

The Political Economy of Reforming Agricultural Support Policies

Rob Vos, Will Martin, and Danielle Resnick

3.1 Introduction

In both developed and developing countries, agricultural support policies provide enormous transfers of resources to agriculture—about US\$817 billion per year worldwide in the 2019–2021 period (OECD 2022).¹ Some agricultural support policies, such as input subsidies, have boosted global food production, particularly of staple crops, thereby reducing hunger and poverty. Yet, there are serious concerns about their impacts on achieving sustainable, healthy, and inclusive food systems. Redirecting or “repurposing” agricultural subsidies toward investments that support both increased production and greater sustainability—such as agricultural research and development (R&D) and rural infrastructure—has the potential for win-win-win gains for people, planet, and prosperity.

This chapter first considers how shifts in agricultural support would affect global efforts to promote healthy, inclusive, and sustainable food system transformation. Since such reforms are contingent on political economy considerations, the chapter subsequently presents a framework for analyzing how interests, institutions, ideas and information, and policy characteristics intersect to facilitate or stymie reform efforts. Case studies of attempted reforms from different regions are presented that highlight the relevance of the framework. The chapter concludes by summarizing some potentially enabling political economy conditions for repurposing agricultural support policies.

¹ This chapter draws on material that was included in IFPRI (2022: Ch. 2). It is an abridged version of a longer paper prepared for the Food System Economic Commission (see Vos, Martin, and Resnick 2022). The authors are grateful to Jikun Huang, Bharat Ramaswami, and Johan Swinnen for their inputs into the case study material presented in this chapter. The authors are further grateful for research funding received from the EAT Foundation and the OneCGIAR research initiative “Rethinking Food Markets and Value Chains for Inclusion and Sustainability.”

3.2 Current Agricultural Support and Its Impacts

3.2.1 Current Support

Current agricultural support goes largely to agricultural producers, primarily in forms that affect market prices and distort incentives for producers and consumers. Agricultural support (provided by 54 countries for which comparable data are available) amounted to \$817 billion per year, in 2019–2021 (OECD 2022). Individual producers received \$611 billion per year in positive support (that is support excluding taxes on exports), representing 17 percent of gross farm receipts in OECD countries and 13 percent in the 11 emerging economies for which data are available. Of this support to producers, more than half, or \$317 billion per year, took the form of support through higher market prices paid by consumers (“market price support”), while the remaining \$293 billion was paid by taxpayers through farm payments (Figure 3.1), of which \$74 billion in the form of subsidies coupled to output levels or input use and \$200 billion in decoupled payments to farmers. Direct subsidies to consumers totaled \$100 billion per annum during 2019–2021 and \$106 billion was for “general services,” which include expenditures on agricultural R&D, rural infrastructure, and extension services.

Not all of this support comprises the use of government budget resources. The market price support (MPS) involves implicit transfers from consumers to producers by creating a price gap between domestic market prices and border prices for specific agricultural commodities. Border measures include tariffs, tariff rate quotas, or import licenses that raise domestic prices, benefiting the farm sector. Some emerging and developing countries, including Argentina, India, Indonesia, Kazakhstan, Russia, and Vietnam, implicitly tax producers of certain agricultural commodities through export taxes or export restrictions, which depresses the domestic prices of these products. This “negative” market price support amounted

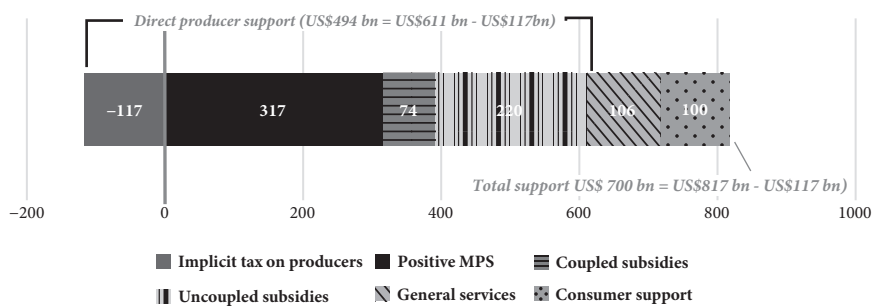


Figure 3.1 Agricultural producer support by main types of support, 2019–2021 (billions of US\$ per year).

Source: Compiled from data from OECD 2022.

to \$117 billion per year (Figure 3.1), but rose significantly in 2022, as many countries responded with such measures to the global food, feed, and fertilizer market impacts of the war in Ukraine.

Support measures requiring fiscal expenditures amounted to \$500 billion per year in 2019–2021. As mentioned above, these include the direct transfers to producers in the form of coupled and decoupled farm payments amounting to \$293 billion per year, consumer subsidies (\$100 billion) and the general services support (\$106 billion). Thus, only a limited portion of total support (about 12 percent) is for R&D and agricultural innovation systems, infrastructure, and other general services for the sector, with only 4 percent of total support allocated specifically to R&D in 2019–2021.

In absolute terms, agricultural support is concentrated in a few large economies (Figure 3.2). The European Union (EU) and the United States (US), both large agricultural producers, jointly account for two-thirds of the total support provided by rich countries, amounting to around \$230 billion per year by far most of which is in the form of direct farm payments. The support in the non-OECD developing countries increased to \$360 billion per year in 2019/21, of which China alone provided about \$280 billion per year mostly in the form of market price support to farmers. Other non-OECD developing countries provide most support in the form of coupled direct payments to farmers and general services. For this group as whole, MPS is negative, meaning a net tax on producers, mainly on account of India's policy stance.

For the discussion on repurposing of the present support, the focus of this chapter, three important points can be made: (a) agricultural support is huge and much takes the form of market distorting measures; (b) repurposing of this

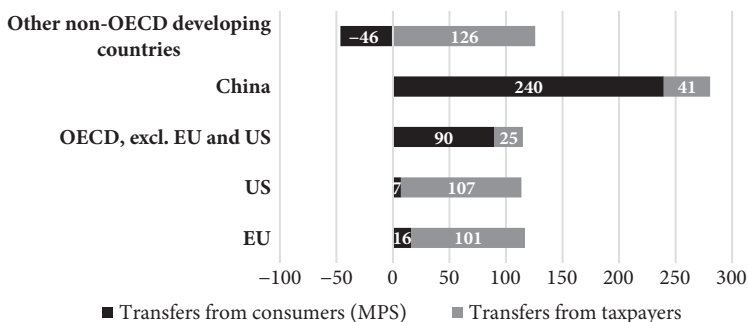


Figure 3.2 Agricultural producer support by main countries and country groupings, 2019–2021 (billions of US\$ per year).

Notes: Transfers from consumers refer to market price support; transfers from taxpayers include coupled and uncoupled payments to farmers and general service expenditures.

Source: Compiled from data from OECD 2022.

support involves not only reallocation of budgetary resources, but importantly also changing price incentives through reform of MPS; and (c) degrees of support vary greatly across countries but concentrated among a few large economies, implying that an even-handed repurposing agenda serving global objectives will require international cooperation and overcoming domestic political economy constraints to achieve that cooperation. Before turning to the nature of the desired policy reform and the political obstacles to such reform at the national level, we first assess the impacts of the current support.

3.2.2 Impacts of Current Support

Support coupled to output or input use increases output, leading to increased greenhouse gas (GHG) emissions from agricultural production and land conversion for agriculture. Some types of support—such as fertilizer subsidies—also encourage the use of production techniques that increase emissions per unit of output. Support provided through trade barriers, however, may reduce global emissions because it couples incentives to increase output with higher prices to consumers. The strong focus of many agricultural support policies on promoting staple crops has improved access to basic calories but has done much less to improve dietary diversity. Moreover, social impacts of support are often regressive—benefiting wealthier, commercial farmers, while denying poorer farmers access to markets—and raising the cost of nutritious food and harming poor consumers.

Government support to agriculture usually is justified by perceived needs to protect farm incomes, ensure food availability, and promote agricultural productivity. However, its efficiency in delivering benefits to farmers is low, providing a return to agriculture of 35 cents for every dollar spent (Gautam et al. 2022); with the remainder either shared with consumers or dissipated as economic waste. Much of those 35 cents are likely capitalized into land values (Ciaran et al. 2021). Only a small share of support is in the form of fully decoupled transfers despite their potentially much higher transfer efficiency. Similarly, only a small share of total support is invested in public goods, including R&D and rural infrastructure, although both the private and social returns of such investments are estimated to be very high. Many interventions create trade conflicts between countries and very few help reduce the GHG emissions that are driving climate change, despite the threat of devastating climate change impacts on agriculture, especially in tropical zones.

The need for reforms is now well recognized (see e.g., OECD 2021, 2022), and the urgency of reducing GHG emissions and adapting to climate change has added impetus to the calls for reform. However, recent studies have shown that simply eliminating all existing support would not greatly reduce GHG emissions, but

would depress farm incomes, increase poverty, and increase the cost of healthy diets (Searchinger et al. 2020; FAO, UNDP, and UNEP 2021; Laborde et al. 2021; Gautam et al. 2022). Public discourse, including at the 2021 United Nations Food Systems Summit and during the climate discussions at COP26 and COP27, thus has shifted to how existing support might be repurposed to create better incentives for producers and consumers.²

3.2.3 Global Scenario Analysis: Removing All Support

To understand the impacts of current support, a series of recent studies estimated the impact of a complete withdrawal of current agricultural support on GHG emissions, farm output, poverty, food security, and diets (Laborde et al. 2020, 2021; FAO, UNDP, and UNEP 2021; Gautam et al. 2022). The results show that current measures have only a small influence on the global overall volume of agricultural production (see Figure 3.2), although they do have important impacts in individual countries. The small impact on the current level of output should be understood in the context of decades-long sustained support to the buildup of present systems, and that the removal of such support now would not lead producers to suddenly reverse all they have built up in capacity with the support. Moreover, at the global level, withdrawal of domestic subsidies and border measures offsets impacts on production and emissions. Removing subsidies reduces both global food output and emissions, but removing border protection, which acts as a tax on demand, slightly increases global output and emissions. The combination of removing both subsidies and border support slightly reduces global output and GHG emissions from agriculture (see Figure 3.3), lowers farm output, and raises the costs of healthy diets.

The impacts of removing all agricultural subsidies also differ substantially between rich and poor countries. As reported in Gautam et al. (2022), the drop in per worker farm income would be four times larger in developed countries than in developing countries. In contrast, farm employment would decline in developed countries but increase in developing countries, where higher world prices would induce a supply and employment response. However, global poverty would rise as higher food prices push more people below the poverty line. GHG emissions would fall by over 6 percent in the developed countries, but by only 1.5 percent globally. The distributional impacts, if the scenario analysis is deemed credible, would suggest that crude policy reform undoing existing support is bound to face strong opposition from those having to pay a price for, at best, very minor gains toward one societal goal only.

² See: <https://foodsystems.community/game-changing-propositions-solution-clusters/repurposing-public-support-to-food-and-agriculture-2/>

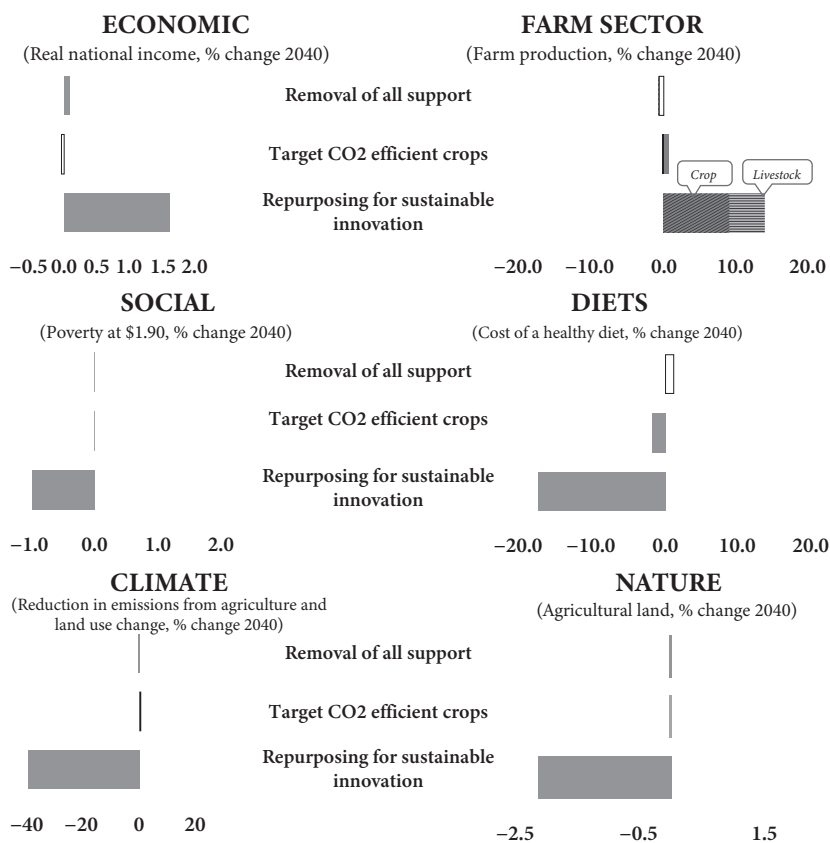


Figure 3.3 Global implications of repurposing domestic support (% change relative to baseline projections for 2040).

Note: **Dark-shaded** bars indicate movement toward societal goals; **white** bars indicate movement away from societal goals.

Source: Gautam et al. (2022).

3.2.4 Global Scenario Analysis: Repurposing Support

Given the above results, how can the substantial resources that support agriculture be repurposed in ways that simultaneously provide strong incentives to reduce GHG emissions, improve food system efficiency and farm productivity, and help combat poverty, hunger, and malnutrition? Additional model-based analysis (Gautam et al. 2022) indicates that investing an additional 1 percent of agricultural output value (or about \$45 billion in 2021 prices) in R&D for technologies that both increase the efficiency of production and reduce emission intensities, complemented by incentives to farmers to adopt those technologies, could achieve greater gains with fewer trade-offs than simply eliminating subsidies.

This scenario involves countries repurposing about 15 percent of 2016/18 domestic support into R&D that generates green innovations which reduce emission intensities by 30 percent while raising productivity by 30 percent. These improvements are consistent with those reported for key innovations, such as modified diets for ruminants and alternate wetting and drying for rice. The scenario results are promising: global welfare and food output increase; food prices fall, making food and healthy diets more affordable for many people; and poverty rates fall worldwide (Figure 3.3). Global GHG emissions from agriculture and land use change would drop by about 40 percent, both because of the direct reduction in emissions from crop production and because higher productivity reduces the need for agricultural land. Farm incomes would fall with the removal of subsidies, although returns to farm labor would rise if policy reform were combined with rural development policies to reduce the barriers to movement of labor out of agriculture.

Such a win-win-win scenario could suggest there should be a straightforward road to reform. Yet, political obstacles may well emerge, as farmers may be more uncertain about the productivity and net income gains of innovations than the model scenario assumes and may not be persuaded to accept reform for gains obtained at some distance from their farms (i.e., poverty reduction in other parts of the world or containing climate instability globally in a distant future). Hence, when assessing options for reform and their political feasibility, a deeper dive is needed into factors behind resistance to reform.

3.3 Political Economy Framework for Reform

As the modeling results illustrate, reforms to, and repurposing of, agricultural support policies could produce significantly better outcomes for poverty reduction, for food security and nutrition and for the natural environment, especially if carried out in an internationally coordinated manner. However, achieving outcomes that will be socially optimal for the planet in the longer-term require policy shifts that may face considerable political resistance in the short term, especially if certain groups perceive that they may lose out or face considerable adjustment costs. Moreover, not all optimal policies can be feasibly implemented in a particular country context. International coordination therefore requires first understanding possible sources of domestic resistance or support for a reform agenda and be calibrated to extant state capacities.

To do so, we provide a framework in Figure 3.4 to show how interest groups, institutions, ideas, and information, and policy characteristics combine to delineate who exercises leverage, opportunities for debate and deliberation, influences on policy design, and capacities for implementation. Where those different elements intersect is the win-set, which refers to the range of alternative instruments

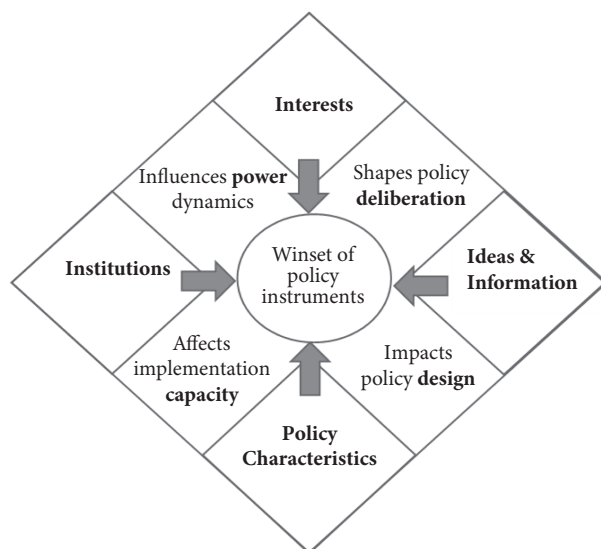


Figure 3.4 Identifying political economy influences on policy options

Source: Authors' depiction.

that a majority of stakeholders prefer compared to the status quo. In other words, the win-set encompasses the most politically feasible policy instruments for repurposing agricultural support, which may include re-allocating subsidies for agricultural R&D, removing price supports, or attaching environmental conditionalities to subsidies. The framework is then used to review recent reform attempts in different national and regional settings in order to draw broader political economy lessons.

3.3.1 Interest Groups

Interest groups play a central role in the political economy of agricultural support policies. Some individuals derive their interests from material goals based on either their position in the economy or in the political arena. The opportunity to secure profits, votes, job security, and prestige, among others, may all shape who favors which policies. For instance, political economy analyses of fertilizer subsidy programs hypothesize that politicians favor these programs because they maximize their chances of re-election (Dionne and Horowitz 2016; Mason et al. 2017). The growing emphasis on food systems, rather than agriculture alone, upends traditional fault lines across interest groups because it requires considering a more complex array of interests and coalitions (Anderson et al. 2013; Swinnen 2015).

Just like individuals, countries have their own interests. For instance, countries may attempt to protect national food security by restricting exports of staple foods or lowering import tariffs on such products (as happened, for instance, in response to global food price crisis during 2022), even though this may end up exacerbating price increases in global markets (Martin and Minot 2022; Glauber et al. 2023).

3.3.2 Institutions

Not all interest groups have equivalent influence and power to secure their objectives (Grossman and Helpman 1994). More concentrated interest groups are frequently able to harness the support from policymakers to gain distortions that narrowly benefit them, even at considerable economic, environmental, and social costs to the economy (Anderson 1995; Olson 1965). In rich countries, for instance, farmers can organize much more easily than in poor countries and have historically been able to secure much more support than farmers in poor countries. And farmers in industries that are geographically concentrated and require close coordination for processing—such as dairy and sugar—tend to get higher protection than those more geographically spread and sold without substantial processing, such as fruits and vegetables.

The structure of institutions largely shapes both whose interests gain traction with policymakers and the prospects for policy coordination and implementation. The importance of institutions spans a wide range of modalities, including domestic regime types (e.g., democracies, autocracies, anocracies), parliamentary and presidential systems, federal or unitary settings, the World Trade Organization (WTO), and international conventions. Sometimes, decisions on agricultural policy may be controlled by a small but politically powerful constituency, epitomized by military involvement in wheat flour milling in Sudan, fertilizer production in Pakistan, or agricultural extension in Uganda (Resnick 2021a, 2021b). Attention to such institutions also underscores the “two-level games” (Putnam 1988), or simultaneous negotiations at national and international levels. In such instances, the gains from international cooperation are diffuse but the costs are concentrated among certain interest groups and sectors who may have substantive domestic influence to block reform.

3.3.3 Ideas and Information

Ideational concerns can also shape interests (see Chapter 1). In this view, policy preferences are derived from historical experience, cultural norms, and societal expectations (Blyth 1997; Abdelal 2009). This may lead policymakers and citizens to, for instance, favor the market over the state, food security over dietary diversity,

or nationalism over multilateralism. A particularly salient ideational view adopted by many governments is that food self-sufficiency is tantamount to food security (Sen 1981). Such aspirations can contribute to autarkic practices, such as Nigeria's year-long border closure with Benin in 2019 to increase domestic production of rice. Often, ideational and material interests intersect; concerns about self-sufficiency can provide justification for policies that ultimately support a country's material interests in creating jobs for farmers or ensuring lower food prices for consumers.

Information derived from empirical analysis, media outlets, or learning of policy experiences from other contexts can, like ideas, cause interest groups and policy actors to update their preferences. Despite the conventional wisdom that evidence should inform policymaking, there are disparate understandings of what constitutes evidence. The credibility of the source, the means of diffusion and the background of decisionmakers all determine how information is perceived and whether it is acted upon (MacKillop and Downe 2022). The credibility of the source and the means of diffusion do, however, play a key role in determining how information is perceived and whether it is acted upon. As discussed in Chapter 1, this is especially true in more polarized political environments that can result in even high-quality information being dismissed if it does not resonate with extant biases of policymakers (Kosec and Wantchekon 2020). Moreover, the way in which information is disseminated can influence which policy instruments may be more viable. On the one hand, mass media may ensure that a larger set of affected stakeholders are aware of a policy's distributive implications (Olper and Swinnen 2013). On the other hand, decisionmakers may obfuscate the details of instruments to avoid alienating groups that may stand to lose the most (Swinnen 2018).

3.3.4 Policy Characteristics

Policies have different characteristics, including the dispersion and concentration of costs and benefits, time to demonstrate impact, visibility to the public, and different degrees of sophistication in implementation (see Swinnen 2018). For instance, pollution taxes have a key advantage over regulatory approaches in encouraging adjustment on a wide range of margins—such as choice of production techniques, level of output, and creation of incentives for innovation—perhaps leading to entirely new and unanticipated ways to reduce pollution. Taxes are usually easier to administer than regulatory policies, which require a certain degree of enforcement capacity. Yet, pollution taxes tend to be very unpopular, particularly if imposed on powerful interest groups.

Other instruments include the use of conditionality or incentive subsidies to induce behavioral change by tying practices with desirable social or environmental outcomes, such as low-carbon management practices, to the receipt of a benefit

(Searchinger 2020). Several studies in Southern Africa have found that incentive subsidies increased farmers' adoption of conservation agriculture methods (Bell et al. 2018; Ngoma et al. 2018; Ward et al. 2018). These instruments are a category of distributive policies and less likely to generate contention among stakeholders because while the resources may be collected from diffuse groups (e.g., taxpayers), the benefits are concentrated on just a few actors (Lowi 1972). At the same time, they require strong oversight to ensure farmer compliance with program conditions, making them administratively demanding. Even if compliance can be achieved, such policies need to be carefully evaluated for their impact on productivity. For instance, if the proposed technology is expected to be less productive than the techniques that farmers would have otherwise chosen, it could require farmers to expand land under cultivation with possible adverse environmental impacts.

Regulatory policies restrict the activities of individuals or groups under certain conditions and at risk of some penalty. These types of policies, such as imposing limits on GHG emissions or mandating producers to use organic practices, are much more contentious because they concentrate costs on specific interest groups (Lowi 1972). The viability of regulation depends on the power of such interest groups. These approaches have had some success in particular cases like ozone-depleting refrigerants (Montreal Protocol), where an alternative technology is available. But they proved much less effective than tradable quotas in dealing with acid rain spillovers between the US and Canada. Establishing regulation can be difficult in low-capacity settings since enforcement is essential to policy efficacy. By contrast, de-regulation is considered a quintessential "stroke of the pen" reform (Grindle 1999) because it requires governments to desist from doing something, such as managing quantitative controls on trade or overseeing price controls.

The degree of resistance to removal of subsidies or to imposition of commodity taxes can depend on whether distinct constituencies benefit from the measure, or whether the redistribution of revenues results in investments in public goods of benefit to the affected interest groups. For instance, in Côte d'Ivoire and Kenya, export levies on certain agricultural commodities are intended to be used for reinvestment into agricultural research (Stads and Doumbia 2010; Andae 2021). The success of proposals such as that suggested by Gautam et al. (2022) to invest part of current agricultural support into R&D designed both to reduce emission intensities and to raise productivity will thus depend heavily upon whether the affected interest groups recognize the potential to raise productivity and hence increase farm incomes.

3.4 Case Studies of Agricultural Support Policy Reforms

Each of the key variables discussed in the framework above has demonstrated an important impact on the success or failure of policy reform efforts in several key case study settings. Below we focus on four cases—in India, China, the US,

and the EU—that vary not only with regards to political institutions but also with respect to interest group dynamics and policy priorities. This comparative case study approach allows for elucidating which political economy factors have played a more prominent role over time, offering important insights about when and why certain policy options become more feasible and in particular the options suggested in Section 3.2.

3.4.1 Challenges of Market Reform in India

India's agricultural policies have long had twin goals, resulting in supporting farmers through input subsidies (fertilizer, electricity, and hence groundwater) while frequently reducing domestic food prices below world levels to benefit consumers. In addition, the Public Distribution System provides a safety net for poorer consumers through sales of food at concessional prices. Moreover, strong ideational objectives have underpinned interventions, such as the goal of national self-sufficiency in staple foods and price stabilization for key staples. Both input subsidies and minimum support prices for wheat and rice help maintain output levels. However, agriculture does not provide a viable livelihood for most Indian farmers, with 86 percent of farms working less than 2 hectares and mostly growing staple foods (India, Directorate of Economics and Statistics 2020).

Subsidies have also contributed to environmental degradation and GHG emissions; most notably, methane emissions from rice cultivation are sustained through rice price supports and electricity subsidies. Depletion of valuable water resources is also aggravated by support policies, both directly (through electricity subsidies that promote groundwater withdrawal) and indirectly (through output subsidies that promote overproduction of water-intensive rice). Much of the policy debate on environmental damage stemming from agriculture has focused on air pollution rather than reducing GHG emissions; crop-residue burning—a common practice in the paddy-wheat crop rotation sustained by support prices (Kumar et al. 2015)—is a major contributor to poor air quality in northern India.

Resolving trade-offs between supporting livelihoods and food security, on the one hand, and environmental sustainability on the other is a challenge. Current agricultural subsidies amount to about 2 percent of GDP, but account for about 20 percent of farm income (Ramaswami 2019). Any repurposing of support, including toward R&D and promotion of climate-smart policies, could thus cause hardship for poor farmers.

In the past decade, successive Indian governments have experimented with reforms. Historically, procurement of rice and wheat has been a major mechanism to provide minimum support prices to farmers. This system is costly and analysis suggests that simpler approaches could achieve the same goals at lower cost (Gouel et al. 2016). For some other crops, policymakers have used price deficiency payments, which are easier to administer despite being expensive and reproducing some of the market distortions of the procurement system. Some policymakers

increasingly see direct (uncoupled) transfers as an alternative to these distortionary subsidies. Progress has been made in financial systems to facilitate such payments, but gaps remain in reaching all farmers, in part because of poor land records and insufficient digital connectivity.

Agricultural policy reform would serve India's national interests and potentially make an important global contribution to climate change mitigation but lacks political ownership and is likely electorally costly. In addition, the country's federal structure gives state governments considerable influence over agricultural policies, which can make policy reform challenging but not necessarily impossible—as became evident with India's successful implementation of a goods and services tax that has substantially reduced the costs of transporting goods across state borders (Rao 2019). These factors all contributed to the difficulties of implementing three market-friendly reforms introduced by India's Finance Minister in May 2020.³ The first allowed farmers to sell outside of the government-regulated *mandis* (wholesale markets), engage in barrier-free inter- and intra-state trade of farm commodities, and provide a framework for e-trading of agricultural produce. This was seen as a way to overcome fragmented supply chains created by the *mandis*. The second aimed to de-regulate commodities such as cereals, pulses, oilseeds, onion, and potato, by no longer allowing them to be exposed to stock-holding limits, except under extraordinary circumstances. The third sought to allow farmers to engage in contract-pricing schemes with agro-processors that would reduce price risk to the farmers and encourage private sector investment in agricultural inputs and technology. The latter was viewed as especially beneficial to producers of perishable fruits and vegetables who appeared to be losing out by relying on slow-moving government agencies to procure and distribute them (Singh and Rosmann 2020).

On June 3, 2020, the Union Cabinet approved the policy resolutions and two days later, the Ministry of Law and Justice issued three ordinances, or farm laws, that corresponded with the resolutions. The farm laws were then passed by the majority Bharatiya Janata Party (BJP) Parliament in September 2020, despite resistance from all of the countries' main opposition parties who claimed that the bills were against the interests of small and marginal farmers and that they had been pushed forward using emergency powers under COVID-19 with minimal legislative discussion (Jadhav and Bhardwaj 2020).

In fact, their resistance reflected opposition by different interest groups about the implications of the laws. While the ability to sell outside Agricultural Produce and Livestock Market Committee (APMC) *mandis* could improve competition and reduce transportation costs, concerns emerged about the ability of small farmers to negotiate good prices with large buyers. In addition, there was opposition

³ The announcement on May 15 of that year was part of a five-day set of measures announced as part of the Self-Reliant India Special Economic Packages (see Singh 2020).

from the commission agents in the mandis, known as “*arhatiyas*,” who are influential with farmers and who would potentially lose commissions from the reforms. State governments have been concerned about the loss of tax revenue as a result of anticipated declines in the fees that typically are collected from levies on trade outside the APMC markets. The provision allowing contract farming further raised suspicions that this would result in small farmers losing access to their land and enabling large agribusinesses to dominate markets (Sahoo et al. 2020).

In addition, the disputes over the reforms revealed deeper tensions between the states and the center, across states, and among different farmer groups. For instance, in BJP-controlled Gujarat, Madhya Pradesh, Uttar Pradesh, and Karnataka, state governments had already approved amendments to the APMC Acts in early May that de-regulated trade outside the mandis (Kaur 2020). By contrast, in opposition-controlled Punjab and Rajasthan, disgruntled farmers were supported by their state governments, which refused to adopt the three farm bills (Bhatia 2021).

Starting in October 2020, opposition protests were organized by farmers’ unions that were predominantly from Punjab, Haryana, and Rajasthan—major wheat producing states—and often led by the Bharatiya Kisan Union (Indian Farmers’ Union). They feared the reforms would ultimately lead to the elimination of subsidized crop prices and make them susceptible to takeover by large corporations. By late November, opposing farmers marched to New Delhi. In December, farmers’ unions under the All India Kisan Coordination Committee from other states, including Bihar, Kerala, Tamil Nadu, and Telangana, expressed their support for the farm reforms. Eight rounds of talks between the government and the opposing farmers did not lead to a resolution of concerns. In January 2021, India’s Supreme Court temporarily suspended the new agricultural laws to allow further time for negotiation and to build consensus (Sharma 2020).

3.4.2 Shifting Agricultural Priorities in China

The Chinese setting is notably different due to more centralized political institutions that permit substantial policy changes once policy makers are convinced of the need for change. China’s agricultural performance has been impressive—averaging 4.5 percent annual sectoral growth and 7 percent annual growth in farm incomes since the 1980s—while substantially diversifying production. Yet, the rural–urban income gap has widened, and agricultural expansion has come at the cost of natural resource degradation and high greenhouse gas (GHG) emissions (Huang and Yang 2017).

Achieving self-sufficiency in staple foods and stability of domestic food prices are policy priorities in China. The Chinese government implicitly taxed agriculture until the early 1990s by keeping urban food prices low. This policy was

reversed in the mid-1990s as concerns grew about the expanding rural–urban income gap and urban consumers became less concerned about food prices. The government allowed domestic prices to rise above world market prices and began providing direct payments to farmers—thus shifting from taxation of producers to protection of domestic production. As a result, the nominal rate of protection (NRP) in agriculture increased from –50 percent in 1981 to around +13 percent in recent years, with direct payments adding 5 percentage points (as reflected in the nominal rate of assistance, NRA; see Figure 3.5).

The transformation of China’s agricultural policies might have been even greater if it had not been limited by the country’s commitment to multilateral trading rules. For instance, protection of domestic rice production would likely have been higher if not for China’s commitment to a tariff binding (cap) of 65 percent at the WTO. While the country’s policymakers remain committed to ensuring grain self-sufficiency, they managed to do so without substantially raising protection for rice, in contrast with earlier high-growth economies in the region, such as Japan, where rice protection reached over 800 percent, and Korea, where it reached over 400 percent (Anderson 2009). WTO disciplines have also contributed to China shifting to less distortionary forms of support (Swinnen 2018: Ch. 7).

To support farm incomes, the Chinese government introduced a direct payment scheme in 2004 largely decoupled from agricultural production and increased support through crop procurement schemes. Despite the huge fiscal cost, these reforms had only a modest effect on average farm incomes, and benefits from

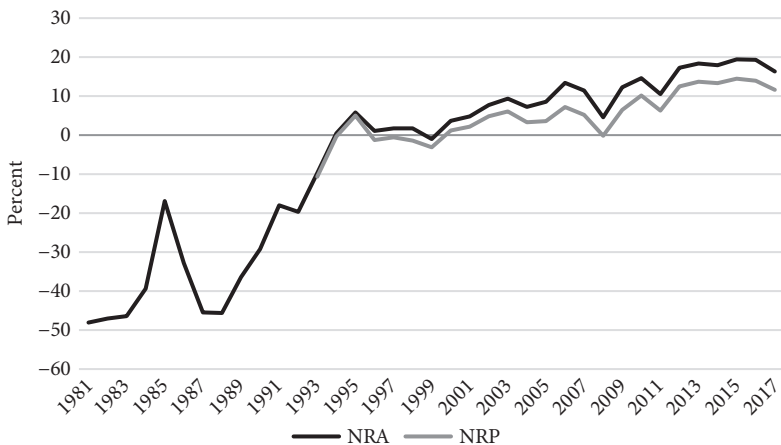


Figure 3.5 China’s support to agriculture, 1981–2017

Note: Nominal rate of protection (NRP) is calculated as support from border protection divided by the value of agricultural production at world prices. Nominal rate of assistance (NRA) is calculated as support from all sources divided by value of agricultural production at world prices.

Source: Data compiled from Huang et al. (2010) and OECD (2021).

procurement were unequally shared. As a result, the government phased out public procurement of all commodities, except for rice, wheat, and cotton, and converted all farm subsidies to lump-sum income transfers to farmers in 2015.

Environmental concerns and international commitments to reducing GHG emissions led the Chinese government to enhance its Store Grains (Food) in Land (SGiL) and Store Grains (Food) in Technology (SGiT) programs to raise productivity, enhance food security, and promote sustainable production. The program enlargement, introduced in 2015, included large-scale investments in “high-standard farmland,” defined as land with a high degree of resilience to impacts of droughts and floods, water-saving production practices, high yields, and soil improvement. Through the SGiT, public expenditure on agricultural R&D was raised to RMB26 billion (about \$4.1 billion), overtaking US spending and making China the world’s largest public investor in agricultural R&D (Chai et al. 2019). The additional R&D is primarily focused on biotechnology and digital technology.

In 2016, the Chinese government also introduced a special project to reduce fertilizer and pesticide use and a subsidy program to promote organic fertilizers. In 2018, Technical Guidelines on Green Agricultural Development were issued, promoting low-carbon and circular-economy technologies to raise productivity, reduce GHG emissions, and enhance carbon sequestration. This strategy is part of China’s effort to comply with its commitments under the Paris Agreement to reduce GHG emissions by 2030 and achieve carbon neutrality by 2060. This exemplifies how institutions (international agreements, in this case) can drive national policy reform.

3.4.3 CAP Reform in the European Union

European policy reforms between the 1980s and the early 2000s illustrate how even policies that are rooted in long-held ideas, like food self-sufficiency, and heavily supported by powerful interest groups can sometimes be fundamentally changed. In particular, when the European Union (EU)’s Common Agricultural Policy (CAP) was designed in the 1960s, it featured administratively determined market price support and import barriers. Farm organizations lobbied for this system to protect them against internal and external competition. The policy also resonated with the public given concerns about food self-sufficiency in the wake of World War II.

High support prices ignited a strong supply response and turned the EU into a major commodity exporter by the 1980s. The farm support required export subsidies, provoking the ire of other agricultural exporters, particularly the United States, which responded with its own program of export subsidies. As world agricultural prices fell to unprecedented lows during the mid-1980s, pressures

from other countries and budgetary pressures increased, with rising costs of export subsidies and storage. Unsold stocks accumulated in embarrassing “butter mountains” and “wine lakes.”

Agricultural exporters pushed hard for reform of global agricultural trade during the Uruguay Round of global trade negotiations (1986–1993). Given European desire to contribute to the Uruguay Round and the internal problems with the price support system, important CAP reforms were introduced in 1993, including reducing and replacing support prices with direct payments to farmers (Swinbank 2016).

Several concurrent pressures resulted in subsequent reforms. These included food safety and animal welfare crises in the 1990s, as well as the prospect of ten Eastern European countries with large agricultural sectors acceding to the EU in the 2000s. Expectations were that, unless the CAP was further reformed, it would lead to exploding budgets, a massive inflow of cheaper Eastern agricultural products, and a conflict with WTO agreements. Institutional changes within the EU facilitated reform since decisions no longer required unanimous agreement of EU member states, removing the veto power of reform opponents. These factors contributed to the 2003 reform that decoupled farm subsidies from production decisions, while maintaining the overall level of farm support, and allowing the gradual integration of the Eastern countries into the CAP (Swinen 2008).

Environmental goals also have been further integrated into Europe’s agricultural policies over the past 30 years, with budget allocations shifted accordingly (OECD 2017). However, the global food price spikes in 2008–2011 weakened pro-environment reforms that aimed to restrict input use and production (Swinen 2014). More recently, the EU has attempted to build a Farm-to-Fork strategy as part of the European Green Deal that is designed to make Europe the first climate neutral continent by 2030 (EC 2020a, 2020b). As discussed more in chapter 13 of this book, the reforms include payments to farmers conditional on reduced use of pesticides and fertilizers, a shift to organic farming practices, and adoption of new technologies that reduce GHG emissions from agriculture. A possible trade-off is that shifting to organic farming practices could reduce productivity which, in turn, could drive agricultural land expansion and potentially lead to increased global GHG emissions from either land-use change or a shift to regions with higher emission intensities (Gautam et al. 2022). Just as in 2008–2011, high food prices on global markets in 2022 are also triggered similar political economy reactions, reinforcing lobby pressure from farmers and agribusiness against environmental policies that would reduce productivity and the EU’s potential to produce food.

3.4.4 Biofuel Policies in the United States

Biofuel policies in the United States are an energy and agricultural strategy with important environmental dimensions. Biofuel policies were first introduced in

the 1970s to replace expensive petroleum-based fuels and lead-based additives then used to improve engine performance. Their introduction was supported by farmers and ethanol producers keen to increase demand for their products. As concerns about global greenhouse gas (GHG) emissions increased, biofuels were increasingly justified on environmental grounds (Lawrence 2010).

Support for biofuels initially was provided via a tax credit (Tyner 2008). Reforms in 2005 and 2007 introduced a mandate for the use of biofuels, with targets rising from 13 to 36 billion gallons between 2010 and 2022. This policy was enormously popular with ethanol distillers and blenders, who otherwise would face substantial uncertainty about profitability and throughput.

These policies responded to new concerns about the environment and health as well as traditional desires to expand demand for farm products, but several concerns have emerged. First, a binding mandate makes the demand for feedstock unresponsive to changes in corn prices, hence contributing to grain price volatility. Second, due to concerns that transferring large shares of grain output to biofuels production would raise food prices (Wright 2014), the mandate required only a 25 percent increase in conventional biofuels but a twentyfold increase in advanced biofuels, mainly from plant-based matter unsuitable for human consumption. However, due to a lack of substantive technological innovations, advanced biofuel output has only increased sixfold (CRS 2022). Third, while bioethanol use may decrease fossil fuel emissions relative to use of fossil fuels, its production increases emissions through the land use change required to grow bioenergy crops (Searchinger 2008; EPA 2018). Recent estimates suggest that US ethanol has a higher GHG intensity than oil-based gasoline (Lark et al. 2022).

Several lessons can be drawn from the policy innovation represented by biofuels. One is that environmental goals, and particularly mitigation of climate change, may provide important pressure for change. A second is that it may be helpful to build coalitions, including among interest groups with different but potentially compatible goals—such as energy self-sufficiency and farm income support—to achieve rapid, widely supported reform. However, there is a risk of policies being captured by some members of the coalition and ending up not achieving their social goals. Third, no single instrument such as biofuel policy can hope to achieve multiple goals, reinforcing the message on policy bundling discussed in Chapter 9 of this volume. Finally, simply mandating a goal, such as a major expansion of output using new technologies, is unlikely to be successful unless it is backed by investments in targeted R&D.

3.4.5 Summary

Table 3.1 draws on the framework in Figure 3.4 to synthesize key political economy factors that affected policy reforms in the preceding cases. Despite institutional variations, similar policy instruments were implemented in China and the EU to

create incentives rather than penalties for more environment-friendly practices. In addition, outlays of agricultural investments for R&D, which are usually seen as low visibility to voters and therefore marginalized by policymakers in democratic countries (Mogues 2015), have been a distinguishing feature of China's recent agricultural strategy. By contrast, the US relied on regulatory mandates for biofuels without sufficient corresponding R&D investments. India's agricultural market reform attempt, which required buy-in at both the federal and state levels and from powerful farmers unions and middlemen, was a much broader and complex undertaking that ultimately failed.

3.5 Conclusions

Climate change is an existential threat to food systems globally, and the scenario analysis for repurposing existing agricultural support presented in Section 3.2 showed that international cooperation for such policy reform should be expected to achieve superior outcomes on all environmental, economic, and social dimensions for all countries compared with current non-cooperative agricultural support policies. Existing government agricultural support budgets offer a potential source of public finance for innovations and incentives to producers and consumers. Currently, only an eighth of total government support to agriculture is invested in R&D, inspection and control systems, and rural infrastructure—all areas where the private sector tends to under-provide—while three-quarters is allocated to individual producing firms, many of which are commercial and large-scale operations, thus reinforcing inequality.

Nonetheless, agreeing on a common approach internationally is difficult partially because of political-economy constraints at the domestic level. Undoubtedly, current beneficiaries will resist policy reforms, while potential winners may be uncertain about the benefits or insufficiently organized to mobilize for change. Most policy reforms therefore emerge from first understanding the confluence of interest, institutions, and ideas that shape the status quo and then uncovering policy instruments that neutralize losses to potential opponents that also account for capacity constraints.

In this regard, the current chapter points to some promising paths and some dead ends for repurposing. For instance, the full abolition of current support is likely neither to find political support nor to generate more than modest reductions in emissions. Moving away from market-distorting price support or subsidies coupled to production levels or input use, and toward providing incentives through direct payments to farmers, is sensible from an efficiency perspective. Such direct payment schemes would need to be clearly targeted, and any conditionality attached to such payments be linked to verifiable farm targets and food systems objectives. Importantly, reforms often have unintended consequences;

Table 3.1 Comparison of political economy dynamics

Country	Interest groups	Institutional factors	Ideas & Information	Policy instruments and outcomes
India	Subsidy, trade, and procurement policies are electorally popular and benefit well-organized cereal farmers	Federal system results in concurrent powers over agriculture between the national and state governments, creates many veto players	Food self-sufficiency still predominant over environmental concerns	Stalled efforts at market procurement reforms in 2020/2021
China	Concern over rural-urban wage gaps increased importance of farmers and agriculture in national investment strategies	WTO commitments and international climate agreements Political regime less beholden to popular interests	Food self-sufficiency but growing desire to assert role in global governance, including on environment	Adoption of lump-sum income transfers to farmers, Conditional subsidies to promote organic fertilizers Increased investment in agriculture R&D
EU	Strong farm lobbies but budgetary burden from subsidies and pressures from trading partners	WTO negotiations at Uruguay Round, reform decisions no longer require unanimous agreement of EU member states	Growing norms about environmental sustainability	Two rounds of CAP reforms, decoupling farm subsidies from production decisions, payments conditional on reduced pesticide and fertilizer use Progress on Green Deal slowed due to 2022 food price crisis
US	Farmers and ethanol plant investors saw income benefits from biofuels and forged unlikely coalition for reform	Environmental Protection Agency	Growing norms about environmental sustainability	Subsidies and mandates to improve ethanol now reconsidered due to ethanol's impacts on land use change

approaches that impose certain types of “green” conditionality to farm support, like the reduced usage of fertilizers and pesticides as proposed as part of EU’s CAP reforms, might lower land productivity and thereby induce conversion of new land for agriculture and increase emissions.

Even with green conditionality, resistance is still possible, as seen in the farmer protests in The Netherlands in 2022 over proposed restrictions on nitrogen emissions to meet EU directives (Ortega Froysa 2022). When resistance by farmers or other organized groups is anticipated, the process of negotiation and engagement becomes just as important as the policy instrument under consideration. As learned from the case of India, where attempted reforms announced rapidly as part of Covid-19 measures alienated farmers, it is essential to engage stakeholders early on and iteratively in the process of designing policy reform to build trust and a common agenda.

Another promising approach emphasized in this chapter is reallocating part of existing support to R&D focused on innovations that both increase productivity and lower emission intensities. Reallocation of resources in this way is expected to produce major societal gains, including benefits for those farmers who benefit from current support. However, the gains from innovation in sustainable production methods may be perceived as uncertain and adoption may come at a cost to producers in the short run. Compensatory payments to losers and to offset adoption costs for producers could help win political support. Importantly, appropriate regulations, such as mandates on the use of renewable energy or limits on the conversion of land for farming, may be essential to overcome the resistance of some agricultural producers to more environmentally sustainable reforms.

More broadly, the modeling scenarios presented in this chapter show that international cooperation for repurposing agricultural support achieves superior outcomes on all environmental, economic, and social dimensions for all countries compared with current non-cooperative agricultural support policies. Notwithstanding recurrent threats to multilateralism, an internationally concerted reform agenda bolstered by the WTO, the Paris Climate Agreement, and platforms such as the G20 is critical to deal with the cross-border impacts of climate change driven by agricultural policies (Vos et al. 2022). Such coordination will require intense dialogue, informed by continuous and credible assessments of the gains to be obtained and the trade-offs to be confronted. Moreover, given great differences across countries in the amount of agricultural support provided, a concerted global repurposing agenda would require creating transnational constituencies facilitating equitable diffusion of technologies and financial resources to enable all countries to even-handedly engage in agriculture policy reform and reap the global benefits for people and planet.

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