

SO WHAT?

POLICY BRIEF N° 19 • MAY 2022
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World Food
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Hidden costs and the fair price of our food: between the market, the State and the commons

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KEY POINTS

- The market price of food products reflects only a limited share (between a third and half) of their true cost if we take into account the negative externalities associated with their production, distribution and consumption.
- These harmful impacts pertain to human health (50% of hidden costs on average), the environment (30%), and the economy (20%). These figures vary due to the territorial diversity of food systems.
- Integrating part of these costs into the price of food products involves adopting food policies that address the issue of vulnerable populations' access to the right to food.

The question of the fair price of goods and services is one that has been raised for as long as money and trade have existed. Aristotle considered the fair price to be the result of a natural trade allowing a community to meet its basic needs, in contrast with trade conducted for the purpose of accumulating wealth beyond these needs, characterized by excessive prices.

This understanding was subsequently adopted by the Scholastics, who advocated a commutative justice whereby equality had to prevail in an exchange, with no party benefiting or being wronged.

This perspective was dismissed by economists during the Industrial Revolution. The concept of “marginal utility”, formulated in the 19th century, thus states that the market price results from an equilibrium between the utility of the seller, who seeks to maximize their profit for a given volume of supply, and that of the buyer, who seeks to maximize their satisfaction for a given level of demand. This is called a market optimum. In neo-classical economics, price is the product of an automatic mechanism and not of moral considerations. This theory continues to prevail, despite numerous criticisms of the restrictive nature of its hypotheses compared to the real-life functioning of trade, particularly surrounding actors' limited rationality and market failures. Studies on the hidden costs of goods and services sold on the market are raising the question of fair price anew, articulating novel arguments.

The market price is not necessarily a “fair price”.

Negative externalities of the market process and hidden costs

We owe Arthur Pigou¹ the concept of negative externality, a core dimension of hidden costs: a business that generates negative effects on its environment as a result of its activities imposes a cost on the community (social cost) that is greater than that which determines the price set by the market (private cost). Consequently, the State must intervene to restore true prices by taxing the business an amount equal to the difference between the two costs and thus compensate for the shortcoming of the market mechanism. The aim here is to “internalize negative externalities”. This is exemplified by the “polluter pays” principle that appeared in the 1970s.

At the turn of the 2000s, researchers and practitioners became interested in creating a new branch of accounting, focused on measuring true costs (True Cost Accounting). The earliest and most comprehensive estimates of hidden costs pertain to food systems. Studies in three countries and at global level provide the following information:

1. In 2015, in the United Kingdom, the cost of negative externalities from the food system was on par with food spending: every £1 paid by the consumer generated £1 of additional costs not borne by businesses and therefore passed on to society (Fitzpatrick *et al.*, 2019). Based on an analysis of over 50 items, these costs were distributed as follows: food-borne diseases (37.3%) and occupational diseases (13.4%), which together represented a “health” cost making up 50.7% of the total; natural capital degradation (36.3%, including 10.6% from biodiversity loss); food imports (7.8%); rural

development and research programmes (2.7%); and agricultural subsidies (2.5%). The total amounted to £120 billion.

2. In 2018, in Switzerland, an analysis of 100 types of externalities found that the cumulative hidden costs of food amounted to 0.87 Swiss Franc (between 0.61 and 1.12) for every Swiss Franc paid by the consumer. These costs pertained to human health (45%), the environment (36%, with biodiversity loss accounting for 32%), and the economy (19%, with imports accounting for 4%), representing a total of 32.2 billion Swiss Francs, while food expenditure amounted to 37.4 billion Swiss Francs.

These findings further showed that the greatest external costs (excluding economic externalities) were those associated with animal products (particularly beef, with external costs amounting to 125% of the price paid; cheese, 53%; and chicken, 38%) but also wheat (69%). Conversely, positive health externalities led to external costs lower than the market price for apples (-178%), carrots (-91%) and milk (-48%, the only animal product among the products with positive externalities) (Perotti, 2019).

3. In 2020, the Rockefeller Foundation estimated that the hidden costs of food in the United States amounted to \$2,105 billion, almost double the amount spent on food (\$1,100 billion). The majority of these costs pertained to the health sector (54%), followed by environmental damage (38%), poor working conditions (6%), and lastly agricultural subsidies (1%) (Barrett *et al.*, 2021). It is worth noting that this report—unlike the UK and Swiss studies—did not take imports into account: they reached 169 billion dollars in 2020, accounting for 15% of national food consumption.

4. Finally, in 2021, the Scientific Group of the United Nations Food Systems Summit (UNFSS) published a global estimate. By the end of the 2010s, the total cost of negative externalities from the global food system was calculated at US\$11.9 trillion, with 45% relating to the environment, 38% to health and 18% to the economy. According to this estimate, negative externalities amounted to 1.2 times the value of global food consumption (Hendriks *et al.*, 2021). Additionally, a World Bank article² reported a cost of US\$4 billion in 2018 due to malnutrition (\$2.4 billion from undernourishment and \$1.6 billion from overnutrition), \$1 billion due to losses and waste, and \$1 billion due to soil and climate damage. This represented a total of US\$6 billion, or 7% of the global GDP. This figure is significantly lower than the result of the UNFSS calculations and does not include the impact of diseases associated with agrochemicals, biodiversity loss and farming subsidies.

1. Arthur was a professor at Cambridge University, and author of *The Economics of Welfare* (1920).

2. Martin van Nieuwkoop, “Do the costs of the global food system outweigh its monetary value?” (2019).

METHODOLOGY

Building on the concept of negative externalities coined by Arthur Pigou, this brief provides a comparative summary of four studies on the food system, conducted in three countries and on a global scale. These studies apply the True Cost Accounting technique for calculating the value of goods and services based on an estimate of the hidden costs not included in the market price. These costs are split across three categories, each associated with a key area of sustainable development: 1) social costs (health, security, education, working conditions); 2) environmental costs (degradation of natural resources—land, water, air, biodiversity—, climate change, losses and waste); and 3) economic costs (subsidies, imports, working days lost, tangible and intangible investments not included in traditional accounting). Based on the diagnoses established, this brief formulates recommendations for public policy and stakeholder strategies.

Table 1. Market cost of food and estimated negative externalities of the food system

Country and world	Household food consumption spending (1)	Cost of externalities (2)	(2)/(1) ratio	Human health % of (2)	Environment % of (2)	Other impacts % of (2)
United Kingdom, 2015, £ billion	120	116	0.97	48%	39%	13%
Switzerland, 2018, CHF billion	37	32	0.86	45%	36%	19%
United States, 2019, US\$ billion	1,100	2,105	1.91	54%	38%	8%
World, 2018-2019, US\$ billion	10,000	11,900	1.19	38%	44%	18%

Source: Michel Duru and Anthony Fardet, adapted by Jean-Louis Rastoin.

Table 1 provides a comparative analysis of these studies and shows that they converge on the significance of hidden costs.

For the three countries studied, the average ratio of externality costs to food expenditure is around 1:1. Internalizing these costs would amount to doubling the price of food, thus arriving at the fair price from an overall economic perspective. This ratio is particularly high in the United States due to the considerable incidence of chronic food-borne diseases in the country, which has one of the highest obesity rates in the world.

Table 1 includes a breakdown of hidden costs by category. On average, for the three countries studied, human health is the leading category, accounting for 54% of the total cost, followed by the environment (38%) and the economy (8%). The figures calculated on a global scale differ significantly due to the low economic weight of low-income countries. Furthermore, it has been shown that negative externalities in France are comparable to those in the three abovementioned countries, based on four indicators: the mass use of (1) nitrogen fertilizers and (2) synthetic pesticides in conventional farming; (3) the production and excessive consumption of animal products; and (4) ultra-processed foods (Duru and Fardet, 2022).

Four recommendations to reduce hidden costs and get closer to fair prices

Foresight scenarios show an inexorable rise in hidden food costs, as the same causes that are consubstantial with the agro-industrial model produce the same effects: chemical and mechanical intensification, the specialization of crops (e.g. soybean monocropping across large regions), market concentration (e.g. large agrochemical companies controlling 75% of the global pesticide market), the globalization of markets, and financialization. Based on this observation, recommendations are made in the four studies presented above.

Human health: prevention to enhance well-being and reduce costs

The prevention of chronic and infectious foodborne diseases, which affect 40% of the global population, appears to be crucial, especially as treatment becomes more expensive and more frequent. It requires dietary changes, as well as daily physical activity for sedentary individuals.

Wastewater treatment and hygiene infrastructure must be made available everywhere in order to limit infectious pathologies. Moreover, prevention requires better training and information for consumers.

Natural resources: the ecological transition imperative

The negative impacts of the prevailing agro-industrial model on natural resources and the climate call for a change of farming model. Chemical intensification must give way to agro-ecological intensification in order to restore soil fertility, improve water management, and increase climate change resilience.

This technological shift involves reorienting the chain of knowledge towards the objectives of sustainable development, with profound changes to the allocation of public and private funds. The challenge is twofold: to provide food system businesses with accessible and effective technical and economic roadmaps, and to make them more attractive to workers and investors. This is essential to the revitalization of activity in rural areas.

Reorienting food consumption and production through economic incentives and taxation

The socio-economic externalities induced by relatively indiscriminate subsidies to the agricultural sector, imports driven by the prioritization of foreign trade, food insecurity, and working conditions are all issues calling for a new strategy for food systems and therefore an overhaul of public policies.

Part of the hidden costs could be internalized in food prices, through the taxation of foods with an excessive amount of ingredients that have been scientifically proven to be harmful, but also through partial tax exemptions for foods with health benefits.

Regarding the environment, carbon tax levels need to be more incentivizing, and limiting soil, water and air pollution must become a greater focus.

The Covid-19 pandemic has highlighted the need for greater food autonomy: more autonomy means fewer imports and the relocation of activity to create added value within territories. To achieve this, investment support is required.

The recommended changes in consumption and production models imply a new direction and a budgetary effort around training and information.

Better coordinating food law and the right to food

The magnitude of the hidden costs evidenced by the four studies suggests that there is considerable budgetary room for manoeuvre to support the

socio-ecological transition. The fair price of food is necessarily greater than the price afforded by the economies of scale of the agro-industrial model and its sole market focus. In view of the high socio-economic inequalities observed throughout the world, it is therefore important to ensure food security for all through public and private mechanisms (particularly those of the social and solidarity economy) tailored to each of the territorial scales concerned, from local to global level. To this end, it is recommended to combine “food law (an economic instrument), which externalizes certain costs, and the right to food (enshrined in the Universal Declaration of Human Rights), which leads to their internalization” (Collart Dutilleul, 2022). ■

CONCLUSIONS

“Capitalism only promotes the common good when the invisible hand is restrained and complemented by the highly visible hand of the State”
(Stephen Marglin, 2022)

The explosion in the hidden costs of food worldwide calls for rethinking the role granted to the market in optimizing the alignment of supply and demand. Given its biological, cultural and ecosystemic nature, human food constitutes a “commons” as defined by Elinor Oström, winner of the 2009 Nobel Prize in Economics. The “fair price” of food should include part of the hidden costs, so as to make all food system actors accountable: farmers, “artisans” and manufacturers, shopkeepers and restaurant owners, and consumers. This paradigm shift involves supporting populations with low purchasing power through a policy of solidarity to guarantee the right of all to quality food. In order to break the cycle of globalization of markets and economic deregulation—with its worrisome consequences on food systems—, a consensus is emerging within the scientific community and civil society to recommend the path of socio-ecological transition, which necessitates new food policies. Following a shared governance approach, such policies will be defined and articulated on different geographical scales: regions, States, and global through intergovernmental institutions.

References

- Barrett C. *et al.*, 2021. *True Cost of Food, Measuring What Matters to Transform the U.S. Food System*. Washington DC: The Rockefeller Foundation, 34 p.
- Collart Dutilleul F., 2022. Le droit à l'alimentation dans la perspective de l'économie sociale et solidaire. *Recma*, 364 (forthcoming).
- Duru M., Fardet A., 2022. Les coûts cachés de notre alimentation. *Up-Magazine*. 10/01/2022.
- Fitzpatrick I. *et al.*, 2019. *The Hidden Cost of UK Food*. Bristol: Sustainable Food Trust, 49 p.
- Hendriks S. S. *et al.*, 2021. *The True Cost and True Price of Food*. UN Food Systems Summit Draft. New York: The Scientific Group, 42 p.
- Perotti A., 2019. *Moving Towards a Sustainable Swiss Food System: An Estimation of the True Cost of Food in Switzerland and Implications for Stakeholders* (Master Thesis). Zurich: ETH, 70 p.

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