TITAN

Transparency solutions for transforming the food system

Summary of interesting publications on topics relevant to the TITAN project

September 2025

ENABLING INFORMED CHOICES BY CONSUMERS

Publications

Planetary Alliance

Building Our Food Future: How 10 Global Visionaries Are Transforming Food Systems Through Healthy & Sustainable Diets

This white paper sets out strategic opportunities for businesses and policymakers to act at the intersection of human and planetary health. It highlights the transformative potential of healthy, sustainable diets and how they show up in everyday basket and meal choices.

The Journal Ireland

Opinion: How to reduce food bills, tackle obesity and improve population health affordably

Dr Catherine Conlon has a list of alternative approaches to healthier eating habits, that don't include weight loss drugs or fast food.

The American Journal of Clinical Nutrition

Retail prices, environmental footprints, and nutritional profiles of commonly sold retail food items in 181 countries

Transitions toward healthier, more environmentally sustainable diets would require large shifts in consumption patterns. This study provides the first worldwide test of how retail food prices relate to empirically estimated environmental footprints and nutritional profile scores between and within food groups.

arxiv

Food safety trends across Europe: insights from the 392-million-entry CompreHensive European Food Safety (CHEFS) database

In the EU, official food safety monitoring data collected by member states are submitted to EFSA and published on Zenodo. This data offers great opportunities for AI to analyze trends, predict hazards, and support early warning systems. However, the current format hinders accessibility and analysis. To address this, we introduce the CompreHensive European Food Safety (CHEFS) database, which consolidates EFSA monitoring data on pesticide residues, veterinary medicinal product residues, and chemical contaminants into a unified and structured dataset.

Science Direct

Customer awareness and perceptions of the high in fat, sugar, and salt (HFSS) placement legislation and impacts on self-reported food purchasing

Legislation in England restricts the placement of high in fat, sugar or salt (HFSS) products in stores and online. This is the first study to investigate shoppers' perceptions, and self-reported purchasing behaviours following its implementation.

BBC

My quest for a climate-friendly family diet

Climate journalist Graihagh Jackson goes on a quest to find a diet that's healthy for her child, and helps fight climate change – but will her son actually eat it?

Nutrition Reviews

Development of food literacy in children and adolescents: implications for the design of strategies to promote healthier and more sustainable diets

The design and implementation of programs to support the development of food literacy from early childhood can contribute to healthier and more sustainable eating habits. In this context, the aim of the present narrative review is to provide an in-depth description of how different food literacy competencies are developed in childhood and adolescence, integrating the extensive body of evidence on cognitive, social, and food-related development.

Science Direct

When consumers say one thing but do another: Consumer segmentation by implicit and explicit attitudes toward meat and plant-based alternatives

This study combines the Implicit Association Test (IAT) with U&A surveys to understand consumer attitudes toward meat and Plant-Based Meat Alternatives (PBMAs).

Science Direct

How to encourage people to follow a climate-friendly diet? Increase social cohesion!

While motivations to reduce meat intake are well documented, few studies have integrated these with basic human values to understand dietary behaviour. This paper addresses this gap by examining how environmental, health, and animal welfare motivations interact with value orientations based on the Schwartz's theory of basic human values to influence consumers' willingness to adopt an additional meat-free day per week.

Springer

The power of diversity in online communities

An increasing focus on diversity and inclusion initiatives can be observed in the marketplace with varying success in terms of consumer response. This research focuses on the role of communicating membership diversity in attracting and importantly engaging new members in an online community.

Reports

Oxford University Press

The Making of the Modern Supermarket

This publication explores the rise of the supermarket in the UK and summarizes the main documents of the Sainsbury Archive - the most important archive on food retailing in the world.

SUPPLY CHAIN SUSTAINABILITY

Publications

Nature Food

Biodiversity pressure from fruit and vegetable consumption in the United Kingdom, India and South Africa varies by product and growing location

In many countries around the world, fruit and vegetable consumption must increase to improve human health, potentially pressuring local and global biodiversity. Here we use biodiversity-pressure metrics to compare the biodiversity pressures associated with fruits and vegetables consumed in the United Kingdom, India and South Africa.

Kirsten Schuijt

Financing forests for the future

Despite all that forests provide, their true value is consistently overlooked. That disconnect is costing us more than we can afford. If we want to build a future that is

fair, resilient and livable - for people and the planet - it must be rooted in thriving forests. And that starts with rethinking how we value them.

Nature

Evidence for the existence and ecological relevance of fast-cycling mineral-associated organic matter

We demonstrate that the dynamic qualities of fast-cycling mineral-associated organic matter vary based on 1) the chemistry of the mineral particles and organic matter, 2) the complex set of interactions between organic matter and the mineral matrix, and 3) the presence and strength of destabilizing forces that lead to decomposition or loss of mineral-associated organic matter.

Science Direct

Energy transition will require substantially less mining than the current fossil system

The study shows that, while new mining developments (in general) can have significant environmental consequences, the concern that the energy transition will require a large expansion in overall, global mining activity compared to today's energy system is unfounded.

Biodiversity Gateway

Biodiversity and circular health: the integrated approach of Aboca

Jacopo Orlando is an agronomist and agricultural economist. At Aboca he is in charge of institutional relations in agriculture and coordinates the Impact and Sustainability Office. His efforts are focusing on biodiversity, or the variety of life forms that populate an ecosystem, and how it can be integrated into on-farm practices to ensure health and well-being-partly through his collaboration with NBFC.

Science Direct

Frugality and food waste avoidance: Does a prime work as much as the trait?

This paper investigates the effects of habitual frugality and primed frugality on food waste avoidance tendencies in individuals.

IOP Science

National temperature neutrality, agricultural methane and climate policy: reinforcing inequality in the global food system

This study critically examines the use of 'no additional warming' approaches, such as temperature neutrality (TN), to determine national climate policy on agricultural methane (CH4).

Reports

Land & Carbon Lab

Tracking the Health of Earth's Ecosystems with New Global Productivity Data

Gross primary productivity (GPP) — the rate at which plants absorb carbon dioxide from the atmosphere through photosynthesis to produce the energy they need to grow — is a foundational indicator of ecosystem health and productivity as well as of the global carbon cycle.

World Resources Institute

What Is the EU Deforestation Regulation? 7 Key Questions, Answered

Between 2001 and 2024, the world lost 177 million hectares of tree cover that is likely permanent. Most of this loss was the result of clearing for farms, pastures and tree crop plantations. This daunting number is a wake-up call, underscoring the urgent need for stronger action to curb deforestation for farming and forest degradation from wood production.

ALIGN

Nature-Based Insetting: A Harmful Distraction from Corporate Decarbonization

This commentary analyzes the purported benefits of nature-based insetting and concludes that any near-term emphasis on such projects is at best a dangerous distraction.

Springer

The Sustainability of Meat and Cured Meat Supply Chain: Where Are we Now?

The main goal of this paper is to investigate on the diffusion of sustainability practices through a critical assessment conducted among these companies.

IMD

Debunking five common myths about sustainability

Much has been said about corporate sustainability – and much of it is wrong. It's time to retire common misconceptions and consider it a strategic lever for value creation, resilience, and competitiveness.

J.P. Morgan

Cocoa prices are finally falling. Why?

Why are cocoa prices coming down after the global shortage, and how will this impact the chocolate industry? Find out.

EIT Food

EARA's Landmark Research Project: World's Largest Pioneering Regenerative Agriculture Research Study

European farmers can produce significantly more food for less by transition to regenerative agriculture, compared to average conventional practices, a new landmark study launched today by the European Alliance for Regenerative Agriculture (EARA) shows.

DEVELOPMENT & IMPLEMENTATION OF NEW TECHNOLOGIES

Publications

Emerald Insight

Unveiling digitalisation in Italian viticulture: a field study on drivers and barriers

This study investigates the drivers and barriers to digitalisation in viticulture, focusing on the Italian wine sector.

Open Food Chain

How blockchain beats traditional databases for food supply chain transparency

At each stage of the supply chain valuable data is generated, which should create a clear record of the product's journey. However, these records are stored in separate systems and controlled by different parties. When a recall occurs or a regulator asks for proof of compliance, the process of collecting and verifying this information can be slow, error-prone, and incomplete. For consumers, it creates uncertainty. For brands, it creates risk.

Open Supply Hub

Transparency vs. Traceability: What's the Difference and Why It Matters for Supply Chains

In the world of sustainable supply chains, transparency and traceability are often used interchangeably, but they mean different things. The rise of due diligence regulations, such as Germany's LkSG (still in effect despite announced repeal), the upcoming Corporate Sustainability Due Diligence Directive (CSDDD), and the EU Deforestation Regulation (EUDR), is forcing companies to get clear on the distinction.

NPJ

AI for food: accelerating and democratizing discovery and innovation

Traditional attempts to transform the global food system are too slow to drive innovation at scale. Here we explore the potential of artificial intelligence to reshape the future of food.

Reports

UN Food Systems Coord. Hub

Using foresight for food systems transformation: A guide for policy makers, practitioners, and researchers

Using Foresight for Food Systems Transformation is a new practical guide developed jointly by the UN Food Systems Coordination Hub and Foresight4Food to help policy makers, practitioners, and researchers apply strategic foresight approaches to national food systems transformation.

World Economic Forum

The Global Risks Report 2025 20th Edition

The report highlights the latest findings from our annual Global Risks Perception Survey, which this year brought together the collective intelligence of over 900 global leaders across academia, business, government, international organizations and civil society.

TAKING THE FOOD SYSTEM APPROACH

Publications

Nature Food

Governance and resilience as entry points for transforming food systems in the countdown to 2030

Due to complex interactions, changes in any one area of food systems are likely to impact—and possibly depend on—changes in other areas. Here we present the first annual monitoring update of the indicator framework proposed by the Food Systems Countdown Initiative, with new qualitative analysis elucidating interactions across indicators.

Nature

Could these five future agricultural innovations slow down climate change?

From AI-powered bee monitors to genetically modified yeasts that make protein, here are some solutions that are set to revolutionize the future of food.

Nature

Carbon payment strategies in coffee agroforests shape climate and biodiversity outcomes

Agricultural supply chains increasingly mitigate climate change and biodiversity loss through initiatives that either plant trees or protect threatened carbon stocks on farmlands. We conducted a global meta-analysis to evaluate how these programs may impact carbon and biodiversity outcomes across coffee agriculture, which spans a vegetation complexity gradient from monoculture to biodiverse agroforestry.

Our World in Data

$3 a day: A new poverty line has shifted the World Bank's data on extreme poverty. What changed, and why?

In June 2025, the World Bank increased its extreme poverty estimates by 125 million people. This doesn't mean the world has gotten poorer: it reflects a new, higher International Poverty Line of $3 a day, up from $2.15.

Science Direct

Ambitious food system interventions required to mitigate the risk of exceeding Earth's environmental limits

Here, we synthesize previous studies to provide a foundation for a novel risk assessment framework that estimates the risk mitigation potential of numerous intervention combinations against four key environmental limits by 2050.

WILEY

Stakeholder Relationships in the Circular Economy. Conceptualizing Relational Approaches Through Systematic Literature Review

Circular economy (CE) demands a stakeholder perspective. To advance a holistic overview in this regard, we conducted a systematic review of the literature on stakeholder relationships and CE.

BMJ Global Health

Who funds the WHO Foundation? A transparency analysis of donation disclosures over the first 3 years of its operation

This analysis sought to examine the transparency and patterns of donations received by the WHOF based on the Foundation's own disclosures.

BMJ

Bans on junk food advertising in outdoor spaces derailed by industry lobbying

Councils trying to bring in policies to protect the public from unhealthy food adverts face a "tobacco playbook" of tactics to stymie their plans, such as financial warnings and claims advertisers "can be part of the solution" to obesity.

Science Direct

Financing sustainable farming: The role of trust in the adoption of fintech by farmers

Based on the initial trust model, this study investigates five antecedents of farmers' initial trust in agricultural FinTech: strategic partnerships, structural assurances in data processing and storage, farmers' propensity to trust, and perceived relative benefits.

Taylor & Francis

Assessing ongoing sustainability transitions: The state of food system transition in the Netherlands

Given food system complexity, assessing food system transition is exceedingly difficult. Responding to this tension, the aim of this paper is to develop a stakeholder assessment of the state of sustainable food system transition in the Netherlands using the X-curve framework, a model that visualizes the interplay of growth and destabilization in food system transitions.

Reports

Edward Elgar Publishing

Elgar Encyclopedia of Food and Society

Featuring over 120 entries from international experts, this Encyclopedia provides a comprehensive overview of the activities, ideas, issues and challenges that shape relationships between food systems and society.

OFS Preprint

"It was a force for good but...": a mixed-methods evaluation of the implementation of the High in Fat, Sugar and Salt (HFSS) legislation in England

This study explores retail sector responses to the legislation's implementation.

The Business Times

Powering Singapore's innovation economy

A*Star pushes the frontiers of science and deep tech while ensuring that innovation drives meaningful, real-world outcomes for Singapore and Singaporeans.

FAO

Transforming food and agriculture through a systems approach

The purpose of Transforming food and agriculture through a systems approach is to clarify what a systems approach involves in practice across agrifood systems.

GAIN

Understanding Moments of Change in Food Systems Transformation: examples from around the world

Organised around the UNFSS+2 calls to action, this paper offers a snapshot rather than an exhaustive overview of progress observed by the EoS. From these perspectives, diverse successes and cross-country trends emerge. Each country's transformation is unique, but these stories aim to inspire action by sharing positive steps that others can learn from.

UN Food Systems Coord. Hub

Implementing National Food Systems Pathways: Emerging Practices

This document summarises key emerging evidence and compiles concrete country experiences that demonstrate how national food systems pathways are implemented successfully, and often against the odds.

PATOS

From Obscurity to Opportunity: Leveraging True Cost Accounting for smarter decisions

Businesses often prioritize revenue growth, inadvertently overlooking the significant impact of hidden costs. These non-obvious expenses collectively consume resources and diminish overall efficiency.

Co-funded by the European Union

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them. Project number 101136754.

Project funded by

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Education, Research and Innovation SERI

UK Research and Innovation

This project has received funding from UK Research and Innovation (UKRI)