Chapter 1

# FOOD POLICY RESEARCH IN LOW- AND MIDDLE-INCOME ECONOMIES
## Past, Present, and Future

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As an integral part of daily life around the world, food systems affect people and societies in many ways. Everyone participates in food systems through making choices about what to purchase, cook, eat, sell, store, or grow, as well as through political and social actions and the management of natural resources. Food systems are critical to economies as a major source of both private and public revenue and to societies as a basis for political power. Almost half of the world's population earns a livelihood from farming, fishing, or processing and distributing food (Davis et al. 2023). Throughout history, governments have developed and enacted policies to regulate, shape, and support the production, consumption, and trade of food, with crises often precipitating significant reforms. In both the distant past and today, these policies aim to address a range of objectives, such as raising tax revenue, protecting consumers, supporting farmers' incomes, protecting powerful landowners and agribusinesses, and addressing climate, environmental, or health externalities, among others.

IFPRI was founded in 1975 at a time when food systems had been disrupted by the global food crisis of 1972–1975. The Institute's mission to end

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hunger and poverty[2] remains the same today, but in a much different scientific, political, and global context. In 1975, 35 percent of people in low- and middle-income countries (LMICs) were experiencing hunger (Ritchie et al. 2023). Geopolitics were driven by the Cold War and the energy crisis, China was poor and still largely closed to the world, many African countries were newly independent, and the digital revolution had barely begun. The Club of Rome's newly published report, *Mankind at the Turning Point*, called for an interdependent world system to confront modern energy and food challenges (Mesarovic and Pestel 1974). Although much has changed since then, the world faces yet another global food crisis. Once again, rapid growth in food demand—due to population and income growth, as well as urbanization—is outpacing expansion of the food supply, generating price shocks that imperil the health and nutrition of billions, while production processes generate unsustainable environmental impacts and increase the risk of novel infectious diseases. Food policy research helped overcome the challenges of half a century ago. It can likewise help empower consumers, producers, and policymakers to make better decisions that will facilitate healthy, equitable, resilient, and sustainable food systems transformation in the coming decades.

Looking back over the past half-century can help identify key lessons that will better prepare us to move forward to 2050. History shows that agricultural development evolves continuously, driven by producers, consumers, workers, policymakers, and entrepreneurs working to improve their own and their communities' living conditions. Achieving sustainable and equitable solutions to hunger, malnutrition, and poverty demands a shift in the way we study, implement, and evaluate innovations in technologies, programming, governance, investments, and markets: the food systems transformation we need will require a continued evolution in our approach to food policy research.

This Global Food Policy Report reviews and reflects on food policy research over the past 50 years and presents recommendations for a forward-looking research agenda. While many of today's challenges existed in 1975, they are contextually different and, in some cases, carry greater importance today—and moving forward—than in the past. In this chapter, we first review the evolution of food policy as well as the events and theories that drove that

2 It is important to note that our understanding and approach to hunger and malnutrition has been greatly refined since 1975, shifting from a singular focus on increasing caloric intake to a focus on promoting healthy diets to address all forms of malnutrition, including micronutrient deficiencies and overweight and obesity, based substantially on evidence generated by IFPRI, as described later in this chapter and in Chapter 12.

evolution, many of which are explored in more detail in the topical chapters. We then look specifically at IFPRI's contribution and evolution across these years. The final section of the chapter briefly outlines key directions for future research and IFPRI's strategy for tackling this work, before concluding with a summary of the report's topical and regional chapters.

## Food policy: 1975–2025

Starting in the mid-1960s, the widespread release of high-yielding varieties of rice, wheat, and maize in Asia and Latin America marked the advent of the Green Revolution. Significant research and development (R&D) investments by philanthropies and bilateral and multilateral donor agencies spurred the diffusion of science and technology, inducing unprecedented growth in agricultural productivity. Through the technological innovations of the Green Revolution, policymakers and scientists aimed to meet basic caloric needs by boosting yields of staple crops. Indeed, growth in the world food supply outpaced demand growth, leading to lower real food prices. However, the 1972–1975 world food crisis showed that the prevailing supply-side focus was insufficient, though necessary, to guarantee food security.

At the time, the primary role of food policy research was to complement and facilitate the beneficial diffusion of new agricultural technologies. It was widely understood that agricultural development was closely linked to broader economic growth, especially in the heavily agrarian economies of LMICs, where most people lived in rural areas and worked on farms (Johnston and Mellor 1961). Agricultural productivity growth was considered the key catalyst for development.[3]

However, the success of the Green Revolution relied on far more than improved crop varieties, requiring complementary advances in rural infrastructure, inputs and irrigation, services, natural resource management, and sectoral and macroeconomic policies (Barrett 2021). By the early 1970s, attention was turning to the social and environmental spillovers resulting from rapid agricultural transformation. No purely technical fix could sustainably resolve the food crisis that emerged in the early 1970s—the moment called for appropriate policy designs and reforms.

3 For more on this theory of development, see Christiaensen et al. (2011), Christiaensen and Martin (2018), de Janvry and Sadoulet (2010), Dorosh and Thurlow (2018), Johnston and Mellor (1964), and Timmer (1988).

The food crisis also accelerated understanding of the causes of hunger. The 1974 World Food Conference, convened by the Food and Agriculture Organization of the United Nations (FAO), was the first high-level global event to recognize food security as a pressing policy issue. The work of Amartya Sen (1981) showed that adequate food intake depends not only on food availability in the broader economy but also on individuals' access to food. Poverty was—and remains—the primary driver of food insecurity, necessitating policies that targeted it for the joint goals of hunger reduction and economic development (World Bank 1986). Ultimately, it was recognized that food systems outcomes concern people's agency in their daily lives—eating, working, raising families, and exercising voice in their communities (Sen 2000).

This expanded understanding of food security and the necessary policy environment was transformational. Raising incomes, especially among the poor, became the lead objective in global development strategies, and technological change was appreciated as a means to achieve that goal, not a goal unto itself. Moreover, policy responses—including those meant to foster agricultural technology development and diffusion, as well as extending far beyond—were recognized as a primary vehicle to advance that objective.

A major rethinking was also underway regarding the state's role in economic development and poverty reduction. In the 1960s and 1970s, state control of agricultural markets was widespread, especially in LMICs. This was most extreme in the communist countries in Asia and Eastern Europe, but many African, Caribbean, and Latin American states also controlled marketing and trade in agricultural products and food. Farmers were generally taxed, either explicitly or implicitly through export controls and exchange rate manipulation, to keep food prices low for urban consumers or to raise government revenue (Anderson et al. 2013). Governments in higher-income countries increased farm subsidies, which distorted domestic and global markets (Johnson 1991). These interventionist economic policies were called into question by the global macroeconomic crises of the 1970s and the resulting LMIC debt crisis of the early 1980s.

In response to these crises and the waning of the Cold War, the 1980s and 1990s saw a wave of market-oriented liberalization. In almost every country, the state's role in agricultural input and output markets shrank dramatically. Governments were expected to end market-distorting policies to unleash the economic growth potential of the private sector. Large-scale, market-oriented economic reforms in China starting in the late 1970s and in Viet Nam in the mid-1980s vividly demonstrated the potential for policy

reform to support agricultural transformation, economic growth, poverty reduction, and rapid improvements in food security (Liu et al. 2020; Rozelle and Swinnen 2004).

In the 1990s, pressure from global agricultural exporters also led to reforms in high-income countries following years of multilateral trade negotiations that resulted in the Uruguay Round Agreement on Agriculture and the World Trade Organization. These trade agreements further intensified globalization that had been stimulated by advances in transportation and information and communication technologies, as well as the liberalization of domestic markets.

On the supply side, globalization was reflected in growing trade in agricultural commodities and in cross-border investments in the food and retail sector by private companies (Barrett, Reardon et al. 2022; Reardon et al. 2003). On the consumer side, by the turn of the millennium, governments shifted away from large-scale food subsidies toward social protection programs, often built around cash transfer programs, recognizing the need to reduce food insecurity by directly addressing poverty. International humanitarian food assistance transitioned sharply from in-kind shipments originating in high-income agricultural exporting countries to cash-based models that leveraged commercial markets.

Liberalization of the agriculture sector necessitated a broader understanding of agricultural transformation. The focus of technology innovation, policies, and investments had to expand from on-farm agricultural production to the whole agrifood system, including the rapidly growing nonfarm economy (Haggblade et al. 2007, 2010; Hazell et al. 2024). The off-farm economy served as a source of employment and income for rural households, and the post-farmgate segments of agrifood value chains increasingly connected consumers and producers. Policy attention to nonfarm components was expected to strengthen on- and off-farm linkages to accelerate diffusion of improved agricultural practices and technologies, as well as to add value to postharvest farm outputs. As agrifood value chains expanded, innovations in processing, transport, food environments, and other services were required to improve value chain productivity, satisfy changing consumer preferences, and improve household welfare.

Despite earlier concerns about the impact of rapid population growth, the world saw a remarkable reduction in hunger and poverty between the 1970s and 2000s. Falling food prices—partly thanks to gains in agricultural productivity—led to a global decline in the prevalence of undernourishment, even as the world population rose to 6 billion people by the mid-2000s. Global

poverty rates declined rapidly, with the share of those in extreme poverty[4] falling from 44 percent to 21.5 percent between 1981 and 2005 (World Bank n.d.-d). The most significant progress occurred in Asia, where concerns that population growth would outstrip the food supply had been most pronounced (Ehrlich 1968). In China, the number of hungry people fell from around 300 million in 1980 to 120 million in 2005, even as the population grew from 981 million to 1.3 billion (Spielman and Pandya-Lorch 2009; World Bank n.d.-a). In India, the number of people facing chronic hunger declined from 210 million in 1990 to 194 million in 2015, while the population climbed from 865 million to 1.3 billion (FAO et al. 2015; World Bank n.d.-c). No country's path to agricultural development was the same, and progress stemmed from many different factors, including reforms to property rights, improved productivity in staple crops and livestock, better management of natural resources, expansion of markets, diversification of agricultural production, reformed trade and fiscal policies, and improved nutrition.

Unfortunately, the astounding achievements of these decades led to a sense of complacency in policymaking. Agriculture sectors had contracted sharply as a share of macroeconomic output, populations were urbanizing, and workforces were shifting off-farm.[5] With the problems of agricultural development and hunger seemingly well on the way to resolution, policymakers turned their attention and resources elsewhere. Starting in the 1990s, governments in high-income countries reduced public investments in agricultural R&D (Fuglie 2016), and foreign aid for agricultural R&D became scarcer and less flexible, including CGIAR funding (Barrett et al. 2009). Some emerging economies, such as China and Brazil, increased their own investments in agricultural R&D after 2000, but for most African countries, public investments remained well below their agreed-upon official target of 1 percent of agricultural value added.

Despite considerable progress, however, poverty and food insecurity were far from eradicated, and concerns about the sustainability of the food system were growing rapidly. Food security had improved in many LMICs, but in the mid-2000s, hunger persisted among 45 million people in Latin America, and the population facing hunger in sub-Saharan Africa had almost doubled—from 125 to 212 million people—since 1979. The impact of

4 Defined as living on less than $2.15 a day per person in 2017 PPP terms.

5 The global labor force in agriculture peaked in 2003 at just over 1 billion workers and has been declining steadily ever since (Fuglie et al. 2024), although the workforce in downstream agrifood industries grows at the same pace as economies overall, on average (Yi et al. 2025; Corong et al. 2024).

market-based reforms on agricultural development in Africa was mixed and, in some cases, produced worse outcomes for the poor (Kherallah et al. 2002; Swinnen et al. 2010).

Amid these persistent challenges, market volatility has also become a key characteristic of the world food system over the past 20 years. A surge in international grain prices caused two additional global food crises, the first in 2007/08 and then again in 2011/12. The disruption of livelihoods and supply chains by the COVID-19 pandemic reversed global progress in reducing poverty and malnutrition, and many low- and lower-middle-income countries still face a double burden of high food price inflation and large external debts resulting from the pandemic. The Russia–Ukraine War, begun in 2022, induced another spike in food, fuel, and fertilizer prices that further complicated pandemic recovery and impeded progress on food security goals. While global agrifood trade has tripled since 1975 and can compensate for domestic supply disruptions, increased trade can also expand the impact of national and regional shocks, especially in today's more volatile trade environment. Agrifood value chains have expanded rapidly in LMICs with scant oversight from the public sector, and concerns about concentrated corporate power—from agricultural input markets to consumer retail—are becoming more prominent in policy debates (Clapp 2025; Crespi and MacDonald 2022).

Overall, progress in reducing food insecurity and poverty has stagnated since the 2010s. The striking, steady progress of the 1960s to1990s has slowed and even reversed course. Income inequality is on the rise, including in Asia, where the benefits of the Green Revolution and liberalization were strongest (Fosu 2017). Globally, average agricultural productivity growth fell by nearly half between the 2000s and 2010s (Fuglie et al. 2024). The fragility of our food systems is also increasingly apparent. The past decade has been marked by a rise in both extreme weather events and environmental degradation and biodiversity loss related to foods systems and other human activities. In addition, the global increase in conflicts and displaced populations, including a threefold increase in the number of people living in conflict-affected areas since 1990 (World Bank n.d.-b), has greatly increased the prevalence of poverty and acute malnutrition in these places. The agricultural technology and market-oriented policy research of the prior decades now seems insufficient to manage the myriad shocks and stressors suddenly confronting the world's poor, record numbers of whom have migrated in search of better lives.

The nature of malnutrition challenges has also evolved over the past half-century. At the time of IFPRI's creation, concerns revolved around undernourishment from inadequate supplies of and access to dietary energy and

protein and around famine and hunger-related morbidity and mortality. While the share of undernourished people in the global population has declined rapidly, both undernourishment and poverty have become increasingly concentrated in regions facing complex emergencies and conflict (FAO et al. 2024). At the same time, nutrition and public health research has called attention to the drastic rise in obesity rates, especially in middle-income countries (Shekar and Popkin 2020). Research has also brought growing awareness to the formidable challenges of micronutrient deficiencies (vitamins and minerals), especially among women and children, and highlighted the presence of multiple coinciding nutrition burdens—undernourishment, micronutrient deficiencies, and/or overweight/obesity—within individuals, households, and communities. In response, in addressing food policy questions, researchers and policymakers have increasingly shifted their attention to the relationship between farm and post-farmgate production and marketing systems, including to commercial drivers of dietary choices, and chronic disease and to gender and youth issues.

## IFPRI's role, achievements, and challenges: 1975–2025

In the years leading up to IFPRI's creation, international food policy research was a relatively novel concept. The primary justification for an institution devoted to this research centered on the pressing need to expand the adoption of agricultural technologies, which policy was expected to facilitate. Experts including John Mellor, who was Chief Economist at the U.S. Agency for International Development when IFPRI was launched and, a few years later, became IFPRI's Director General, promoted agricultural development as an engine of economic growth and structural transformation, especially among smallholders in LMICs.[6] High-level officials in national governments and international organizations also sought better understanding of the world food situation and the international management of agricultural inputs and food in the wake of the 1972–1975 food crisis. With key support from the Ford Foundation, the Rockefeller Foundation, and the International Development Research Centre of Canada (IDRC), IFPRI was established in 1975 to address these needs (Farrar 2000). In 1979, the Institute joined CGIAR to facilitate policy research support to the existing Research Centers (see Box 1.3).

6 For more on this theory of development, see Barrett et al. (2010), Christiaensen et al. (2011), Christiaensen and Martin (2018), de Janvry and Sadoulet (2010), Dorosh and Thurlow (2018), Johnston and Mellor (1961), Mellor and Johnston (1984), and Timmer (1988, 1992).

In its early years, IFPRI's research focused on four global issues: world food trends, agricultural production policies, food subsidies, and agricultural trade policies.[7] It emphasized the creation of international public goods, using case studies to generate knowledge that could be applied to many, if not all, low-income countries. In a role that continues today, IFPRI made major contributions to developing theory, methods, strategies, tools, and especially empirical evidence to support sound policymaking for food systems, although the concept of "systems" was relatively uncommon 50 years ago. A key contribution during this period involved addressing questions related to world food production and consumption data and projections, collecting household survey data, and establishing more reliable data and forecasting methods (Pinstrup-Andersen 2000). In the 1980s and 1990s, IFPRI researchers studied the nuances of food access through research on intrahousehold resource allocation, with attention to gender as a cross-cutting issue (Alderman et al. 1995; Haddad et al. 1997). The Institute's research in the 1990s examined the sector's role in providing nutritious and diversified diets, not solely sufficient calories (Kennedy et al. 1992; von Braun and Kennedy 1994). This work helped influence the evaluation and design of conditional cash transfer programs and gender-sensitive targeting around the world. IFPRI research also focused increasingly on the environmental footprint of agriculture, including land and water resources, and later the relationship between agriculture and climate change. By 1993, IFPRI took on a more visible and direct role in shaping global food policy agendas. The *2020 Vision Initiative*, for which Director General Per Pinstrup-Andersen was awarded the 2001 World Food Prize, called for multistakeholder action on the intersecting issues of agriculture, nutrition, poverty, and the environment (Paarlberg 1999).

This evolution was reflected in and enhanced by the increasingly multidisciplinary range of IFPRI's research expertise and efforts. In the early years, most staff were economists, but the subsequent recruitment of experts from other disciplines contributed to a stronger focus on inter- or transdisciplinary research appropriate to policy issues that rarely adhere to disciplinary boundaries. Today, nutrition and health specialists make up 12 percent of IFPRI's research staff, and social and political scientists make up 5 percent. While economists remain the largest group, at roughly 70 percent (Hazell and Place 2025), the nature of IFPRI's economic analyses has evolved over the past 50 years with the growing influence of institutional economics, behavioral economics, and the use of randomized controlled trials in impact evaluation.

7 See Hazell and Place (2025) for a detailed analysis of how research programs at IFPRI have evolved over the past 50 years.

IFPRI's research aims to provide evidence and data that inform policy efforts to reduce malnutrition and poverty. While measuring the impact of this work is complex, the Institute's work has been shown to improve millions of lives (see Chapter 2). We highlight here IFPRI's work on liberalization, market and trade analysis, collective action, nutrition, and gender, and its support for capacity building.

IFPRI played a key role in informing the transition to agricultural trade liberalization in several countries. For instance, its analysis of Viet Nam's rice policies between 1996 and 1998 contributed to the government's decision to relax rice export quotas and internal restrictions on rice trade. The market-oriented policy changes generated substantial economic benefits for Viet Nam, including greater opportunities, incomes, and food security for 24 million people dependent on rice farming (Ryan 2000). When a severe flood in Bangladesh in 1998 caused a drastic reduction in rice production, IFPRI researchers helped the government decide to allow the private sector to import rice, thus avoiding a price spike (del Ninno et al. 2001). More stable prices for this staple crop likely benefited the 65 million people living below the national poverty line at the time.

Market and trade analysis continues to be a hallmark of IFPRI research, providing country-level, regional, and global insights. For instance, IFPRI and the African Growth and Development Policy (AGRODEP) Modeling Consortium developed the general equilibrium model MIRAGRODEP, which allows researchers to simulate the effect of trade policy on poverty, hunger, diets, and global greenhouse gas emissions. IFPRI also coordinates the AgIncentives Consortium and Database, a collaborative effort among predominant international organizations to monitor agricultural incentives. IFPRI's investments in cutting-edge modeling assets also include the International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT), launched in the 1990s. More recently, IFPRI has complemented its global trade and market models with domestic economy models (with disaggregated food systems and value chain segments) for a large group of LMICs, particularly the Rural Investment and Policy Analysis (RIAPA) model designed in 2016, which can be used to assess the interaction of global shocks, domestic policy reforms, and structural changes.

Although market-based reforms have changed the role of the state in agriculture, public investment remains fundamental to the transformation of agriculture and broader rural development. Starting in the mid-1990s, IFPRI began influential work using evidence to inform the design of cost-effective public policies that focused on smallholders, poor populations, and other

marginalized groups. Significantly, IFPRI conducted research for India and China in the early 2000s that informed public investments in rural development, enabling millions of people in these countries to exit poverty within the decade (Fan and Gulati 2008; Renkow 2010). During the same period, IFPRI started to evaluate social protection programs, conducting landmark evaluations such as those in Bangladesh, Ethiopia, and Mexico that inspired a culture of accountability in social policy (Nelson et al. 2015). Evaluations of the benefits and costs of different food assistance modalities (cash versus food versus vouchers) affected the strategies of countries and international organizations, such as the World Food Programme. IFPRI also led important work on biosafety and intellectual property policies related to biotechnology in food and agriculture (El-Chichakli et al. 2016; Pardey 2001; Falck-Zepeda and Zambrano 2011; Pinstrup-Andersen 1999; Spielman 2007).

IFPRI spearheaded research on community-led collective action related to natural resource management. The Institute provided evidence to inform policymakers on issues of property rights, especially around management of common property resources such as land and water. These efforts also helped civil society organizations and marginalized subpopulations resist elite capture of valuable resources (Markelova et al. 2009; Meinzen-Dick 2007; Meinzen-Dick et al. 1997).

Research on nutrition policy has long been central to IFPRI's work on food security. In the 1980s, IFPRI showed that increased caloric intake as a result of poverty reduction did not automatically lead to improved nutrition. Work considering the role of gender found that putting additional income in the hands of women was associated with higher per capita calorie and protein intake, as well as faster increases in children's growth. IFPRI also provided evidence on the importance of early nutrition for development and well-being later in life. For example, in the 2000s, IFPRI's nutrition research in Latin America and the Caribbean and in other countries provided high-quality evidence that improving nutrition in children's first 1,000 days is critical for their development, findings that have contributed to widespread adoption of preventative nutrition approaches (Grajeda et al. 2005; Hoddinott et al. 2008). At the turn of the century, IFPRI researchers were among the first to document and draw wide attention to the "double burden" of malnutrition, referring to undernutrition and obesity. In 2003, IFPRI together with other CGIAR Centers established HarvestPlus, a multicountry program focused on facilitating policy for the development and scaling of improved and biofortified crop varieties. Since the 2010s, IFPRI's research linking nutrition with agriculture, social protection, and extension programming in Bangladesh and

### BOX 1.1 IFPRI and the World Food Prize

IFPRI's research and thought leadership has been recognized three times by the World Food Prize. In 2001, Dr. Per Pinstrup-Andersen (then Director General of IFPRI) received the award in recognition of his role as "the catalyst behind the groundbreaking 2020 Vision Initiative, and for his contribution to agricultural research, food policy, and uplifting the status of the poor and starving citizens of the world." In 2016, four scientists, including Dr. Howarth Bouis from IFPRI, received the award for their "development and implementation of biofortification, breeding critical vitamins and nutrients into staple crops, thereby dramatically reducing 'hidden hunger.'" In 2018, Dr. Lawrence Haddad (then with IFPRI) received the award with Dr. David Nabarro for their "individual and complementary global leadership in elevating maternal and child undernutrition to a central issue within the food security and development dialogue at national and international levels."

**Source:** World Food Prize Foundation, accessed May 2025. www.worldfoodprize.org/en/laureates/20002009_laureates/

other parts of South Asia has demonstrated the potential for multisectoral approaches to improve diets and health (Ruel and Alderman 2013). These initiatives reflect not only the widening scope of nutrition and food security in research and practice but also IFPRI's ability to lead and collaborate on generating such change. Several of these programs have contributed to major nutrition and health policy changes in countries where IFPRI was active, and two IFPRI researchers were awarded the World Food Prize for their work in these areas (see Box 1.1).

For decades, IFPRI has also emphasized the role of gender both in its research strategy and analyses. IFPRI's transformative work on gender issues, both conceptually and empirically, has been widely recognized. Early work helped to push economists to recognize how neglect of intrahousehold decision-making dynamics could lead to poorly designed policies and project interventions (Haddad et al. 1997; Quisumbing 2003; and Udry et al. 1995). The IFPRI-developed Women in Agricultural Empowerment Index (WEAI) and related tools are now widely used in surveys, program evaluations, and analyses throughout LMICs (Alkire et al. 2013; Malapit et al. 2019; Meinzen-Dick et al. 2019; Moore et al. 2023; Sraboni et al. 2014).

In the early 21st century, the concept of food systems began to take hold as scholars and policymakers recognized the need to grapple with the close interconnections between natural systems and human activities and across

all actors along food value chains. IFPRI's solution-focused, interdisciplinary research teams were well-positioned to undertake the integrative work required to tackle complex food systems challenges.

IFPRI's broader research focus and the shift to more integrated and interdisciplinary research coincided with another important transition in the Institute. IFPRI began to supplement its generalizable knowledge products with demand-driven, country-specific capacity strengthening work and more contextualized policy research. First started on an ad hoc basis, this expansion evolved into a more deliberate decentralization strategy with the establishment of country strategy support programs in 2003. Although IFPRI began as a small institution with most staff based in Washington, DC, more than half of its multinational staff now work in LMIC offices, where they engage with civil society, government, and private sector partners. The network of regional and country offices provides IFPRI with unsurpassed capacity to integrate deep local knowledge and policy influence with evidence from global research across diverse contexts to inform policies (Benin et al. 2018). IFPRI researchers routinely co-design and co-develop research projects with partners, elevating their ideas and voices and ensuring they are recognized for their intellectual leadership and innovative contributions.

Throughout its 50-year history, IFPRI has been in the vanguard of changes in research objectives and strategies, as well as addressing unexpected crises. When the 2007/08 food crisis struck, IFPRI launched a unique communications campaign that engaged high-level policymakers and the media with findings generated by its models, evaluations, and open-access data. As part of its mandate, IFPRI has remained active in providing rapid analyses on food crises, their drivers, and effective responses, as reflected by past and ongoing work related to the COVID-19 pandemic, the Russia–Ukraine war, and a host of other conflicts, using its unique combination of global and local models, accumulated knowledge, and analytical capacity (Glauber and Laborde 2023; Swinnen and McDermott 2020).

Alongside its modeling and quantitative analysis, IFPRI has made significant contributions to research and innovation in governance and the political economy of food systems, which are crucial factors in policymaking. Its capacity strengthening work has enhanced analytical capacity among institutions and individuals in numerous countries (Kuyvenhoven 2014). Together, these have positioned IFPRI as a recognized thought leader and convener around policy design, formulation, and implementation related to food systems, directly and indirectly shaping both policies and lives.

## Food policy for the future

Fifty years after IFPRI's founding, the world again faces a global food crisis. But today, unlike 50 years ago, climate change, including more frequent extreme weather events, is slowing productivity growth (Ortiz-Bobea et al. 2021) and increasing the volatility of agricultural production and prices. Food systems are major contributors of greenhouse gas emissions, but they also face harm from the changing climate (IPCC 2023; Rohr et al. 2019; Urban 2024). Climate change has a disproportionate impact on tropical regions where productivity growth and poverty reduction have been slowest, creating unique risks for the world's poor and vulnerable (Crippa 2021; Lipper et al. 2014; Rezaei 2023; Willett et al. 2019). The global population has more than doubled since IFPRI's creation, straining the limits of land and water resources. Meeting rising food demand will require expanding supply while also identifying and scaling up novel means to reduce the water, land, and chemical footprints of agrifood systems. But just as policy research helped overcome major challenges half a century ago, it can also address these overlapping crises in the coming years. While the chapters of this report point to various specific areas for research, many highlight the imperative for policy research to address several broad challenges, as described here.

### Improve diets, nutrition, and food environments

The challenge of meeting minimal caloric needs in the 1960s and 1970s is no longer salient, outside of complex emergencies arising from climate and conflict. In these contexts, the primary research questions must focus on improving the speed and cost-effectiveness of humanitarian response. For most of the world, the main nutritional challenges now involve micronutrient deficiencies and overweight and obesity, even in LMICs, not a shortage of calories. Food policy research must identify and address both structural (commercial and political) drivers of unhealthy food environments and ways to most effectively shift the behaviors of all food systems actors toward healthier dietary patterns. R&D investments and policy need to move production and consumer behavior toward a healthy balance of staple cereals, roots, and tubers and relatively more expensive, more nutrient-dense foods—such as fruits, nuts, vegetables, and animal-source foods—and make healthy diets affordable for the roughly 3 billion people for whom they are unaffordable today (FAO et al. 2024). Increased investment is needed in R&D throughout agrifood value chains—both in primary production and in processing methods that affect diets and health (Schneider et al. 2023)—and in food systems more broadly to boost the availability and accessibility of more sustainable, healthier foods.

### Focus on resilience and inclusion for vulnerable people and places

Food policy research must continue to shift its geographic focus to sub-Saharan Africa and the conflict- and disaster-affected areas of Asia and Latin America and the Caribbean. Poverty and malnutrition are concentrated in these places, where growth in food demand over the coming decades will be fastest but productivity is lowest and slowest growing. Renewed attention to resilience has emerged amid increased disorder and volatility in food systems, not only from weather-related shocks but also those related to conflict, disease, and macroeconomic policy shocks. The recognition of differences in vulnerability to malnutrition and various other risks has also elevated attention to inclusion, particularly of women, leading to a call for contextualized solutions that are sensitive to the often-intersecting needs of the poor, women, youth, and other marginalized and vulnerable populations.

The rise of conflict and fragile environments over the past 15 years affects both the focus of research and the logistics of its local engagement. IFPRI is currently active in several conflict-affected areas in Asia and Africa, where its work is especially relevant, as it is sometimes the sole on-the-ground source of high-quality, objective information on the food and economics situation. Working in these areas obviously implies major challenges and risks for staff and for research design and implementation. IFPRI's research on fragility and conflict-affected areas and societies is likely to grow in importance in the coming years, as multiple crises exacerbate fragility in weak institutional environments, and as the world increasingly recognizes that most people at risk of famine are concentrated in conflict-affected areas.

### Take on the challenge of new technologies

The rapid development of new technologies, combined with the dramatic growth of the private sector, has profound implications for the distribution and ownership of innovation in agricultural technologies and innovations. The rapid diffusion of information and communications technologies and the digitization of technologies have extended the private sector's reach into even remote, low-income rural areas, raising a host of new privacy concerns and widening the gap between those who are digitally connected and those who are not. The dawning era of artificial intelligence (AI) within food systems magnifies these concerns, while also multiplying opportunities for accelerated innovation.

### Engage with the private sector and value chains to meet food systems goals

The private sector has become an essential partner in ending poverty and malnutrition. The financing needs for R&D and innovations now far exceed what governments and philanthropies can and will provide, while pre- and post-farmgate value chains have grown immensely. Moreover, the private sector plays a key role in developing technologies that could radically reshape food systems, from AI to alternative proteins and vertical farming (Swinnen et al. 2024). As a result, off-farm companies have great potential to increase access to technologies and finance across the whole food system (Yi et al. 2021). In fact, most agricultural R&D now occurs in the private sector (Fuglie 2016), and research organizations such as IFPRI can contribute to better outcomes through collaboration. Nevertheless, policy researchers must be mindful of the potential mismatch between the commercial interests of private sector firms and the broader societal goals espoused by not-for-profit organizations.

### Leverage public investments

With important gaps in private sector investment in R&D (UN et al. 2021), key public investments will remain important. Novel public–private partnerships and new forms of financing are needed to mobilize and leverage these resources. Significant room remains for the food policy research community to engage public sector and civil society institutions, and to use available sources of public funding more effectively. One high priority is reform of existing public support for agriculture, which remains highly distortionary and often promotes unsustainable practices (Gautam et al. 2022). While distortionary subsidies generate short-run gains for politicians, this money could be better used for future-oriented R&D. Research is greatly needed to help design these policy reforms to address political constraints while providing more efficient and sustainable outcomes.

### Partner for interdisciplinary research and policymaking

Achieving policy reforms is complicated by the legacy institutional structures of governments and donors that make it difficult to identify institutional entry points and feasible political strategies. All countries have ministries of agriculture, environment, health, and trade, among others, but none have ministries or agencies with authority that spans food systems. Likewise, donor agencies rarely organize internally to cover the broad policy spaces relevant to food systems issues, although some local and civil society organizations

undertake this work. These broad issues can best be addressed by developing a range of partnerships and maintaining a local presence in key countries, while remaining connected globally.

### Build research capacity and decolonize research

As improved technologies and market access become ever more knowledge intensive, building human capital and research capacity remains critical for progress. This includes the technical capacity of experts in regions where performance improvements to agrifood systems are most urgently needed. As lessons from the past 50 years show, technologies, policies, and institutions developed in and for high-income countries rarely transfer easily, or with similar effectiveness, to food systems in Africa, Asia, or Latin America and the Caribbean. The future agenda for food policy research must therefore be closely linked to capacity sharing and capacity maintenance activities that enhance partners' ability to adapt and scale research findings, as well as to identify follow-on research needs.

The imperative for capacity sharing reflects the shifting landscape of global governance and finance. Growing skepticism about both globalization and multilateralism, as well as increased political polarization and rejection of modern science, increasingly complicates coordinated international responses to various crises. Yet growth in South–South cooperation and the economic rise of Brazil, China, India, South Africa, Viet Nam, and other countries suggest that new geopolitical developments also provide opportunities.

Development research and practice is also increasingly sensitive to the need for decolonization and local engagement. IFPRI was founded at the end of the 20-year period in which former colonies won their independence from European rule. Today, the persistent, pernicious legacy of colonization remains all too real, manifested in both economic performance (Acemoglu et al. 2001) and the composition of the scientific workforce (Beintema 2020). IFPRI is thus committed to research decentralization, which entails working with local researchers in country-based offices, and to capacity sharing with partners throughout the Global South. For an international research organization such as IFPRI, success should involve becoming steadily less central or assuming a different role as local partners take on more of the work. While local partners still vary considerably in their human capital, analytical skills, and policymaker outreach capacity, these capabilities have improved tremendously. Continued advances by local partners will require that IFPRI's role evolves over time.

## IFPRI's strategy

Looking ahead, IFPRI's primary task is still to marshal the best possible research—but now, that research must help chart a transformation from current crises toward healthier, more equitable, resilient, and sustainable agrifood systems throughout the world (Barrett, Benton et al. 2022). Just as the initiatives begun 50 years ago confronted the challenges of that moment and generated unprecedented advances in agricultural productivity, food security, and poverty reduction, today's research can help us navigate the challenges and opportunities of the decades ahead.

At the end of 2025, IFPRI will launch a new institutional Strategy, organizing its future work around four research components (Box 1.2) that target the five impact areas defined in the CGIAR Research and Investment Strategy (Box 1.3). The four components are (1) to develop a clear understanding of the context and outlook of a particular situation; (2) to test, adapt, and scale potential solutions; (3) to build an enabling environment to facilitate change and reforms; and (4) to build and strengthen local capacities.

For IFPRI, crucial conditions for success will include continued attention to research quality, a well-organized communications strategy, and a sound financial foundation. To secure the quality of its research and disseminate findings to broader academic audiences, the Institute maintains a strong commitment to publishing its research in top peer-reviewed journals. IFPRI consistently ranks among the world's top producers of peer-reviewed research related to food systems. Through its open-access policy, IFPRI makes its research and datasets freely available online to enable more stakeholders to employ its evidence-based insights and recommendations. The Institute also engages with policymakers and external stakeholders through multiple channels to ensure its research fills critical evidence gaps and aligns with local assets and needs.

Today's challenging and rapidly changing global funding landscape not only affects food systems transformation itself but also the funding of organizations such as IFPRI. Changes include a radical shift from core funding to project-based funding over the past 15 years and recent sharp reductions in overseas development assistance from traditional donors, which have accelerated a long downward trend in public investment in agrifood R&D by the high-income world. The limited capacity of other funding sources, for example, from middle-income countries and private finance, to replace bilateral donors poses a major challenge for the future. While private finance has the potential to provide ample resources for some much-needed investments,

### BOX 1.2 IFPRI's approach to research

IFPRI works with its partners in four ways: to develop a clear understanding of the context and outlook of a particular situation; to test, adapt, and scale potential technological and policy solutions; to build an enabling environment to facilitate change and reforms; and, finally, to strengthen research methods and capacity.

**CLARIFYING THE SITUATION AND OUTLOOK.** To inform relevant and effective programs and policies, IFPRI works to understand the immediate regional, country, or local context and formulate a vision of its future. This helps illuminate immediate challenges, especially among the most vulnerable populations, and provides a baseline for long-term planning. IFPRI's foresight analytics and policy models also enable decision-makers to imagine how potential future scenarios such as shifts in public expenditures, trade shocks, or climate uncertainties will affect hunger, poverty, and development in the long term—and provide tools and frameworks to plan and prioritize policies accordingly.

**TESTING, ADAPTING, AND SCALING DIVERSE SOLUTIONS.** After identifying promising pathways for food systems transformation, IFPRI develops corresponding institutional, technical, governance, policy, and behavior change interventions and innovations. By implementing solutions with local and global partners, the Institute can evaluate their effectiveness, their adaptability to varied contexts, and the feasibility of scaling them to reach a broader population. IFPRI's implementation and evaluation work is often accompanied by concurrent efforts to identify and advance policy and incentives that will facilitate scaling. Once tested, evaluated, improved, and scaled, these interventions may go on to improve livelihoods, well-being, equity, and inclusion in and beyond the targeted communities.

**SHAPING ENABLING ENVIRONMENTS.** To achieve large-scale and lasting impact, innovations and interventions require enabling environments, which include governance, trade and markets, and investments. IFPRI studies the institutional, governance, and regulatory frameworks, as well as the cultural and financial contexts that can put into place sustainable solutions to malnutrition and poverty. It engages policymakers, donors, the private sector, and civil society to ensure that research supports decision-making and that food security, healthy diets, livelihoods, and gender equality are at the forefront of global agendas.

**STRENGTHENING RESEARCH METHODS AND BUILDING CAPACITY.** IFPRI supports researchers and organizations by developing research methods and tools and providing training and opportunities for collaborative work. The Institute also collects and disseminates unique databases and analyzes organizational performance. These efforts aim to build the capability of researchers and organizations to provide evidence that supports agenda setting, tests innovations, and changes policies.

### BOX 1.3 IFPRI and CGIAR

IFPRI officially became part of CGIAR in 1979. CGIAR, then known as the Consultative Group on International Agricultural Research, was founded in 1971 to coordinate international agricultural research in low- and middle-income countries. CGIAR evolved from efforts that date back to the 1940s, when breeding work by predecessor programs of the International Maize and Wheat Improvement Center (CIMMYT) in Mexico and the International Rice Research Institute (IRRI) in the Philippines set the stage for the Green Revolution. These first CGIAR Centers engaged with social scientists, though only for specific purposes. For instance, CIMMYT and IRRI undertook a limited range of studies on the social and economic obstacles to farmers' adoption of more productive agricultural technologies. As an institution devoted to policy research, IFPRI could address questions related to policies and technology, as well as broader ones related to prices, trade, taxes, and public investment. IFPRI therefore filled a gap in CGIAR's overarching strategy to achieve global food security.

Today, IFPRI and its food policy research remain important within CGIAR. It has aligned its work to the five CGIAR Impact Areas, as documented in the 2030 CGIAR Research and Innovation Strategy:

**NUTRITION, HEALTH, AND FOOD SECURITY.** IFPRI advances research and recommendations to diversify diets, enhance agrifood value chains, boost productivity of nutrient-dense foods, and advocate for biofortification.

**POVERTY REDUCTION, LIVELIHOODS, AND JOBS.** IFPRI's policy research helps to strengthen markets and institutions, test and scale up social protection programs, and facilitate the development and adoption of improved crop varieties.

**CLIMATE ADAPTATION AND MITIGATION.** IFPRI integrates sustainability into food systems transformation planning and policies, explores innovative financing to fund climate research and investments, and disseminates climate-resilient production methods and varieties to help producers, communities, and countries mitigate and adapt to the disruptions that come with a changing climate.

**GENDER EQUALITY, YOUTH, AND SOCIAL INCLUSION.** IFPRI works to develop and evaluate gender-transformative interventions, improve data on inclusion and empowerment, and enhance opportunities for youth employment and entrepreneurship.

**ENVIRONMENTAL HEALTH AND BIODIVERSITY.** As part of its aim to strengthen ecosystem health, IFPRI generates models to estimate the impact of food systems on the environment and devise alternative pathways, explores improved resource governance mechanisms, and creates enabling environments for the adoption of sustainable agricultural technologies.

especially in infrastructure and R&D, there is a pressing need for policies and instruments that can combine private sector incentives with societal returns, while avoiding or carefully and transparently managing conflicts of interest. Policy research on creating an enabling environment to mobilize private finance for sustainable development initiatives, especially in sub-Saharan Africa, is just beginning (Barrett 2023; Kremer et al. 2020). This evolving funding landscape will require IFPRI to continuously evaluate and hone its comparative advantage to efficiently provide the greatest positive impact in a changing world.

IFPRI's relevance to first-order global challenges has never been greater. Food systems transformation is inevitable, and its pace in the years ahead will be brisk. An ambitious research agenda will be essential to inform actions by governments, donors, civil society organizations, and firms, as well as by individual consumers, producers, resource managers, and entrepreneurs. People throughout food systems seek to learn what works, why, how, and for whom, including not only government ministries and donor agencies but also farmers' and women's groups, those responding to disasters, and those making daily choices about how to manage limited budgets and the planet's finite resources so that their families and communities flourish. IFPRI's task in the years ahead, as it has been over the past five decades, is to provide the evidence that supports effective policies to sustainably reduce poverty and end hunger and malnutrition.

## Organization of the book

In the chapters that follow, this Global Food Policy Report analyzes topic areas crucial to agrifood systems development over the past 50 years. Each chapter provides both a historical review and a current assessment of the challenges and opportunities anticipated up to 2050, featuring IFPRI's past and present contributions to research, policy, and practice.

Chapters 2 and 3 examine the role of food policy research and agrifood system development in creating pathways for reducing poverty and malnutrition. **Chapter 2** examines IFPRI's impacts over the last 50 years, synthesizing case studies of impact and exploring how policy research organizations can measure their impact and overcome impact assessment challenges for the future. Through an assessment of Asia's Green Revolution and its lessons for other LMICs, **Chapter 3** examines how agriculture's role in structural change and economic development is evolving in ways that continue to redefine discourse, research, and action.

Chapters 4 to 7 focus on sustainability and natural resources along with the tenure rules and markets that shape farming decisions and practices. **Chapter 4** reviews the evolution of food policy research on climate change, food security, and food systems, reflecting on IFPRI's major contributions to understanding climate change impacts and identifying promising policies and investments for mitigation and adaptation. **Chapter 5** considers the broader intersection of agrifood systems and ecosystem health, including land, water, and energy systems. The chapter highlights how taking a systems view can best provide evidence and policy approaches to balance agricultural production with environmental sustainability.

Pivoting to the secure tenure of land and natural resources, **Chapter 6** examines foundational concepts and key lessons from the research, reviewing the variety of tenure arrangements, relationships between different forms of tenure and farming practices, and investments in resource management, and the effects of reforms, especially for women and youth. **Chapter 7** focuses on food value chains, with a discussion of the major drivers and revolutions that have shaped the growth, structure, and importance of these chains to economies, employment, and diets, as well as policy research contributions.

Chapters 8 to 10 explore key instruments used to support livelihoods at the farm level. **Chapter 8** applies IFPRI's "best fit" conceptual framework to examine the global evolution of agricultural extension and rural advisory services over the past 50 years, as well as the shift from a "transfer of technology" approach to a more sophisticated "facilitation for innovation" paradigm. **Chapter 9** looks at how evidence on crop genetic improvement has contributed to productivity, nutrition, environment, and poverty outcomes, as well as the hurdles to farmer uptake of new varieties and ways to overcome this challenge. Turning to agricultural insurance, **Chapter 10** examines how policy-oriented research has assessed and refined insurance options to facilitate farmer use and uptake, and explores how new technologies and approaches are creating opportunities for increasing coverage.

Chapters 11 to 14 analyze how polices can reduce vulnerability and inequities, including the role of social protection, ways to address different forms of malnutrition, the impacts of conflict, and the importance of gender. **Chapter 11** examines the development of increasingly sophisticated social protection programs and discusses the contribution of research to changing program approaches and policies, highlighting IFPRI's role in providing evaluations and recommendations. **Chapter 12** reviews the evolution of nutrition in both policy and programming, with particular attention to the

intersection of nutrition with agriculture, food systems, gender, and multisectoral approaches. **Chapter 13** focuses on hunger and undernourishment in fragile and conflict-affected areas, reflecting on changes in food policy research in these areas and highlighting how evidence has helped to clarify the linkages between conflict and hunger. **Chapter 14** examines the evolution of gender research in the context of the development discourse on gender, with a focus on agrifood systems, and highlights the need for intentional gender programming and transformative approaches to improve women's empowerment and achieve gender equality.

Chapters 15 to 18 examine macro-level factors related to governance, trade, public investment, and finance that determine whether and how policy change occurs. With a focus on political economy and governance, **Chapter 15** examines the key areas of decentralization, agriculture and food policy reform processes, political economy of distribution, and state capacity, as well as the need to build effective and legitimate global institutions for food systems governance. **Chapter 16** reviews the evolution of research on agrifood trade, looking closely at the contributions made by IFPRI and others, and considers how trade policy analysis can contribute to more stable and sustainable food systems in the future. **Chapter 17** addresses innovation in agriculture, exploring the evolution of research on technical change and public policy, including how research has supported priority-setting and policymaking, multistakeholder innovation platforms and partnerships, and scaling up of promising innovations. Looking at the financing of agricultural and food production, **Chapter 18** examines the various actors and channels in LMIC food systems funding flows, describes related policy research, and highlights possible policy options to mobilize future financing for food systems transformation.

Chapters 19 to 24 examine food policy and food policy research in six major world regions over the past 50 years and up to 2050. **Chapter 19** explores how Africa's agrifood policy landscape has evolved in response to complex challenges, including food insecurity, climate change, and socioeconomic disparities, and the research-based solutions offered to address these challenges. Looking to Central Asia, **Chapter 20** examines how food policy research informed market-oriented reforms and agricultural transformation, and assesses ongoing challenges, including climate change, land use, and markets and incentives. **Chapter 21** reviews the evolution of South Asia's food systems, covering its agricultural growth linkages, policymaking and investments in agriculture, and institutional innovations, and highlights how policy research has played a critical role in shaping national policies on food security, rural development, and nutrition.

Turning to East and Southeast Asia, **Chapter 22** analyzes how the alignment of research outputs, financial programs, and regional cooperation initiatives with national policy frameworks in the region has led to improvements in food security, nutrition, and livelihoods, though important challenges remain. **Chapter 23** draws on research by IFPRI and partners to outline the evolving food systems landscape in Latin America and the Caribbean, with attention to the region's role in supplying food exports and environmental services. With a focus on the Middle East and North Africa, **Chapter 24** synthesizes historical trends in policies and outcomes related to agricultural production, consumers, and food and nutrition programs, and assesses emerging policy issues and research priorities.

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