



Factsheet TRUE COST ACCOUNTING: A TOOL TO IMPROVE THE SUSTAINABLE PRODUCTION AND CONSUMPTION OF FOOD

This factsheet was produced as part of a collaboration between the House of Representatives and The Young Academy, the Royal Netherlands Academy of Arts and Sciences (KNAW), the Netherlands Federation of University Medical Centres (NFU), the Netherlands Organisation for Scientific Research (NWO), TNO, and Universities of the Netherlands (UNL).

24 January 2023

Authors: Willy Baltussen and Dr. Geert Woltjer, Wageningen Economic Research

1. Key messages

The production, processing, distribution and consumption of food often come with negative societal impacts that are not reflected in market prices and therefore don't influence the decisions made by participants in the food chain. *True cost accounting* (hereafter also referred to as 'TCA') is a way of making sense of these various societal impacts, whether environmental, social or health-related. This process can enable us to identify tools for weighing up these impacts as part of the decision-making process for all actors in the food chain – including the government, banks and others – so that we can ultimately arrive at a more sustainable food system. Interventions aimed at making food production more sustainable are different to those aimed at making consumption more sustainable.

2. Central question

If we are to achieve a sustainable food system, we need behavioural change among actors in the food value chain, as well as among consumers and their dietary choices, and everyone else involved in food production and the way that production is carried out. Behaviour is largely driven by relative prices. For many unsustainable products, the damage caused by their production and consumption isn't priced in, meaning that these products are actually too cheap. If these 'external costs' were factored in, unsustainable products would become relatively expensive and consumption of those products would decrease. This would simultaneously incentivise producers to make their production methods more sustainable. A first step would be to make differences in sustainability visible in products.

The sustainable production and consumption of food is relevant to almost all of the Sustainable Development Goals set by the United Nations (UN) for 2015-2030.¹ A key challenge here is to provide appropriate visibility so that producers, consumers and all other actors can make the right decisions. The concept of *true cost accounting* as a sustainability metric can make an important contribution to making the food system more sustainable, when combined with other tools and interventions to promote such behaviour.

¹ <https://unric.org/nl/duurzame-ontwikkelingsdoelstellingen/>

3. Introduction

This factsheet explores the following:

- a. The methodology: the *true cost accounting* tool as a metric (section 5)
- b. The tools and interventions or incentives that use TCA to make the food system more sustainable (section 6)
- c. Policy: strategies for the Dutch government (section 7)

A second factsheet (by Katja Logatcheva and Yuca Waarts, 2023) discusses the 'fair' price of food. That factsheet focuses on the remuneration of the various actors in the food chain. In other words, are farmers and horticulturalists earning a fair income within the particular value chains they operate in? Remuneration in that sense refers to both their core business and any additional efforts to make their production methods more sustainable.

4. The problem

At present, our food system isn't sufficiently sustainable. Over the past century, agricultural land use has played a major role in biodiversity decline and climate change. In many parts of the world, rural areas are having to deal with environmental pollution, the risk of poverty, a lack of training and employment opportunities, and depopulation. FAO, the United Nations Food and Agriculture Organization, has reported that 700 million people worldwide are living in poverty, three quarters of them in rural areas.² A third of all the food produced globally is wasted, while nearly 800 million people go hungry³. Agriculture accounts for 70 percent of all water use, or as much as 95 percent in some developing countries. Water extraction for irrigation and livestock production is set to increase as the global population continues to grow and economic development continues to drive demand for food.⁴ Overfishing is driving some species to extinction and is threatening the viability of some livelihoods. Meanwhile, uncontrolled expansion of aquaculture can cause pollution, and rising levels of carbon dioxide in the atmosphere are contributing to the acidification of our oceans.⁵

The biggest societal impact of food comes from the over and under-consumption of certain food products in our daily diet.⁶ The way that we currently produce and consume food has negative impacts on the environment, people and animals. These impacts are already being felt both within and beyond Europe, and they are set to continue.⁷

² <https://www.fao.org/sustainable-development-goals/goals/goal-1/en/>

³ <https://www.fao.org/sustainable-development-goals/goals/goal-12/en/>

⁴ <https://www.fao.org/sustainable-development-goals/goals/goal-6/en/>

⁵ <https://www.fao.org/sustainable-development-goals/goals/goal-14/en/>

⁶ <https://www.rockefellerfoundation.org/wp-content/uploads/2021/07/True-Cost-of-Food-Full-Report-Final.pdf> ; p15

⁷ These negative effects can sometimes be paired with positive ones, such as carbon sequestration and the creation of attractive landscapes. Positive impacts such as those are also included in True Cost Accounting, but the negative ones tend to dominate.

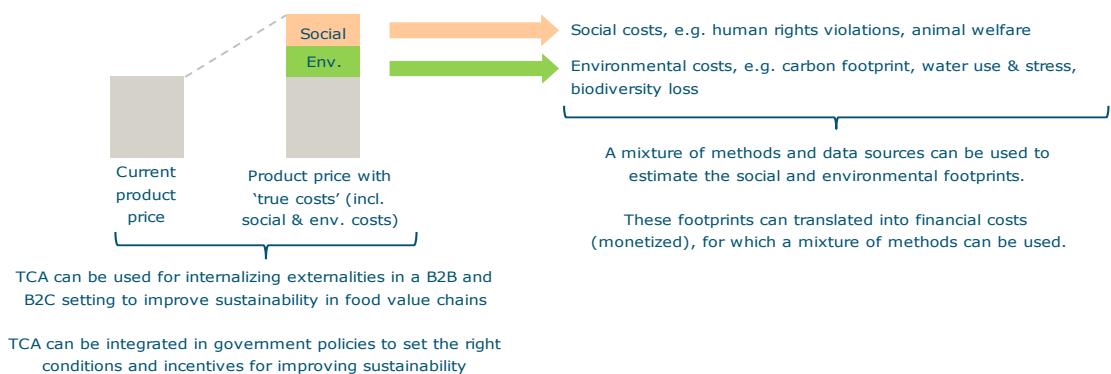
5. The methodology: true cost accounting

True cost accounting (TCA) is a system of measuring and valuing environmental, social, health and economic costs and benefits to facilitate sustainable decision-making by governments and stakeholders in the food system.⁸ Figure 1 shows the relationship between TCA and market prices. TCA takes environmental, social and human health impacts and converts them into euros. This conversion is based on the cost of damages, drawing on life-cycle analyses (LCAs) to ensure that all forms of environmental impact are included without double-counting any effects. A similar methodology is currently being developed for social impacts, using social LCAs.⁹ A lot of research is being done into the relationship between diets and human health.

A comprehensive list of societal impacts is currently being developed within an EU Horizon Europe project known as FOODCoST.¹⁰ The project distinguishes between 10 different environmental impact categories (e.g. climate, particulate matter, water use, land use; toxicity); nine social impact categories (e.g. working conditions/labour rights; social equity, local community rights; food safety, dietary patterns and animal welfare) and five economic categories (monetary transfers, congestion, market structures, employment and transaction costs).

One example is food transport. It's often argued that food is moved around too much and that this has negative environmental impacts. If the price were to include climate costs, pollution costs and the congestion costs attributed to transportation, products that have moved around a lot would be relatively more expensive.

Figure 1: True cost accounting (TCA) in relation to current market prices



⁸ https://sc-fss2021.org/wp-content/uploads/2021/06/UNFSS_true_cost_of_food.pdf

⁹ <https://iso26000sgn.org/iso-26000/about-iso26000/unep-social-lca-and-iso-26000/>

¹⁰ <https://www.foodcost-project.eu/>

TCA should therefore really be seen as a metric for all kinds of societal impacts – social, environmental, and economic – that are not currently reflected in the market price. TCA is not itself a tool for improving sustainability. The next section discusses tools that can do that.

6. Tools: incentivising sustainability

TCA as an objective metric – including the data required for it – can be used to distinguish eight interventions to improve the sustainability of the food system. Each route is illustrated with a current example.

a) Government policy

Governments play an important role in balancing societal costs and benefits. Indeed, by setting targets and introducing policies (legislation, taxes, subsidies), the government can actively steer towards certain outcomes. Some current examples would be the aforementioned Sustainable Development Goals (SDGs) of the United Nations, the Climate Agreements, the EU Green Deal and the Agriculture Agreement currently being developed in the Netherlands. Governments can pursue food policies by, for example, introducing a sugar tax, imposing requirements on working conditions abroad (ICSR) or through energy pricing policies. TCA is relevant to governments because it identifies a range of societal issues and locates tensions (or trade-offs) within the policy landscape. One example would be the question of whether a nitrogen transition will affect the energy transition.

b) Consumer behaviour

The organic supermarket De Aanzet has used true pricing since November 2020, meaning its prices include societal costs. Consumers have to actually pay those prices at the till. De Aanzet itemises the societal costs so that it can value sustainability projects. The labelling on the supermarket shelves indicates exactly what the societal costs are for specific products, based on an agreed TCA methodology. Because consumers have to pay the true price, sustainable options become relatively cheap. The revenue goes into a fund (though at present it's not yet clear how those funds will be used). A supermarket like De Aanzet serves a niche market, meaning this voluntary approach can only serve as an example and eventually government intervention will be needed to scale it up.

c) Catering

Catering represents an important segment of food consumption. Workplace catering involves three parties: the caterer, the organisation where the catering is taking place and the employees who make use of the catering. The latter can be nudged towards a more sustainable diet by making sustainable food cheaper (more subsidies) and making less sustainable food more expensive (fewer subsidies). In practical terms this could mean that organic salad becomes cheaper, while a burger becomes more expensive. TCA can be used as part of that pathway to provide a 'price tag' for the societal impact of the caterer's products, giving customers an understanding of how sustainability works and why one product is subsidised more than another. One case study of such an approach

would be the partnership between the catering company Hutten and FMHaaglanden¹¹ which was launched on 1 January 2023.

d) Sustainable procurement

Using TCA as part of the decision-making process for the procurement of goods and services is a way for businesses and governments to make progress in sustainability. Coffee procurement is a classic example. It's widely known that coffee production has major societal impacts, both socially and environmentally. People are also generally aware that there are differences between producers, countries of origin and coffee value chains. TCA can help shed light on what those differences mean when it comes to societal impacts. TCA can also be used to ensure that procurement contracts take account of the sustainability of the coffee value chain. One case study of this would be Rijkswaterstaat¹², which has worked with its supplier Selecta to ensure that their new contract for hot drinks is focused on a fair and transparent coffee value chain.

e) Making internal operations more sustainable

Performing a TCA for a product creates an insight into where the 'unsustainabilities', or hotspots, are located in the production chain. This insight can be used to make advances in sustainability. The cooperative De Fruitmotor¹³ is a case in point: based on a TCA, it has drawn up a sustainability plan to generate impact so that it can "create a biodiverse landscape in which we value food".

f) Business model

Companies can focus their business model entirely on sustainability, so that through their production and processing methods they are in a position to market the most sustainable product compared to their competitors. In many cases, this translates into higher consumer prices per unit of product. Examples include companies such as Tony's Chocolonely¹⁴ (chocolate) and EOSTA¹⁵ (organic fruit and vegetables).

g) Quality labels

Quality labels are often used as a way of communicating sustainability to consumers. The Netherlands has 12 leading quality labels for food, based on objective criteria assessed by Milieu Centraal.¹⁶ None of these leading labels require any compliance with sustainability impact standards. Only a few, such as the Rainforest Alliance, carry out impact studies.¹⁷ TCA can play a supporting role here, and options for ways of collaborating are currently being explored.

¹¹ <https://www.hutten.eu/blog/hutten-trotse-nieuwe-cateraar-bij-fmhaaglanden>

¹² <https://www.magazinesrijkswaterstaat.nl/zakelijkeninnovatie/2020/03/contract-warme-dranken#:~:text=In%20het%20nieuwe%20contract%20voor,een%20primeur%20op%20dit%20gebied.>

¹³ <https://www.defruitmotor.nl/>

¹⁴ <https://tonyschocolonely.com/nl/nl>

¹⁵ <https://eosta.com/en/about-eosta>

¹⁶ https://www.milieuentraal.nl/eten-en-drinken/topkeurmerken-check-het-plaatje/?gclid=EAIaIQobChMIpsv9ie7Q_AIVC6x3Ch1eIgfEAAAYASAAEgIJKPD_BwE

¹⁷ <https://www.rainforest-alliance.org/impact/>

h) Financial institutions

Like the government, financial institutions are in a position to influence the sustainability of production methods through the loans they provide and the price they demand for those loans (interest rates). TCA can be a tool to increase the visibility of risk in terms of societal impact.

Based on the pathways described above, it seems clear that:

- We need a sustainability metric to guide the way towards sustainability, regardless of the chosen route, and TCA is an option for this.
- The calculated *true costs* don't always equate to price increases for individual products (with the exception of pathway b).

In short: TCA makes societal costs transparent, but this doesn't mean that those costs have to be settled straight away at the till. The purpose of TCA is mainly to trigger behavioural change across the value chain.

7. Strategies for the Dutch government

7.1 What are true prices?

True prices for agricultural products are retail prices that include all the applicable societal costs. This includes costs that aren't currently being paid for, known as external costs. It means paying to rectify all the damage caused. TCA is a methodology to calculate those external costs and make them visible to consumers, producers and the government. This is often done by performing life-cycle analyses and putting a price on the calculated impacts. The method is still far from perfect, and the precision of the calculation depends on the objective. It's still tricky, for example, to differentiate between organic products and conventional products by using the present public tools for true cost accounting.

7.2 How do we achieve true pricing?

True pricing happens when any damage that has been caused is paid for. For example, if the costs associated with climate change are attributed to fossil fuels or deforestation, then those damages should be paid for. Taxes or tradable carbon credits are the most appropriate tool to compensate for general damage, but they're difficult to implement on an international scale. If such taxes were successfully introduced, climate costs would be included in food prices and producers and consumers would automatically take that into account. But even if that doesn't work, it's possible to use TCA to estimate the external climate costs associated with products sold in the Netherlands, and then have consumers pay for that through taxes. If this is done carefully enough, so that suppliers who incur lower climate costs are also taxed less on their products, it would act as an effective incentive for producers to be more climate-conscious in their production methods.

7.3 What can governments do?

Governments have various tools at their disposal to improve sustainability. These include information gathering (research), information sharing, encouraging innovation through subsidies or levying taxes, and introducing regulations to improve sustainability.

7.4 What strategies can the Netherlands pursue to contribute to 'fair pricing' in the global market?

A climate tax on unsustainable consumption could theoretically reduce the specific climate impact attributed to consumers in the Netherlands. But it would be better to do this on a European or even global level. If there's no requirement to pay for climate damage abroad, some border corrections would be needed. For some external costs, such as working conditions, producers can be held responsible for damage attributed to their value chain, and then be obligated to correct this (*due diligence*). International networks can provide a way of organising these measures collectively. Producers and supermarkets can also be held responsible for healthy diets, for example through the provision of good information and by ensuring that unhealthy products are labelled as such and are not excessively promoted.

Disclaimer: De Jonge Akademie, KNAW, NFU, NWO, TNO en UNL bemiddelen tussen parlementaire kennisvraag en wetenschappelijk kennisaanbod. De informatie in het kader van Parlement en Wetenschap is afkomstig van vooraanstaande wetenschappers, maar niet onderworpen aan peer review en niet door de wetenschapsorganisaties geverifieerd.