True Costs of Food Database - Q&As

This document presents answers to questions asked during the online launch event and stakeholder webinar for TMG's True Costs of Food Database, held over Zoom on 8 and 13 January, 2026.

Questions have been copy-edited for clarity and to correct typos.

In my understanding, supply chain data and social human impact data are among the biggest gaps of available data. So far, I understand that TCA does not cover that part. Will they be added if/when they become available?

The current version of the True Costs of Food Database focuses on primary production-related environmental and human health impacts (i.e. from cradle to farm gate) that can be quantified using existing datasets. Broader social impacts, such as labor conditions, income distribution, or social well-being along the supply chain, are not yet included due to limited harmonized data and methodological challenges. These dimensions are conceptually part of True Cost Accounting, and they could be added in future versions if reliable, consistent data and accepted assessment methods become available.

Could you provide a list of the limitations of the methodology/database?

The limitations of the methodology behind the True Costs of Food Database are explained in the Documentation and User Manual in Chapter 1.4, 'Limitations of the database'.

Will you try to expand the database beyond the farm gate in the future for products available in the EU?

Expanding the system boundary beyond the farm gate is a logical future development. If suitable data sources and further funding become available, future versions could extend the scope to include processing and downstream stages.

There are also other accounting methods for these hidden externalities, like eco-cost, which uses the abatement costs approach. Why did you choose the current two methods and not eco-cost for instance?

The monetization factors from True Price's *Monetisation Factors for True Pricing* and CE Delft's *Environmental Prices Handbook* were chosen because they are well aligned with LCA-based impact assessment methods used in the database and provide a broad and consistent set of values covering all included impact categories. Together, these two approaches represent both a rights-based perspective and a damage costs approach which allows users to choose results under different assumptions. Future work could explore expanding the database to include additional valuation approaches, such as abatement costs using eco-cost values, subject to the availability of additional funding and data harmonization efforts.

Since the data is based on intensive production only (and not, for example, organic, etc.), is the purpose of the database to shift people to (for example) eating more beans instead of meat?

The purpose of the database is simply to provide available data on the hidden costs of raw food products, in order to support food systems research and enable better decision-making for policymakers, businesses, and consumers. The database makes environmental and health externalities visible and comparable across food products and can support a range of applications including policy impact assessment, public procurement, agricultural policy design, and future TCA research. An analysis of some of the hidden cost of different foods, such as a comparison of current diets vs. more plant-based consumption, is one possible use case of the database.

What position is taken when it comes to uncertainty? In particular, when the JRC believes that, in most impact categories, midpoint models are more mature, better validated, and less uncertain than full damage models. Do you take a different stance than the JRC and on what basis?

The approach taken is largely aligned with the JRC position. Most impact categories are assessed and reported at the midpoint level, where models are better validated and uncertainty is lower. Endpoint modeling is used only for human health impacts, such as human toxicity and health impacts from ammonia emissions, because these

impacts are expressed in Disability Adjusted Life Years (DALYs) and can be valued using available monetization factors.

Why is the calculated true price of fresh bovine meat approximately 20% higher in Germany compared to the Netherlands? I would have expected it the other way around.

The expectation that true prices would be higher in the Netherlands is understandable given the country's high livestock density and well-documented nitrogen challenges. However, the database reports product-level true costs per kilogram of fresh bovine meat, rather than regional environmental pressure per hectare. LCA is an efficiency-based, product-oriented framework that quantifies impacts per unit of output. Consequently, more intensive systems with higher yields or faster animal turnover can exhibit lower product-level impacts, while spatial concentration effects and local exceedance of environmental thresholds are not fully captured. The difference reflects system-level averages and the results depend on feed composition, manure management, production structure, country-specific factors such as water use, and other environmental impacts, which all influence the calculated true cost.

Are packaged/ultra-processed products covered?

No, the True Costs of Food Database currently includes only raw food products assessed at the farm-gate level.

How is the scope of the database different to a traditional LCA database like ecoinvent? It seems to me very similar. Is the difference that you added the monetization factors?

While the True Costs of Food Database is grounded in the same LCA principles as traditional LCA databases (such as ecoinvent), its scope, level of aggregation, and intended use differs. Traditional LCA databases provide process-level life cycle inventory (LCI) data across many sectors and are designed as input databases for conducting bespoke LCAs. Users must select processes, model supply chains, choose impact assessment methods, and perform characterization and interpretation themselves.

In contrast, the True Costs of Food Database is product-focused and application-oriented. It provides pre-calculated, harmonized life cycle impact assessment results from cradle to farm gate, combined with monetized environmental and production-related health external costs. This significantly lowers the entry barrier for non-LCA experts and enables direct use in economic, policy, and business contexts where monetized results are required. The key added value therefore lies not only in the inclusion of monetization factors, but in the standardization, comparability, and accessibility of product-level true cost results, presented in an open-access database.

Is the cost we saw added to the market price observed today? Or is it the new price that would have to be paid for the product?

The costs shown represent hidden environmental and health externalities that are not currently included in market prices. They should be interpreted as additional societal costs that exist alongside the market price.

The database shows the category of red meat as having the highest hidden cost. I was at another seminar on TCA, where they argued poultry has a higher cost because more individual animals have to be killed per ton of meat. Can you explain the difference?

The database focuses on production-related environmental and human health impacts, where red meat has very high impacts per kilogram due to greenhouse gas emissions and resource use. The argument that poultry has higher costs is based on animal welfare considerations related to the number of animals killed, which are not included in this database.

As far as I am informed, the negative impacts on society of the food system are largely on public health and on the environment. With this database, are you sufficiently able to take the costs for society on public health problems into account?

The database captures selected public health impacts related to food production, but it does not represent a comprehensive assessment of all societal health costs of the food system. The database includes health impacts that arise through production-related pathways, such as those linked to environmental contamination downstream

of food production (e.g. respiratory health impacts associated with ammonia emissions and other air pollutants).

However, several major public health impact channels are outside the scope of the database, including:

- occupational health impacts affecting farmers, agricultural workers, and others in the food chain;
- food safety and foodborne illness risks associated with contaminated or unsafe foods;
- diet-related health impacts linked to consumption patterns, such as non-communicable diseases influenced by dietary composition; and
- health impacts related to food insecurity and inadequate access to nutritious food.

As a result, the public health costs included in the database represent only a subset of food-system-related health impacts, focusing on those that can be robustly modelled within a cradle-to-farm-gate, LCA-based framework. The results should therefore be interpreted as partial estimates of societal health costs, rather than a full valuation of all public health impacts associated with food systems.

Are there no positive externalities generated by organic production in the database?

The current version of the database does not include any positive externalities or cover organic production systems.

Why is the cost more than 20% higher with right-based costs compared to the damage costs? Is human life valued differently?

The difference mainly comes from how environmental impacts are valued. The rights-based approach reflects the cost of preventing or remediating impacts to protect basic environmental and human rights, which tend to be higher. The damage cost approach reflects estimated welfare losses under current economic conditions, which tend to be lower. For human health impacts, both approaches monetize Disability Adjusted Life Years (DALYs), but they use different conceptual logics. The damage costs approach values health impacts by estimating medical costs, productivity losses,

and welfare losses, with losses of healthy life included in these values. The rights-based approach assigns a monetary value to a lost healthy life year, derived from a meta-analysis of Value of Statistical Life studies.

How come dairy and eggs appear to have relatively low impact?

Dairy and eggs appear to have relatively low impacts because results are presented per kilogram of product and reflect average, highly productive systems in Europe. Intensive systems with high yields tend to have lower emissions per unit of output. LCA based impact data, as is the case in our database, captures efficiency per unit of output rather than comprehensive assessments of sustainability or of total system-level impacts.

Within the database, is it possible to differentiate between organic and conventional products?

No, not in the current version. The database reflects the impacts and values for conventional production systems.

The production method and system specifics are not in the database. So, what is included in terms of production?

The database includes average, country-level production systems as represented in the underlying SAFAD dataset. This means it reflects typical conventional agricultural practices, including average yields, input use, and emissions per product for each country.

How does the dataset consider inflation? Would it be critical to remember that the dataset values are most relevant to today's economy and there might be limitations if the monetization values are applied retrospectively to the past?

All monetization values in the database are expressed in euros and have been adjusted to 2023 prices using appropriate inflation indices. Values can be applied by the user for other years as long as they are adjusted for inflation.

What will be your next steps for extending the database? Is a distinction between production methods (e.g. organic/conventional) planned?

Future extensions of the database could include broader system boundaries, additional impact categories, and differentiation of production systems, including organic and conventional methods. Whether this can be implemented depends on the availability of robust data that can be consistently applied across countries and products. TMG would require further funding to be able to work on extending the database. However, the database is open source and anyone is free to extend it and make it available to others.

I assume that biodiversity loss is mainly based on agriculturally based land use, since these are the main impacts and cost of food production. How can they not be included?

Biodiversity loss is indeed strongly linked to agricultural land use, but it is not included in the current database due to resource constraints.

Looking at the database the other day, I didn't find much data specific to my country, Finland. How accurate would it be to use Sweden as a proxy? Or is the data the same for each country (because of using global values)?

Impact data is to some extent country-specific, while the monetization factors use global averages. Using Sweden as a proxy for Finland may be reasonable for some products and impacts, where, e.g., climate and production systems are similar.

Why are only 9 impact categories taken on board, while important categories like land use and fossil energy are not taken into account?

The impact categories were selected based on data availability, methodological maturity, the possibility of monetization, and resource constraints. We acknowledge that the current list of impact categories is not exhaustive and may be expanded in future versions.

Once I downloaded it, could I extend the database with my own primary data in the form of LCA or Product Carbon Footprints (PCFs) to obtain external costs?

Yes, the database can be used as a reference framework. Users can combine their own LCA results or product carbon footprints with the monetization factors used in

the database to estimate external costs for specific products or production systems. However, to ensure comparability, it is important that the underlying impact assessment methods and assumptions are aligned with those used in the database.

The interpretations, the right-based approach and the damage costs, do not refer to the overall production cost of the foods, correct? One refers to the cost of ensuring that specific standards are being met, while the other is the cost of environmental damage caused by food production.

The database presents the costs for some of the environmental and production-related health costs. It does not include traditional production costs such as labour cost, cost for machinery, and inputs, etc. The rights-based approach estimates the cost required to prevent or remediate environmental or health impacts in order to meet environmental and human rights standards, while the damage-cost approach estimates the societal welfare losses caused by environmental and health damages. Both approaches capture external costs that are not included in market prices and should be interpreted as additional societal costs rather than as total production costs.

Could you better explain the difference between the two valuation approaches in human health? Which are the costs in the restoration part and which ones in the damage (if the approaches also differ in this area)?

For valuation of Disability-Adjusted Life Years (DALYs), CE Delft's damage costs approach values specific diseases and health effects. For each endpoint it includes medical costs, productivity losses, and welfare losses, with losses of healthy life included in these values. True Price's rights-based approach uses a compensation approach that assigns a monetary value to a DALY, derived from the meta-analysis of Value of Statistical Life from Willingness-to-Pay studies. This value represents the cost of compensating for lost healthy life years, rather than measuring the actual disease-specific damages.