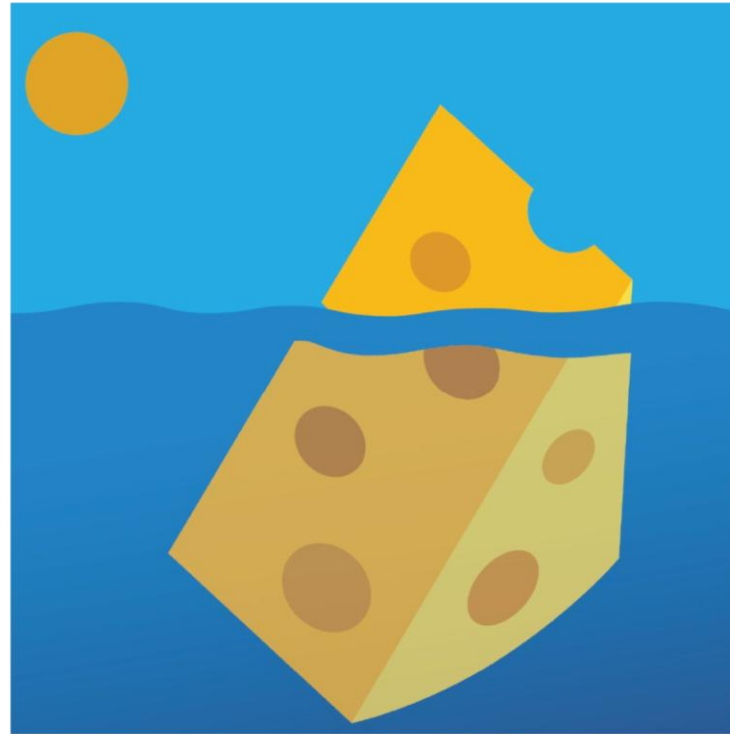




TRUE
COST
OF FOOD
.CH

TCAF - True Cost Accounting for Food

Focus Food Save 2026 – Close the gaps!

June 24th, 2026

Dr. Gino Baudry

EPFL, LEUrE - Laboratory of Environmental and Urban Economics

Short-bio | Senior scientist



Dr Gino Baudry

Senior researcher
EPFL, LEURÉ
(Switzerland)

- Since 2022 Senior scientific**
EPFL, LEURÉ - Laboratory of Environmental and Urban Economics
- 2017-2022 Research fellow**
Imperial College London, CEP - Centre for Environmental Policy
- 2016-2017 Post-doc fellow**
Vrije Universiteit Brussel (VUB), MOBI - Mobility & Logistics Research Centre (MOBI)
- 2012-2016 PhD student, Research & Teaching Assistant**
University of Nantes, LEMNA & GEPEA
- 2010-2012 Political advisor**
Agence régionale des Pays de la Loire
- 2009-2010 Masters in Sustainability, Energy Economics and Policy**
Polytechnique Paris chair, IFP School, CEA-INSTN

Climate
plan

8 years

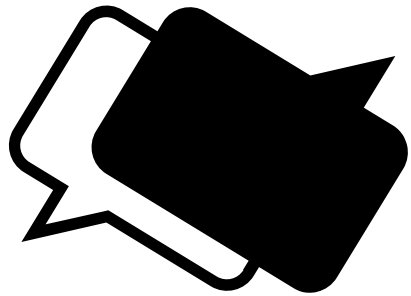
Agrifood systems
& bioenergy

14 years

Energy &
Climate

16 years

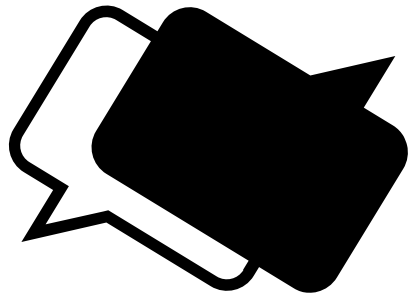
Introduction | Q&A: Agreements & Commitments



Who is familiar with the Paris Agreement? The 2030 Agenda? The Convention on Biological Diversity?

*Qui est familier avec les accords de Paris?
L'Agenda 2030? La Convention sur la diversité
biologique ?*

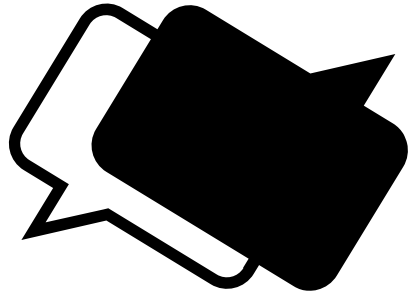
Introduction | Q&A: Strategy & KPIs



Who has made clear and explicit what these commitments actually mean in terms of their day-to-day work and activities?

Qui a interprété ce que ces engagements signifient dans vos métiers et activités au quotidien?

Introduction | Q&A: Monitoring & implémentation



Who has the necessary tools and human resources to understand, implement and monitor progress towards these objectives/commitments?

Qui dispose des outils et ressources humaines nécessaires pour appréhender, implémenter et monitorer l'atteinte de ces objectifs/engagements ?

Introduction | From commitments to achievements



Switzerland has ratified the **Paris Agreement**, committing to halve its emissions from 1990 levels by 2030 and to achieve net zero by 2050



Switzerland has committed to implementing the **2030 Agenda** (United Nations Sustainable Development Goals) The mitigation strategy must be broken down by sector and activity



EPFL's 20-30 Strategy (Bruno Rossignol) has been developed to break down, monitor and achieve these objectives in the catering sector



Living lab to explore, test, and validate (scientifically) ambitious strategies, methods and tools prior dissemination



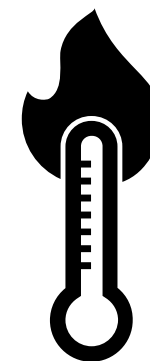
Scaling up our solutions for a more sustainable and healthier agrifood system and maximum health and sustainability impacts

Introduction | Close the gaps !



Looking at...
... what can be implemented today
5 years ahead

Looking at...
... Sustainability & climate objectives & commitments
15 years late





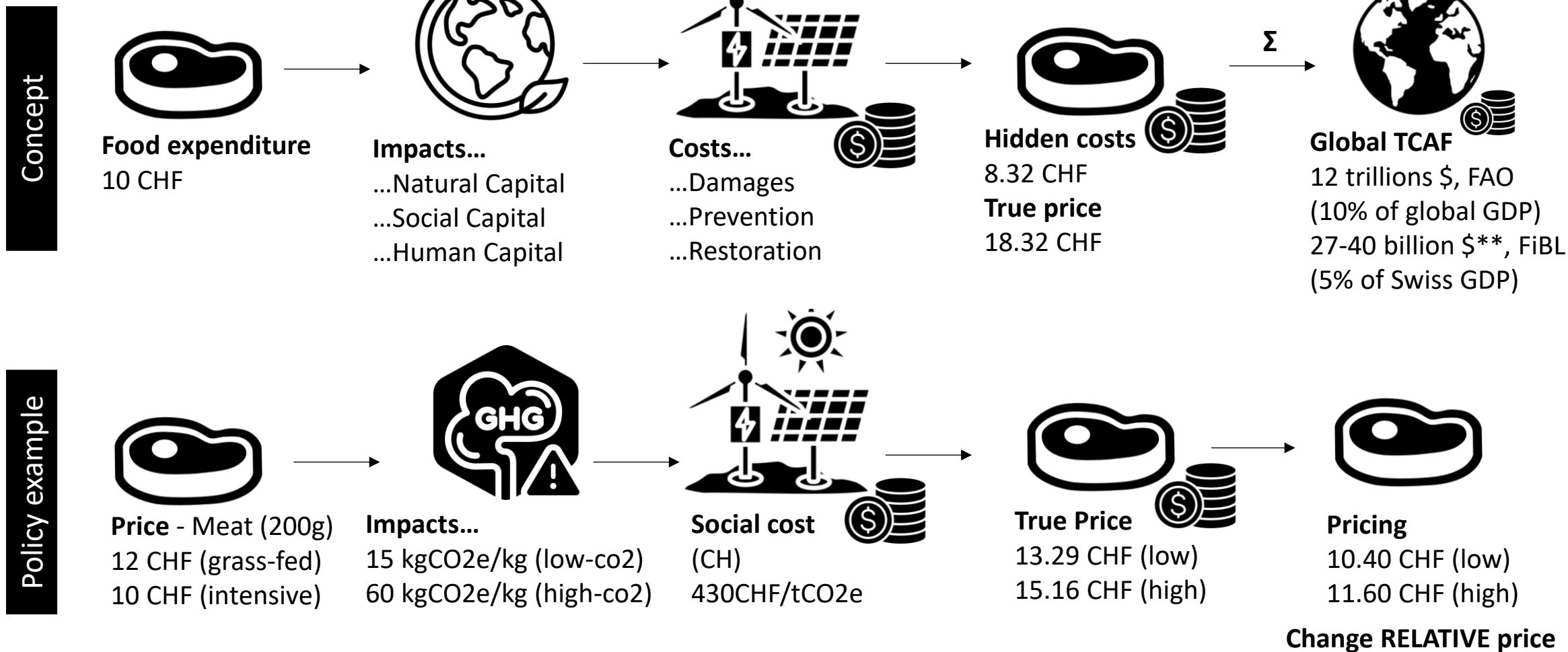
TCAF: Definition, Impacts & Indicators

Definition | True Cost Accounting for Food (TCAF)



« A holistic and systemic approach to measuring and valuing the environmental, social, health and economic costs and benefits generated by agrifood systems to facilitate improved decisions by policymakers, businesses, farmers, investors and consumers.” »

Concept | TCAF assessment & pricing



*FAO (2023), The state of food and agriculture 2023, Revealing the true cost of food to transform agrifood systems

** De Luca et al. (2025), Hidden costs of the Swiss Agrifood System, FiBL, FAO (commissioned by OFAG)

Impact category | Environment



Climate Change*

Global warming potential from GHG



Ozone depletion

Potential depletion of the stratospheric ozone layer



Terrestrial acidification

Acidifying emissions affecting soil quality



Freshwater/marine eutrophication*

Nutrient loading of marine/freshwater



Freshwater/Marine ecotoxicity*

Harmful effects of chemical/hazardous substances on marine organisms and ecosystems



Terrestrial ecotoxicity

Harmful effects of chemical/hazardous substances on marine organisms and ecosystems



Human toxicity

Harmful effects of human exposure to chemical/hazardous substances



Photochemical oxidant formation

Potential for ground-level smog and ozone formation



Particulate matter formation

Potential health impacts from atmospheric particles



Ionizing radiation

Exposure of humans and ecosystems to radiations



Fossil depletion

Consumption of fossil fuel resources



Water use*

Consumption of water resources from the environment

Source: LCA, Agribalyse, Ecoinvent

*Commonly used, e.g.: EPFL/Beelong

Impact category | Livelihoods



Occupational injuries

Fatal and non-fatal occupational injuries, insured and non-insured



Children at work, not attending school

Children not attending school due to working activity, by age and gender



Children at work, non-hazardous

Non-hazardous child labour that is performed in non dangerous and unhealthy conditions



Children at work, hazardous

Hazardous child labour that is performed in dangerous and unhealthy conditions



Maternity leave provision

Women with no maternity leave provision



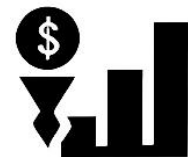
Social protection floor

Informal workers and workers with no access to minimum social protection floor



Prevalence of excessive work

Working hours beyond legal maximum (non-paid)



Wage gap from gender discrimination

Wage rate gap between men and women at equivalent position



Wage gap legal minimum & DLS

Wage rate gap between actual and legal minimum wages, and Decent Living Standards



Denied maternity leave

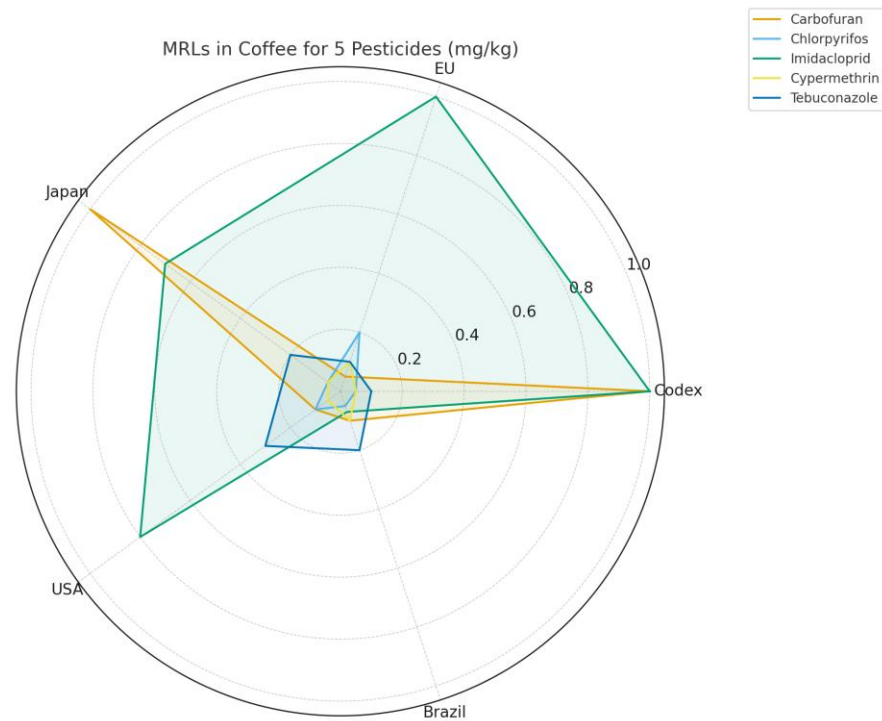
Ability for women to access maternity leave



Denied paid leave

Ability for workers to access paid leaves

Impact category | Health



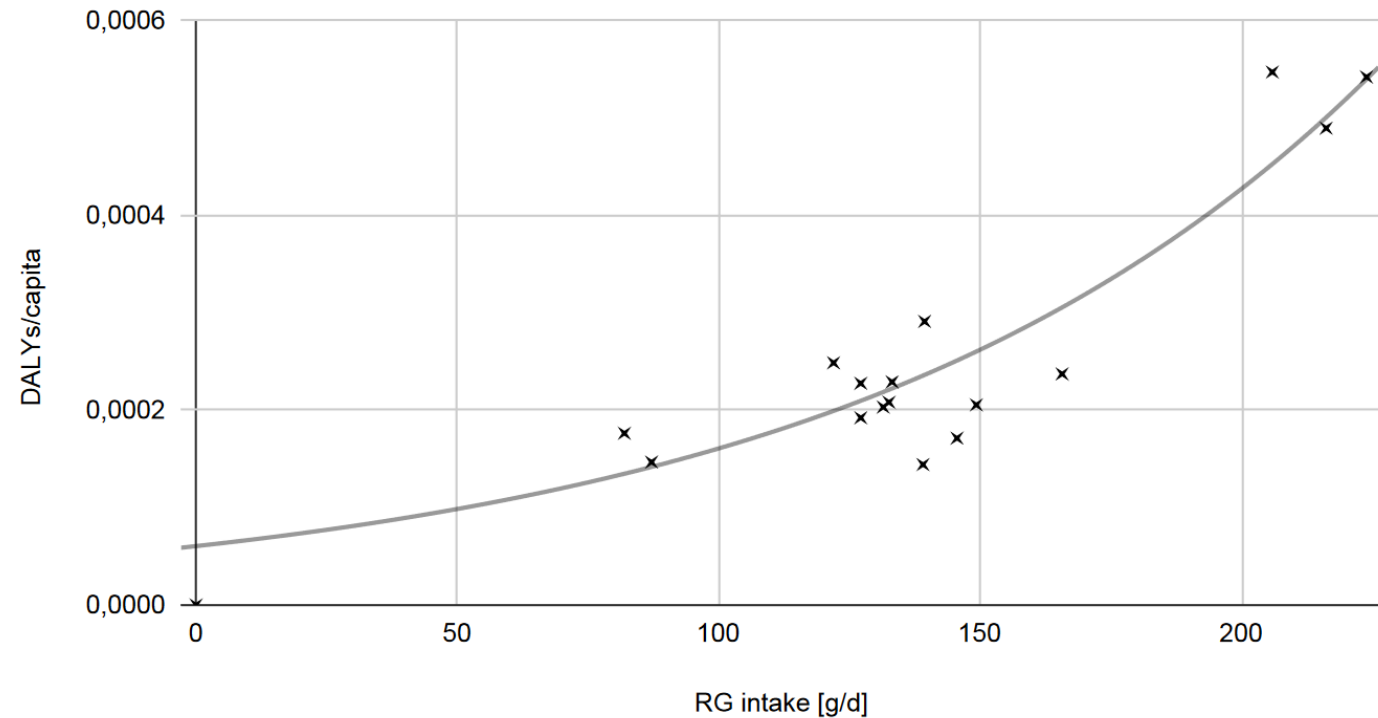
Pesticides ingestion

Regional/National regulation or Codex Alimentarius (MRL, Maximum Residue Level)



Heavy metals ingestion

In development in collaboration with University of Tokyo



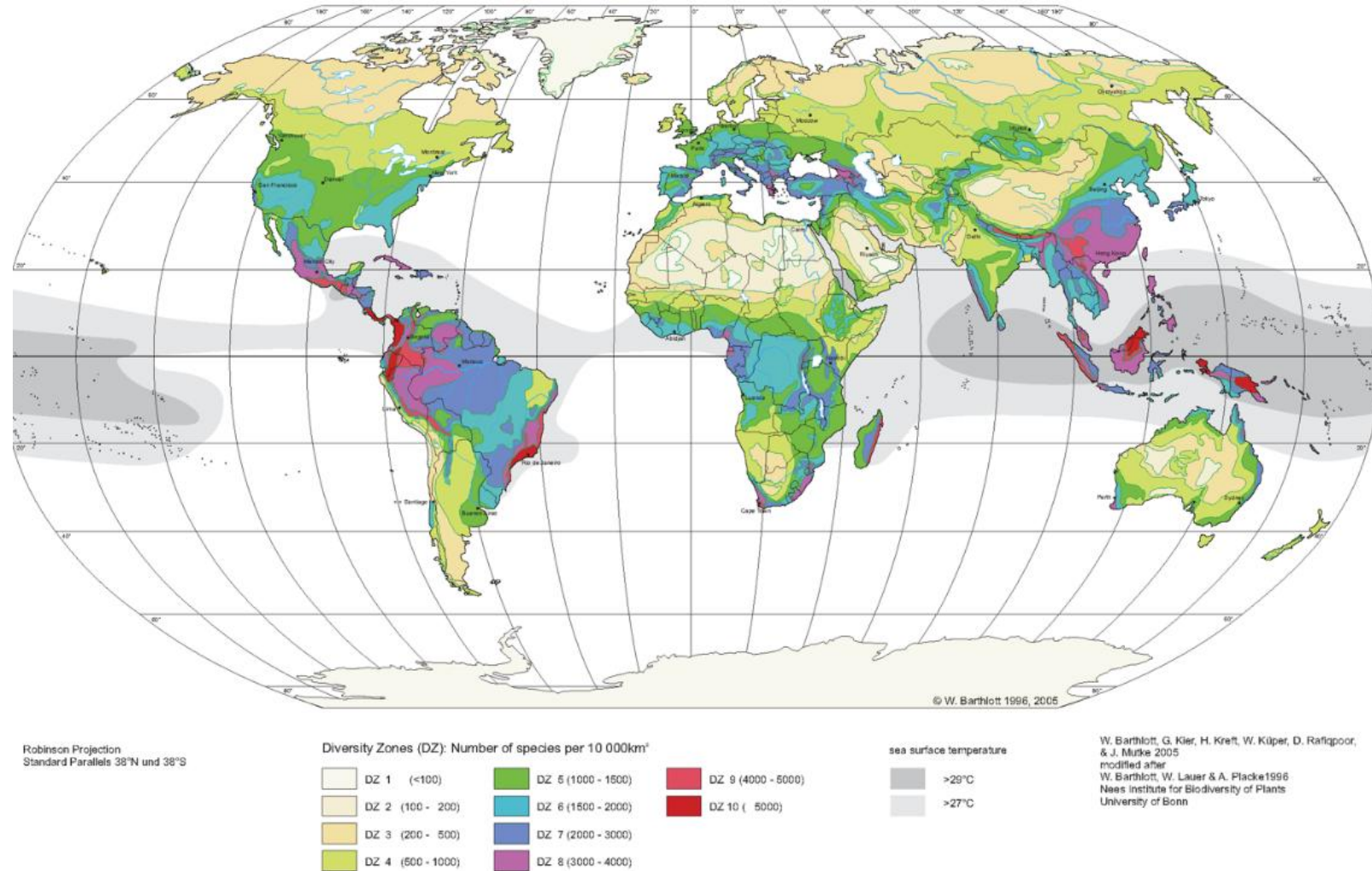
Unhealthy diets

Gap between current & optimal diet (diseases risks, burden, costs)

DALY (Disability-Adjusted Life Years): years of life lost due to premature death and years lived with a disability or impairment, weighted according to severity

References: TCAF-CH project, Global Burden Diseases (GBD), Crosnier et al. 2025

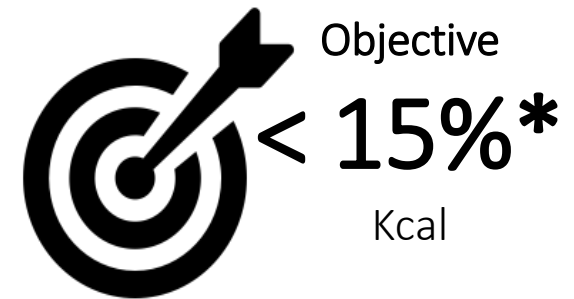
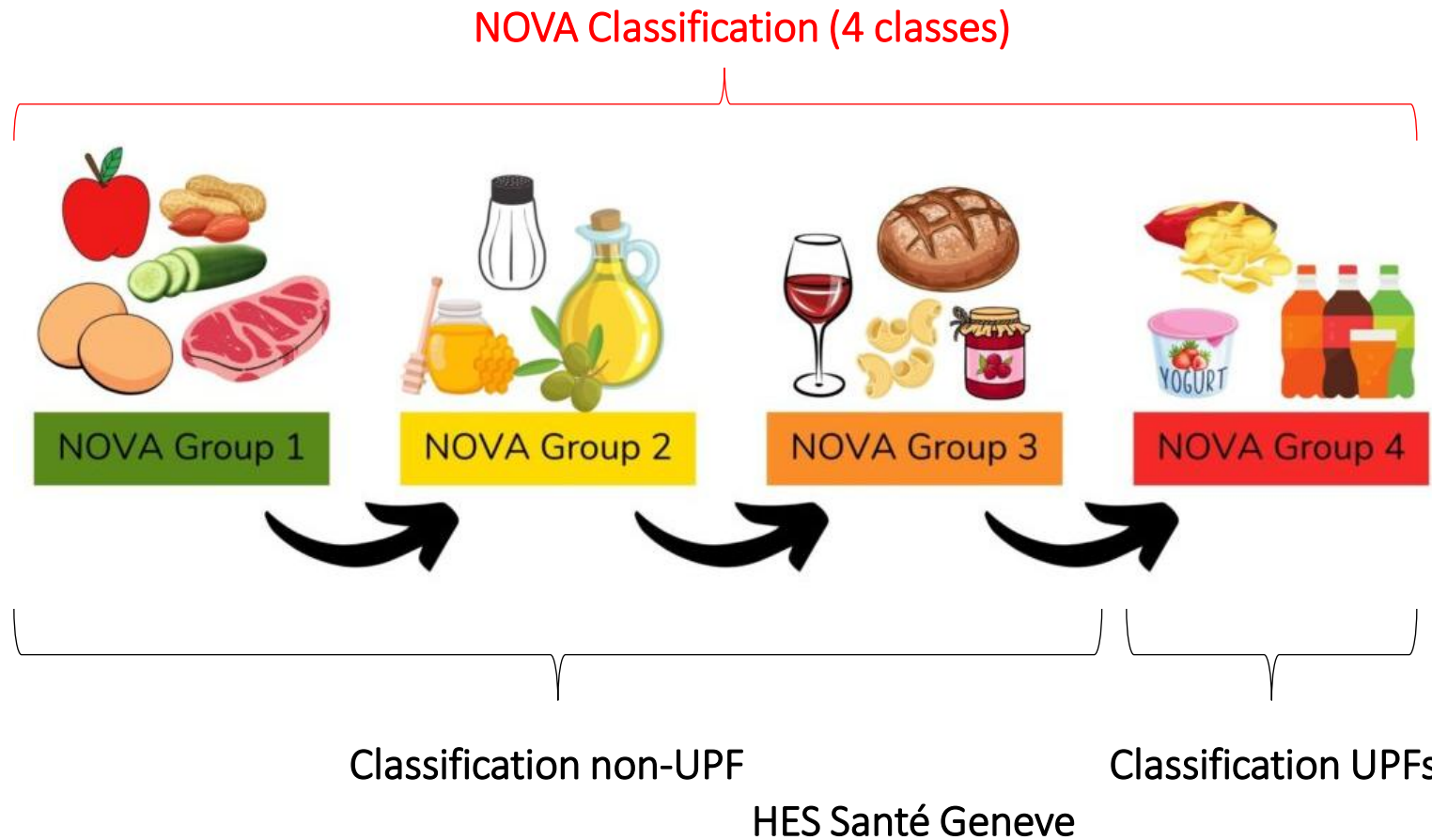
Impact category | Biodiversity (vascular plants)



Biodiversity richness, vascular plants (species per m²)

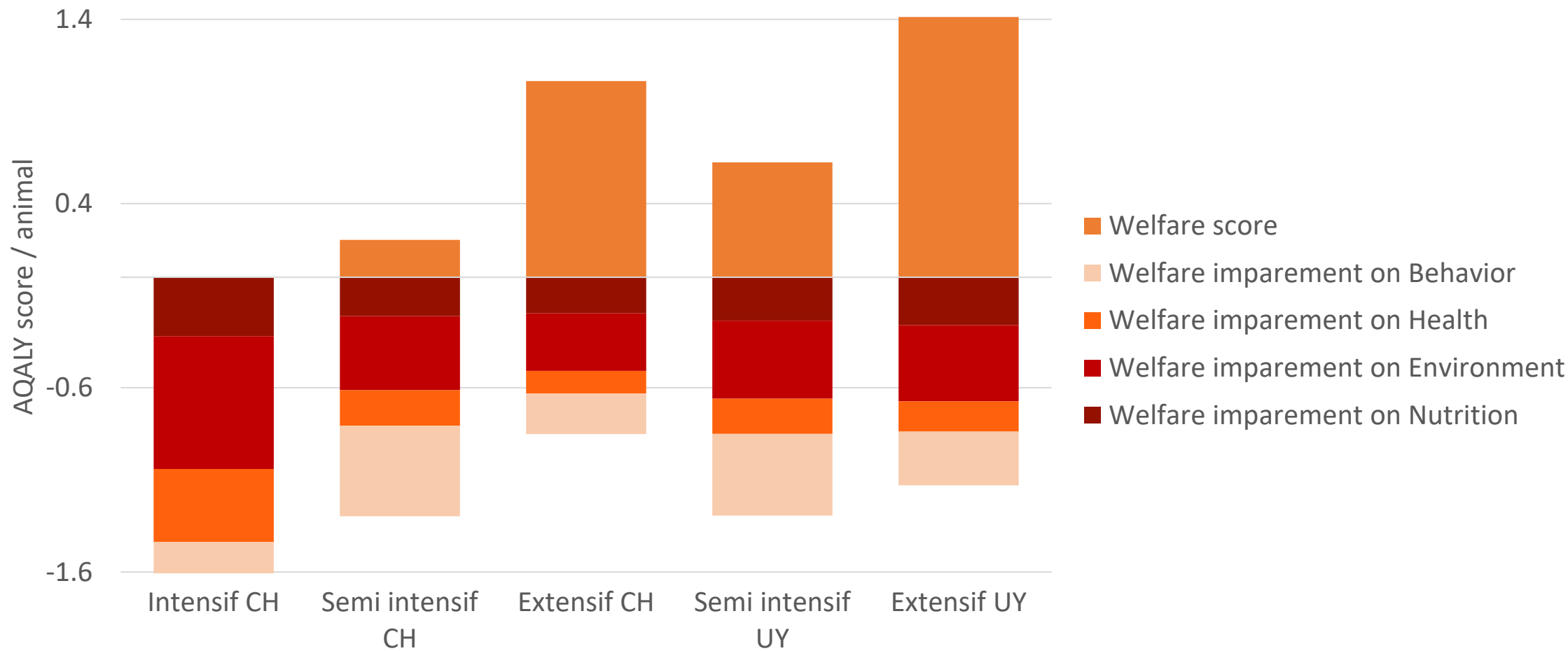
Reference: Eco cost of land-use

Impact category | Ultra Processed Food



*No scientific consensus on UPF definition/limit but strong convergence on recommendations and importance to monitor

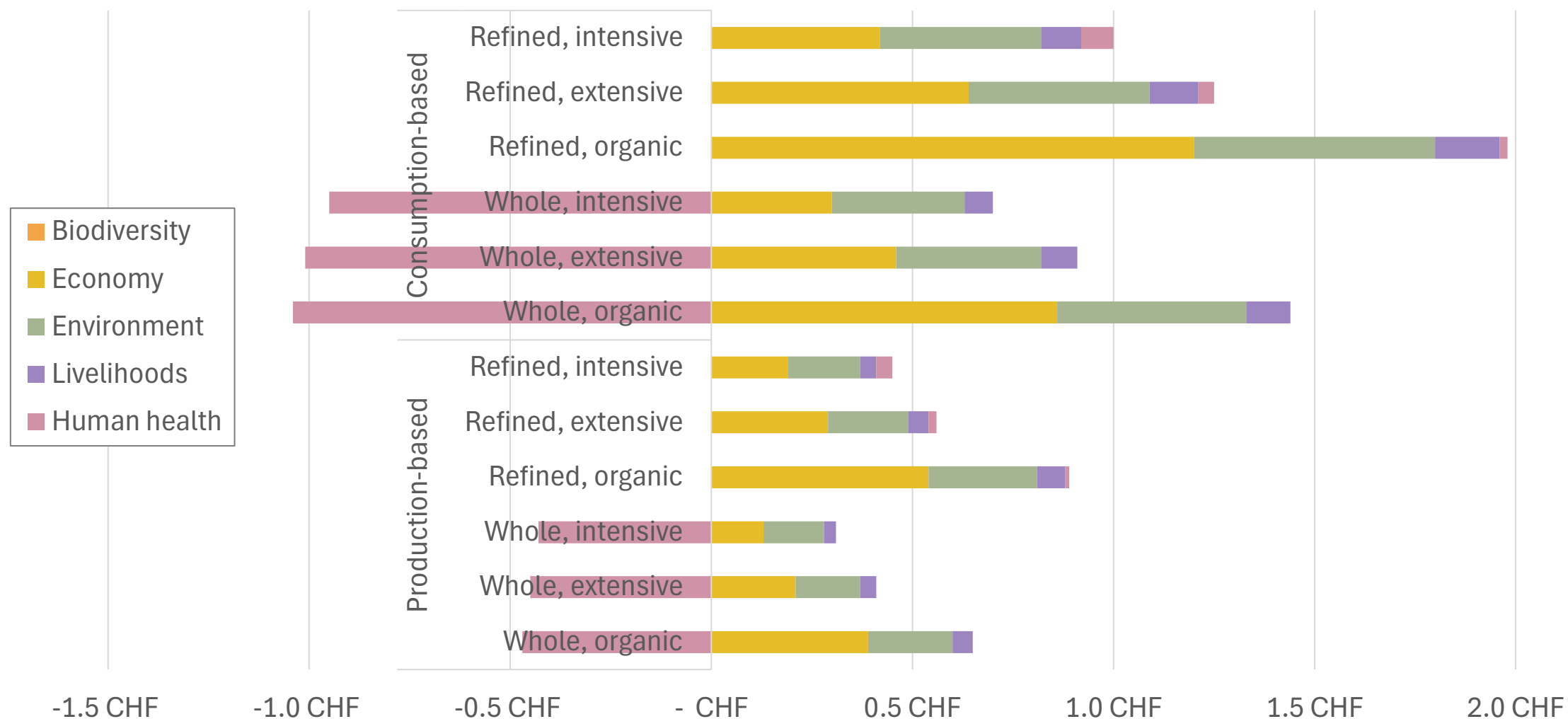
Impact category | Animal welfare



Hidden costs associated with animal welfare (AQALY: Animal Quality-Adjusted Life Year)

Reference: TCAF-CH, Espinosa et al. (2024)

Illustration | Swiss bread (whole/refined grains)

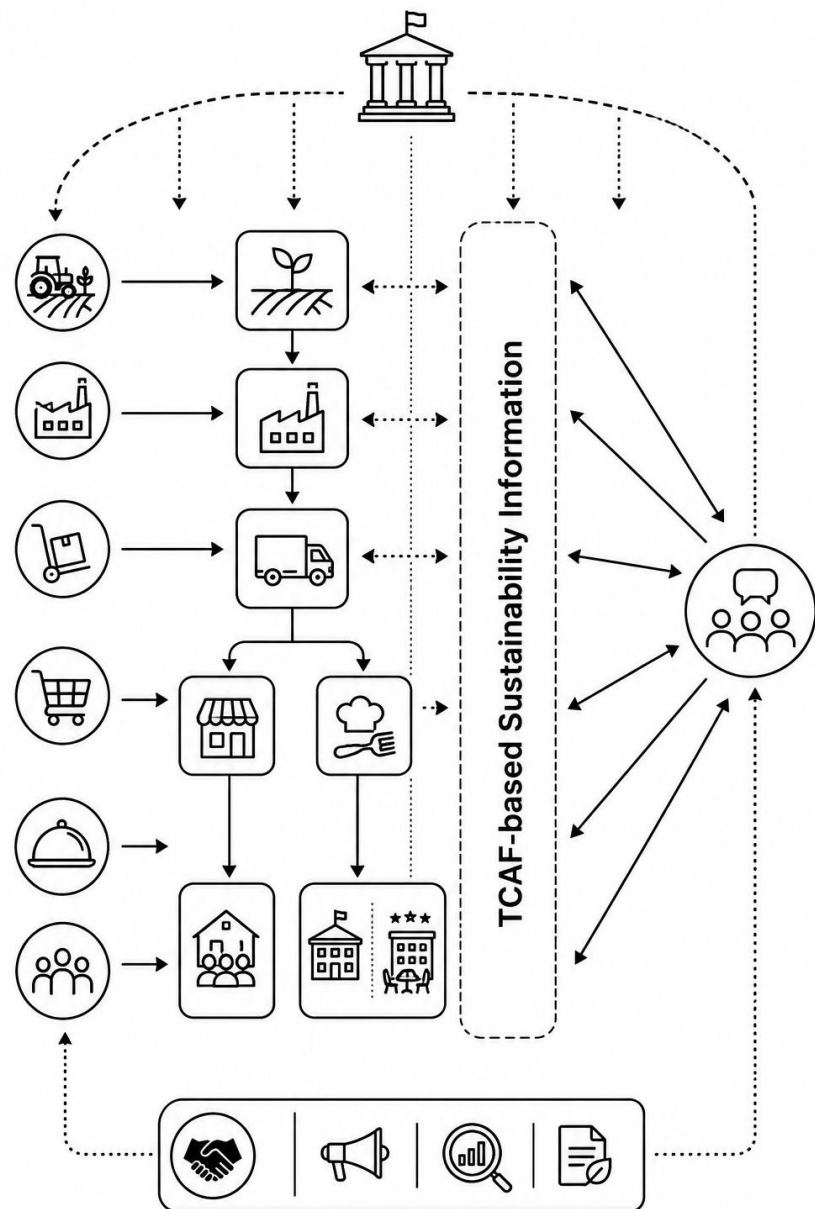


Hidden costs by impact category and per kg of bread, by type and production method (CHF)



True Cost Action Levers

Action Levers | TCAF for decision support & pricing



From seed to plate

Public policy: customs duties, public health, 'smart' VAT, agricultural policy, public tenders, strategies for public catering, etc.

Private sector: decision support (sourcing, investment) in the catering sector, sustainable sourcing, monitoring of strategies, pricing, smart subsidies, etc.

Citizens: information, awareness-raising, incentives, nudges, more informed choices, reward schemes, etc.

NGOs: information, advocacy, public awareness campaigns, monitoring, etc.

Consumer level | Products

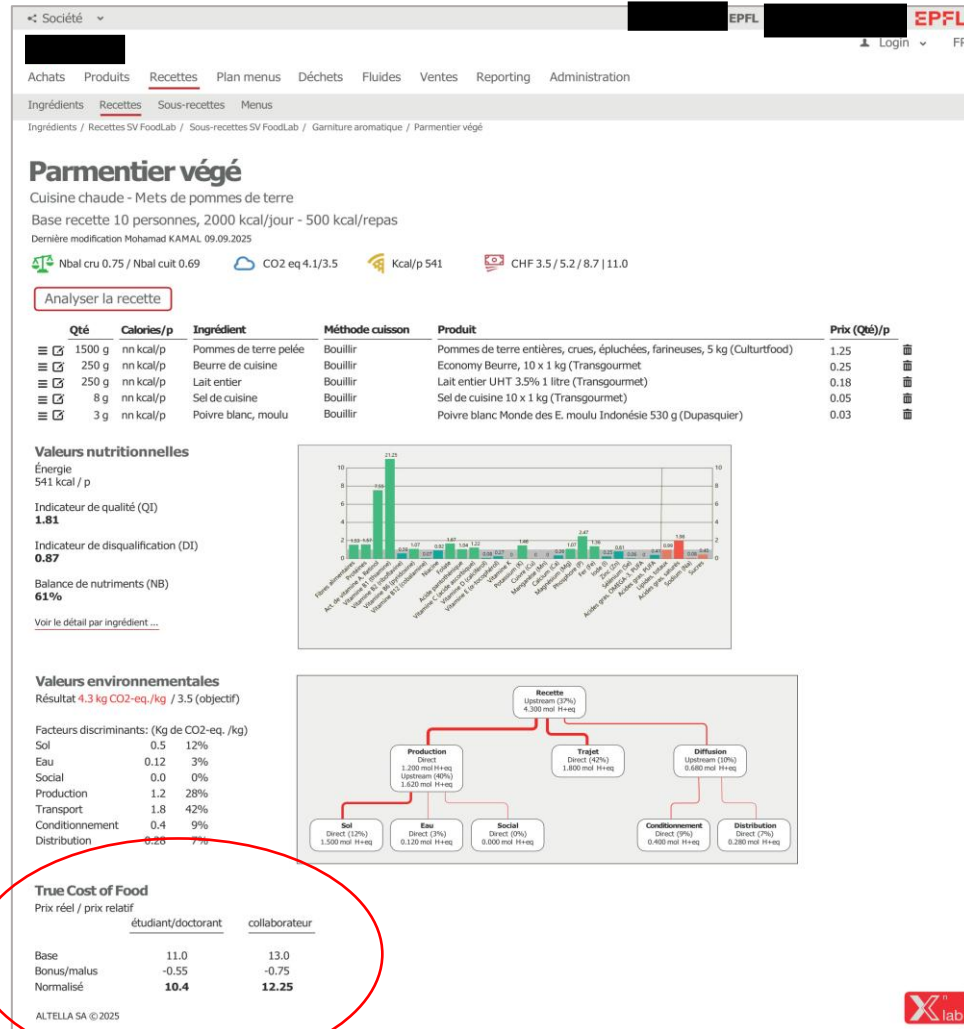


Interactive webapp: flash & check



References: Experiment carried out as part of the TCAF-CH & Megabites project (EPFL-DLab); Web app: prototype developed for the Unil-EPFL Health Days

Catering level | Products, menus, monitoring



To enable:

- Systematic assessment of sourcing, menus and products
- Multi-dimensional assessment of negative impacts and benefits
- Training on international, national and local issues, objectives and commitments

With the aim of:

- Supporting sustainable decision-making
- Setting, monitoring and achieving sustainability targets (in-house strategies, local to international targets)
- Enabling a shift towards a healthier and more sustainable offering (pricing & sourcing levers)

B to B level | Products, menus



Products

Q Product

Search by name

By ECO-SCORE*

A B C D E

Brand

1 brand

By Assortment

+

+

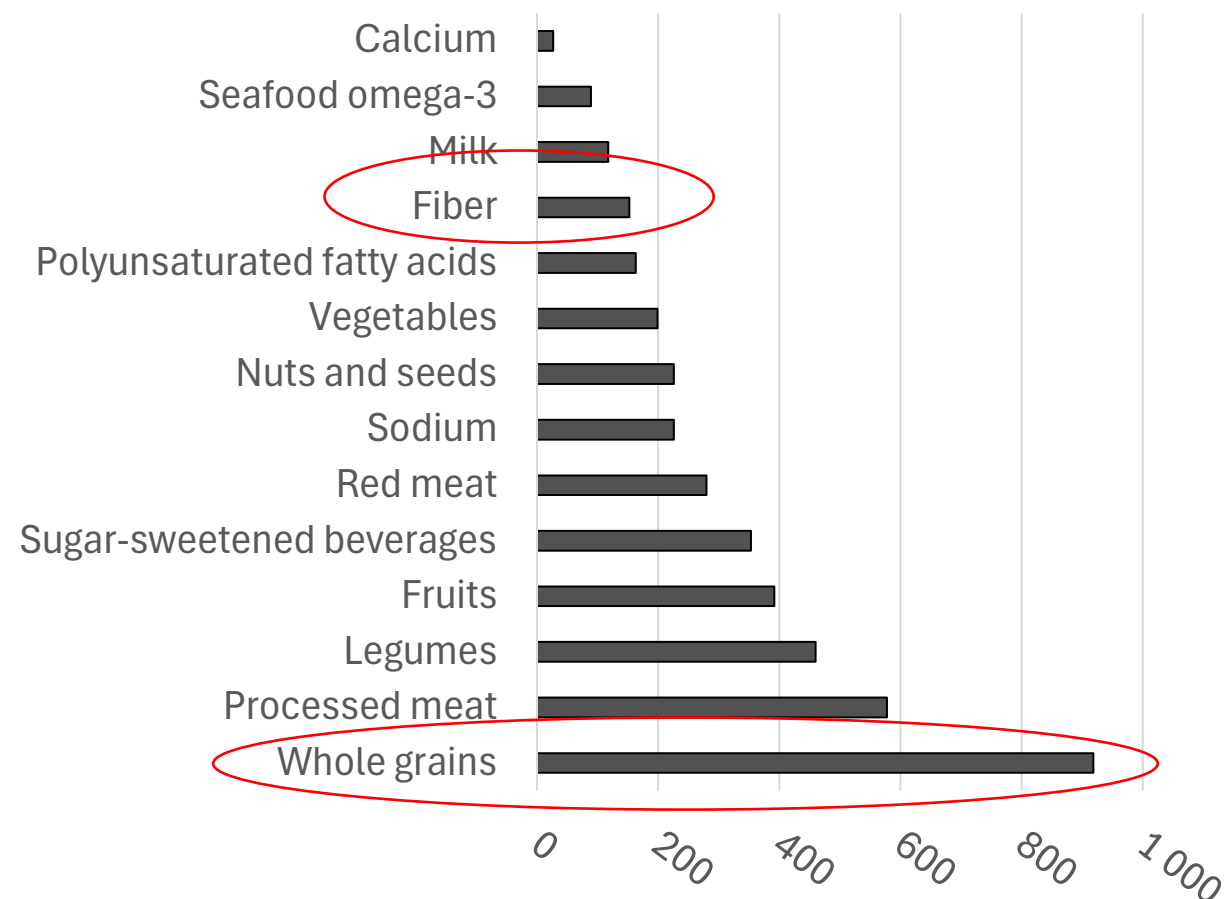
Clear

Product	TCAF	Origin	Elaboration	Labels & programs	Packagi
Carotte aigre-douce	ECO SCORE A CHF 4. 73	Central Europe	Switzerland	-	Glass
Moutarde Mi-Forte 290 Gr Mini Squeeze Hr	ECO SCORE A CHF 6. 04	Switzerland	Switzerland	-	Small bo
Cornichons Tanta Anita 210G Hr	ECO SCORE A CHF 3. 93	World	Switzerland	-	Glass
Sauce BBQ 7Peaks Brasserie 525g Hr	ECO SCORE A CHF 11. 92	Switzerland	Switzerland	-	Plastic, P
OLIVES NOIRES ENTIERES 2'50OG 5/1 HR	ECO SCORE A CHF 1. 59	Spain	Spain	-	Steel
OLIVES VERTES ENTIERES 2'75OG 5_1 HR	ECO SCORE A CHF 2. 96	Spain	Spain	-	
French dressing herbes 1Lt Hr	ECO SCORE A CHF 3. 70	Switzerland	Switzerland	-	
French dressing 1Lt Hr	ECO SCORE A CHF 3. 74	Switzerland	Switzerland	-	
Epis de mais Fairtrade 125g Hr	ECO SCORE A CHF 3. 25	India	India		
Concombres moyens Boite 2200G Hr	ECO SCORE A CHF 3. 67	Europe	Switzerland	-	Steel
Concombres gros Boite 2200G Hr	ECO SCORE A CHF 3. 67	Europe	Switzerland	-	Steel



Source: Table: Beelong (in development, non definitive numbers); Illustration score TCAF: AI generated

Public policy level | Unhealthy diets, GHG , etc.



Disease-related costs (direct and indirect) by food group
(MCHF/year)

Focus on unhealthy diets

Health-related costs (direct and indirect)

At least **3.4 billion per year**
due to unhealthy diets

By way of comparison:

6.1 billion due to smoking

3.8 billion due to alcohol

2.55 billion due to lack of physical activity

Health-related costs (DALYs/GBD)

13.8 billion per year
due to unhealthy diets

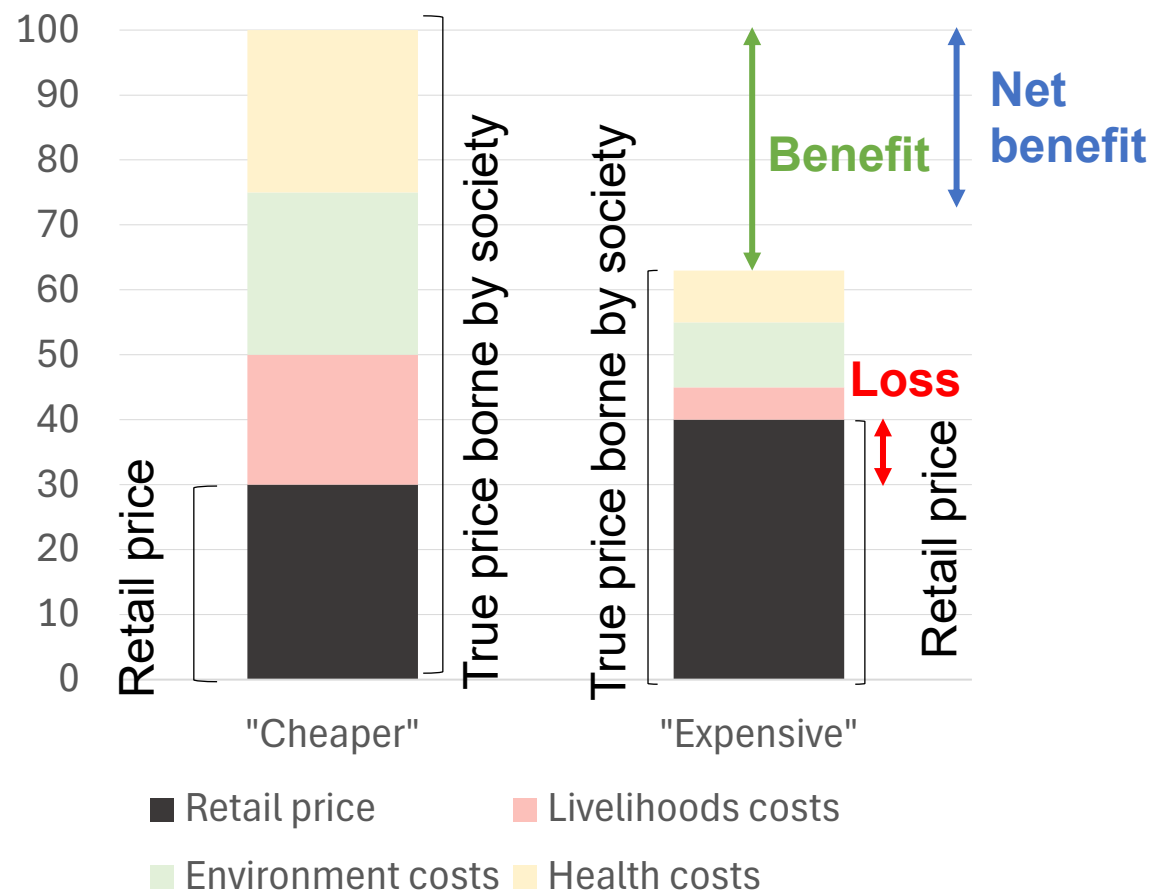
FiBL

25.1 billion per year
due to unhealthy diets

Source: TCAF-CH, Idriss Komi (Unisanté), FiBL

Conclusion | Close the gaps!

Between retail price & prices borne by society



Cheaper?
For whom?
Compared to what?

We don't choose...
'the cheapest / the most competitive'

We choose...
a distribution of external costs
an agri-food system
a model of society

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Contact



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