

# Topic 4 - Using Pricing and Rewarding guided by True Cost Accounting to Manage Hidden Social and Environmental Sustainability Impacts in the Food System

Systemic Lab (contact: <a href="mailto:scarlett.wang@wur.nl">scarlett.wang@wur.nl</a>)

#### **Topic description**

Agri-food systems play a crucial role in society by providing the food we rely on and supporting the livelihoods of over a billion people worldwide. At the same time, prevailing unsustainable practices are driving significant negative impacts, including accelerating climate change, depleting natural resources, and making healthy diets increasingly unaffordable. Tackling these challenges is complex. A better understanding of the hidden costs from uncounted economic, social, and environmental sustainability issues in the current market price will empower individuals, businesses, governments and communities to act on these challenges, as opportunities for change.

True Cost Accounting (TCA) is a method in systems research that looks beyond the price tags of food products by including hidden costs and positive externalities. Up to now, most efforts in TCA research have centered around the monetization of negative environmental and social externalities. In academia, TCA is still a new method, and it belongs to sustainability assessment methods. To date, there have been only a few efforts to estimate the true costs of the global food system, some national estimates and only sparse estimations at product level. The application of TCA in food systems research is a further novelty, and this requires collaboration among multiple disciplines.

To expand the use of TCA in food systems research, we invite applications from experts, practitioners, researchers and educators in: life cycle analysis (LCA), true cost accounting, food and marketing policy, food-based dietary guidelines for sustainable healthy diets, stakeholder engagement, public procurement and contracting, gastronomy, and food services (especially catering providers for school and canteen meals).

The objective is to develop a dashboard, strategic action plan, and knowledge agenda for using pricing and rewarding guided by TCA to manage hidden social and environmental sustainability impacts in the food system. In a short cycle of dashboard building, case study, and engagement with practice, the work within this topic will raise awareness on hidden costs for selected key products. Research activities will also be rooted in a transition management approach.





These objectives will be delivered through the following steps:

- 1. **Dashboard building.** Building on the advances and increasing availability in life cycle impact assessment databases for agri-food products at country level, we aim to create the first interactive dashboard showcasing the true price of several agri-food products. Country coverage of the dashboard is driven by availability of reliable national data and will include France, the Netherlands, and Germany. We invite (LCA) expert contributions to add national data for other EU member states, with a particular interest in Estonia, Poland and Spain.
- 2. Internalization of externalities testing in case studies. We will investigate internalization tools and mechanisms in policy tools and business practices using literature reviews and expert interviews. Case studies related to public procurement and/or food service will be defined to enable in-depth and targeted evaluations and to prioritise solutions that prevent or manage externalities. Building on a framework for transition management in market setting (TransMission), ambitions are set to lower the hidden social and environmental costs through combined interventions, e.g. plate composition and consumption (planetary health diet), sustainable agricultural production, waste prevention, supply chain operations and contract management, pricing, etc.
- 3. **Strategic planning.** As a final step, we aim to involve food system actors in a strategic planning exercise, using the dashboards and internalization tools in the practical context of the food system. In the systemic lab and optionally in the territorial labs held in Barcelona, Riga, and Warsaw participants will discuss key priorities for implementing the internalization tools. The discussions will also address potential challenges that may arise, such as issues related to food affordability, insufficient government action, and other context-specific barriers.

# **Related research questions**

- Can we create a dashboard for the true prices of selected agri-food items per country using the latest scientific advancements in TCA?
- What policy and business internalization tools and mechanisms are available for food system actors?
- How will stakeholders react to internalization tools in addressing externalities?
  Where are the priorities?

# **Methods to be considered (e.g. Theory of Change)**

- True cost accounting on economic, social and environmental costs and benefits of selected food items at country level, potentially also health impacts
- Using the LCA databases and recommended TCA monetization factors
- Literature review
- Expert interviews







- Case studies
- Stakeholder engagement in a systemic lab
- Stakeholder engagement in eliciting behavioural responses towards internalization tools in addressing externalities in territorial labs (optional)

#### **Documents & materials to be used**

- Baker, L., Castilleja, G., De Groot Ruiz, A., & Jones, A. (2020). Prospects for the true cost accounting of food systems. *Nature Food*, 1(12), 765-767.
- Baltussen, W., Bonnet, C., Bunte, F., van Galen, M., Giagnocavo, C. L., Kenny, D. A., ... & van Wagenberg, C. P. A. (2025). True Cost Accounting (TCA) as a transformative approach for livestock agri-food systems. *animal*, 19(8), 101591.
- Crosnier, A., Baudry, G., Jeangros, L., Meier, E. S., Cisco, G., Spring, L., & Barjolle, D. (2025). True Cost Accounting for Food application: Environmental, social and health impacts of bread. *Journal of Cleaner Production*, *524*, 146224.
- de Adelhart Toorop, R., Yates, J., Watkins, M., Bernard, J., & de Groot Ruiz, A. (2021). Methodologies for true cost accounting in the food sector. *Nature Food*, 2(9), 655-663.
- von Braun, J., & Hendriks, S. L. (2023). Full-cost accounting and redefining the cost of food: Implications for agricultural economics research. *Agricultural Economics*, *54*(4), 451-454.
- Lucas, B. F., Abbas, F., Dassesse, K., Marti, J., & Brunner, T. A. (2025). Uncovering the determinants of attitudes towards true cost accounting for food: a study with Swiss residents. *Journal of Agriculture and Food Research*, 102192.
- Mehrabi, S., & Giagnocavo, C. (2024). Business models and strategies for the internalization of externalities in agri-food value chains. *Agricultural and Food Economics*, 12(1), 46.
- Michalke, A., Stein, L., Fichtner, R., Gaugler, T., & Stoll-Kleemann, S. (2022). True cost accounting in agri-food networks: A German case study on informational campaigning and responsible implementation. Sustainability Science, 17(6), 2269-2285.
- Michalke, A., Köhler, S., Messmann, L., Thorenz, A., Tuma, A., & Gaugler, T. (2023).
  True cost accounting of organic and conventional food production. *Journal of Cleaner Production*, 408, 137134.
- Oebel, B., Stein, L., Michalke, A., Stoll-Kleemann, S., & Gaugler, T. (2024). Towards true prices in food retailing: the value added tax as an instrument transforming agri-food systems. Sustainability Science, 1-18.
- Snoek, J., P. Sinke, E. Oosterkamp, N. Odenhoven, 2024. External costs of locally produced cultivated meat compared with three conventional Dutch meat products. Wageningen, Wageningen Economic Research, Report 2024-029. 72 pp.; 14 fig.; 31 tab.; 76 ref.
- Simons, L., Nijhof, A., & Janssen, M. (2023). The mission-driven transition approach to managing complex change processes. TransMission institute.







#### **Expected outcomes (content-related)**

- Dashboard showcasing the true price of several agri-food products for selected EU countries.
- A list of Internalization tools and mechanisms for managing hidden social and environmental impacts based on TCA
- Case studies on applying TCA in public procurement and/or food service (catering)
- Stakeholder engagement workshop for strategic planning

# **Expected outcomes (material)**

- Report
- Paper showcasing research results
- Interactive dashboard
- Position paper: research agenda and future directions of applying TCA in food systems research



