### Integrating Climate and Nature Sustainability into Food Crisis Responses



# Key policy actions

Both short- and long-term policy responses to the world's food crisis can maximize opportunities to build longer-term resilience, reduce greenhouse gas emissions from agricultural production and boost ecosystem health, delivering sustainable and healthy nutritional outcomes to achieve a triple win for people, climate and nature.

Governments and international donors can increase funding to adapt and scale up existing programmes to integrate and build on climate and nature objectives while avoiding shortterm measures that lock in unsustainable production and consumption patterns.

Policies and programmes can act to:

### Change *how* food is produced

- Use social assistance programmes to improve ecosystem management and build longer-term resilience.
- Improve fertilizer use and availability through improving efficiency; providing targeted help to poorer farmers; working to decarbonize the fertilizer supply chain; increasing access to and use of organic fertilizers; and changing production practices.

### Control and monitor *where* food is produced

Strengthen real-time monitoring of landuse change, particularly in environmental hotspots. Increase scrutiny of proposed agricultural investment projects and ensure respect for existing land-use rights.

### Transform *what* food is produced and consumed

- Encourage diversification in food production.
- Scale up nutrition-sensitive social assistance programmes, incorporating them into country and regional humanitarian responses.
- Produce context-specific messaging for different consumer groups about moving to more nutritionally balanced diets to improve personal and planetary health, and food security.

## Improve how food is *used* and *stored*

- Monitor changes in the consumption of animal products to assess the market for switching animal feed products to human consumption, where specifications make this possible.
- Encourage discussions of alternative animal feed sources and the potential for pre-planned switches of grain from use as animal feed to human consumption in countries that affect global grain prices during future food crises.
- Invest in existing programmes to reduce post-harvest crop losses as well as encourage consumers and food companies to minimize food waste through communication campaigns.

## Summary

The world's food system is in crisis, with global conflicts and climate change exacerbating underlying fragilities and accelerating the rise of food, fuel and fertilizer prices. Policy responses in the short term can maximize opportunities to build longer-term resilience, reduce greenhouse gas emissions from agricultural production and boost ecosystem health, delivering sustainable and healthy nutritional outcomes, and reducing the risk of future crises.

In the short term, immediate actions are needed to protect vulnerable households from the sharp increases in prices of wheat, maize and cooking oils. Governments and international donors can increase funding to adapt and scale up existing targeted, nutrition-sensitive social assistance programmes, integrating or expanding actions to improve ecosystem management and build longer-term resilience. They can also keep trade flowing through international cooperation. When introducing measures to boost production, and addressing reductions in planted area and yields, governments can invest in climate-resilient agriculture right from the start, changing how food is produced and used, and what is produced and consumed, with careful attention paid to where it is being produced in response to changing incentives.

Integrating Climate and Nature Sustainability into Food Crisis Responses

100 - 30

## Introduction

The current food crisis has been building for some time. The invasion of Ukraine has tipped the food system's capacity to deliver over the edge, but the underlying drivers – frequent and accentuated climate extremes, conflict and economic shocks – have increasingly undermined the resilience of the food system (Benton 2022, FAO et al. 2022). Global food prices have surged 65% since the start of the COVID-19 pandemic and by 12% in 2022 alone since the start of the Russian invasion of Ukraine (FAO 2022). Oil prices climbed steadily in 2021–22 (Statista 2022) while fertilizer prices have risen nearly 30% in 2022, following an 80% leap in 2021 (Baffes and Koh 2022).

The price hikes raise the prospect of forcing millions more people into severe hunger and moving the world even further away from the global goal of ending hunger, food insecurity and malnutrition by 2030. A "crisis of availability" is looming as farmers react to fertilizer price increases by shrinking planted areas of wheat and maize, reducing fertilizer use or switching to less fertilizer-intensive crops, such as soya (USDA FAS 2022a). In some regions, high commodity prices may spur producers to plant over a greater area, but there is uncertainty about yields, given high fertilizer prices and unpredictable weather (USDA FAS 2022b). Global wheat and maize stocks are currently at healthy levels but have been declining since 2018, constraining the system's capacity to compensate for nearterm production shortfalls.

Business-as-usual production, processing and distribution will double greenhouse gas emissions from agriculture by 2040 and increase biodiversity loss, soil degradation and water depletion, both directly and through land-use change. This further heightens the risk to future food security. In parallel, unsustainable and unhealthy food consumption patterns are increasing, with millions of people consuming low-quality diets or too much food, raising the risk of morbidity and mortality and pushing natural resource use beyond planetary boundaries (Just Rural Transition 2022b).

Responses to previous crises did not address these underlying drivers (Pinstrup-Andersen 2015). Repeating this runs the risk of reproducing and entrenching structural fragilities, undermining the resilience of food systems and aggravating the frequency and severity of future crises. It also misses the opportunity to transform the food system and achieve sustainable and healthy nutritional outcomes.

## **Policy recommendations**

In the short term, immediate actions are needed to protect vulnerable households from the sharp increases in prices of wheat, maize and edible oil. These include globally coordinated action between governments to smooth out price rises through facilitating trade flows from net exporting to net importing countries, and targeting poor households which are net buyers of food in both urban and rural areas with cash transfers to improve access to food.

However, because fertilizer price rises are already resulting in reductions in planted area and yields, measures are also needed to focus on boosting food production. This may be through improving yields or expanding planted areas; switching grain out of other uses, such as animal feed; and changing diets to reduce the land, water and other inputs needed to produce food. These approaches can have widely differing impacts on whether the agricultural sector accelerates or slows climate change; protects or erodes biodiversity; and strengthens or weakens the long-term resilience of the food system. To take these impacts into account, policy responses need to use evolving analysis of the food crisis to address four areas:

- 1. Changing *how* food is produced.
- 2. Controlling and monitoring *where* food is produced.
- 3. Transforming *what* food is produced and consumed.
- 4. Improving how food is *used* and *stored*.

### Changing *how* food is produced

There are long-standing recommendations on how to strengthen resilience in farming and reduce negative climate and environmental impacts (see, for example, Lin 2011). Policymakers could assess short and long-term responses against these objectives and redouble efforts to tackle the political, economic and social barriers to producing food more sustainably. In the short-term, policymakers and donors could use existing measures and programmes to amplify environmental benefits, including the following.

#### Using social assistance programmes to improve ecosystem management and build longer-term resilience

Employment-based social assistance or public works programmes can combine short-term, cyclical social protection needs with longerterm livelihood interventions that focus (at least in part) on ecosystem restoration and climate mitigation. Relevant schemes could be scaled up to expand coverage and increase support during shocks, while improving environmental outcomes and building longerterm resilience, applying long-standing lessons about strengthening institutional systems for delivering social assistance (Norton et al. 2020).

#### Improving fertilizer use and availability

Across-the-board cuts in fertilizer application are neither feasible nor efficient and fertilizers have a role to play in bolstering food security. Certain countries and regions, particularly in sub-Saharan Africa, need to use more fertilizer to reduce forest loss and degradation caused by agricultural encroachment (Ritchie 2022). However, there are significant trade-offs to consider in taking measures in the short term that entrench dependency on the limited number of fertilizer-producing countries, do not incentivize fertilizer-use efficiency or lock in inefficient fertilizer production technologies and infrastructure.

Measures that could help in the short and medium term to achieve both social and environmental objectives include:

1. Providing targeted help through direct transfers to less well-off farmers who currently use mineral fertilizers and who are likely to cut back their fertilizer use, even when they know the returns outweigh the costs.

- Strengthening global cooperation on fertilizer-use efficiency and environmental standards to reduce emissions and pollution without impacting crop yields.
- Accelerating projects to decarbonize the fertilizer supply chain using technological improvements or scaling up circular economy approaches.
- 4. Scaling up initiatives to increase access to and use of good quality organic fertilizers and a circular economy approach between livestock and crop production, using locally produced, composted or fermented animal manure instead of – or to complement – synthetic fertilizer.
- 5. Changing production practices for future planting seasons, using leguminous crops either singly or intercropped to fix nitrogen in the soil. Key to this will be **expanding extension services** in a way that is adequately tailored to the context or to farmers' resources (Just Rural Transition 2022a).

Policymakers would need to assess conditions for accelerating and scaling up such initiatives in each context and the time needed to set up systems, establish infrastructure, understand incentives and manage the transition. The case of Sri Lanka is a cautionary tale in transitioning away from synthetic fertilizers too abruptly (Ellis-Petersen 2022).

### Controlling and monitoring *where* food is produced

The combination of rising food and fertilizer prices heightens the risk that incentives are created for clearing land for extensive agricultural production, particularly in areas with poor environmental and land governance and enforcement capacity. In the short and medium term, policymakers could:

- 1. Strengthen real-time monitoring of land-use change, combined with data on food and fertilizer prices in different countries, focused particularly on environmental hotspots.
- 2. Increase scrutiny of proposed agricultural investment projects and respect for existing land-use rights through heightening monitoring of landbased agricultural investment projects and supporting investment agencies to improve due diligence and assessments of investment proposals.

# Transforming *what* food is produced and consumed

#### **Diversifying food production**

Governments and the international community can accelerate and adapt programmes to support the diversification of production in future planting seasons of, for example, horticultural products, legumes and Indigenous staples.

Ideally, short-term responses would avoid supporting the production of a narrow range of staples, which could crowd out farmlevel investments in resilience and lock in production practices that threaten food security.

#### Healthy and sustainable diets

Changing food consumption patterns could reduce the overall level of inputs needed to produce enough food while remaining within planetary boundaries and improving the chance of hitting Paris Agreement targets. Short-term actions include:

- 1. Scaling up nutrition-sensitive social assistance programmes, incorporating nutrition-sensitive social protection interventions into country and regional humanitarian responses.
- 2. Producing tailored messaging for different consumer groups about moving to more nutritionally balanced diets to improve personal and planetary health, and food security.

In the short term, responses to the food crisis would ideally avoid broad-based subsidies to foods that are energy-dense but nutritionally poor and reliant on only a few staple products.

Integrating Climate and Nature Sustainability into Food Crisis Responses

### Improving how food is used and stored

#### Using grains for animal feed and biofuels

Rising food prices have led to calls to switch grain from animal feed to human consumption and to relax biofuel mandates to release more maize from ethanol production and oilseeds from biodiesel production. The feasibility of this in different countries is constrained by economics, international trade conditions and technical specifications of grain (Locke et al. 2013). The large volumes of maize used for biofuels in the US make it a promising way of lowering international grain prices. However, relaxing ethanol mandates is unlikely to encourage switching if the relative prices of maize and crude oil make it profitable to produce ethanol and keep it cheaper than oil.

#### Short-term actions include:

- 1. Monitor changes in the consumption of animal products closely to see if demand for animal feed falls as incomes drop, increasing the market for products for human consumption, where feed specifications make this possible.
- 2. Through global cooperation platforms, encourage discussions of alternative animal feed sources and longer-term, planned switches of grain from use as animal feed to human consumption in countries that affect global grain prices.

Governments would ideally avoid creating incentives for increasing meat consumption or targeting livestock producers with costreducing efforts in countries with a high per capita consumption of meat.

#### Storage, post-harvest losses and food waste

National governments and international funders could increase investment in existing programmes to reduce post-harvest crop losses as well as encourage consumers and food companies to minimize food waste through communications campaigns.

8

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