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From Food Security to Nutrition Security in the East Asia and Pacific Region

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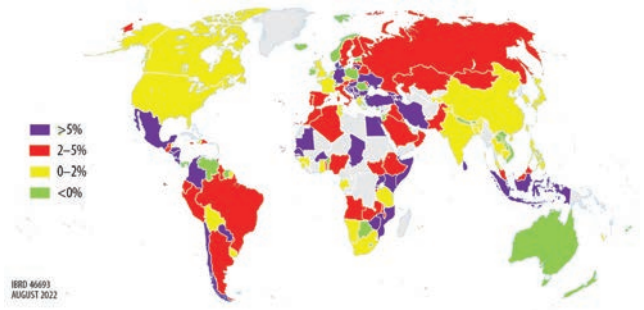
The East Asia and Pacific (EAP) region has been less exposed to the food price shock arising from Russia's invasion of Ukraine than other world regions. East Asia and Pacific economies have not imported much directly from the war-affected countries and have consumed less wheat (prices for which spiked) and more rice (prices for which remained stable). But the region has still imported inflation because of its dependence on imports of non-rice food and fertilizers. This dependence arises, first, because policy support to rice production through trade restrictions and subsidies discourages diversified domestic production and creates a mismatch with increasingly diversified domestic consumption. Second, input subsidies have encouraged input-intensive production, which magnifies the need for fertilizer and petroleum imports. Because these subsidies also encourage the excessive use of water, they worsen the environment. Governments need to shift their focus from rice-centric food security to nutrition security, reduce subsidies and trade barriers that favor the production of rice, and shift support from input subsidies to encourage higher agricultural productivity, production diversity, and greater sustainability.

The Impact of the Recent Food Crisis

On the face of it, the East Asia and Pacific (EAP) region has been relatively less affected by the recent food crisis than other world regions. An international comparison of real food inflation during the April–July 2022 period shows that inflation was in the low band of 0 percent to 2 percent in EAP most economies (map 1).

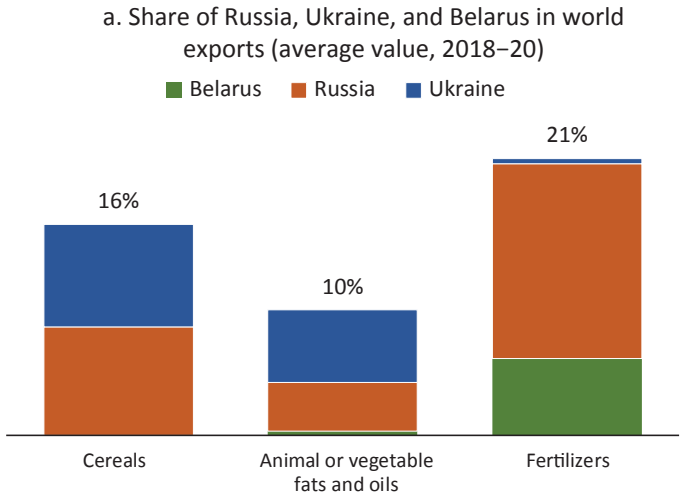
The low impact is not surprising because the EAP region was structurally less susceptible to shocks generated by the war in Ukraine. Russia, Ukraine, and Belarus combined represent 16 percent of the world's exports of cereal (mainly wheat), 10 percent of the exports of animal/vegetable fats or oils, and 21 percent of the exports of fertilizer. However, wheat accounts for a small percentage of net cereal trade in EAP economies (figure 1). Similarly, sunflower/safflower oil imports account for a small share of total edible oils and fats imports of EAP countries. However, about one-quarter of the fertilizer imports of EAP economies do come from Russia, Ukraine, and Belarus.

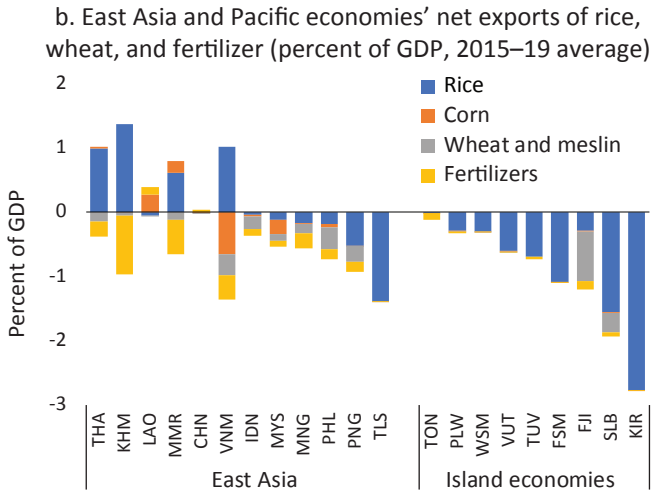
Map 1. The intensity of food inflation varies widely around the world



Source: World Bank, Food Security Update, August 11, 2022.
Note: Food inflation for each country is based on the latest month from April to July 2022 for which data on the food component of the Consumer Price Index (CPI) and overall CPI data are available. Real food inflation is defined as food inflation minus overall inflation.

Figure 1. The war in Ukraine has shocked the global food system





Source: World Bank staff estimates using data from the World Integrated Trade Solution (WITS) database.
Note: In panel a, cereals include wheat, meslin, barley, and maize. Animal or vegetable fats or oils include soya-bean, sunflower, safflower, rape, colza, or mustard oil. Fertilizers include N-fertilizer, K-fertilizer, and fertilizer with two or three elements (N, P, K) (nitrogen, phosphorus, potassium). Panel b uses International Organization for Standardization country codes.

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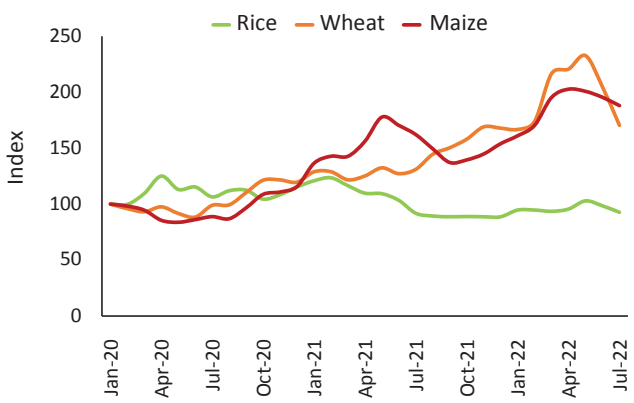
Figure 2. Prices for rice, the staple cereal for East Asia and Pacific economies, have been stable recently



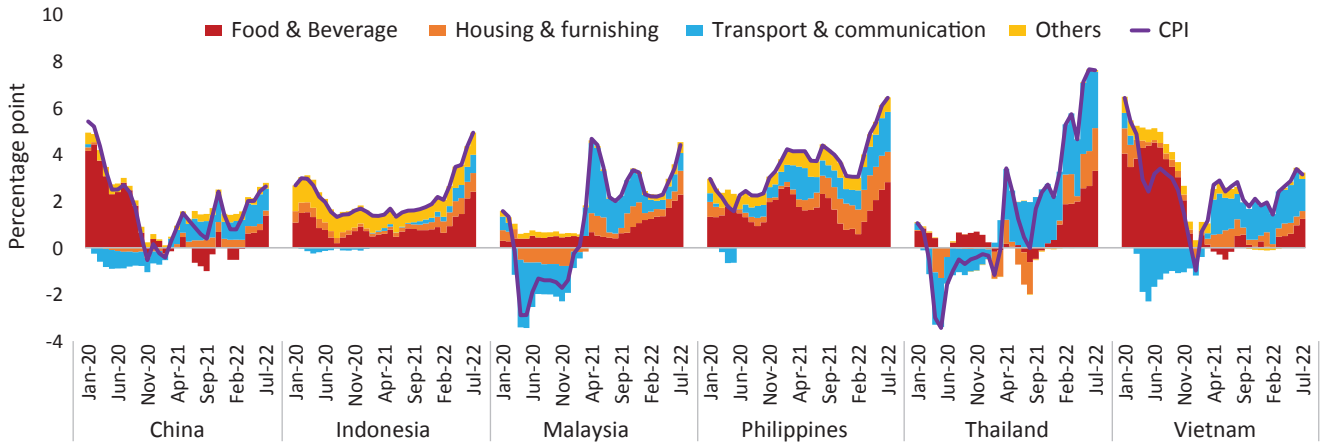
Source: World Bank staff calculations using data from World Bank Commodity Price Data (The Pink Sheet).
Note: The figure shows monthly cereal price indexes (January 2020=100).

The second reason the EAP region has been less affected is because the price of rice, which is the main food staple, has been generally stable throughout the recent crisis. Since early 2021, the rice price has kept declining even as the price of wheat has nearly doubled (figure 2).

Even though EAP economies have generally been less affected than other economies, food prices have nevertheless increased considerably in Indonesia, Malaysia, the Philippines, and Thailand following Russia's invasion of Ukraine. In fact, rising food prices have been the major contributor to higher inflation in the region's major economies (figure 3).

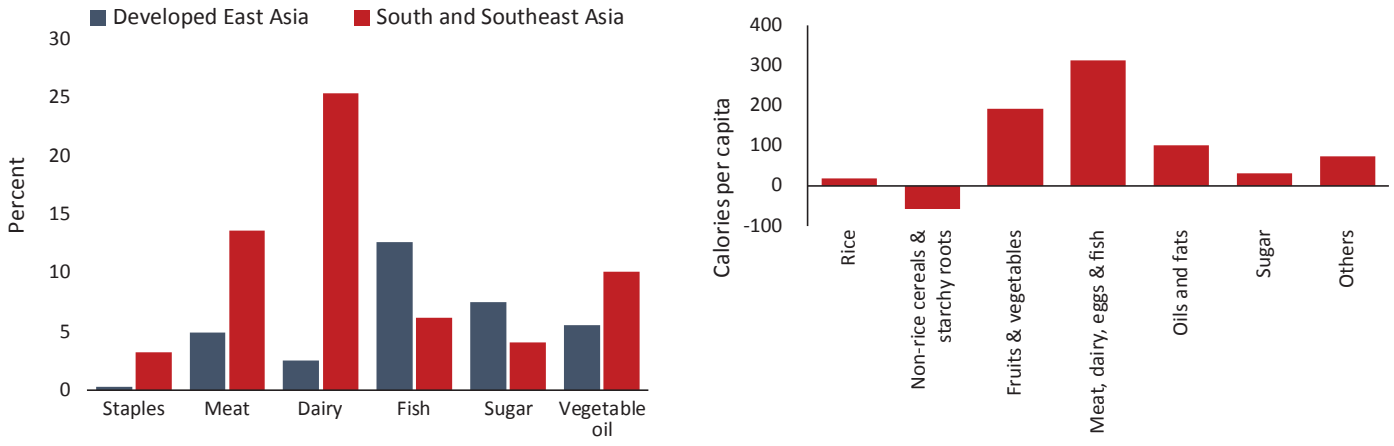
Moreover, country-level data show that despite the stable (even falling) price of rice, consumers have had to endure both price increases and price swings for food driven, for example, by changing prices of animal protein. This is because the contribution ("weight") of rice to the overall Consumer Price Index (CPI) is dwarfed by that of non-rice food items (figure 4). This has important consequences for consumer welfare and food security strategy and policies.

Figure 3. These price increases have generated inflationary pressures in some East Asia and Pacific economies



Source: Haver Analytics.
Note: The figure shows the contribution to Consumer Price Index (CPI) inflation (year on year). China's CPI weight is estimated.

Figure 4. Regional demand for and consumption of food are diversifying out of rice



Source: FAO 2022 (retrieved on Aug 20, 2022); OECD/FAO 2022
Note: In panel a, the Developed East Asia group includes 5 countries: Australia, China, Japan, the Republic of Korea, and New Zealand. The South and Southeast Asia group includes: Afghanistan; American Samoa; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; Cook Islands; Fiji; French Polynesia; Guam; Hong Kong SAR, China; Kiribati; Korea, Democratic People's Republic of; Lao People's Democratic Republic; Macao SAR, China; Maldives; Marshall Islands; Micronesia; Mongolia; Myanmar; Nauru; Nepal; New Caledonia; Niue; Palau; Papua New Guinea; Samoa; Singapore; Solomon Islands; Sri Lanka; Taiwan, China; Timor-Leste; Tokelau; Tonga; Tuvalu; Vanuatu; Wallis and Futuna Islands. In panel b, East Asia and Pacific economies include developed East Asia and South and Southeast Asia.

Longer-Term Challenges

It is imperative to address three long-term challenges to strengthen food security in EAP economies. First, as noted, there is a growing mismatch between food demand and supply. Food demand is moving away from rice as consumers grow richer, more nutritionally conscious, and more urbanized. However, insufficient diversification in domestic production has led to an increase in imports in important categories of food products, especially meats and edible offal, maize, and soybeans.

Second, climate change presents major risks to the food security of EAP economies. Figure 5 shows the rising frequency of natural disasters in the EAP region. Agriculture is both a "perpetrator" of climate change (a major contributor of greenhouse gases) and a "victim" (one of the sectors expected to be hardest hit). Food security policies need to address the fact that current agricultural practices and land use changes are compromising the natural resource base and future production potential. Evidence shows a direct negative impact of climate change on the growth of agricultural productivity. There is need to promote adaptation by investing in new technologies, adapted seeds, and better management practices.

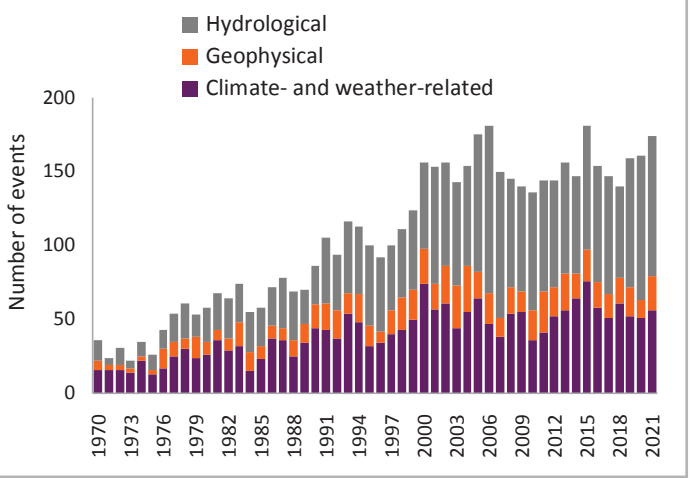
Third, the current crisis has highlighted the need to increase resilience to fuel and fertilizer shocks. The crisis has ratcheted up both fuel and fertilizer prices. Historically, fertilizer prices have had a close influence on grain prices. In the short term, there is need to diversify fertilizer imports to secure supplies for the coming planting seasons. In the longer term, to promote sustainability and resilience, it is important that food security policies both promote optimum use of fertilizers (which reduces per unit consumption) and reduce the fuel-intensity of agriculture by transitioning to lower-carbon approaches and green energy sources in both agriculture production and distribution.

Recent Policy Response

The short-term responses to recent crises have been enacted against a backdrop of longer-term trend that supports production, and have involved a mix of measures to restrict trade, subsidies, and social protection support. Figure 6 shows that a number of export restrictions and market interventions were introduced in response to the current crisis. Export restriction can, however, amplify price fluctuations. Globally, measures to protect domestic markets and consumers introduced during the 2010–11 food price spike are estimated to have accounted for 40 percent of the increase in the world price of wheat and 25 percent of the increase in the world price of maize (Laborde, Lakatos, and Martin 2019).

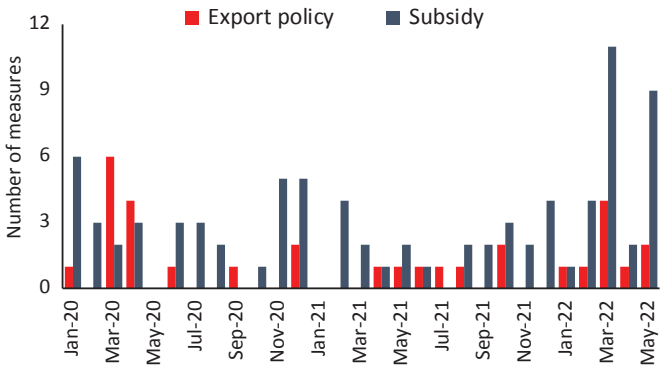
Several countries in the region announced price stabilizing measures on crucial food items such as rice, meat, and cooking oil, and subsidies to limit price increases in early 2022 to cap the increase in food prices (table 1). Commodity exporters Indonesia and Malaysia benefited from fiscal windfalls that made the

Figure 5. Asia region is particularly vulnerable to natural disasters



Source: World Bank staff estimates using EM-DAT data.
Note: The figure covers 46 Asian economies reporting any natural non-biological disasters. Biological disasters are excluded. EM-DAT refers to Emergency Events Database launched by the Centre for Research on the Epidemiology of Disasters (CRED), within the Université Catholique de Louvain (UCLouvain), Belgium.

Figure 6. Trade and policy measures in East Asia and Pacific have increased during the recent crisis



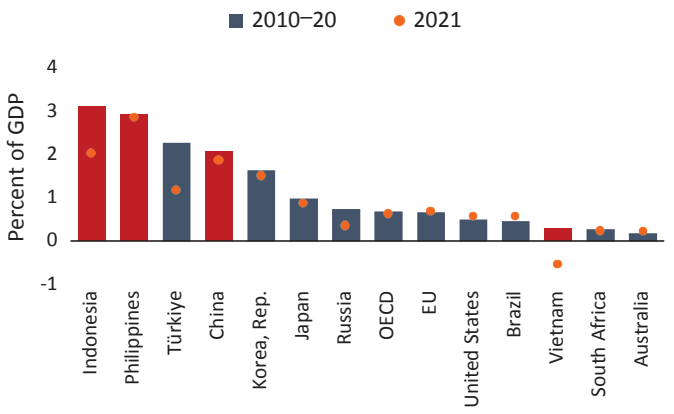
Source: World Bank staff estimates using data from Global Trade Alert.
Note: The figure shows restrictive policy announcements in 8 EAP economies related to only food, fertilizer, and feed. Export restrictions include export bans, export licensing requirements, export quotas, export tariff quotas, export taxes, export-related non-tariff measures, tax or social insurance relief, and local supply requirements for exports. Subsidies includes capital injection and equity stakes (including bailouts), financial grants, in-kind grants, interest payment subsidies, loan guarantees, localization incentives, price stabilization, production subsidies, state aid, state loan, and tax or social insurance relief.

Table 1. East Asia and Pacific countries have pursued various market and fiscal interventions to support food security since Russia's invasion of Ukraine

	Market intervention		Fiscal intervention (percent of GDP)			
	Price control	Trade restriction	Food subsidy	Agriculture / fertilizer subsidy	Fuel subsidy	Other transfers[a]
Malaysia	Chicken etc.	Poultry export ban	0.10	0.80	1.40	0.20
Thailand	Food, construction material etc.		0.39		0.56	0.27
Indonesia	Cooking oil	Temporary export ban of palm oil	0.04		1.10	
Philippines				0.12	0.02	0.21
Vietnam					0.30	
China	Coal	Coal tariff elimination, Fertilizer export restrictions		0.02		

Source: World Bank
Note: The figure covers February 2022-August 2022 period.
a. Other transfers include cash transfers to low-income households, the tourism sector, and social security contributions.

Figure 7. Policy support for agriculture, as a share of GDP, is among the highest in the world in Indonesia, the Philippines, and China



Source: World Bank staff estimates from OECD 2021.
Note: EU = European Union; OECD = Organisation for Economic Co-operation and Development.

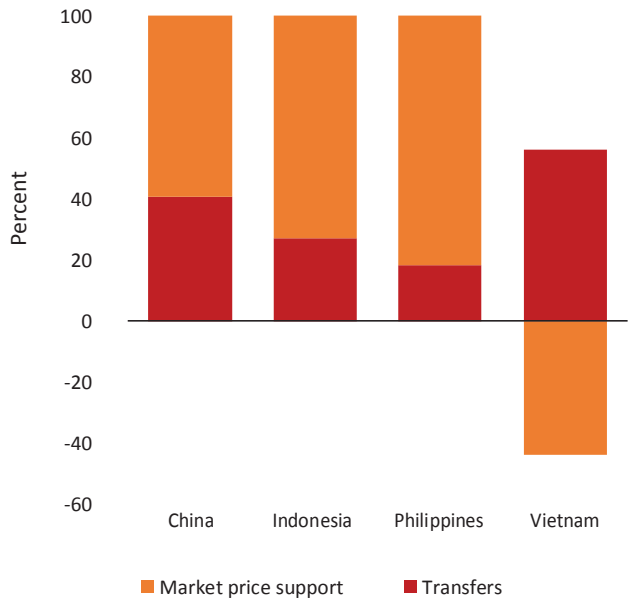
subsidies more affordable than they have been in other countries such as Thailand. While helpful in containing price pressures in the short term, subsidies impose a significant fiscal cost.

Long-Standing Distortions

More importantly, many aspects of current agricultural policies and public expenditures do not support needed transformations for greater nutritional security. In the EAP region, the Total Support Estimates (TSE)—the annual monetary value of all gross transfers from taxpayers and consumers arising from policy measures that support agriculture, net of associated budgetary receipts—for agriculture are some of the highest in the world (figure 7).

The Organisation for Economic Co-operation and Development (OECD) measures two types of support to agriculture: through policy distortions that drive up (or down) farm-gate prices (the prices received by farmers for their produce at the location of farm); and through budget transfers. Farm-gate price distortions are computed by calculating the difference between observed farm-gate prices and a reference farm-gate price free of the effect of policy distortions. This reference farm-gate price is calculated by adjusting the border price of net imports (net of cost, insurance, and freight, CIF) or net exports (freight on board, FOB) for domestic marketing costs, quality, and quantity differences, thereby reflecting the farm-gate price that would prevail in the absence of trade barriers and price-administering policies. The price gap between observed and reference prices is calculated for each commodity, then multiplied by the volume of production and aggregated to calculate the market price support. This support is sometimes referred to by the OECD as "implicit support" because it is not provided through budget transfers. Budget transfers include producer subsidies (input and output subsidies), general service support estimates (such as research, extension, irrigation) and consumer transfers (such as food aid). They are sometimes referred to by the OECD as "explicit support".

Figure 8. Public policy support through market price support is at least twice as great as through budget support in some East Asian countries

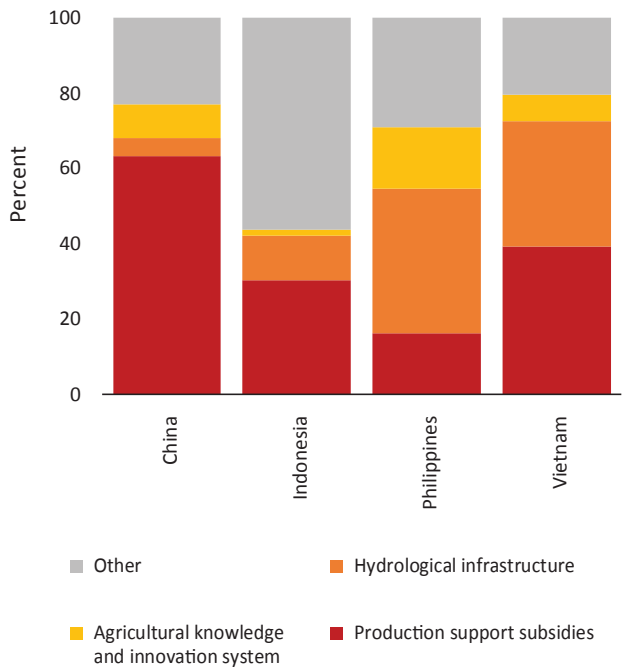


Source: World Bank staff estimates from OECD 2022.
Note: The figure shows the 2010–20 average for both explicit (budgetary) and implicit (market price support) to agriculture.

In China, Indonesia, and the Philippines, budget support is currently dwarfed by market price support (MPS) in agriculture, which households pay for and which significantly distorts production, consumption, and resource allocation decisions. Market price support—or support through fixing prices and maintaining trade barriers—is 2.5 to 4 times higher than budget support (figure 8), except in Vietnam, where domestic farm gate prices are lower than reference international prices. Further, market price support and subsidies are heavily biased toward production of livestock and grains, especially rice. This support inhibits diversification into horticulture (fruits and vegetables), which can have positive nutrition effects and give farmers higher incomes at undistorted market prices. Also, rice and livestock are a significant source of greenhouse gas (GHG) emissions in agriculture (FAO 2020). Repurposing this support for green innovation (for instance, improved breeds and rice farming technologies) could lead to both productivity increases and GHG emission decreases (OECD 2019).

An average of 37 percent of budget support to agriculture is spent on direct subsidies across China, Indonesia, Philippines and Vietnam, the four largest economies in the EAP region, excluding Thailand. Direct subsidies—paid for by taxpayers—serve to lower the cost of inputs (fertilizer, seeds, power, other), and these often entrench food production patterns that do not support diversification to meet changing demand patterns. These patterns can also have high (hidden) costs in terms of GHG emissions, land degradation, and environmental pollution. In a context of constrained fiscal space, they also represent a lost opportunity for public investments in knowledge and innovation, which are critical to develop technologies that increase agricultural productivity, sustainability, and resilience. These investments receive a limited 8 percent of budget support (figure 9).

Figure 9. Between 40 percent and 70 percent of budget support to agriculture has gone to direct subsidies and irrigation in some East Asian countries



Source: World Bank staff estimates from OECD 2022.
Note: The figure shows the 2010–20 average of explicit (budgetary) support to agriculture.

The Way Forward

In the EAP region there is a need to shift focus from rice-centric food security to nutrition-centric food security. Food consumption has been diversifying out of rice over the years. Therefore, stable rice prices have not insulated EAP consumers from food inflation or food price volatility. More than 99 percent of the population in East Asia and Southeast Asia can afford a diet sufficient in calories (food energy), but less than 50 percent in Southeast Asia can afford a healthy diet (intended to meet all nutrient intake requirements and to help prevent malnutrition in all its forms) (FAO et al. 2020).

Food security has three key dimensions: *availability* (ensuring adequate overall supplies); *access* (ensuring physical and economic access at the household level); and *stability* (ensuring continuity over time of the "food secure" status of all households). Table 2 identifies the relevant set of issues, and the risks relating to them, for these three dimensions of food security. As the table shows, food security policies need to include supply-side measures as well as steps to insure against a range of risks and shocks, both internal and external.

The directions of change for strengthening food security in EAP are clear: nutritional diversity needs to be enhanced; food prices need to be lowered; incomes of vulnerable populations need to be increased; resilience to shocks must be strengthened; and the sustainability of the agri-food system needs to be ensured (table 3). Given the current structure and legacy of food security policies and approaches in the EAP economies, and the evolving nature of the food security challenges, some key policy shifts will be desirable, going forward. There are some areas where the

Table 2. Food security in East Asia and Pacific: Issues and risks

Dimension of food security	Issues	Risks
Availability	• Increase domestic productivity • Increase product diversity • Increase trade	• Inputs shocks (fuel, fertilizers, seeds) • Natural shocks • Trade shocks
Access	• Increase incomes and transfers to the vulnerable • Reduce cost of food • Competitive markets with related logistics for stable prices	• Income shocks • Transfers shocks (change in remittances, state protection) • Political shocks (e.g., internal conflicts, FCV situations) disupting logistics, trade and markets
Stability	• Inventory (public, commercial and private stocks) to ease seasonal variations • Strategic reserves to offset shocks offset shocks • Risk spreading to cope with shocks: insurance, trade and forward markets • Deepen markets and strengthen supply chains (to dampen price fluctuations)	• Hoarding, panic buying • Inadequate institutional capacity to offset shocks • Ineffective ("time-inconsistent") insurance arrangements • Logistical bottlenecks • Regulatory hurdles • Supply chain shocks (e.g., internal conflicts, logistics)

Source: World Bank staff elaboration.
Note: FCV = fragility, conflict and violence.

government can do more (listed in the "consider" column in table 3) and other areas where it can do less or work differently (listed in the "reconsider" column in table 3).

For instance, to improve affordability, agricultural support policies should be recast to focus on increasing productivity because that would lower the cost of food for consumers and increase the incomes of farmers. In the face of shocks, it may be necessary to shield consumers from price spikes and producers from price crashes. Where additional support for consumers is deemed necessary, it would ideally take the form of income transfers rather than price controls. Similarly, support to producers would ideally take the form of direct transfers decoupled from production.

Lowering trade barriers would also improve consumer access to cheaper and more diverse food products. To maintain product diversity and stability of supplies over time, an integrated set of measures is needed. Policy biases and distortions that currently favor the production of rice need to be reduced. Public expenditures need to be repurposed to help farmers diversify their production to livestock and other high-value agriculture goods and nutritious foods. Food marketing and logistics should be expanded to make the domestic food system more resilient to internal and external shocks and to further stabilize prices.

Finally, to improve sustainability, governments should safeguard the environmental and ecological health of land, water, and air. Necessary measures include reducing subsidies that encourage input-intensive agriculture and strengthening incentives to reduce negative spillovers. To enhance climate resilience of agriculture, governments need to promote the use of more resilient breeds/varieties and smarter agriculture water management. These recommendations are presented in table 3.

Table 3. East Asia and Pacific governments should reconsider some current policies and consider some new ones to strengthen food security

Dimensions	Reconsider…	Consider…
Availability	**Producer/input subsidies**, which distort crop choice and inputs-mix; impede improvement in productivity and/or resilience; and crowd-out other public expenditures. **Trade restrictions and price band policies**, which impede stabilizing role of trade and distort production and consumption decisions.	**Support to producers decoupled from production** to enhance technical and allocative efficiency (inputs-mix and crop choices) at the farm level. **Repurposing public expenditures** away from input, output subsidies towards research, extension and other public investments that increase productivity and diversification.
Access	**Market price support**, which is paid by taxpayers and all consumers, raising food prices.	**Targeted transfers to vulnerable consumers** **Improving storage and processing infrastructure** to lower transaction costs and minimize food losses. **More open and competitive food marketing and trade arrangements.**
Stability	**Unsustainable producer support**, such as input/output subsidies that encourage greater use of land, water, fertilizer and other inputs, increase GHG emissions, and support low-nutrition, low-value crops. **Over-reliance on "short-horizon" ex post risk management policies**, such as ad hoc post-shock farmer and consumer transfers, protective trade policies, market price interventions.	**Support to shift from inputs- to knowledge-intensive production**, such as improved breeds/varieties, precision agriculture, measures to lower GHG emissions. **Building long-term resilience to shocks** through ex-ante preparedness (such as risk assessments, early warning systems) and improved ex-post management capacities and funds).

Source: World Bank.
Note: GHG = greenhouse gas.

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