CATALYSE

Relevant Publications and Reports – June 2025

PUBLICATIONS
Health
Local Solutions to Improve Access to Nutritious and Safe Complementary Foods in Africa *Dakar Local Production* A Regional Dialogue in December 2024 convened over 100 stakeholders from governments, private sector, technical agencies and financial institutions to identify solutions to the systemic barriers in the complementary food eco-system
A political economy analysis of the legislative response to unhealthy food and beverage marketing in Chile, Canada and the UK *Springer Nature* This research studies the underlying political economy influences that impacted the introduction of legal responses.
Global food retail environments are increasingly dominated by large chains and linked to the rising prevalence of obesity *Nature Food* This study examines trends in retail food environments from 2009 to 2023 across 97 countries, exploring associations with changes in obesity prevalence.
Antenatal multiple micronutrient supplements: time for alignment to support country action *The Lancet* This comment offers suggestions from several members of the WHO Strategic and Technical Advisory Group of Experts (STAGE) for Maternal, Newborn, Child, and Adolescent Health and Nutrition on the need for alignment among UN agencies and assistance to countries in conducting rigorous implementation research, with an emphasis on equity considerations for such interventions.
Non-communicable disease burden through adhering to Dutch dietary guidelines: a modeling study to estimate future reductions *The Lancet* Non-optimal food consumption is a major modifiable risk factor for non-communicable diseases (NCDs). The study aimed to estimate the potential reductions in NCD burden that could be achieved in 2050 by adhering to eleven components of the Dutch dietary guidelines in the Netherlands.

State of Food Security in the EU

European Commission

A qualitative assessment of food supply and food security in the EU within the framework of the EFSCM.

The Future of Food Security in the UK: New Research Reveals Why Factory Farming is Not the Answer

CAWF

The CAWF report challenges the narrative that factory farming bolsters UK food security, revealing instead how it undermines it—costing taxpayers millions, threatening farmers' livelihoods, and increasing our reliance on imports.

Subnational and lifecycle-specific estimates of diet costs support nutrition-sensitive policies and programmes

Science Direct

This study has two objectives: First, to assess whether national level diet costs from the Fill the Nutrient Gap (FNG) analysis are in line with national estimates from the Food Prices for Nutrition (FPN) Project and discuss methodological differences. Second, to review the added value of subnational and lifecycle-specific estimates from FNG to inform design of policies and programmes for improving nutrition of the most vulnerable groups.

Impact of Olive Oil Components on the Expression of Genes Related to Type 2 Diabetes Mellitus

Pub Med

This literature review aims to critically examine and synthesize existing research regarding the impact of olive oil on the expression of genes relevant to T2DM.

Beyond soluble and insoluble: A comprehensive framework for classifying dietary fibre's health effects

Science Direct

This article proposes a holistic classification framework that accounts for different fibre types and can be used to accurately infer their physiological outcomes.

Dietary species richness provides a comparable marker for better nutrition and health across contexts

Nature Food

This study computed the between- and within-country variability of similarity-insensitive Hill numbers using dietary intake collected from prospective cohorts in nine European countries and cross-sectional studies in five low- and middle-income countries.

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.

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Optimal dietary patterns for healthy aging

Nature Medicine

Using longitudinal questionnaire data from the Nurses' Health Study (1986–2016) and the Health Professionals Follow-Up Study (1986–2016), this study examined the association of long-term adherence to eight dietary patterns and ultraprocessed food consumption with healthy aging, as assessed according to measures of cognitive, physical and mental health, as well as living to 70 years of age free of chronic diseases.

Immune and metabolic effects of African heritage diets versus Western diets in men: a randomized controlled trial

Nature Medicine

A randomized controlled trial in the Kilimanjaro region in Northern Tanzania was conducted to investigate the immune and metabolic effects of switching between Kilimanjaro heritage-style and Western-style diets for 2 weeks and consuming a traditional fermented banana beverage ('Mbege') for 1 week.

Soya Nutrition, Health and Sustainability

MyNutri Web

The latest research and practical guidance on soya for human consumption.

Ultra-processed foods: the ANSES opinion

Food Times

Addressing the growing public health concern surrounding ultra-processed foods (UTPs), this document unveils the expert opinion of the French National Agency for Food, Environmental and Occupational Health Safety.

Why is the medical profession reluctant to talk about diet change?

Science Direct

Evidence shows that plant-based diets can prevent and manage conditions such as cardiovascular disease, type 2 diabetes and cancer, while addressing global food insecurity and resource inefficiency.

UPF and HFSS: different labels, same foods?

Nesta

An analysis of where ultra-processed foods meets those high in fat, sugar and salt.

Understanding the association between household food insecurity and diet quality: The role of psychological distress, food choice motives and meal patterning

Science Direct

This study examined the associations between household food insecurity (HHFI), psychological distress, motives underlying food choices and meal patterning behaviours in a sample of UK adults (N = 594, mean age = 40.6 years, 96 % female).

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A modeling analysis of whole body potassium regulation on a high-potassium diet: proximal tubule and tubuloglomerular feedback effects

American Psychological Society

A recently developed mathematical model of whole body K+ regulation to unravel the individual impacts of these regulatory mechanisms. In this study, this mathematical model was extended to incorporate recent experimental findings that showed decreased fractional proximal tubule reabsorption under a high-K+ diet.

F. prausnitzii potentially modulates the association between citrus intake and depression

BMC

These data underscore the role of diet in the prevention of depression and offer a plausible explanation for how the intestinal microbiome modulates the influence of citrus on mental health.

Cancer risk based on alcohol consumption levels: a comprehensive systematic review and meta-analysis

epiH

This systematic review aimed to investigate the associations between different levels of alcohol consumption and the risk of several cancer types.

Chemistry

Spectroscopy, a Tool for the Non-Destructive Sensory Analysis of Plant-Based Foods and Beverages: A Comprehensive Review

MDPI

In this review, NIR and imaging-based techniques coupled with chemometrics based on artificial intelligence and machine learning for sensory evaluation are documented.

Regulated and emerging mycotoxins occurrence in plant-based beverages from the Italian market

Science Direct

This study aimed to optimize a salting-out assisted liquid-liquid extraction (SALLE) procedure combined with ultra-high performance liquid chromatography coupled to mass spectrometry (UHPLC-MS/MS) for the simultaneous determination of 19 mycotoxins in plant-based beverages.

Research Progress in Current and Emerging Issues of PFASs' Global Impact: Long-Term Health Effects and Governance of Food Systems

MDPI

This review introduces PFASs comprehensively, discussing their nature and identifying their interconnection with microplastics and their impacts on public health and the environment.

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Behaviour of the Shiga toxin-producing Escherichia coli O157:H7 and O26:H11 in dairy products, in static and dynamic conditions for predictive model validation

Science Direct

In this study, the kinetics of two Shiga-toxin-producing *Escherichia coli* (STEC) strains (one O157:H7 strain and one O26:H11 strain) were investigated in different dairy matrices (milk supplemented or not with NaCl, mascarpone and raw milk cheese).

Plasma perfluoroalkyl substances and breast cancer risk in Brazilian women: a case–control study

BMC

This study examined the association of PFAS exposure and breast cancer risk in Brazilian women, who represent a racially and ethnically diverse group.

Research Progress in Current and Emerging Issues of PFASs' Global Impact: Long-Term Health Effects and Governance of Food Systems

Europe PMC

This review introduces PFASs comprehensively, discussing their nature and identifying their interconnection with microplastics and their impacts on public health and the environment.

ZeroPollution4Water Cluster: the overview and the inventory of 32 case studies in drinking and groundwater

European Commission

This report aims to provide an overview about the 32 cases studies of seven ZeroPollution4Water Cluster projects. These seven projects received funding under Horizon Europe Research and Innovation programme in 2022, aiming to prevent groundwater pollution and secure drinking water quality.

First evidence of microplastics in human ovarian follicular fluid: An emerging threat to female fertility

Science Direct

In this study, 18 women (undergoing assisted reproductive treatment at In Vitro Fertilisation center in Salerno, Southern Italy) were selected to assess the presence of MPs in follicular fluid. Plastic particles < 10 µm were measured using Scanning Electron Microscopy (SEM) coupled with an EDX (X Energy Dispersion) detector.

Polystyrene microplastics exposure in freshwater fish, Labeo rohita: evaluation of physiology and histopathology

Nature

The goal of this investigation was to assess the adverse impacts of polystyrene microplastics (PS-MPs) on *Labeo rohita* with a comprehensive assessment of growth performance, hematological changes, and histopathological effects.

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Microbiology

Quantitative microbiological risk assessment using individual data on food storage and consumption (Part 1): A case study on listeriosis associated to ready-to-eat foods in France

Science Direct

This study integrated individual food consumption and food storage data collected by the French national dietary survey INCA3 with food contamination data to estimate the risk of listeriosis in France, without assuming independence of variables.

Biofilm detection in the food industry: Challenges in identifying biofilm eps markers and analytical techniques with insights for Listeria monocytogenes

Science Direct

This review aims to identify general biofilm EPS markers distinct from planktonic cells, focusing on macromolecules in the EPS matrix.

Enhancing water efficiency in the processing of leafy greens: Efficacy of inline chlorine and pH control systems in reducing microbial contamination and limiting DBP formation

Science Direct

The Automated SmartWash Analytical platform (ASAP) unit, an inline dosing and monitoring (i.e. control) system, was tested at full scale during the washing of iceberg and Lollo Rossa lettuce, using different lettuce-to-water ratios, simulating various processing conditions.

Pathogenic Escherichia coli Virulome in Top Soil Improvers and Irrigation Waters Devoted to Leafy Vegetable Production: Hazard Assessment From a Case Study in Italy

IADNS

This paper report the hazard characterization of 31 top soil improvers (TSIs) and 15 irrigation water samples of different origins, sampled at the farm level.

Listeria monocytogenes colonises established multispecies biofilms and resides within them without altering biofilm composition or gene expression

Science Direct

This study examined the behaviour of a L. monocytogenes ST121 isolate in a multispecies biofilm composed of Pseudomonas (P.) fragi, Brochothrix (B.) thermosphacta, and Carnobacterium (C.) maltaromaticum, previously isolated from a meat processing facility.

Inactivation Kinetics of Alicyclobacillus acidoterrestris Spores and Determination of Spore Germicidal Fluences Under UV-C Treatment

Science Direct

The aim of this study is to measure the UV-C inactivation kinetics and determine the fluences required for incremental inactivation of Alicyclobacillus acidoterrestris (AAT).

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Development of extensive growth and growth boundary models for mesophilic and psychrotolerant Bacillus cereus in dairy products (Part 1)

Frontiers

B. cereus isolates of dairy origin were used to generate a comprehensive dataset to develop two cardinal parameter growth and growth boundary models for mesophilic and psychrotolerant B. cereus, respectively.

Fermentation of native Brazilian fruits with kombucha: A novel opportunity for producing low-alcohol beverages

Science Direct

This study used kombucha as an inoculum to ferment pulp from Brazilian native fruits, and the resulting beverages were evaluated for their physicochemical properties, substrate consumption, metabolite production, total phenolic content, antioxidant activity, and microbial composition over 10 days.

Report of the Cultivated Meat Investment Landscape in the Mid-Twenties

Cell corp affairs

This report analyses the market investment trends in 2025 compared to 2024, covering total funding volumes, who are the investors, what are the regional patterns, any deals and acquisitions, public market sentiment, and the challenges and opportunities shaping these trends.

Microviridae bacteriophages influence behavioural hallmarks of food addiction via tryptophan and tyrosine signalling pathways

Nature metabolism

This study shows that *Microviridae* bacteriophages, particularly Gokushovirus WZ-2015a, are associated with food addiction and obesity across multiple human cohorts.

Exploring Yeast's Energy Dynamics: The General Stress Response Lowers Maintenance Energy Requirement

EnviroMicro Journals

The impact of GSR on MER was investigated by assessing the effect of the absence of its key regulators, Msn2 and Msn4, on energy-substrate distribution and stress resistance.

Food Safety Management

Regulatory Sandboxes for Novel Foods

Cambridge University Press

This article conceptualises regulatory sandboxes in the food area, considering them as unique spaces with varying degrees of openness.

Draft Guidance for Industry: Establishing Sanitation Programs for Low-Moisture Ready-to-Eat Human Foods and Taking Corrective Actions Following a Pathogen Contamination Event

U.S Food & Drug

This guidance is intended to help manufacturers/processors of low-moisture, ready-to-eat (LMRTE) human foods comply with 21 CFR part 117 (part 117).

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Holistic risk assessments of food systems

Science Direct

This study reviewed and presented various assessment methods and their applications in food systems, highlighting their advantages and disadvantages.

Digital Applications

Translating data into policy informing decisions: current and future perspectives from the European Food Safety Authority (EFSA)

Cambridge University Press

This paper provides insights into EFSA's data-related activities and future perspectives in the following key areas of EFSA's 2027 strategy: one substance-one assessment, combined exposure to multiple chemicals, environmental risk assessment, new approach methodologies, antimicrobial resistance and risk–benefit assessment.

Quantitative prediction of disinfectant tolerance in Listeria monocytogenes using whole genome sequencing and machine learning

Scientific Reports

This study, explores the prediction of tolerance and minimum inhibitory concentrations (MIC) using whole genome sequencing (WGS) and machine learning (ML).

Is regulatory science ready for artificial intelligence?

NPJ

At the Global Summit on Regulatory Science (GSRS24), regulators agreed that successful AI adoption requires ongoing dialogue, adaptability, and AI-trained personnel to harness its potential for regulatory responsibilities in the evolving 21st-century landscape.

Mass Spectrometry-Based Method for Multiple Allergens Control: Application to Bakery Goods

MDPI

This paper investigated the applicability of the developed method for the detection of traces of allergenic ingredients including egg, milk, soy, almond, hazelnut, peanuts, and sesame in two different kind of food matrices, namely cookies and rusks.

Self-assembling peptide with dual function of cell penetration and antibacterial as a nano weapon to combat intracellular bacteria

Science Advances

This paper proposes a strategy to develop self-assembled nanopeptides with dual functions through the chimerization of self-assembled core, hydrophobic motif, and cell-permeable unit.

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Paper-immobilized liquid-phase microextraction for direct paper spray mass spectrometry and immuno-detection of atropine in baby food, buckwheat cereals, and edible oils at regulatory levels

Science Direct

Simplified and affordable method for atropine monitoring, combining immunodetection and mass spectrometry to detect atropine in buckwheat, canola oil, and baby cereals at regulatory levels.

The Ability of Near Infrared (NIR) Spectroscopy to Predict Functional Properties in Foods: Challenges and Opportunities

MDPI

This mini-review highlights and discussed the applications, challenges and opportunities that NIR spectroscopy offers to target the quantification and measurement of food functionality in dairy and cereals.

REPORTS

Risk assessment of Listeria monocytogenes in foods: part 1: formal models: meeting report

WHO

This report describes the output of the FAO/WHO Expert Meeting and the advice herein is useful for both risk assessors and risk managers, at national and international levels and those in the food industry working to control the hazard in foods.

Exposure to endocrine disrupting chemicals: changes from 2002 to 2024

FAO

The report investigates the change in exposure to endocrine disrupting chemicals (EDCs) since risk management practices were put into place in the last decades**.**

Prolonged cross-border multi-serovarSalm onellaoutbreak linked to consumption of sproutedseeds

EFSA

Seed producers should apply all procedures necessary(e.g. Good Agricultural Practices (GAP)) to prevent microbial contamination of seeds intended for sprouting andsprout producers should implement adequate food safety management systems to ensure only safe productsreach the market.

Microbiological Guidance for Produce Suppliers to Chilled Food Manufacturers (MGG4) (4th Edition) 2025

CFA

CFA brings 30 years of experience to one of its most popular documents in its revised and updated fourth edition of Microbiological Guidance for Produce Suppliers to Chilled Food Manufacturers (MGG4).

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