Modern food systems, though fundamental to human life, impose heavy costs on the environment and public health. These costs transcend borders and generations, and thus require international governmental action. We call on the Group of 20 (G20) to lead action on addressing this problem in three ways: first, by issuing a mandate to international organizations to develop a harmonized approach to measure the social cost of food; second, by coordinating the international reform of current harmful policies, especially subsidies linked to the emission of greenhouse gases or a nutritionally imbalanced food supply, that contribute to costs; and finally, by setting an agenda to repurpose government resources that have been previously used toward creating harmful policies for reducing the costs remaining after the reform of current policies through beneficial measures. For instance, agricultural R&D for sustainability, payment for ecosystem services, and food safety initiatives.

Challenge

Challenge. Food systems are the foundation of all societies. The lives of 7.8 billion people depend on affordable and diversified food on a daily basis, but not everyone’s needs are met. As many as 2 billion people are affected by at least one form of malnutrition. Current practices and features of food systems cause significant damage to the environment and public health through social costs. These costly practices and features can be found throughout the food system, in primary food production, processing, distribution, retail, and consumption. The price paid by the consumer at the time of purchase may not reflect the true cost of food to society once we take this unintended damage into account.

Social Costs. Social costs are generated by food systems and include water and air pollution, greenhouse gas emissions, overdrawn aquifers, biodiversity loss, zoonotic diseases, antibiotic resistance, land degradation, and the rise of illnesses related to food consumption (e.g., diabetes) and production (e.g., exposure to chemical pesticides). Social costs originate in market failures including incomplete information and missing markets, particularly, in negative externalities. The policy environment around the food system has a major influence on the social costs it generates through four drivers: what, how, how much, and where we produce.

Although social costs are not reflected in the price tag of food, society is paying in other ways, such as through tax-funded environmental and health programs or reductions in crop yields because of climate variability. Some costs will only emerge in the future. For instance, when antibiotic-resistant bacteria emerge, fresh water will become scarce and other environmental or health costs will surface.

To illustrate the variety and scale of costs, we compiled non-exhaustive estimates in the United States made by other researchers and arrived at a total of USD 833 billion (see Appendix 1). This is presented in Table 1. For comparison, the United States Department of Agriculture (USDA) estimated that the value added generated by the food system amounted to USD 1.053 trillion (United States Department of Agriculture n.d.). Thus, the ratio of USD 1 of the food system GDP to USD 0.7 of hidden costs is close to the global estimates provided by the World Bank (Vanekoop 2019). The value of the global food system is estimated at USD 8 trillion, while the additional cost is about USD 6.03 trillion (a ratio of 1:0.75). These estimates remain partial (not everything is included) and heterogeneous in terms of assumptions (e.g., value of carbon) and methods (discount rates, correction for double counting). Furthermore, they do not always provide a proper categorization of the nature of the gap between social cost and the price paid by the consumer when they purchase food. Still, they provide a surprising consensus: a very large share (40 percent) of the cost of the food system is not included in the price tag paid by the consumer.

Need for Measurement. Today, there is no harmonized approach to measure the true cost of food. Such an approach is necessary to enable cross-country discussion, comparison, and domestic policy reform. Proposal 1 in the following section addresses this need.

Role of the G20. As social costs of food cross borders and generations, it is the responsibility of international governance to address them through policy. Air, water, biodiversity, effectiveness of antibiotics, and people’s contributions to humanity enabled by their health are among the international and intergenerational public goods affected by our food systems. International coordination on many policies is important to ensure some fairness and that a problem does not simply get pushed onto another country to bear, as may be the concern with, for example, agriculture and forest protection. Proposal 1 provides for the knowledge sharing that is necessary to promote a common language and vision among the G20 countries. Proposals 2 and 3 address policy reform.

Proposal

To address the true cost of the food challenge, we propose a leadership role for the G20 in mandating the measurement of the true cost of food, coordinating reforms of harmful policies, and setting the agenda for the introduction of beneficial policies. Measurement and reform are proposed sequentially. The problem must be measured before priorities for reform can be determined. Reform is split into Proposals 2 and 3. The former covers the elimination of policies that we may be better off without, that is, those that increase the gap between the price paid by the consumer at purchase and social cost. The latter covers the introduction or strengthening of beneficial policies that decrease this gap.

Having a clear understanding and measure of the true cost of food—being able to include all market failures—will help design and repurpose the current agricultural policies to ensure the triple wins in productivity, resilience, and environmental stability.

Proposal 1. The G20 should provide a mandate to International Organizations to develop an evidence-based, harmonized method to measure the true cost of food.

The G20 should provide a mandate to international organizations (e.g., FAO, OECD, IFPRI, UNEP, and WHO) and the Meetings of Agricultural Chief Scientists of G20 States (MACS-G20) to develop a consistent, evidence-based, and robust approach with a harmonized method to measure the true cost of food and to ensure that double counting is avoided. International organizations (IOs) should work on identifying a definition for cost (including social, fiscal, and environmental costs). They should invite international panels of experts such as the High-Level Panel of Experts on Food Security and Nutrition (HLPE) and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) for engagement.

The database on the measurement of the true cost of food should be publicly available to ensure transparency and enable utilization by the scientific community.

Drawing up a definition is a prerequisite for measurement, which is a prerequisite for understanding how policy can be improved. The true cost of food has also been referred to as the true price of food, true cost accounting, the hidden cost of food, the social cost of food, and the social price of food. It is important to have a properly defined concept and common terminology to enable comparison and analysis.

Measurement methodology may present challenges that the ICs will need to consider. It is necessary to examine market failures and understand their scale and nature. Wherever possible, social costs and benefits should be priced appropriately.

While thinking of the methodology used to measure the cost of food, it is important to differentiate between measurement at the producer and consumer levels, the latter being a source of consumption externalities. At the producer level, the difference between social cost and the price paid by the consumer at purchase is because of taxes, support programs (e.g., subsidies), missing markets with non-priced inputs, including water, carbon, and soil.
Externalities are vast and disparate in terms of cause (e.g., transportation, pesticide use, food waste, obesity, and property values), food value chain products (e.g., cattle, potatoes, tomatoes), spatial origin (did the apple come from Chile or Japan?), and geographical scale (local or global).

The work done by the IOs in developing an approach for harmonized measurement could be a central contribution to the United Nations Food System Summit in 2021. Providing the mandate to the IOs promptly can give them lead time to make significant progress before the Food Systems Summit. Subsequently, the event can be an opportunity to create momentum and foster thought around the true cost measurement agenda.

Proposal 2: The G20 should implement a coordinated set of policy reforms aimed at removing existing harmful policy incentives that increase the social cost of food.

Following the mandate given to IOs in Proposal 1, IOs should identify key types of policies that contribute to the different "hidden" costs of food systems. Many existing types of policy have already been well established as harmful in the literature, even if they are not measured in a uniform manner. Such policies include tax rebates for fuel used on the farm, subsidies for chemical fertilizers, and agricultural subsidies for tobacco production. With the fulfillment of Proposal 1, national policymakers will have a common language that can serve as a precondition for coordinating reform of these known harmful policies.

The G20 should identify and prioritize policy reforms that its members can implement domestically without having to rely on international coordination. It can identify areas of policy reform requiring coordinated action as well as platforms where plurilateral and multilateral reform can be discussed, such as in WTO negotiations. WTO disciplines-agreements among WTO members on the policies that are allowed in the context of measures that have international implications—can be a powerful framework for limiting detrimental policies in a way that is fair. G20 countries can track the impacts of these policy reforms on redistribution and implement compensating policies if vulnerable stakeholder groups are negatively impacted. In some cases, such compensatory policies may be beneficial, as described in Proposal 3.

Proposal 3: The G20 should propose a coordinated set of beneficial policies that repurpose money from the harmful policies removed in accordance with Proposal 2, to offset or reduce specific costs of the food system in a socially acceptable manner.

Even if harmful policies are eliminated, there will be market failures that will increase the social cost of food. For example, the clearing of forest or peatland for food production will release greenhouse gases, a negative externality that will not show up in what the consumer pays. Beneficial policies can help account for these social costs. Such policies may include, for example, the adoption or strengthening of the enforcement of a forestry code, agricultural R&D to improve yields so that there is demand for cleared land, and payment for ecosystem services such as silvo-pastoral cattle systems.

The elimination of negative policies (Proposal 2) is expected to free up considerable financial resources for governments. These can be reallocated to beneficial policies (Proposal 3) to narrow the gap between price paid by the consumer at purchase and social cost.

Based on country experience and cross-country comparisons, IOs can identify good practices and the largest unaccounted-for costs and recommend types of reforms. The G20 should promote the implementation of positive policy reforms at the country level to reduce the gap between the price paid by the consumer at purchase and social cost.

The G20 countries should also adapt the Committee on World Food Security (CFS) Voluntary Guidelines on Food Systems and Nutrition to match the regulatory needs for their domestic food system.

The G20 positive policy reform agenda should be conducted in an open and transparent manner, by limiting cross-border externalities, and in a way that is consistent with international commitments such as those on labeling and WTO principles on Technical Barriers to Trade.

Disclaimer

This policy brief was developed and written by the authors and has undergone a peer review process. The views and opinions expressed in this policy brief are those of the authors and do not necessarily reflect the official policy or position of the authors' organizations or the WTO Secretariat.

References


As the focus of this brief is on the reduction of the social costs of food systems, we do not discuss the true social benefits of food. Social benefits can include a case where, for example, children who are well-nourished have better developmental outcomes and contribute more to society as adults. Similarly, we do not focus heavily on equity/redistributive issues with food systems, such as social safety nets to prevent hunger.

For example, consumption of bushmeat and wet markets are suspected as factors that played a role in the origins of the Ebola outbreak, HIV/AIDS, and other diseases. Although it is premature to draw conclusions, a wet market may have been a factor in the origin of the current COVID-19 pandemic, contributing to a statement by the Acting Executive Secretary of the Secretariat of the Convention on Biological Diversity that policy measures may be necessary to mitigate the risk of future pandemics of zoonotic origin (Greenfield 2020).

As an example, obesity can easily be understood as a social cost in countries with public healthcare systems, where taxpayers collectively finance obesity-related health costs. Outside of socialized healthcare systems, the argument around obesity as a social cost is more complex.