free school meals policy has been implemented during a challenging economic period in the UK, marked by austerity and slow economic recovery. Scotland's constrained fiscal budget, which is largely determined by the UK Government's spending decisions, has limited its ability to expand universal welfare policies as quickly as intended. This has led the Scottish Government to use its devolved tax powers to raise revenue, making income tax more progressive than in the rest of the UK. Financial pressures on local authorities have also sometimes incentivised them to prioritise cost over broader public value in procurement, even where there is the policy space to promote wider social and environmental goals.

Impacts:

Tackling poverty: The Scottish Government estimates that universal free school meals save households up to £400 per child annually, reducing financial strain and mitigating food insecurity (Scottish Government, 2025).

Improving health and nutrition: Studies have found that universal free school meals have significantly reduced the consumption of ultra-processed food at lunch time, especially among low-income children (Parnham et al., 2023).

Improving educational outcomes: Studies have found that universal free school meals has had a small positive impact on attendance and health-related

absences (Borbely et al., 2022). Qualitative feedback suggests it has also contributed to better student engagement and concentration (CPAG, n.d.).

Economic benefits: Evidence on the economic impact of spending on universal free school meals is limited, as disaggregated data on school meal procurement and supply chains is not currently published. However, with the Scottish Government spending £238 million a year on the policy, there is scope to explore how the purchasing power of UFSM can be more deliberately harnessed to drive private investment, support innovation, and strengthen domestic food supply chains.

Environmental sustainability: Qualitative case studies in Scotland have highlighted the potential for school meal policies to drive environmental benefits through more strategic use of public procurement (Soil Association, 2024). However, the fragmented, often voluntary nature of the current approach limits the potential for free school meals to drive sustainability goals – and there is a strong case for replacing it with a more joined-up, strategic approach aimed at aligning economic, social and environmental goals.

This example draws from a longer case study explored in Mazzucato and Macfarlane, forthcoming.

REFERENCES

Abdallah, A., Jat, H., Choudhary, M., Abdelaty, E., Sharma, P. and Jat, M. (2021). 'Conservation agriculture effects on soil water holding capacity and water-saving varied with management practices and agroecological conditions: A review', *Agronomy*, 11(9), pp. 1681. doi: https://doi.org/10.3390/agronomy11091681

Abdul Aziz, M., Brini, F., Rouached, H. and Masmoudi, K. (2022). 'Genetically engineered crops for sustainably enhanced food production systems', *Frontiers in Plant Science*, 13, pp. 1027828. doi: https://doi.org/10.3389/fpls.2022.1027828

African Union (2022). *African Union Climate Change and Resilient Development Strategy and Action Plan (2022–2032).* Agriculture, Rural Development, Blue Economy, and Sustainable Environment (ARBE). Available at: https://au.int/en/documents/20220628/african-union-climate-change-and-resilient-development-strategy-and-action-plan

Akhtar, Y., and Isman, M. B. (2018). *Insects as an Alternative Protein Source*, in Food Science, Technology and Nutrition, Proteins in Food Processing (Second Edition). 263–288. (ed. Rickey Y. Yada). Woodhead Publishing. Available at: https://www.sciencedirect.com/science/article/pii/B9780081007228000115

Alberta Innovates (n.d.). *Agriculture & Food Innovation: Innovation in Food and Farming bringing Food Security into Reach.* Alberta Innovates. Available at: https://albertainnovates.ca/strategic-initiatives/agri-food-innovation/#:~:text=Our%20program%20focuses%20on%20developing,the%20crop%20and%20livestock%20sectors.

Alderman, H., Bundy, D. Gelli, A. (2024). 'School Meals Are Evolving: Has the Evidence Kept Up?', The *World Bank Research Observer*, 39(2), pp. 159–176. doi: https://doi.org/10.1093/wbro/lkad012

Arrowsmith, S. (2010). Horizontal policies in public procurement: a taxonomy https://www.emerald.com/insight/content/doi/10.1108/jopp-10-02-2010-b001/full/html

Battle, M., Carter, M., Chaudhary, A., Holst, A., Hong-Mitsui, K., La, Y., Liu, G., Netto, M. et al. (2025). *Public investment in alternative proteins to feed a growing world in 2024, State of Global Policy.* Good Food Institute (GFI). Available at: https://gfi.org/wp-content/uploads/2025/04/2024-Executive-summary-State-of-Global-Policy.pdf?_gl=1%2Aqet254%2A_up%2AMQ..%2A_ga%2AMTU3NjMxODEyNy4xNzUxNTYzMzAz%2A_ga_TT1WCK8ETL%2AczE3NTE1NjMzMDEkbzEkZzEkdDE3NTE1NjMzMDEkaYwJGwwJGgw

BBC News (2017). *Scottish school meals serve chicken from Thailand.* Available at: https://www.bbc.co.uk/news/uk-scotland-39113681

Behm, S. (n.d.). *Vertical farming is growing up.* Farm Credit Canada (FCC). Available at: https://www.fcc-fac.ca/en/knowledge/vertical-farming-is-growing-up#:~:text=What%20is%20vertical%20farming?,of%20aeroponics%20systems%20is%20emerging.

Bliss, F. (2017). *Home-Grown School Feeding as a "Good Practice" for Poverty Alleviation and Nutrition Security in Cambodia.* Institute for Development and Peace (INEF), University of Duisburg-Essen (AVE-Studie 4/2017, Wege aus extremer Armut, Vulnerabilität und Ernährungsunsicherheit – Ways out of extreme poverty, vulnerability and food insecurity). https://www.uni-due.de/imperia/md/content/inef/ave4.pdf

BNDES (n.d.) *Cross-sectional guidelines for our pathway to a just transition.* BNDES. Available at: https://www.bndes.gov.br/wps/portal/site/home/desenvolvimento-sustentavel/clima/climate/guidelines

Bratina, B. (2021). *Food Security in Northern and Isolated Communities: Ensuring Equitable Access to Adequate and Healthy Food for All: Report of the Standing Committee on Indigenous and Northern Affairs.* House of Commons, Canada. Available at: https://www.ourcommons.ca/Content/Committee/432/INAN/Reports/RP11420916/inanrp10/inanrp10-e.pdf

Brasil (1955). *Decreto nº 37.106, de 31 de março de 1955*. Institui a Campanha de Merenda Escolar. Diário Oficial da União.

Brasil (1994). *Lei nº 8.913, de 12 de julho de 1994.* Dispõe sobre a municipalização da merenda escolar. Diário Oficial da União, 13 jul. 1994. Available at: https://www.planalto.gov.br/ccivil_03/leis/l8913.htm

Bridging the Gap. (2023). *Enhancing public sector food procurement.* Sustain. https://www.sustainweb.org/bridging-the-gap/procurement-case-study/

Brennan, M., Jones, J. and McKendrick, J.H. (2022). *School Meals Case Study: Scotland.* Research Consortium for School Health and Nutrition. Available at: https://www.schoolmealscoalition.org/sites/default/files/2024-05/Brennan_etal_2022_School_Meals_Case_Study_Scotland.pdf

Cabernard, L., Pfister, S. and Hellweg, S. (2023). 'Biodiversity impacts of recent land-use change driven by increases in agri-food imports', *Nature Sustainability,* 7, pp. 1512–1524. doi: https://doi.org/10.1038/s41893-024-01433-4

Cabinet Secretariat of the Republic of Indonesia (2025). *President Prabowo Prepares Strategic Policy to Boost National Economy.* Office of Assistant to Deputy Cabinet Secretary for State Documents & Translation. Available at: https://setkab.go.id/en/president-prabowo-prepares-strategic-policy-to-boost-national-economy/

Camden Renewal Commission (2021). *Developing renewal missions in Camden*. UCL Institute for Innovation and Public Purpose and Camden Council. Available at: https://camdenrenewal.com/wp-content/uploads/2021/12/Developing-renewal-missions-in-Camden_Renewal-Commission-Report-2021.pdf (Accessed: July 25 2025)

Campbell, C. (2023). 'Values-based institutional food procurement programs: A narrative review', *Journal of Agriculture, Food Systems, and Community Development*, 12(4), pp. 123–133. doi: https://doi.org/10.5304/jafscd.2023.124.005

Campos, A. (2025). *Banks begin releasing funds from first Eco Invest auction.* Valor. Available at: https://valorinternational.globo.com/business/news/2025/06/26/banks-begin-releasing-funds-from-first-eco-invest-auction.ghtml

Caram, B. (2025). *Brazil's government aims to raise $2 billion in financing with new Eco Invest auction*. Reuters. Available at: https://www.reuters.com/sustainability/climate-energy/brazils-government-aims-raise-2-billion-financing-with-new-eco-invest-auction-2025-04-28/

Chakrabarti, S., Scott, S., Alderman, H., Menon, P. and Gilligan D. (2021). 'Intergenerational nutrition benefits of India's national school feeding program', *Nature Communications*; 12(1), pp. 4248. doi: https://doi.org/10.1038/s41467-021-24433-w

Climate Action (2024). *COP29 – Transforming Agri-Food Systems.* Available at: https://www.climateaction.org/news/cop29-transforming-agrifood-systems#:~:text=Agri%2Dfood%20systems%20%E2%80%93encompassing%20processes,to%20driving%20global%20climate%20action

Chan, G (2023). '*Climate crisis could contribute to a global food shortage by 2050, US special envoy on food security warns'*, The Guardian, 5 September. https://www.theguardian.com/australia-news/2023/sep/05/climate-crisis-could-contribute-to-a-global-food-shortage-by-2050-us-special-envoy-on-food-security-warns? (Accessed: 11 August 2025).

Chiavari, J., Coser, G., Florias, R. and Souza, P. (2023). *Landscape of Climate Finance for Land Use in Brazil September.* Climate Policy Initiative (CPI) and CPI/PUC-Rio. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/09/Landscape-of-Climate-Finance-for-Land-Use-in-Brazil.pdf

Ciaffi, G., Deleidi, M. and Mazzucato, M. (2024). 'Measuring the macroeconomic responses to public investment in innovation: evidence from OECD countries', *Industrial and Corporate Change*, 33(2), pp. 363–382. doi: https://doi.org/10.1093/icc/dtae005

Clapp, J. (2023). 'Concentration and crises: exploring the deep roots of vulnerability in the global industrial food system', *The Journal of Peasant Studies*, 50(1), pp. 1–25. DOI: https://doi.org/10.1080/03066150.2022.2129013

Clapp, J. and Isakson, S. (2018). 'Risky Returns: The Implications of Financialization in the Food System', *Development and Change*, 49(2), pp. 437–460. doi: https://doi.org/10.1111/dech.12376

Clapp, J., Noyes, I. and Grant, Z. (2021). 'The Food Systems Summit's Failure to Address Corporate Power', *Development,* 64, pp. 192–198. doi: https://doi.org/10.1057/s41301-021-00303-2

Cohen, J., Hecht, A., McLoughlin, G., Turner, L., and Schwartz, M. (2021). 'Universal School Meals and Associations with Student Participation, Attendance, Academic Performance, Diet Quality, Food Security, and Body Mass Index: A Systematic Review', *Nutrients*, 13(3), pp. 911. doi: https://doi.org/10.3390/nu13030911

CPAG (n.d.). *Learners take universal free school meal call to the Scottish Parliament.* Available at: https://cpag.org.uk/what-we-do/project-work/cost-school-day/resources-tackling-poverty-schools/ideas-bank/learners-lead/learners-take-universal

Deleidi, M. and Mazzucato, M. (2019). 'Putting austerity to bed: Technical progress, aggregate demand and the supermultiplier', *Review of Political Economy,* 31(3), pp. 315–335. doi: https://doi-org.libproxy.ucl.ac.uk/10.1080/09538259.2019.1687146

Deleidi, M. and Mazzucato, M. (2021). 'Directed innovation policies and the supermultiplier: An empirical assessment of mission-oriented policies in the US economy', *Research Policy*, 50(2), pp. 104151. doi: https://doi.org/10.1016/j.respol.2020.104151

De Schutter, O., 2015. *Institutional food purchasing as a tool for food system reform. In Global Alliance for the future of food.* In: Advancing Health and Well-Being in Food Systems: Strategic Opportunities for Funders. Available at: https://futureoffood.org/wp-content/uploads/2016/09/Global-Alliance-Advancing-Health-Wellbeing-Compendium-April-2015.pdf

Dimbleby, H. (2021). National Food Strategy, Independent review, The Plan. https://www.nationalfoodstrategy.org/the-report/

Drake, L., Woolnough, A., Burbano, C., and Bundy, D. A. (Eds.). (2016). *Global school feeding sourcebook: lessons from 14 countries.* Imperial College Press. London, UK.

East Lothian Council (2019). *Increased sustainability with school meals*. Available at: https://www.eastlothian.gov.uk/news/article/13017/increased_sustainability_with_school_meals

Eaves, D., Mazzucato, M., Lanzuolo, G. (2024). *Digital Public Infrastructure in Brazil.* In Mazzucato, M. (ed.) (2024). State Transformation in Brazil: Designing mission-oriented public procurement, state-owned enterprises and digital public infrastructure to advance sustainable and inclusive growth. UCL Institute for Innovation and Public Purpose. IIPP Policy Report 2024/15. ISBN: 978-1-917384-34-6 Available at: https://www.ucl.ac.uk/bartlett/public-purpose/policyreport-2024-15

European Commission: Directorate-General for Environment and Local Governments for Sustainability (ICLEI) (2016). *Buying green! – A handbook on green public procurement.* Publications Office. Available at: https://data.europa.eu/doi/10.2779/837689 (Accessed: 14 August 2025)

Ewe, K. and Samosir, H. (2025). *Mass food poisonings cast shadow over Indonesia's free school meals.* BBC News. Available at: https://www.bbc.com/news/articles/c77ne2vnkg3o

FAO, IFAD, UNICEF, WFP and WHO. (2024). *The State of Food Security and Nutrition in the World 2024 – Financing to end hunger, food insecurity and malnutrition in all its forms.* Rome. Available at: https://doi.org/10.4060/cd1254en

Fernandes, M., Galloway, R., Gelli, A., Mumuni, D., Hamdani, S., Kiamba, J., Quarshi, K., Bhatia, R., Aurino, E. et al. (2016). 'Enhancing linkages between healthy diets, local agriculture, and sustainable food systems: the school meals planner package', *Food and Nutrition Bulletin*, 37, pp. 571–584. doi: https://10.1177/0379572116659156

Fundo Nacional de Desenvolvimento da Educação (FNDE), 2023. *Governo Federal reajusta valores da alimentação escolar.* Published in March 2023. Available at: https://www.gov.br/mec/pt-br/assuntos/noticias/governo-federal-reajusta-valores-da-alimentacao-escolar

Fundo Nacional de Desenvolvimento da Educação (FNDE), 2023. *Histórico do Programa Nacional de Alimentação Escolar (PNAE)*. Gov.br. Retrieved June 30, 2025, from https://www.gov.br/fnde/pt-br/acesso-a-informacao/acoes-e-programas/programas/pnae/historico

Fundo Nacional de Desenvolvimento da Educação (FNDE) (n.d.).

FoEI, (2019) *Power concentration in the global food system and the threat of Big Data.* Friends of the Earth International. Available at: https://www.foei.org/publication/power-concentration-in-the-global-food-system-and-the-threat-of-big-data/

Food and Agricultural Organization (FAO) of the United Nations (n.d.a). *Responsible consumption and production.* Food and Agriculture Organization of the United Nations. Available at: https://openknowledge.fao.org/server/api/core/bitstreams/3a8baf8c-960d-4105-9538-e4bd9b1d4503/content/cc7088en.html#/12

Food and Agricultural Organization (FAO) of the United Nations (n.d.b). *Cooperation Agreement with FAO to support INDAP in its contribution to the development of Family Farming in Chile within the framework of its strategic guidelines 2014–2018 Public Procurement Policy for Family Farming for School Meals.* Food and Agriculture Organization of the United Nations. https://www.fao.org/platforms/family-farming/recursos/experiencias/projects-detail/pol%C3%ADtica-de-compras-p%C3%BAblicas-a-la-agricultura-familiar-para-la-alimentaci%C3%B3n-escolar/en

Food and Agricultural Organization (FAO) of the United Nations (n.d.c). *Food systems and value chains: definitions and characteristics in Climate Smart Agriculture Sourcebook.* FAO. Available at: https://www.fao.org/climate-smart-agriculture-sourcebook/production-resources/module-b10-value-chains/chapter-b10-2/en/

Food and Agriculture Organization (FAO) of the United Nations and the World Food Programme (WFP) (2018). *Home-Grown School Feeding Resource Framework.* FAO and WFP. Rome. Available at: https://openknowledge.fao.org/server/api/core/bitstreams/d082f20d-a9b4-4a3e-9574-3551ef74043e/content

Food and Agriculture Organization (FAO) and World Health Organisation (WHO) (2019). *Sustainable Healthy Diets Guiding Principles.* FAO and WHO, Rome. Available at: http://www.fao.org/3/ca6640en/ca6640en.pdf.

Food and Agricultural Organization (FAO). (2022). *Technical Platform on the Measurement and Reduction of Food Loss and Waste (TPFLW).* Available at: https://www.fao.org/platform-food-loss-waste/en (Accessed: 10 June 2025).

Food and Agricultural Organization (FAO) of the United Nations (2022). *The State of Agricultural commodity markets 2022.* Part 4 The agricultural Trade Policy Environment. https://openknowledge.fao.org/server/api/core/bitstreams/0c7cb6df-c416-4397-b999-bf7bca819b17/content/state-of-agricultural-commodity-markets/2022/geography-trade-policies-agriculture.html

Food and Agricultural Organization (FAO) of the United Nations (2023). *First-ever global estimation of the impact of disasters on agriculture.* FAO. Available at: https://www.fao.org/newsroom/detail/first-ever-global-estimation-of-the-impact-of-disasters-on-agriculture/en

Food and Agriculture Organization (FAO). (2023). *The Impact of Disasters on Agriculture and Food Security 2023 – Avoiding and reducing losses through investment in resilience.* Rome. Available at: https://doi.org/10.4060/cc7900en

Fossil Free Sweden (2021). *The journey to a fossil free Sweden*. Available at: https://fossilfrittsverige.se/en/the-journey/

Foster, S., Heckelman, A., Ruetz, A., Engler-Stringer, R., Black, J., Alaniz-Salinas, N., Michnik, K. (2024). *School food programs in Canada – Needs assessment and community engagement guide. University of Saskatchewan.* Available at: https://harvest.usask.ca/items/57d8184c-8e0e-4ac2-98e9-491e5f171a54

Fuglie, K., Morgan, S., and Jelliffe, J. (2024). *World agricultural production, resource use, and productivity, 1961–2020* (Report No. EIB-268). U.S. Department of Agriculture, Economic Research Service. Available at: https://www.ers.usda.gov/publications/pub-details?pubid=108649

G20 TF CLIMA Group of Experts (2024). *A Green and Just Planet.* Independent Report of the G20 TF CLIMA Group of Experts, co-chaired by M. Mazzucato and V. Songwe. Available at: https://www.g20.org/en/tracks/sherpa-track/climate-change/the-g20-taskforce-on-a-global-mobilization-against-climate-change-tf-clima

Gaitán-Cremaschi, D. and Valbuena, D. (2024). 'Examining purchasing strategies in public food procurement: Integrating sustainability, nutrition, and health in Spanish school meals and social care centres', *Food Policy,* 129, pp. 102742. doi: https://doi.org/10.1016/j.foodpol.2024.102742

Garton, A., Thow, A. and Swinburn, T. (2021). 'International Trade and Investment Agreements as Barriers to Food Environment Regulation for Public Health Nutrition: A Realist Review', *International Journal of Health Policy and Management,* 10(12), pp. 745–765. doi: https://doi.org/10.34172/ijhpm.2020.189

Gautam, Madhur; Laborde, David; Mamun, Abdullah; Piñeiro, Valeria; Martin, Will; Vos, Rob (2022). *Repurposing Agricultural Policies and Support: Options to Transform Agriculture and Food Systems to Better Serve the Health of People, Economies, and the Planet.* The World Bank and IFPRI. Available at: http://hdl.handle.net/10986/36875

Giunti, S., Aurino, E., Masset, E. and Prifti, E. (2022). *Impact evaluation of home-grown school feeding programmes – Methodological guidelines.* Rome. FAO. Available at: https://doi.org/10.4060/cb8970en

Global Child Nutrition Foundation (GCNF) (2024). *School Meal Programs Around the World: Results from the 2024 Global Survey of School Meal Programs.* Available at: https://gcnf.org/wp-content/uploads/2025/02/GCNF-Global-Survey-Report-2024-V1.8.pdf.

Good Food Institute (GFI) (n.d.). *Alternative protein company database.* GFI. Available at: https://gfi.org/resource/alternative-protein-company-database/#manufacturers-and-brands

Good Food Institute (GFI) (2023a). *Environmental benefits of alternative proteins.* GFI Fact Sheet. Available at: https://gfi.org/wp-content/uploads/2024/02/Environmental-benefits-of-alternative-proteins-Dec-2023.pdf?_gl=1%2A1ft9f07%2A_up%2AMQ..%2A_ga%2ANTc3MjYzMDAyLjE3NTEzNjYwMzM.%2A_ga_TT1WCK8ETL%2AczE3NTEzNjYwMzAkbzEkZzEkdDE3NTEzNjYwMzAkajYwJGwwJGgw

Good Food Institute (GFI) (2023b). *Federal budget 2024: Germany invests €38 million in the protein transition, setting sights on field leadership*. GFI Europe. Available at: https://gfieurope.org/blog/federal-budget-2024-germany-invests-38-million-euros-in-the-protein-transition-and-sets-out-to-become-a-leader-in-the-field/

Gov.uk (2015). *'Happy birthday to the Digital Marketplace'* (6 November). Available at: https://digitalmarketplace.blog.gov.uk/2015/11/06/happy-birthday-to-the-digital-marketplace/.

Hendrickson, M., Howard, P., Miller, M., Constance, D. (2020) *The Food System: Concentration and its impacts.* A Special Report to the Family Farm Action Alliance. Available at: https://democrats-rules.house.gov/sites/evo-subsites/democrats-rules.house.gov/files/Concentration%20and%20Options%202020%20Final%209%2015.pdf

Hintz, J., d'Addario, F., and Defranceschi, P. (2021). *The power of the public plate — analysis of public procurement impact across the food value chain.* FAO, One Planet Network, and ICLEI. Available at: https://www.oneplanetnetwork.org/sites/default/files/from-crm/The%2520Power%2520of%2520the%2520Public%2520Plate_Analysis%2520ICLEI%2520OPN%2520SPP%25202021.pdf (Accessed: July 12 2025)

House of Commons Public Administration Select Committee (2011). *Government and IT – 'a recipe for rip-offs': time for a new approach.* Available at: https://publications.parliament.uk/pa/cm201012/cmselect/cmpubadm/715/715i.pdf

Impact on Urban Health (2022). *Investing in Children's Future: A Cost Benefit Analysis of Free School Meal Provision Expansion.* Available at: https://urbanhealth.org.uk/insights/reports/expanding-free-school-meals-a-cost-benefit-analysis

International Labour Organization (ILO). (2023). *Policy guidelines for the promotion of decent work in the agri-food sector.* ILO Sectoral Policies Department. Available at: https://www.ilo.org/sites/default/files/2024-05/Policy%20guidelines%20for%20the%20promotion%20of%20decent%20work%20in%20the%20agri-food%20sector.pdf (Accessed: 10 June 2025).

Izumi, B., Akamatsu, R., Omori, K., Agliano Sanborn, A., Uejima-Carr, M., Trask, N., Weber, N., Tasala, K. et al. (n.d.), *Japan's School Food Program.* Available at: https://e7a651fe-6e96-431d-9a6f-a7fa6f71676d.usrfiles.com/ugd/e7a651_b1e971910e0d4f0f95ce67230f704466.pdf

Kang, D., Louis, F. and Liu, H. et al. (2021). 'Engineered whole cut meat-like tissue by the assembly of cell fibers using tendon-gel integrated bioprinting,' *Nature Communications.* 12, pp. 5059. DOI: https://doi.org/10.1038/s41467-021-25236-9

Kattel, R. and Takala, V. (2021). *Dynamic capabilities in the public sector: The case of the UK's Government Digital Service.* UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2021/01). Available at: https://www.ucl.ac.uk/bartlett/public-purpose/wp2021-01

Keenan, L., Monteath, T. and Wójcik, D. (2023). 'Hungry for power: financialization and the concentration of corporate control in the global food system', *Geoforum,* 147, pp. 103909. doi: https://doi.org/10.1016/j.geoforum.2023.103909

Kelly, S. and Swensson, L. (2017). *Leveraging institutional food procurement for linking small farmers to markets. Findings from WFP's Purchase for Progress initiative and Brazil's food procurement programmes.* FAO Agricultural Development Economics Technical Study 1. Available at: https://ageconsearch.umn.edu/record/288202/?v=pdf

Kłoczko-Gajewska, A., Malak-Rawlikowska, A., Majewski, E., Wilkinson, A., Gorton, M., Tocco, B., Was, A., Saïdi, M. et al. (2024). 'What are the economic impacts of short food supply chains? A local multiplier effect (LM3) evaluation', *European Urban and Regional Studies,* 31(3), pp. 281-301. doi: https://doi.org/10.1177/09697764231201572

Kogut, P. (2025). *Soil Degradation: Harmful Effects & Promising Solutions.* EOS Data Analytics. Available at: https://eos.com/blog/soil-degradation/ (Accessed: 10 June 2025).

Kraljevic, B., and Zanasi, C. (2023). 'Drivers affecting the relation between biodistricts and school meals initiatives: evidence from the Cilento biodistrict', *Frontiers in Sustainable Food Systems,* 7, pp. 1235871. doi: https://doi.org/10.3389/fsufs.2023.1235871

Lazonick, W. and Mazzucato, M (2013). 'The risk-reward nexus in the innovation-inequality relationship: Who takes the risks? Who gets the rewards?', *Industrial and Corporate Change*, 22(4), pp. 1093–1128. doi: https://doi.org/10.1093/icc/dtt019

Livsmedelsverket. Nyqvist A. Sandström E. (2025). *L 2025 nr 05: Ett nytt recept för skolmåltider—Att arbeta med skolmåltider ur ett innovations-och systemperspektiv.* Livsmedelsverkets rapportserie. Uppsala.

Liguori, J., Osei-Kwasi, H., Savy, M., Nanema, S., Laar, A., and Holdsworth, M. (2024). 'How do publicly procured school meals programmes in sub-Saharan Africa improve nutritional outcomes for children and adolescents: a mixed-methods systematic review', *Public Health Nutrition,* 27(e213), pp. 1–23. DOI: https://doi.org/10.1017/S1368980024001939

Lima, D., Diogo, S., Peixinho, A. and Cabrini, D. (2023). 'Programa Nacional de Alimentação Escolar (PNAE): marcos históricos, políticos e institucionais que influenciaram a política nos seus quase 70 anos de existência', *Revista de Alimentação e Cultura das Américas – RACA*, 4(1), pp.20–44. doi: https://doi.org/10.35953/raca.v4i1.159

Locke, A., James, M, Jones, H., Davies, R., and Willians, F. and Brophy, S. (2024). 'Impacts of Global School Feeding Programmes on Children's Health and Wellbeing Outcomes: A Scoping Review', *medRxiv.* doi: https://doi.org/10.1101/2024.09.03.24312981

Lundborg, P., Rooth, D.O. and Alex-Petersen, J. (2022). 'Long-term effects of childhood nutrition: evidence from a school lunch reform', *The Review of Economic Studies*, 89(2), pp. 876–908. doi: https://doi.org/10.1093/restud/rdab028

Lurie-Luke, E. (2024). 'Alternative protein sources: science powered startups to fuel food innovation', *Nature Communications*, 15, pp. 4425 doi: https://doi.org/10.1038/s41467-024-47091-0

MacLardie, J., Murray, L., Ford, I. and Anderson, S. (2008) *Evaluation of the Free School Meals Trial for P1 to P3 Pupils*. Edinburgh: Scottish Government. Available at: https://dera.ioe.ac.uk/9515/1/0064986.pdf

Maietta, O. and Gorgitano, M. (2016). 'School meals and pupil satisfaction. Evidence from Italian primary schools', *Food Policy*, 62, pp. 41–55, doi: https://doi.org/10.1016/j.foodpol.2016.04.006

Malik, X., Jozepa, I. and Balogun, B. (2023). *Debate on public sector food procurement and healthy eating.* UK House of Commons. Available at: https://commonslibrary.parliament.uk/research-briefings/cdp-2023-0210/

Mazzucato, M. (2013a). The Entrepreneurial State: debunking public vs. private sector myths, London, UK: Anthem Press.

Mazzucato, M. (2013b). 'Financing innovation: Creative destruction vs. destructive creation', *Industrial and Corporate Change*, 22(4), pp. 851–867. doi: https://doi.org/10.1093/icc/dtt025

Mazzucato, M. (2018). 'Mission-oriented innovation policy: challenges and opportunities', *Industrial and Corporate Change*, 27(5), pp. 803–815. doi: https://doi.org/10.1093/icc/dty034

Mazzucato, M. (2019). *Governing Missions in the European Union.* European Commission, Directorate General for Research and Innovation. Available at: https://research-and-innovation.ec.europa.eu/knowledge-publications-tools-and-data/publications/all-publications/governingmissions-european-union_en

Mazzucato, M. (2021). Mission Economy: A moonshot guide to changing capitalism, London, UK: Penguin Allen Lane.

Mazzucato, M. and Kattel, R. (2020). 'COVID-19 and public sector capacity', *Oxford Review of Economic Policy*, 36(1), pp. 256–269. DOI: https://doi.org/10.1093/oxrep/graa031

Mazzucato, M. and Ryan-Collins. (2022). 'Putting value creation back into "public value": from market-fixing to market-shaping", *Journal of Economic Policy Reform*, 25(4), pp. 345–360. DOI: https://doi.org/10.1080/17487870.2022.2053537

Mazzucato, M. and Rodrik, D. (2023). *Industrial policy with conditionalities: a taxonomy and sample cases.* UCL Institute for Innovation and Public Purpose Working Paper Series (IIPP WP 2023-07). Available at: https://www.ucl.ac.uk/bartlett/public-purpose/wp2023-07

Mazzucato, M. and Macfarlane, L. (2023). *Mission-oriented development banks: the case of KfW and BNDES*. UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2023-13). Available at: https://www.ucl.ac.uk/bartlett/public-purpose/wp2023-13

Mazzucato, M., Macfarlane, L., Mikheeva, O. and Bellinson, R. (2022). *A mission-oriented community wealth fund for Camden*. UCL Institute for Innovation and Public Purpose, IIPP Policy Report No.2022/03. Available at: https://www.ucl.ac.uk/bartlett/public-purpose/2022-03

Mazzucato, M. (2023a). 'Governing the economics of the common good: from correcting market failures to shaping collective goals', *Journal of Economic Policy Reform,* 27(1), pp. 1–24. doi: https://doi.org/10.1080/17487870.2023.2280969

Mazzucato, M. (2023b). *Financing the Sustainable Development Goals through mission-oriented development banks*. UN DESA Policy Brief Special issue. New York: UN Department of Economic and Social Affairs; UN High-level Advisory Board on Economic and Social Affairs; University College London Institute for Innovation and Public Purpose. Retrieved from https://desapublications.un.org/policy-briefs/un-desa-policy-brief-special-issue-financing-sustainable-development-goals-through

Mazzucato, M. and Collington, R. (2023). The Big Con: how the consulting industry weakens our businesses, infantilizes our governments, and warps our economies, London, UK: Penguin Allen Lane.

Mazzucato, M. (ed.) (2024). *State Transformation in Brazil: Designing mission-oriented public procurement, state-owned enterprises and digital public infrastructure to advance sustainable and inclusive growth.* UCL Institute for Innovation and Public Purpose. IIPP Policy Report 2024/15. ISBN: 978-1-917384-34-6 Available at: https://www.ucl.ac.uk/bartlett/public-purpose/policyreport-2024-15

Mazzucato, M., Eaves, D., and Vasconcellos, B. (2024). *Digital public infrastructure and public value: What is 'public' about DPI?* UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2024-05). Available at: https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/mar/digital-public-infrastructure-and-public-value-what-public-about-dpi

Mazzucato, M., Eaves, D., and Lanzuolo, B. (2024). *Chapter 5: Digital public infrastructure in Brazil.* In Mazzucato, M. (ed.) (2024). State Transformation in Brazil: Designing mission-oriented public procurement, state-owned enterprises and digital public infrastructure to advance sustainable and inclusive growth. UCL Institute for Innovation and Public Purpose. IIPP Policy Report 2024/15. ISBN: 978-1-917384-34-6 Available at: https://www.ucl.ac.uk/bartlett/public-purpose/policyreport-2024-15

Mazzucato, M. and Wainwright, D. (2024). *Mission-led procurement and market shaping: lessons from Camden Council.* IIPP Policy Report No. 2024/06. Available at: https://www.ucl.ac.uk/bartlett/public-purpose/policyreport-2024-06

Mazzucato, M., Doyle, S. and Kuehn von Burgsdorff, L. (2024). *Mission-oriented industrial strategy: global insights.* UCL Institute for Innovation and Public Purpose Policy Report (IIPP 2024/09). Available at: https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/jul/mission-oriented-industrial-strategy-global-insights

Mazzucato, M., Okonjo-Iweala, N., Rockström, J. and Shanmugaratnam, T. (2024). *The Economics of Water: Valuing the Hydrological Cycle as a Global Common Good*, Global Commission on the Economics of Water, Paris. Available at: https://economicsofwater.watercommission.org/

Mazzucato, M. (2025a). *Directing growth: how a mission-oriented industrial strategy drives productivity.* UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2025-06).

Mazzucato, M. (2025b). R*eimagining financing for the SDGs: from filling gaps to shaping finance.* UN DESA Policy Brief, No. 170, Special issue. New York: UN Department of Economic and Social Affairs; UN High-level Advisory Board on Economic and Social Affairs; University College London Institute for Innovation and Public Purpose. Available at: https://desapublications.un.org/policy-briefs/un-desa-policy-brief-no-170-special-issue-reimaginingfinancing-sdgs-filling-gaps

Mazzucato, M. and Kühn von Burgsdorff, L. (2025). *A mission-oriented approach to governing our global water challenges and opportunities.* UCL Institute for Innovation and Public Purpose, IIPP Policy Brief Series (IIPP Policy Brief 31, 2025) ISSN 2635-0122. Available at: https://www.ucl.ac.uk/bartlett/public-purpose/PB-31

Mazzucato, M. and Vieira de Sá, R. (2025). *Mind the mission, not the gap: Rethinking blended finance for public purpose.* UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2025-09). ISSN 2635-0122. Available at: https://www.ucl.ac.uk/bartlett/publications/2025/jun/mind-mission-not-gap-rethinking-blended-finance-public-purpose

Mazzucato, M., Spanó, E. and Wainwright, D. (2025). *Rethinking the economics of public procurement: towards a mission-oriented economic approach.* UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2025-08). ISSN 2635-0122 Available at: https://www.ucl.ac.uk/bartlett/publications/2025/jun/rethinking-economics-public-procurement-towards-mission-oriented-approach

Mazzucato, M., Macfarlane, L. (2025). *A Green, Fair and Growing Scotland: A mission-oriented approach.* UCL Institute for Innovation and Public Purpose. IIPP Policy Report 2025/03. Available at: https://www.ucl.ac.uk/bartlett/publications/2025/sep/green-fair-and-growing-scotland-mission-oriented-approach

Mazzucato, M. and Hill, D. (forthcoming).

Mazzucato, M. and Macfarlane, L, (forthcoming).

Mazzucato, M. and Spanó, E. (forthcoming).

Ministério da Educação (MEC) (2023a). *Governo Federal reajusta valores da alimentação escolar.* Available at: https://www.gov.br/mec/pt-br/assuntos/noticias/2023/marco/governo-federal-reajusta-valores-da-alimentacao-escolar (Accessed 25 April 2025)

Ministério da Educação (2023b). Programa Nacional de Alimentação Escolar (PNAE). Available at: https://www.gov.br/mec/pt-br/centrais-de-conteudo/publicacoes/institucionais/pnae (Accessed: 23 April 2025)

UCL Commission for Mission-Oriented Innovation and Industrial Strategy (MOIIS) co-chaired by Mazzucato, M. and Willetts, D. (2019). *A Mission-Oriented UK Industrial Strategy.* UCL Institute for Innovation and Public Purpose, Policy Report, (IIPP 2019-04). https://www.ucl.ac.uk/bartlett/public-purpose/wp2019-04

Molin, E., Lingegård, S., Martin, M. and Björklund, A. (2024). 'Sustainable public food procurement: criteria and actors' roles and influence', *Frontiers in Sustainable Food Systems,* 8, pp. 1360033. doi: https://10.3389/fsufs.2024.1360033

McKendrick, J.H. and Cathcart, S. (2021). *Tackling Food Insecurity in Scottish Schools: Case Studies of Strengthening Free School Meal Provision in Scotland.* Glasgow: Scottish Poverty and Inequality Research Unit. Available at: https://povertyinequality.scot/publication/tackling-food-insecurity-in-schools-case-studies-of-strengthening-free-school-meal-provision-in-scotland/

McKendrick, J.H. (2022). *Fuelled in School? A Nation-Wide Survey of Secondary School Pupils' Opinion on School Meals in Scotland.* Glasgow: Scottish Poverty and Inequality Research Unit. Available at: https://geniusschoolfoodnetwork.com/sites/media/Media,1323673,smxx.pdf

Muratori, U., Juarros, P. and Valderrama, D. (2023). *Heterogeneous spending, heterogeneous multipliers. International Monetary Fund Working Paper* (WP/23/52). Available at: https://www.imf.org/en/Publications/WP/Issues/2023/03/10/Heterogeneous-Spending-Heterogeneous-Multipliers-530398

OECD (2023). *Government at a Glance.* Available at: https://doi.org/10.1787/3d5c5d31-en

Office of the State Superintendent of Education Division of Health and Wellness (OSSE), Government of the District of Columbia (2019). *Healthy Schools Act Informational Guide.* Government of the District of Columbia. Available at: https://osse.dc.gov/sites/default/files/dc/sites/osse/page_content/attachments/Healthy%20Schools%20Act%20Informational%20Guide%2012.13.19.pdf

Open Contracting Partnership (2020). *How Governments Spend: Opening up the value of global public procurement.* Available at: https://www.open-contracting.org/wp-content/uploads/2020/08/OCP2020-Global-Public-Procurement-Spend.pdf (Accessed: 30 January 2024).

Orkusz, A. (2021). 'Edible Insects versus Meat-Nutritional Comparison: Knowledge of their Composition is the Key to Good Health', *Nutrients*, 13, pp. 1207. doi: https://doi.org/10.3390/nu13041207

Ortiz-Bobea, A., Ault, T., Carrillo, C., Chambers, R. and Lobell, B. (2021). 'Anthropogenic climate change has slowed global agricultural productivity growth', *Nature Climate Change*, 11, pp. 306–312. doI: https://doi.org/10.1038/s41558-021-01000-1

Parnham, J., Chang, K., Rauber, F., Levy, R., Millett, C., Laverty, A., von Hinke, S., Vamos, E. (2022). 'The Ultra-Processed Food Content of School Meals and Packed Lunches in the United Kingdom', *Nutrients*, 14, pp. 2961. doi: https://doi.org/10.3390/nu14142961

Parnham, J., Chang, K., Rauber, F., Levy, R., Laverty, A, Pearson-Stuttard, J., White, M., von Hinke, S. et al. (2023). The Impact of the Universal Infant Free School Meals Policy on the Ultra-Processed Food Content of Children's Lunchtime Intake in England and Scotland. Proceedings, 91(1), pp. 424. doi: https://doi.org/10.3390/proceedings2023091424

Paula, D., Mendes, K., Oliveira, A., and Costa, M. (2023). *A inserção da agricultura familiar no Programa Nacional de Alimentação Escolar: impactos na renda e na atividade produtiva.* Brasília: IPEA. Available at: https://repositorio.ipea.gov.br/server/api/core/bitstreams/ca55bbc0-b414-4fd3-8e18-a728c61f4ed7/content

Paviot, M, Peña, H., del Grossi, M., Mora López, M., Florencia Tejeda, M., Traverso, V., Garcia, B., Leite, L (2025). Enhancing Brazil's Agricultural Support: Policies for a Competitive, Green, and Inclusive Agrifood Sector. World Bank Group. Available at: https://www.greenpolicyplatform.org/sites/default/files/downloads/resource/brazils%20agrifood.pdf

Planalto (2024). *Brazil launches Green Seal Program to standardize and certify sustainable products and services.* gov.br Presidência da República. Available at: https://www.gov.br/planalto/en/latest-news/2024/06/brazil-launches-green-seal-program-to-standardize-and-certify-sustainable-products-and-services#:~:text=Voc%C3%AA%20est%C3%A1%20aqui:%20Home%20Latest,products%20in%20Brazil%20and%20abroad

Protein Industries Canada, (n.d.). *What we do.* Protein Industries Canada. Available at: https://www.proteinindustriescanada.ca/what-we-do (Accessed 15 July 2025)

Rainforest Alliance (2023). *The Indigenous Roots of Regenerative Agriculture.* Rainforest Alliance. Available at: https://www.rainforest-alliance.org/insights/the-indigenous-roots-of-regenerative-agriculture/

Ranganathan, J., Waite, R., Searchinger, T. and Hanson, C. (2018). *World Resources Report: Creating a Sustainable Food Future.* Available at: https://www.wri.org/insights/how-sustainably-feed-10-billion-people-2050-21-charts.

Rede Brasileira de Pesquisa em Soberania e Segurança Alimentar (PENSSAN) (2022). II Inquérito Nacional sobre Insegurança Alimentar no Contexto da Pandemia da Covid-19 no Brasil: II VIGISAN: *relatório final*. Vol. 7. São Paulo, SP. Available at: https://olheparaafome.com.br/wp-content/uploads/2022/06/Relatorio-II-VIGISAN-2022.pdf

Regeringskansliet (Swedish Government) (2025). *Livsmedelsstrategin 2.0.* Available at https://www.regeringen.se/rattsliga-dokument/departementsserien-och-promemorior/2025/03/livsmedelsstrategin-2.0 Accessed 10 August 2025

Hill, D. (2022) *'Designing Missions: Mission-oriented innovation in Sweden'*, Vinnova, Sweden

Reuters (2025). *Bigger meals budget to add 2 pct points to Indonesia's growth, president's adviser says.* Reuters. Available at: https://www.reuters.com/world/asia-pacific/indonesias-bigger-free-meals-budget-add-2-pct-points-growth-presidents-adviser-2025-01-31/

Research and Markets (R&M) (2025a). *Smart Agriculture Market Report 2025-2034: Global Industry Growth, Competitive Landscape, Opportunities, and Challenges.* ResearchAndMarkets.com. Available at: https://www.globenewswire.com/news-release/2025/06/23/3103613/0/en/Smart-Agriculture-Market-Report-2025-2034-Global-Industry-Growth-Competitive-Landscape-Opportunities-and-Challenges.html

Research and Markets (R&M) (2025b). *Alternative Protein Analysis and Forecast Report 2025–2034: Market to Grow by Over $325 Billion – Plant-Based and Lab-Grown Proteins Drive Expansion.* ResearchAndMarkets.com. Available at: https://www.globenewswire.com/news-release/2025/06/13/3098918/28124/en/Alternative-Protein-Analysis-and-Forecast-Report-2025-2034-Market-to-Grow-by-Over-325-Billion-Plant-Based-and-Lab-Grown-Proteins-Drive-Expansion.html

Rodrigues, J., Liberal, Â., Petropoulos, S., Ferreira, I., Oliveira, M., Fernandes, Â. and Barros, L. (2022). 'Agri-Food Surplus, Waste and Loss as Sustainable Biobased Ingredients: A Review', *Molecules*, 27(16), pp.5200. doi: https://doi.org/10.3390/molecules27165200

Rossi, R. and Šajn, N. (2024). *EU 'farm to fork' strategy: State of play.* EU Parliament Directorate-General for Parliamentary Research Services. Available at: https://epthinktank.eu/2024/02/13/eu-farm-to-fork-strategy-state-of-play/ (Accessed: 15 July 2025)

Ruetz, T. and Fraser, E. (2019). *National School Food Program a short-term opportunity for jobs creation and economic growth.* Canadian Science Policy Centre. Available at: https://sciencepolicy.ca/posts/national-school-food-program-a-short-term-opportunity-for-jobs-creation-and-economic-growth-2/ (Accessed 15 July 2025)

Ruetz, A., Edwards, G. and Zhang, F. (2023). *The Economic Rationale for Investing in School Meal Programs for Canada: multi-sectoral impacts from comparable high-income countries.* Available at: https://amberleyruetz.ca/assets/uploads/ruetz-consulting_the-economic-rationale-for-investing-in-school-meal-programs-for-canada.pdf (Accessed: 15 July 2025)

Ruetz, A., Michnik, K., Engler-Stringer, R., Alaniz-Salinas, N., Doyle, E., Kirk, S., Korten, D., Tasala, K. et al. (2024). *School Food Programs in Canada: 15 Promising Cases. Saskatoon: University of Saskatchewan and Coalition for Healthy School Food.* Available at: https://harvest.usask.ca/items/eeab1aed-37d9-4bf3-bd42-bb2916dd1f03 (Accessed 15 July 2025)

Sands, R., Meade, B., Seale, Jr., J.L., Robinson, S., and Seeger, R. (2023). *Scenarios of global food consumption: Implications for agriculture (Report No. ERR-323)*. U.S. Department of Agriculture, Economic Research Service. Available at: https://doi.org/10.32747/2023.8134356.ers (Accessed: 11 August 2025)

Savary, S., Willocquet, L., Pethybridge, S., Esker, P., McRoberts, N. and Nelson, A. (2019). 'The global burden of pathogens and pests on major food crops', *Nature Ecology & Evolution*, 3, pp. 430–439. doi: https://doi.org/10.1038/s41559-018-0793-y

School Meals Coalition (SMC). (2024). *Declaration of Commitment.* Available at: https://schoolmealscoalition.org/sites/default/files/2024-05/SMC_Decl_Comm_COUNTRIES_Mar-2024.pdf

School Meals Coalition (SMC). (2025). *Members.* Available at: https://schoolmealscoalition.org/about/members

Scotland Excel (2021). *Leading the way in public food procurement.* Available at: https://home.scotland-excel.org.uk/newsroom/features/leading-the-way-in-public-food-procurement/

Scottish Executive (2003) *Hungry for Success: A Whole School Approach to School Meals in Scotland*. Edinburgh: Scottish Executive. Available at: https://library.fabresearch.org/uploads/itemUploads/6987/hfs.pdf

Scottish Government (2021) *Healthy Eating in Schools: Guidance 2020*. Available at: https://www.gov.scot/publications/healthy-eating-schools-guidance-2020/pages/4/

Scottish Government (2023). *Fair Work First guidance.* Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2023/03/fair-work-first-guidance-2/documents/fair-work-first-guidance-supporting-implementation-fair-work-first-workplaces-scotland/fair-work-first-guidance-supporting-implementation-fair-work-first-workplaces-scotland/govscot%3Adocument/fair-work-first-guidance-supporting-implementation-fair-work-first-workplaces-scotland.pdf

Scottish Government (2024a). *Green Industrial Strategy.* Available at: https://www.gov.scot/publications/green-industrial-strategy/

Scottish Government (2024b). *School healthy living survey: school meal uptake statistics 2024.* Available at: https://www.gov.scot/publications/school-healthy-living-survey-school-meal-uptake-statistics-2024/pages/data-and-methodology/

Scottish Government (2025a). *Delivering Free School Meals.* Available at: https://www.gov.scot/news/delivering-free-school-meals/

Secretaria de Comunicação Social (2024). *Federal Government initiative to fund development, climate transition projects.* gov.br Presidência da República. Available at: https://www.gov.br/secom/en/latest-news/2024/10/federal-government-initiative-to-fund-development-climate-transition-projects

Secretariat of the Convention on Biological Diversity. (2020). *Global Biodiversity Outlook 5.* Available at: https://www.cbd.int/gbo/gbo5/publication/gbo-5-en.pdf

Sierra Leone Ministry of Basic and Senior Secondary Education (2021). *National School Feeding Policy.* Available at: https://mbsse.gov.sl/wp-content/uploads/2021/05/National-School-Feeding-Policy_May2021.pdf (Accessed 15 July 2025)

Silva, S. (2019) *Trajetória e padrões de mudança institucional no Programa Nacional de Alimentação Escolar.* Brasília: Instituto de Pesquisa Econômica Aplicada (IPEA).

Singh, S. and Fernandes, M. (2018). 'Home-grown school feeding: promoting local production systems diversification through nutrition sensitive agriculture', *Food Security*, 10, pp. 111–119. doi: https://doi.org/10.1007/s12571-017-0760-5

Singh, S. (2021). 'Home-grown school feeding: promoting the diversification of local production systems through nutrition-sensitive demand for neglected and underutilized species,' In: FAO, Alliance of Bioversity International and CIAT, Editora da UFRGS. *Public Food Procurement for Sustainable Food Systems and Healthy Diets* – Volume 1. Rome, pp. 125–141 doi: 10.4060/cb7960en

Sittimart, M., Rattanavipapong, W., Mirelman, A.J., Hung, T., Dabek, S., Downey, L., Jit., M. Teerawattananon, Y. et al. (2024). 'An overview of the perspectives used in health economic evaluations', *Cost Efficient Resource Allocation*, 22, pp. 41. doi: https://doi.org/10.1186/s12962-024-00552-1

Skolmat Sverige (n.d.). *Skolmat i Sverige sedan långt tillbaka.* Available at: https://www.skolmatsverige.se/om-oss/skolmatens-historia/ (Accessed: 28 June 2024)

Soil Association (2024). *Aberdeen City gives peas a chance.* Available at: https://www.soilassociation.org/our-work-in-scotland/scotland-news/2024/april/15/aberdeen-city-gives-peas-a-chance/?count=19

Soil Association (n.d.). *What is Food for Life Scotland*? Available at: https://www.soilassociation.org/our-work-in-scotland/food-for-life-scotland/what-is-food-for-life-scotland/

Sonkin, F. (2020). *Recipe for disaster: The IMF and World Bank's role in the financialisation of food and agriculture.* Bretton Woods Project. Available at: https://www.brettonwoodsproject.org/wp-content/uploads/2020/03/IMF-and-World-Bank-role-in-financialisation-of-food-and-agriculture-At-Issue-Spring-2020.pdf (Accessed: 10 June 2025).

Strauss, T. (2022). How can we protect food systems against global shocks? Here's what business leaders say. World Economic Forum. Available at: https://www.weforum.org/stories/2022/05/protect-food-systems-against-global-shocks/#:~:text=Food%20systems%20are%20essential%20to,health%2C%20environment%20and%20economic%20costs.

STV News (2024). *Scottish Government Ditches Universal Free School Meals.* Available at: https://news.stv.tv/politics/scottish-government-ditches-universal-free-school-meals

STV News (2025). *Scottish Greens to Back SNP Budget Amid Commitment to Expand Free School Meals to S1–S3.* Available at: https://news.stv.tv/politics/scottish-greens-to-back-snp-budget-amid-commitment-to-expand-free-school-meals-to-s1-s3

Sumberg, J. and Sabates-Wheeler, R. (2011). 'Linking agricultural development to school feeding in sub-Saharan Africa: Theoretical perspectives', *Food Policy*, 36, pp. 341–349. doi: https://10.1016/j.foodpol.2011.03.001

Sundin, N., Halvarsson, R., Scherhaufer, S., Schneider, F. and Eriksson, M. (2024). 'From plate to waste: Composition of school meal waste and associated carbon footprint and nutrient loss', *Resources, Conservation and Recycling*, 206, pp. 107656. doi: https://doi.org/10.1016/j.resconrec.2024.107656

Sustainable Finance Initiative (SFI) of the School Meals Coalition (2023). *What Works: School Meals Programs*. The Education Commission. Available at: https://educationcommission.org/wp-content/uploads/2023/04/what-works.pdf?

Swensson, L. (2015). *Institutional Procurement of food from smallholder farmers. The case of Brazil.* FAO. Available at: https://openknowledge.fao.org/server/api/core/bitstreams/bdf282c0-a5cc-42de-ace8-ca931b10a397/content (Accessed 15 June 2025)

Swensson, L. (2019). *Aligning policy and legal frameworks for supporting smallholder farming through public food procurement.* FAO. Available at: https://openknowledge.fao.org/items/836f7d06-4e1b-48f1-8ad1-4b231fbc2e47 (Accessed 15 June 2025)

Swensson, L. and Tartanac, F. (2020). 'Public food procurement for sustainable diets and food systems: The role of the regulatory framework', *Global Food Security,* 25, pp. 100366. doi: https://doi.org/10.1016/j.gfs.2020.100366

Swensson, L., Hunter, D., Schneider, S. and Tartanac, F. (2021). 'Public food procurement as a game changer for food system transformation', *The Lancet Planetary Health,* 5(8), pp. e495–e496. doi: https://doi.org/10.1016/S2542-5196(21)00176-5

The Nature Conservancy (2023). *Food, Climate and Nature FAQs: An explainer on regenerative food practices across forests, farms and seas.* The Nature Conservancy. Available at: https://www.nature.org/en-us/what-we-do/our-priorities/provide-food-and-water-sustainably/food-and-water-stories/climate-friendly-food-faqs-regenerative-ag-101/

Tregear, A., Aničić, Z., Arfini, F., Biasini, B., Bituh, M., Bojović, R., Brečić, R., Brennan, M. et al. (2022). 'Routes to sustainability in public food procurement: An investigation of different models in primary school catering', *Journal of Cleaner Production,* 338, pp. 130604. doi: https://doi.org/10.1016/j.jclepro.2022.130604

Tussell (2022). *The Local Government Procurement Index.* Available at: https://www.tussell.com/gov/2022-year-in-review-report#form.

United Nations (2024a). *The Sustainable Development Goals Report 2024.* Available at: https://www.sharing4good.org/article/sustainable-development-goals-report-2024 (Accessed: 10 June 2025).

United Nations (2024b). *Global Issues: Food.* Available at: https://www.un.org/en/global-issues/food (Accessed: 10 June 2025)

UN Commission on International Trade Law (UNCITRAL) (2014). *Model Law on Public Procurement.* United Nations. New York. Available at: https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/2011-model-law-on-public-procurement-e.pdf (Accessed: 15 July 2025)

United Nations Environment Programme (UNEP) (2024). *Food Waste Index Report 2024.* Think Eat Save: Tracking Progress to Halve Global Food Waste. https://wedocs.unep.org/20.500.11822/45230.

USDA (2025). *International Agricultural Productivity – Summary Findings.* Economic Research Service. Available at: https://www.ers.usda.gov/data-products/international-agricultural-productivity/summary-findings (Accessed: 10 Aug 2025)

Urban School Food Alliance (2022). *Student voice in school food choice: Strategies to engage students in menu design.* Urban School Food Alliance. Available at: https://urbanschoolfoodalliance.org/blogs/student-voice-in-school-food-choice/

Vasconcelos, F.A.G. de (2005). Combate à fome no Brasil: uma análise histórica de Vargas a Lula. *Revista de Nutrição*, 18(4), pp.439–457. Doi: https://10.1590/S1415-52732005000400001

van Dijk, M., Morley, T., Rau, M. and Sanghai, Y. (2021). 'A meta-analysis of projected global food demand and population at risk of hunger for the period 2010–2050', *Nature Food*, 2, pp. 494–501. doi: https://doi.org/10.1038/s43016-021-00322-9

Van Nieuwkoop, M. (2024). *Financing the agrifood system transformation – There is no lack of money to do it.* Agriculture and Food, World Bank Blogs. Available at: https://blogs.worldbank.org/en/agfood/financing-agrifood-system-transformation-there-no-lack-money-do-it

Verguet, S., Limasalle, P., Chakrabarti, A., Husain, A., Burbano, C., Drake, L., Bundy, D. (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*, 3(8) pp. 587046. doi: https://doi.org/10.3389/fpubh.2020.587046

Wang, D., Shinde, S., Young, T., and Fawzi, W. (2021). 'Impacts of school feeding on educational and health outcomes of school-age children and adolescents in low- and middle-income countries: A systematic review and meta-analysis', *Journal of Global Health,* 11, pp. 04051. doi: https://doi.org/10.7189/jogh.11.04051

World Bank (2016) *Looking Beyond the Horizon: How Climate Change Impacts and Adaptations in Sub-Saharan Africa Can Be Integrated into Macroeconomic Policy.* Washington, DC: World Bank. Available at: https://documents1.worldbank.org/curated/en/764611468197374242/pdf/106307-PUB-ADD-ISBN-back-cover-PUBLIC.pdf (Accessed: 23 April 2025)

World Bank. (2023). *What the Future has in Store: A New Paradigm for Water Storage.* The World Bank Group. Available at: https://thedocs.worldbank.org/en/doc/cdf0e6dd0ee5587caa12caf3d3ab8aa2-0320082023/related/W22038-Water-Storage-Overview-Feb-2023.pdf

World Bank (2025a). *Agriculture, forestry, and fishing, value added (% of GDP).* data.worldbank.org. Available at: https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS? (Accessed: 14 August 2025)

World Bank (2025b). *Enhancing Brazil's Agriculture Support: Policies for a Competitive, Green, and Inclusive Agrifood Sector.* Paviot, M., Peña, H., del Grossi, M., Mora López, E., Tejeda, M. F., Traverso, V., Garcia Ferreira, B. M., Leite, L. World Bank: Washington, DC. Available at: https://www.worldbank.org/en/news/press-release/2025/04/10/new-world-bank-study-brazil-agrifood-sector-public-policies

World Food Programme (WFP) Rwanda. (2020). *Evaluation of USDA's Local and Regional Food Aid Procurement Program* (Rwanda 20172019) Endline – Final Report May, Decentralized Evaluation. WFP Rwanda. Available at: https://www.oneplanetnetwork.org/sites/default/files/from-crm/69.WFP_valuation%2520of%2520USDA%2520local%2520and%2520regional%2520food%2520aid%2520procurement%2520program%2520in%2520Rwanda.pdf

World Food Program (WFP) (2022). *State of School Feeding Worldwide 2022.* Available at: https://docs.wfp.org/api/documents/WFP-0000147725/download/?_ga=2.43536677.1035553553.1746016613-1236986869.1746014176.

World Food Program (WFP) (2024). *State of School Feeding Worldwide 2024.* Available at: https://doi.org/10.71958/wfp130772 (Accessed: 10 September 2025).

World Health Organization (WHO) (2021). *Action Framework for Developing and Implementing Public Food Procurement and Service Policies for a Healthy Diet.* WHO. Available at: https://iris.who.int/bitstream/handle/10665/338525/9789240018341-eng.pdf?sequence=7

World Health Organisation (WHO) Council on the Economics of Health for All (2023). *Health for All – transforming economies to deliver what matters: Final report of the WHO Council on the Economics of Health for All.* WHO. Available at: https://www.who.int/publications/i/item/9789240080973 (Accessed: July 15 2025)

World Trade Organisation (WTO) (n.d.). *Agreement on Government Procurement.* WTO. Available at: https://www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm

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