TITAN

Transparency solutions for transforming the food system

Summary of interesting publications on topics relevant to the TITAN project

August 2024

ENABLING INFORMED CHOICES BY CONSUMERS

Publications

PAPER

PubMed

A tendency toward evening chronotype associates with less healthy diet among preschoolers: cross-sectional findings from the DAGIS study

The objective of the study was to (1) identify and compare individual chronotype tendencies among preschool-aged children and (2) investigate associations of sleep dimensions and chronotype with diet.

Abdollahi, A. M., Li, X., Merikanto, I., Vepsäläinen, H., Lehto, R., Rahkola, J., Nissinen, K., Kanerva, N., Roos, E., & Erkkola, M. (2024).

PAPER

Food Chemistry

Isotopic, mycotoxin, and pesticide analysis for organic authentication along the production chain of wheat-derived products

In this work, pairs of organic and conventional samples of common and durum wheat were collected and subsequently milled, in order for the the resulting flours to be used in the preparation of bakery products (biscuits, crackers) and pasta, simulating industrial conditions.

Giannioti, Z., Suman, M., Roncone, A., Rollo, E., Tonidandel, L., Barbero, A., Catellani, D., Larcher, R., & Bontempo, L. (2024).

PAPER

JAMA Network Open

Comparison of Sales From Vending Machines With 4 Different Food and Beverage Messages

The aim of this trial was to examine which of four food and beverage messages would increase healthier vending machine purchases..

Gibson, L. A., Stephens-Shields, A. J., Hua, S. V., Orr, J. A., Lawman, H. G., Bleich, S. N., Volpp, K. G., Bleakley, A., Thorndike, A. N., & Roberto, C. A. (2024).

PAPER

Current Dvlpment in Nutrition

The Need for an Alternative Health Claim Process for Foods Based on Both Nutrient and Contaminant Profiles

The objective of this work was to highlight the accumulating scientific evidence supporting a reform of the health claim evaluation process for foods toward more holistic approaches.

Makris, K. C., & Chourdakis, M. (2024).

PAPER

Journal of Environmental Psychology

Don't say "vegan" or "plant-based": Food without meat and dairy is more likely to be chosen when labeled as "healthy" and "sustainable"

This study examined the effect of different labels for promoting choices for food without meat and dairy, among a representative U.S. sample.

Sleboda, P., De Bruin, W. B., Gutsche, T., & Arvai, J. (2024).

ARTICLE

Qina

Transforming nutrition by harnessing behaviour change theory for digital success

This article covers the state of the art on behaviour change and how this relates to the success of digital nutrition solutions.

PAPER

Pub Med

Community-based fruit and vegetable prescription programs: a scoping review

The aim of this study was to identify and categorise different models of community-based fruit and vegetable prescription programs, to determine variation in terms of methodology, target population characteristics, and outcomes measured.

Brooks, E.G, McInerney M. (2023).

PAPER

Appetite

A cross-sectional study of the association between food literacy and dietary intake among Danish adolescents

The aim of this study was to investigate the association between food literacy and dietary intake among Danish schoolchildren aged 11–13 years. The study applied a cross-sectional design using baseline data from a cluster-based quasi-experimental controlled study in a sample of Danish school children.

Müllertz, A. L. O., Stjernqvist, N. W., Outzen, M. H., Bloch, P., Elsborg, P., & Ravn-Haren, G. (2024).

PAPER

Trends in Food Science and Technology

Towards a harmonized approach for food authenticity marker validation and accreditation

In this review, the focus was on three critical areas where harmonization is essential for food authenticity marker approaches. Firstly, we emphasize the need for standardized terminologies and definitions in the field. Secondly, we advocate for harmonization in marker discovery approaches. Finally, we propose guidelines for the analytical community concerning marker validation.

Bayen, S., Elliott, C., Arlorio, M., Ballin, N. Z., Birse, N., Brockmeyer, J., Chahal, S., Corradini, M. G., Hanner, R., Hann, S., Laursen, K. H., Mihailova, A., Steininger-Mairinger, T., Suman, M., Tian, L., Van Ruth, S., & Xia, J. (2024).

PAPER

Food Control

Data driven food fraud vulnerability assessment using Bayesian Network: Spices supply chain

In this study, data driven food fraud vulnerability assessment approach was developed based on a Bayesian Network (BN) and Failure Modes and Effects Analysis (FMEA) to predict the food fraud vulnerability level for products entering Europe including the food fraud types and potential adulterants for each step in the supply chain.

Bouzembrak, Y., Liu, N., Mu, W., Gavai, A., Manning, L., Butler, F., & Marvin, H. (2024).

ARTICLE

Nutrients

The Relation between Consumer Perception and Objective Understanding of Front-of-Package Nutrition Labels (FOPNLs); Results from an Online Representative Survey

This study investigates the efficacy of Front-of-Pack Nutrition Labels (FOPNLs) as a cost-effective tool for improving dietary choices among Greek consumers. The purpose of the study was to investigate Greek customers' preferences and comprehension of commonly used European FOPNL schemes.

Magriplis, E., Marakis, G., Panagiotakos, D. B., Samona, A., Kotopoulou, S., Kouretas, D., Smiliotopoulos, T., Chourdakis, M., & Zampelas, A. (2024).

PAPER

Current Opinion in Food Science

From data to models and predictions in food microbiology

This paper emphasizes the importance of structured databases, visualization techniques, statistics, and mathematical models as milestones when developing predictive models of bacterial responses to food environments.

Baranyi, J., Rockaya, M., & Ellouze, M. (2024).

PAPER

International Journal of Hospitality Management

Dining out with food allergies: Two decades of evidence calling for enhanced consumer protection

The objectives of this review were to (i) present scientific evidence characterizing the risk of dining out with food allergies, (ii) describe advances in proposed management mechanisms to mitigate this risk, and (iii) outline gaps in existing practices and regulations related to food allergen management in foodservice operations.

Dominguez, S., Théolier, J., Gerdts, J., & Godefroy, S. B. (2024).

PAPER

JAMA Pediatrics

Global Prevalence of Overweight and Obesity in Children and Adolescents

In this systematic review and meta-analysis, a high prevalence of overweight and obesity in children and adolescents was found. Various possible risk factors were identified, including inherent, dietary, and environmental factors.

Zhang, X., Liu, J., Ni, Y., Yi, C., Fang, Y., Ning, Q., Shen, B., Zhang, K., Liu, Y., Yang, L., Li, K., Liu, Y., Huang, R., & Li, Z. (2024).

Reports

REPORT

FAO

The Future of Food Safety – There is no food security without food safety

Today's global challenges are transforming the way we produce, market, consume and think about food. The most pressing of these revolve around a growing population and increased food demands.

REPORT

UBS

Global Family Office Report 2024

The latest Global Family Office Report is the largest to date bringing together the insights of 320 single family offices across seven regions of the world.

REPORT

University of Saskatchewan & Coalition for Healthy School Food

School Food Programs in Canada: 15 Promising Cases

The promising school food programs in this report illustrate the innovation that is already happening to support the health, education and overall well-being of children in communities in Canada. This report responds to a need for insight into the operational details of school food programs that exist to meet the diverse needs of communities across Canada.

REPORT

WTO

Illicit Trade in Food and Food Fraud

International trade in food has helped to reduce global poverty and hunger. However, illicit trade in food and food fraud undermine the global food system and endanger public health. This publication looks into the challenges of combating illicit practices, such as smuggling and counterfeiting, and the role the WTO could play.

PRESS RELEASE

AR Charity

Charity urges all parties to commit to national fruit and veg on prescription programmes

Alexandra Rose Charity, is currently running fruit and veg on prescriptions pilots in two London Boroughs, released findings this week sharing the profound impact the project has had on the lives of people on low incomes, living with long-term health conditions linked to poor diet.

JOURNAL

Business & Human Rights Journal

The EU Directive on Corporate Sustainability Due Diligence (CSDDD): The Final Political Compromise

This piece explains the main elements of the CSDDD and outlines some of its implications beyond the EU.

Bueno, N., Bernaz, N., Holly, G., & Martin-Ortega, O. (2024).

REPORT

Ajinomoto

The food infodemic report

This report is a snapshot of the beliefs, trends, fears, and widespread confusion about eating in the age of social media. Along with the surprising datapoints collected from 3,000+ people in the U.S., are science-based facts and expert resources to encourage more informed eating habits.

SUPPLY CHAIN SUSTAINABILITY

Publications

PAPER

Operational Research

Food supply chain network design under uncertainty and pandemic disruption

In this research, the goal is to present a math-ematical programming model for designing a resilient food supply chain that can withstand disruptions caused by pandemics and their ripple effects. A hybrid robust- stochastic optimization approach is proposed to handle random as well as deep uncertainties, and three resilience strategies are applied to make the model resilient.

Shekarabi, H., Vali-Siar, M. M., & Mozdgir, A. (2024).

ARTICLE

WILEY

Carrots rather than sticks: Governance of voluntary sustainability standards and farmer welfare in Peru

In this study, a conceptual framework was developed, disentangling three main governance mechanisms through which VSS may affect farmer welfare, which we operationalize using secondary data from a nationally representative farm household survey in Peru.

Boonaert, E., Depoorter, C., Marx, A., & Maertens, M. (2024).

ARTICLE

Earth System Science Data

Global mapping of oil palm planting year from 1990 to 2021

A 10-meter resolution global map of industrial and smallholder oil palm developed using Sentinel-1 data for the years 2016–2021 and a deep learning model based on convolutional neural networks.

ARTICLE

WILEY

What is the Strategy of Strategy to Tackle Climate Change?

In this introduction to the Point-Counterpoint debate on strategic management and climate change, the argument is that this contestation is largely due to what we call three epistemic fault lines that cut through how strategy scholars understand climate change, devise possible solutions, and assume the relationship between theories and reality.

Wickert, C., & Muzio, D. (2024).

ARTICLE

Journal of Cleaner Production

Systematic review of greenhouse gas emissions for different fresh food categories

This paper presents the results of a systematic literature review of greenhouse gas emissions for different food categories from life cycle assessment (LCA) studies, to enable streamline calculations that could inform dietary choice.

Clune, S., Crossin, E., & Verghese, K. (2017).

ARTICLE

WRI

4 Ways to Pursue a Sustainable Seafood Diet

The ocean provides a vital source of protein and nutrition for more than 3 billion people, including many living in the world's most vulnerable communities. Known as "blue food," animals, plants or algae that are caught or cultivated in freshwater and marine environments, offer enormous untapped potential to tackle food insecurity and malnutrition.

Frankfort, A. (n.d.).

ARTICLE

Nature Food

Circular food system approaches can support current European protein intake levels while reducing land use and greenhouse gas emissions

This study models animal-sourced protein to plant-sourced protein ratios within a European circular food system.

Simon, W. J., Hijbeek, R., Frehner, A., Cardinaals, R., Talsma, E. F., & Van Zanten, H. H. E. (2024).

Reports

REPORT

Oceans and Fisheries

Investments in the blue economy are increasing

The BlueInvest Investor Report 2024 shows a remarkable increase in blue economy investments in recent years. Findings show that an investment ecosystem to support blue economy innovation is taking shape, and the BlueInvest initiative has been a driving force behind this change.

REPORT

AFi

Time for Transparency: Deforestation- and conversion-free supply chains

New data released by The Accountability Framework initiative (AFi) and CDP provide a view of companies' current capacity to understand, control, and disclose on deforestation and ecosystem conversion associated with their operations and supply chains.

REPORT

UN

Food Waste Index Report 2024

The Food Waste Index Report 2024 incorporates vastly expanded data points from around the world, expands on the SDG 12.3 food waste measurement methodology introduced in the 2021 report, and transitions from focusing solely on food waste measurement to exploring solutions for food waste reduction.

REPORT

Zero Waste Europe

Zero Waste Europe – Annual Report 2023

Dive into this 2023 Annual Report to discover last year's major victories and achievements – all neatly compiled in one place.

REPORT

U.S. Government

Voluntary Carbon Markets Joint Policy Statement and Principles

A fact sheet with relevant federal government actions, outlining how the U.S. Government has and will continue to shape this market in line with these principles.

GUIDE

FAO

Global Food Waste Management: An Implementation Guide for Cities

This guide sets out: – the experiences of cities around the world in coming to terms with their food waste; – the best practices for preventing and reducing food waste; – an overview of collection systems to ensure clean food waste is brought to treatment; – food waste treatment alternatives, from windrow composting to anaerobic digestion; – the use of outputs from the various treatment processes and how to best valorise them; – the policies needed to ensure food waste is sustainably managed.

GUIDE
ESMA

Guidelines on funds' names using ESG or sustainability-related terms
Updated guidelines to address greenwashing risk stemming from ESG- or sustainability-related terms used in investment fund names.

GUIDE
TfS

The Product Carbon Footprint Guideline for the Chemical Industry
The new TfS PCF Guideline is unique in that it draws on the wealth of expertise and knowledge within the TfS member network to set a standard for the chemical industry, while remaining fully compliant with existing standards including ISO and the Greenhouse Gas Protocol.

REPORT
AquaDocs

State of the Ocean Report 2024.
This report provides important information about the achievements of the UN Ocean Decade and, in the longer term, about ocean well-being. The StOR will be used to inform policy and administrative priorities and identify research focus areas that need to be strengthened or developed.

REPORT
FAO

The State of World Fisheries and Aquaculture
This edition features the Blue Transformation in action, illustrated by activities and initiatives, led by FAO in collaboration with Members, partners and key stakeholders, to integrate aquatic foods into global food security and sustainability, enhance policy advocacy, scientific research and capacity building, disseminate sustainable practices and technological innovations, and support community involvement.

DEVELOPMENT & IMPLEMENTATION OF NEW TECHNOLOGIES

Publications

ARTICLE
AI & Society

We're only human after all: a critique of human-centred AI
This paper uses insights from the works of Michel Foucault (mostly The Order of Things) to argue that the HCAI approach is deeply problematic in its assumptions. In particular, this paper criticises four main assumptions commonly found within HCAI
Ryan, M. (2024).

ARTICLE

LinkedIN

Unlocking Sustainability: The Power of Blockchain-Driven Digital Product Passports

The European Digital Product Passport (DPP) represents a critical initiative under the European Union's broader strategy to enhance sustainability and support the ambitious goals of the European Green Deal. As part of the Ecodesign for Sustainable Products Regulation (ESPR), the DPP aims to significantly reduce CO2 emissions by 55% by 2030 from 1990 levels, with a long-term goal of making Europe the first climate-neutral continent by 2050.

Reports

REPORT

EIT Food

The State of the CEE FoodTech & AgriTech Report 2023 Report

A comprehensive analysis and insights to understand the dynamism and potential of the region's agrifood innovation ecosystem.

REPORT

European Commission

Public Sector Tech Watch

This report presents the Public Sector Tech Watch (PSTW), the observatory dedicated to monitor, analyse, and disseminate the use of emerging technologies within the public sector in Europe.

GUIDE

European Commission

Official guidelines for blockchain systems within the European Union

This document, commissioned with the primary objective of ensuring that blockchain systems align with and promote European values, marks a pivotal moment in the realm of blockchain technology and its ethical implications within the EU framework.

WHITE PAPER

AIFS

Artificial intelligence for food and health

This paper provides an overview of the pivotal role played by AI in reshaping food and health systems through its application in key domains including precision agriculture, foodomics, personalized nutrition, and food safety, distribution, and quality.

Publications

ARTICLE
Our World in Data

How effective are policies in reducing the environmental impacts of agriculture?
All countries now have policies, but not all work as intended. Some drive trade-offs or lead to spillover impacts elsewhere, but there are many examples of successful stories.
Ritchie, H., & Roser, M. (2024).

ARTICLE
Journal of Management Studies

Strategy Can No Longer Ignore Planetary Boundaries: A Call for Tackling Strategy's Ecological Fallacy
This article highlights a logical fallacy that Strategy scholars inadvertently committed through the application of ideas from Industrial-Organization Economics to firms.
Bansal, P., Durand, R., Kreutzer, M., Kunisch, S., & McGahan, A. M. (2024).

ARTICLE
Futures

A vernacular for living systems: Alternative framings for the future of food
This essay argues that we are in the midst of a paradigm shift in how we think about and design our food systems, away from the industrial paradigm and toward an approach informed by the nature and function of living systems.
Loring, P. A. (2023).

ARTICLE
Appetite

Perceptions of three diets varying in animal- and plant-based protein contents: Analysis of participant experience diaries
This qualitative study is part of an intervention trial, during which participants adhered to one of the three intervention diets for 12 weeks: the ANIMAL diet (70% animal-based protein/30% plant-based protein), the 50/50 diet (50% animal/50% plant) or the PLANT diet (30% animal/70% plant).
Pellinen, T., Jallinoja, P., Erkkola, M., & Pajari, A. (2024).

ARTICLE
Stanford Social Innovation Review

The Rise of the Corporate Social Investor
The strategic alignment between business and corporate foundations, impact funds, and accelerators shows enormous potential for achieving social impact. But they can align in different ways, each with its strengths and weaknesses.

ARTICLE

Technological Forecasting and Social Change

How to move the transition to sustainable food consumption towards a societal tipping point

This article integrates renowned models of behavior change, food consumption, and marketing into the framework of positive tipping points in sustainability transitions using an empirical analysis of four case studies from Denmark.
Schulze, M., Janssen, M., & Aschemann-Witzel, J. (2024).

Reports

ARTICLE

Nature Food

Knowledge democratization approaches for food systems transformation

Current narrow views of what constitutes evidence have left blind spots in food system decision-making. Yet, alternative ways of facilitating the production and exchange of transdisciplinary knowledge enable key lessons for more equitable and informed policy processes.

REPORT

UN

Global Resilience Report

This report describes the impact of the polycrisis and highlights the experiences of different countries, offering valuable lessons on the resilience of systems to safeguard nutrition. Lastly, the report builds upon these findings and lessons learned to propose policy and programmatic recommendations for strengthening the nutrition resilience of systems, before, during, and after a crisis.

REPORT

World Bank

Recipe for a Livable Planet: Achieving Net Zero Emissions in the Agrifood System

Recipe for a Livable Planet is the first comprehensive global roadmap for mitigating the agrifood system's contributions to climate change. It shows how the agriculture system that produces the world's food can cut greenhouse gas emissions while continuing to feed the world.

REPORT

IFPRI

Global food policy report 2024: Food systems for healthy diets and nutrition

he 2024 Global Food Policy Report draws on recent evidence to examine the role of food systems in driving nutrition outcomes and opportunities for transforming food systems to ensure healthy diets for all.

ARTICLE

WHO

Just four industries cause 2.7 million deaths in the European Region every year

New WHO report highlights how big industry fuels chronic diseases, obstructs health policy and targets vulnerable people.

REPORT

Commercial Determinants of Noncommunicable Diseases in the WHO European Region

WHO

This report highlights the substantial impact of commercial determinants on noncommunicable diseases (NCDs) in the WHO European Region. Nearly 7500 deaths per day in the Region are attributed to commercial determinants, such as tobacco, alcohol,processed food, fossil fuels and occupational practices.

GUIDE

SHoE

A basic guide to food sector transformation

This guide, written by Sweden Foodtech and used for educational purposes at SSE, is meant to provide you with a 30,000 foot view of food and some of the challenges that all of us face. We also want to point in some directions regarding the upcoming transformation, along with all the innovation that will ensue, as well as all the research that will be necessary to produce in order to make sure that this transformation is beneficial to businesses, the planet and the people.

GUIDE

WHO

Fiscal policies to promote healthy diets: WHO guideline

This WHO guideline provides Member States with recommendations and implementation considerations on fiscal policies to promote healthy diets, including on food and beverage taxation, and on food subsidies that have the primary intention to change consumer behaviour by lowering prices of targeted products at retail level.

GUIDE

WHO

Policies to protect children from the harmful impact of food marketing: WHO guideline

This WHO guideline provides Member States with recommendations and implementation considerations on policies to protect children from the harmful impact of food marketing, based on evidence specific to children and to the context of food marketing.

ARTICLE

EuroHealth Net

A reimagined economic system: Wellbeing Economies for healthier, sustainable and equitable societies

A new report, created by EuroHealthNet and the Institute of Public Health in Ireland, helps decision-makers implement and measure the impact of Wellbeing Economies, from the perspective of the health sector.

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