



JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

Forty-seventh Session

MATTERS ARISING FROM FAO AND WHO

(Prepared by FAO and WHO)

1. Introduction

1.1 This document highlights evolving policies and related matters of FAO and WHO that could be of interest or relevance to the work of Codex and is structured as follows:

Matters arising jointly from FAO and WHO: 3.1 *World Food Safety Day*, 3.2 *UN Decade of Action on Nutrition 2016-2025*, 3.3 *The State of Food Security and Nutrition in the World 2024*, 3.4 *Joint Statement on the Principles of a Healthy Diet*, 3.5 *Healthy Diets Monitoring Initiative*, 3.6 *FAO and WHO's work on AMR*, 3.7 *Joint FAO/WHO Scientific Advice to Codex Alimentarius*

Matters arising from FAO: 4.1 *FAO Governing bodies*, 4.2 *FAO's work on e-notifications for fisheries and aquaculture products*, 4.3 *Update on the Vision and Strategy for FAO's work in Nutrition*, 4.4 *Literature review on the impact on the gut microbiome of pesticides residues, microplastics and veterinary drugs*, 4.5 *Laboratory methods supporting Codex standards; food irradiation and authenticity*, 4.6 *FAO and IAEA International Symposium on Food Safety and Control*, 4.7 *Food safety and new/emerging technologies*, 4.8 *Food Safety in the Circular Economy*, 4.9 *Food safety implications from the use of environmental inhibitors in agrifood*, 4.10 *Risk Analysis for food safety*, 4.11 *New food sources and production systems*, 4.12 *Food safety in personalized nutrition: a focus on food supplements and functional foods*, 4.13 *Food safety in the context of limited food availability*

Matters arising from WHO: 5.1 *World Health Assembly Resolution and The Update of WHO Global Strategy for Food Safety*, 5.2 *WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Diet and Health*, 5.3 *WHO guidelines on the optimal intake of animal source foods*, 5.4 *WHO guidance on the consumption of "Ultra-processed" foods*, 5.5 *WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Policy Actions*, 5.6 *Food classification, including nutrient profiling, to support food environment policies*, 5.7 *WHO guideline on the prevention and management of wasting and nutritional oedema (acute malnutrition) in infants and children under 5 years*, 5.8 *WHO guidelines on complementary feeding of infants and children 6-23 months of age*, 5.9 *WHO technical support on the Code of marketing of breast-milk substitutes*, 5.10 *Elimination of industrially produced trans-fatty acids*, 5.11 *Population sodium/salt intake reduction*, 5.12 *Alcohol*, 5.13 *World Health Assembly Decision on Traditional Food Markets*

2. Recommendations

2.1 CCEXEC and CAC are invited to:

- note the information given in this document; and
- take necessary actions to best take into consideration the policies of the parent organizations.

3. Matters arising jointly from FAO and WHO:

3.1 *World Food Safety Day*

3.1.1 WHO and FAO jointly coordinated the World Food Safety Day campaign, launched on 7 March 2024 with the announcement of the theme "Food safety: prepare for the unexpected", to underly the importance of being prepared for food safety incidents and to present an opportunity to celebrate the 20th anniversary of the FAO/WHO International Food Safety Authorities Network (INFOSAN). On 6 June, WHO hosted Ask WHO Live Q&A¹ on WHO X, Facebook, LinkedIn and YouTube platforms inviting the online audience to ask the FAO and WHO experts questions on maintaining food safety during unexpected events, gathering over 124,000 viewers

¹ <https://x.com/WHO/status/1798641327359607164>

(as of 13 August 2024). On 7 June, WHO and FAO jointly participated in the press briefing² organized by the United Nations Information Service in Geneva. INFOSAN hosted a public webinar to highlight the importance of good risk management and risk communication practices during unexpected food safety incidents. Codex published a case study involving an outbreak managed through the use of Codex texts and information exchange through the INFOSAN network. The World Food Safety Day website³, hosted by Codex, features information about many of the events and initiatives that took place around the world.

3.2 **UN Decade of Action on Nutrition 2016-2025**

3.2.1 The UN Decade of Action on Nutrition, proclaimed by the UN General Assembly in 2016⁴, aims to accelerate implementation of the commitments made at the Second International Conference on Nutrition (ICN2) in 2014, achieve the global nutrition and diet-related non-communicable disease (NCD) targets by 2025, and contribute to the realisation of the Sustainable Development Goals by 2030⁵.

3.2.2 The fourth progress report of the Secretary-General on the Implementation of the UN Decade of Action on Nutrition (2016-2025), compiled by the joint FAO/WHO Secretariat of the Nutrition Decade, was released on 30 April 2024⁶. This report provides an overview of the progress for the period 2022-2023 towards achieving the global nutrition and related Sustainable Development Goals (SDGs) targets and substantial advances in a wide variety of nutrition-related activities within the six action areas of the Nutrition Decade's Work Programme and other nutrition-related global processes. Both the Nutrition Decade and the global nutrition targets have shown their use in providing a vision, a multisectoral framework and ambition in support of the SDGs, especially to reach SDG2. Towards the end of the Nutrition Decade, informal dialogues will be convened in 2025 with the aim to reflect on global progress achieved and challenges encountered, building upon and connecting initiatives of Governments and their many partners, and to review an extension of the Nutrition Decade to 2030. By aligning with the overarching goals of the SDGs and leveraging multisectoral approaches, such an extension or other can catalyse coordinated action across governments, civil society, and the private sector, leading to improved nutrition outcomes, enhanced resilience, and a more equitable and prosperous future for all.

3.3 **FAO, IFAD, UNICEF, WFP and WHO. 2024. The State of Food Security and Nutrition in the World 2024 – Financing to end hunger, food insecurity and malnutrition in all its forms. (SOFI 2024)**

3.3.1 FAO, IFAD, UNICEF, WFP and WHO partnered to produce the joint report on The State of Food Security and Nutrition in the World 2024 (SOFI 2024⁷), which provides latest trends and analysis on the global food security and nutrition situation, including updated estimates on the cost and affordability of healthy diets. Furthermore, it provides a definition of financing for food security and nutrition, which refers to the process of providing or obtaining financial resources to ensure that all people, at all times, have stable, physical, social and economic access to sufficient, safe and nutritious foods that meet their dietary needs and food preferences for an active and healthy life, and suitable food preparation and handling, feeding, caring, and health-seeking practices, and access to health, water and sanitation services to ensure a continued adequate nutritional status. Additionally, it covers expenditures and investments that aim to ensure that all individuals are protected against short-term or long-term instability in food security and nutrition, caused by various climatic, economic, social, commercial and political factors. The report also presents recommendations regarding the efficient use of innovative financing tools and reforms to the food security and nutrition financing architecture.

3.4 **Joint Statement on the Principles of a Healthy Diet**

3.4.1 In September 2024, FAO and WHO will publish a Joint Statement on the Principles of a Healthy diet. The statement will lay out four core principles of what makes diets *healthy* for humans. These principles are driven by human biology, underpinned by evidence, and universal in their application. Specifically, to be healthy, diets must be **adequate** in all essential nutrients to prevent deficiencies and promote health, without excess; **diverse**, including a wide variety of nutritious foods within and across food groups, favouring nutrient adequacy and consumption of other bioactive health promoting substances. They must also be **balanced** in energy intake aligning with requirements to favour healthy weight, growth among children and adolescents, and pregnancy outcomes, and with the main sources of energy (i.e., fats, carbohydrates, proteins) in proportions that help prevent disease. Finally, healthy diets are **moderate** in (or avoid) non-essential nutrients (e.g. free sugar) and foods that are associated with negative health outcomes (e.g. ultraprocessed foods). The joint statement also stresses the importance of food safety to prevent illness and promote the body's optimal utilization of nutrients.

² <https://www.unognewsroom.org/story/en/2200/un-geneva-press-briefing-07-june-2024>

³ <https://www.fao.org/fao-who-codexalimentarius/world-food-safety-day/wfsd-news/en/>

⁴ <https://undocs.org/A/RES/70/259>

⁵ <https://www.un.org/nutrition>

⁶ https://documents.un.org/symbol-explorer?s=A/78/865&i=A/78/865_1715195193345

⁷ <https://openknowledge.fao.org/items/7dab011e-db47-4c63-951e-c69e49111b65>

The Joint Statement also emphasizes that many dietary patterns – or the combinations of foods that people consume over time and in context – can be healthy, when meeting these four principles. Dietary patterns are highly contextual, depending on local food access, preferences, culture and traditions. To guide consumer education and inform policies to promote healthy dietary guidelines, countries must develop local guidelines.

3.5 *The Healthy Diets Monitoring Initiative*

3.5.1 The Healthy Diets Monitoring Initiative (HDMI), a joint initiative of FAO/UNICEF/WHO, was formed in 2022 to bring together experts and initiate a process to reach consensus on the core principles of a healthy diet, to assess the construct validity and cross-context equivalence of available healthy diet metrics, and to develop guidance for monitoring progress towards healthy diets at national and global levels. A suitability assessment report, call-to-action, technical expert meeting report, and guidance version 1 were published in 2023-2024, in addition to ongoing reviews and statistical analyses which aim to accelerate progress in the development, validation, and uptake of evidence-informed healthy diet metrics⁸.

3.5.2 Healthy diets are fundamental to SDG 2 and are a prerequisite for achieving many other SDGs, yet diets are not captured specifically by any indicator in the current SDG framework. During the 2025 Comprehensive Review of SDG indicator framework, the “Prevalence of minimum dietary diversity (MDD), by population group (children aged 6-23.9 months and women aged 15 to 49 years)” was submitted as an additional SDG 2 indicator by Switzerland (lead), Bangladesh, Brazil, and Malawi, with support from FAO/IFAD/UNICEF/WFP/WHO. The proposal of MDD is one of 15 included in the global open consultation⁹. The IAEG-SDGs will prepare the final proposal for the 2025 Comprehensive Review and submit it to the UNSC for its consideration at the fifty-sixth session in March 2025.

3.6 *FAO and WHO's work on AMR*

For more details regarding the FAO and WHO work on AMR, the Committee is invited to consider the information provided separately in the report on FAO and WHO Capacity Development Activities (CX/CAC 24/47/INF 1).

3.7 *Joint FAO/WHO Scientific Advice to Codex Alimentarius*

For more details regarding the work of the joint FAO/WHO scientific advice work to Codex Alimentarius, including the work of JECFA (Joint FAO/WHO Expert Committee on Food Additives), JEMRA (Joint FAO/WHO Expert Meeting on Microbiological Risk Assessment), JMPR (Joint FAO/WHO Expert Meeting on Pesticide Residues), JEMNU (Joint FAO/WHO Expert Meeting on Nutrition) as well as the work of *ad hoc* expert committee, the Committee is invited to consider the information provided separately in CX/CAC 24/47/INF2.

4. *Matters arising from FAO*

4.1 *FAO Governing bodies*¹⁰

4.1.1 The 175th Session of the FAO Council was held from 10-14 June 2024¹¹. The Council discussed the main drivers of food insecurity, including violent conflicts, climate change, economic setbacks, and rising poverty and inequalities. The council appreciated that FAO's financial delivery increased by over 30% compared to the previous biennium, with resource mobilization reaching a historic high of USD 4.2 billion¹². The Council reviewed the Programme Implementation Report for 2022-23, highlighting achievements and areas needing improvement and noted reports from various regional conferences that were presented, focusing on specific challenges and strategies for different regions¹³. In addition, the status and future direction of the FAO Country Office Network were discussed, emphasizing the importance of a modern and efficient decentralized network to support countries in achieving the Sustainable Development Goals (SDGs)¹⁴. These discussions and decisions aim to strengthen FAO's efforts in addressing global food security challenges and supporting sustainable development.

4.2 *FAO's work on e-notifications for fisheries and aquaculture products*

4.2.1 Over a third of global agrifood exports cross borders at least twice before reaching the final consumer. The complexity of fish supply chains creates new and ever greater challenges for the management of food safety. The existence of e-notification systems for food imports helps us understand current challenges and react to them. For this reason, FAO collects import notification data for fisheries and aquaculture products that

⁸ <https://data.unicef.org/resources/the-healthy-diets-monitoring-initiative-hdmi/>

⁹ <https://unstats.un.org/sdgs/iaeg-sdgs/2025-comprehensive-review>

¹⁰ <https://www.fao.org/3/nl148en/nl148en.pdf>

¹¹ <https://www.fao.org/governing-bodies/council/cl175/en>

¹² <https://www.fao.org/director-general/speeches/details/175th-session-of-the-fao-council--opening-statement/en>

¹³ <https://openknowledge.fao.org/server/api/core/bitstreams/cdb4f791-8487-4d3b-b2f6-3c1333aeb424/content>

¹⁴ <https://openknowledge.fao.org/server/api/core/bitstreams/a2582cdc-e84d-486c-9ae7-1736582d1263/content>

is analysed at a later date to understand issues and practices and fill technical gaps. Import notification information by categories can be found on the Globefish website¹⁵ and the raw data extracted from a variety of publicly available portals globally can be extracted from FishStatJ¹⁶.

4.3 Update on the Vision and Strategy for FAO's work in Nutrition

4.3.1 *Better nutrition* is one of the four fundamental aspirations of the FAO Strategic Framework 2022-31 guiding FAO's support to its Members in achieving the 2030 Agenda for Sustainable Development. To help prioritize action, FAO has articulated a vision for nutrition of a world where all people are eating healthy diets from sustainable, inclusive and resilient agrifood systems, which was included in a dedicated cross-organizational strategy that was requested by the FAO Governing Bodies with accountability to Members. The *Vision and Strategy for FAO's Work in Nutrition* was adopted at the 166th Session of the FAO Council in 2021.

4.4 Literature review on the impact on the gut microbiome of pesticides residues, microplastics and veterinary drugs

4.4.1 Further to the publication of three reviews of scientific literature on the effects on the gut microbiome and health of regulated substances (pesticides residues and veterinary drugs) and microplastics, another publication will be issued by end 2024 on food additives. The reviews were conducted within the food safety context to identify research needs and limitations of research producing data that have the potential of being incorporated into chemical risk assessment activities. The published reports were promoted through a series of webinars organized by FAO, the International Bioeconomy Forum (IBF, microbiome working group led by European Commission) and the International Food Information Council.

4.4.2 In December 2023, and as a follow-up activity, FAO organized a technical meeting with the participation of a multidisciplinary group of experts to explore the potential usability of gut microbiome data into chemical risk assessments (report accessible at: <https://doi.org/10.4060/cd1399en>)

4.4.3 In addition, ESF has contributed a chapter related to the microbiome and food safety in the upcoming publication "*The role of microbiome science in addressing malnutrition and noncommunicable diseases,*" co-authored and coordinated by the Nutrition and Food Systems Division (ESN) in FAO.

4.5 Laboratory methods supporting Codex standards; food irradiation and authenticity

4.5.1 The Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture provides support to FAO/WHO's work in the areas of food irradiation, food authenticity and the control of residues and contaminants including radioactivity in food through applied research and development at its Agriculture and Biotechnology Laboratories in Seibersdorf and coordinated research involving institutes from Member Countries.

4.5.2 A coordinated research project focusing on food authenticity; "The Implementation of Nuclear Techniques for Authentication of Foods with High Value Labelling Claims (INTACT Food, D52042)" involving 22 institutes in 19 countries will conclude this year. The project focused on protecting foods that are vulnerable to counterfeiting or economically motivated adulteration due to their premium value. The outputs of this project, including Analytical data, metadata and databases of authentic food commodities with high-value labelling claims; Standard operating procedures and harmonised protocols for sampling, preparation, and analysis of food, statistical evaluation, interpretation and reporting are relevant to committees such as the Codex Committees on Methods of Analysis and Sampling (CCMAS) and on Food Import and Export Inspection and Certification Systems (CCFICS).

4.5.3 The coordinated research project "Depletion of Veterinary Pharmaceuticals and Radiometric Analysis of their Residues in Animal Matrices" (D52043) arising from deliberations of the 23rd and 24th CCRVDF sessions on the need to support establishment of MRLs for targeted veterinary drugs, continues to generate research findings from studies involving the use of radiolabelled veterinary drugs in food animals. The project involves 18 research/regulatory institutions from Bangladesh, Brazil, Burkina Faso, Canada, China, Chile, Iran (Islamic Republic of), Korea (Republic of), Morocco, North Macedonia, Pakistan, Sudan, Tunisia, Uganda, Uruguay and USA. As reported during the 3rd research coordination meeting held in Ohrid, North Macedonia from 21 to 25 August 2023, the project has developed an innovative mechanism of addressing bottlenecks in these studies, by synthesizing radioisotopes such as Zinc-65 in-house and using them to label veterinary drugs such as amoxicillin and to conduct depletion tests in fish. Imaging to visualize the radiolabel pathways and distribution in edible and non-edible tissues has also been reported. The scope of radiolabelling is expanding and so is training of trainers to conduct such studies including radiosynthesis. More than 10 analytical methods have already been developed or validated and are in use.

¹⁵ <https://www.fao.org/in-action/globefish/globefish-home/en/>

¹⁶ <https://www.fao.org/fishery/statistics-query/en/home>

4.5.4 Research continues under a new 5-year coordinated research project on, “Nuclear Techniques to Support Risk Assessment of Biotoxins and Pathogen Detection in Food and Related Matrices”. The project focuses on the development, validation, establishment and implementation of nuclear/isotopic analytical techniques and approaches to support rapid and cost-effective testing, investigation and control of biotoxins and pathogens of food safety, public health, zoonotic and antimicrobial resistance relevance. It contributes to and supports the One Health approach to addressing global health issues and it was established to facilitate global risk assessment as well as preparedness and ability to respond to current and future food safety and related emergencies associated with biotoxins and foodborne pathogens. The project involves 20 institutes in Argentina, Bangladesh, China, France, Ghana, Indonesia, Kenya, Morocco, Pakistan, Philippines, Qatar, South Africa, Tunisia, Uganda and the USA. The 2nd research coordination meeting took place from 2-6 October 2023 in Vienna, Austria where several analytical methods, and data on distribution and occurrence of biotoxins and various pathogens in foods and related matrices were reported.

4.5.5 Research on analytical methods for testing contaminants and residues in food is progressing, expanding the scope both to rapid tools, developing methods for aflatoxins and fumonisins in pistachio and maize using electrochemical immunosensors, and to multi-analyte confirmatory methods for mycotoxins and pesticides in maize, maize tortillas and millet employing liquid chromatography/supercritical fluid chromatography-tandem mass spectrometry.

4.5.6 The Joint FAO/IAEA Centre works on the Peaceful Uses Initiative (PUI) Project “*Ensuring Food Security and Safety by Future-Proofing Dryland Crops under Climate Change*”. Changing climate conditions are expected to adversely impact dryland crop yields posing threat to food security, but also diminish the nutritional quality of food and create environments conducive to mycotoxin-producing fungi and to increased uptake of heavy metals into plants, compromising food safety. The Joint Centre promotes R&D in this space to devise and deploy nuclear and complementary analytical methods to detect, monitor, and control key climate change-related contaminants, focussing on millet, cassava and groundnut, which are exemplary representatives of cereal, root and legume crops that are crucial for food security. Multi-analyte methods have been developed and validated for the determination of the aflatoxins B1, B2, G1 and G2 and the fumonisins FB1, FB2 in millet and cassava by liquid chromatography-tandem mass spectrometry with the isotope dilution assay. Research is progressing for the rapid elemental profiling with handheld and benchtop X-Ray fluorescence spectroscopy for fundamental parameter and calibration method for As, Cd, Cr, Fe, Pb, Zn. The Joint Centre’s capabilities in confirmatory elemental profiling will be substantially enhanced using the newly procured inductively coupled plasma mass spectrometry instrument. A comprehensive literature review has been undertaken to identify critical research gaps. Preparations are underway to convene a consultancy meeting to bring together key stakeholders, discuss project findings, and identify key topics for future research. Additionally, a virtual training workshop is planned to enhance the capacity of researchers and practitioners in the Member States to address the project’s focal areas.

4.6 FAO and IAEA International Symposium on Food Safety and Control, 27 to 31 May 2024, Vienna, Austria

4.6.1 The Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture wishes to announce the International Symposium on Food Safety and Control that was held from 27 to 31 May 2024 in IAEA Headquarters in Vienna, Austria.

4.6.2 The purpose of this symposium was to bring together experts and stakeholders in food safety and food control systems to consider the protection of food supply chain and measures to improve its resilience to food security challenges. The following topics were covered and new knowledge shared.

Main topics:

- Food authenticity and fighting food fraud
- Food and phytosanitary irradiation
- Chemical residues and contaminants in food and feed
- Preparing for, and responding to emergencies and incidents affecting the food supply
- Detection and characterization of pathogens in food
- Standard setting and risk assessment
- One Health, holistic approaches
- Partnerships and networking.

4.6.3 The symposium noted that the support IAEA, in collaboration with the FAO, provide to Member States on food safety and control is contributing to improvement of food safety and quality testing and monitoring; addressing of food authenticity/fraud and in the application of food irradiation. Further work though is needed to better contribute to addressing the global burden of foodborne illnesses and trade-related challenges including rejections. A holistic but practical approach in the food system from the source to consumption was recommended and that various stakeholders must play equal roles. Equity among sectors and disciplines as

well as a trans-disciplinary approach are required for One Health to be more impactful. Some of the recommendations arising from the symposium held in Vienna, Austria include: (a) the need to deploy laboratory testing capabilities to the whole food chain from source to consumption and address other contributors to unsafe food such as unsafe water; (b) undertaking further work on the use of existing facilities in member countries, such as cyclotrons to produce radioisotopes in-house, for application in depletion/pharmacokinetic animal studies and generating data for Codex standards-setting. This would require promoting capabilities for radiosynthesis; (c) Investing in R&D to support the development of advanced analytical techniques to stay ahead of emerging food fraud issues.

4.7 Food safety and new/emerging technologies

4.7.1 Safety assessment of food derived from recombinant-DNA animals and microorganisms: FAO regularly collaborates with the Organisation for Economic Co-operation and Development (OECD) and the Convention of Biological Diversity (CBD) to ensure the synergy of three relevant databases namely: FAO GM Foods Platform¹⁷; OECD BioTrack Product Database¹⁸; and the Biosafety Clearing-House (BCH)¹⁹ of the Cartagena Protocol on Biosafety. The three organizations regularly meet to discuss collaborative activities. The FAO GM Foods Platform employs the consistent OECD Unique Identifier systems, as other two databases maintain the same. Currently, the FAO GM Foods Platform does not include records on GM animals and microorganisms, as well as food derived from other types of biotechnologies such as gene editing. Given that both CBD and OECD have initiated the technical discussions on development of the Unique Identifier for GM animals with their members, and since the Codex *ad hoc* inter-governmental task force on food derived from biotechnology (TFFBT) has been dissolved in 2007, FAO wishes to receive Codex Members' inputs on whether or not the Platform should host safety assessment information of GM animals derived food products and gene-edited food products in the future.

4.7.2 Food safety aspects of precision fermentation: Precision fermentation, also possibly known as industrial (microbial) fermentation or precision biomanufacturing, refers to a process that utilizes microorganisms such as bacteria, yeast, or fungi to produce specific target products through controlled production systems. A wide range of products such as proteins, enzymes, vitamins or other bioactive substances can be produced through precision fermentation. The precision fermentation process typically involves culturing the microorganisms in a controlled environment, providing them with the necessary nutrients and conditions to maximize the production of the desired product. While the core concept of precision fermentation possibly remains consistent, different sources or experts may provide variations in the definition based on their specific scopes, perspectives or purposes. Such variations have become prominent in the last several years, possibly making the regulatory categorization of the products a challenge for food safety regulators and competent authorities. Therefore, FAO is currently working with various collaborators to develop a literature synthesis on 1) nomenclature, 2) product information and 3) regulatory frameworks. The report will be made available in late 2024. Also the informal Technical Working Group (TWG) on the topics of cell-based food and precision fermentation has been expanded to have more than 100 people from 35 different Codex Members in 2024, thus a summary of the country status is being developed, and it will be made available in late 2024.

4.7.3 Indoor farming and food safety: As part of the agrifood systems transformation, various start-ups, investors and greenhouse industries have invested millions of dollars in a novel type of farming, often referred to as "vertical farming", "urban farming", "plant factory farming", and other similar names. Unlike conventional farming where plants are grown outdoors in soil, this type of farming often operates in closed systems with or without soil. Moreover, environmental conditions such as light, temperature, humidity and various other inputs can be controlled to optimize / maximize plant growth, and therefore it is possible to cultivate crops all-year round regardless of the external weather conditions. This net type of farming system has been claimed to not only boost crop yields but also be sustainable due to high efficiency of water and land use, and very flexible in that geographically it can be conducted anywhere in theory. Moreover, there are some claims that vegetables produced from this type of farming are considerably safer as compared to conventional farming. However, there needs to be much more evidence generated to support these claims. More importantly, there is a need for a complete understanding of all of the potential hazards, both existing and new ones, as well as an analysis of potential risk mitigation strategies needed for the control of foodborne pathogens in products produced by vertical farming. In this regard, FAO is developing a literature synthesis on indoor farming and food safety as part of a technical reference for regulators to assure food safety for produce from various indoor farming, and the document is planned to be published in early 2025.

4.7.4 Artificial Intelligence (AI) in food safety: Artificial Intelligence (AI) often refers to the use of advanced algorithms and machine learning to analyze data for certain interpretations to predict something for decision-making. In the context of food safety, based on the vast amount of data generated within agrifood systems that

¹⁷ <https://www.fao.org/gm-platform/>

¹⁸ <https://biotrackproductdatabase.oecd.org/>

¹⁹ <https://bch.cbd.int/>

can potentially feed into AI applications for various aspects of food safety activities, many people have high expectations on AI applications to be useful in various areas such as contaminant detection, sensor monitoring for quality control, predictive analytics for shelf life, traceability and food recall management, detection of food fraud, genome sequencing data monitoring for pathogen movement prediction, prediction of AMR, and so forth. While some of them may have a significant potential to play a critical role in improving food safety, some others may not be realistic applications. Therefore, it is critical to distinguish between realistic applications and overhyped expectations. In this regard, FAO is conducting a literature review to develop a global overview document for food safety competent authorities, particularly those who are in LMICs, on various applications of AI in the area of food safety. The publication is expected to be published in early 2025, and prior to it, there will be a global online seminar to be held in the 4th quarter of 2024.

4.7.5 The FAO Development Law Service (LEGN), in partnership with the FAO Food Systems and Food Safety Division (ESF), is finalizing several publications of food safety relevance. These include the Legal Study “Regulatory options to address food e-commerce in national legislation: policy and legal challenges”. This study examines the main features and challenges of food e-commerce and assess how international and national legal systems have been addressing them to date, especially in relation to food safety and consumer protection. It analyses the regulatory initiatives of six selected jurisdictions to identify which regulatory options may be recommended to ensure food safety in food e-commerce. LEGN is also finalizing a publication on the regulatory challenges related to cell-based and precision fermentation derived food: “Legal Issues Related to Cell-Based Food and Precision Fermentation Derived Products: An Overview”. The objective of this publication is to examine the critical legislative considerations and challenges that national regulators and policymakers face regarding cell-based and precision fermentation food products looking at both international legal standards and existing national law. This examination aims to also identify existing legislative trends in key jurisdictions, providing a non-exhaustive landscape of current regulations. By analysing these areas, the study seeks to offer insights into the evolving regulatory landscape and highlight potential areas for future regulatory development.

4.8 Food Safety in the Circular Economy

4.8.1 FAO is about to publish a report and a series of related policy briefs that analyse the current and emerging evidence around the various challenges and opportunities to manage food safety in the context of a circular economy. Agrifood systems require sustained growth to maintain food security for the global population, while facing unprecedented pressure from the challenges of climate change and resource depletion. Under these circumstances, evaluating, planning and transitioning to circularity will be critical to improve sustainability in the long run while facing those challenges.

4.8.2 While circular economy initiatives offer considerable promise in improving sustainability and increasing performance, these benefits need to be considered vis-à-vis with the possible food safety risks arising from contaminants that can be (re) introduced, persist and accumulate in circular systems. Therefore, protecting food safety is key for the success of transitioning our current linear agrifood systems to be more sustainable and resilient through circular economy. In the report, food safety implications are explored across five themes – water reuse, food loss and waste, packaging waste, integrated farming systems, and changing consumer behaviour.

4.8.3 The report and the policy briefs are in the final stage of the publication process.

4.9 Food safety implications from the use of environmental inhibitors in agrifood

4.9.1 At the end of last year, FAO has released a report on the Food safety implications from the use of environmental inhibitors in agrifood systems²⁰. The report has been developed within the activities of the FAO Food Safety Foresight Programme. As a forward-looking approach, foresight seeks to facilitate preparedness for food safety issues that may emerge in globalized and rapidly evolving agrifood systems. The challenge of feeding a growing world population while responding to the climate crisis requires developing practices and technologies that enhance the sustainability of agrifood systems and reduce harmful effects on the environment. Among those approaches, environmental inhibitors are used to improve the production efficiency of crops and livestock while reducing greenhouse gas emissions, such as methane, or limiting the loss of nitrogen from cultivated fields and pastures. An inadvertent presence of environmental inhibitors in food commodities can raise health concerns as well as trade disruption if standards are not established.

4.9.2 Challenges related to food safety risk assessment and management of these substances include the lack of internationally harmonized maximum residue limits (MRLs), agreed definition for environmental inhibitors and insufficient safety information for some compounds. This publication provides an overview of various synthetic and biological environmental inhibitors along with an analysis of possible food safety implications from their use. Regulatory frameworks relevant for environmental inhibitors in selected countries

²⁰

<https://openknowledge.fao.org/items/68ec6807-6934-48a3-a55d-6b22824f8a80>

are presented as examples of current approaches being taken at national or regional level. Finally, food safety-related knowledge gaps are discussed together with some perspectives on how to move forward.

4.9.3 A webinar on this subject was organized by FAO on 9 May 2024. The summary and the recoding of the webinar are available online²¹.

4.9.4 More information on FAO's work on foresight in food safety is also available online²².

4.10 **Risk Analysis for food safety**

4.10.1 With support from Canada, the Republic of Korea, and the United States, FAO is launching new work on risk analysis. A scientific paper was published on the theory of change that underpins the interactions and impacts of JEMRA and CCFH in the context of improving food safety²³. Tools for food safety risk communication are being updated.

4.11 **New food sources and production systems**

4.11.1 New food sources and production systems²⁴ (NFPS) can play a critical role in the transformation of our agrifood systems by encouraging dietary shifts and diversifying our current ways of producing food. NFPS are attracting significant interest, driven by international trade, changing consumer preferences, potential sustainability benefits, and innovations in climate-resilient food production systems. However, with increasing attention on these novel foods, questions are arising regarding their safety and regulatory oversight.

4.11.2 A recent review²⁵ on new food sources and production systems by scientists from the Singapore Food Agency and FAO has been published in the journal *Comprehensive Reviews in Food Science and Food Safety*. The review outlines known food safety hazards associated with NFPS products, in particular, plant-derived proteins, seaweeds, jellyfish, insects, and microbial proteins as well as foods derived from cell-based food production, precision fermentation, vertical farming, and 3D food printing. It was found that, while most food safety hazards linked to new foods have also been identified in traditional foods, some can be unique, arising from new food ingredients, inputs and processes.

4.11.3 The review outlines also the need for stakeholders from governments, the food industry and the research community to work collectively in order to address and communicate the safety of NFPS products. Through multi-stakeholder collaborations, the international community can harness the potential of NFPS in contributing to sustainable and climate-resilient food production.

4.11.4 This review is part of the ongoing foresight work by FAO examining the future of food safety²⁶. In November 2023, FAO gathered experts at the Food Safety Foresight Technical Meeting on New Food Sources and Production Systems²⁷ to discuss the food safety hazards and future trends of three new foods:

1. *Plant-based food products (that mimic animal-derived foods)*
2. *Products from precision fermentation*
3. *3D food printing.*

4.11.5 The full meeting report is currently being finalized and will be published this year.

4.12 **Food safety in personalized nutrition: a focus on food supplements and functional foods**

4.12.1 In recent years, the understanding of how food interacts with molecular mechanisms and influences physiological states has revolutionized people's approach to diet and health. Research has demonstrated that specific nutrients can affect cellular functions, modulate responses, and regulate numerous metabolic pathways through genomic interactions, impacting various health parameters. This evolving knowledge has invigorated the "food is medicine" concept, integrating nutritional interventions into healthcare systems to prevent and treat chronic conditions, improve health outcomes, and promote health equity. The relationship between diet, health, and disease susceptibility has long been known, forming the basis of dietary recommendations. However, by recognizing the significant variations in individual physiological responses to different foods, there is a shift from the traditional 'one size fits all' approach to personalized nutrition, which tailors dietary interventions based on unique genetic makeup, gut microbiota, lifestyle factors, medical conditions, and phenotypic factors to optimize health outcomes and prevent diseases effectively. Personalized nutrition, though gaining substantial recent attention, is deeply rooted in traditional medicine systems such as Ayurveda and Traditional Chinese Medicine, among others, which have long applied empirical knowledge

²¹ <https://www.fao.org/food-safety/news/news-details/en/c/1698034/>

²² <https://www.fao.org/food-safety/scientific-advice/foresight/en/>

²³ <https://doi.org/10.1016/j.mran.2024.100313>

<https://openknowledge.fao.org/server/api/core/bitstreams/0aa558d4-57c7-498d-87f7-b9e37577882f/content/src/html/new-food-sources-and-food-production-systems.html>

²⁵ <https://doi.org/10.1111/1541-4337.13341>

²⁶ <https://openknowledge.fao.org/items/45ad5b86-4013-4a53-be29-62761baff1d8>

²⁷ <https://openknowledge.fao.org/server/api/core/bitstreams/e58778f3-b3b9-49ed-95d3-6c932016ff14/content>

about the health impacts of specific foods. A significant aspect of this personalized approach is the use of food supplements and functional foods, which aim to modulate physiological functions according to individual needs.

4.12.2 Since the field of personalized nutrition continues to evolve and expand, ensuring the safety of these products becomes increasingly important, given their perceived safety by consumers and the varying regulatory frameworks across jurisdictions. As part of the food safety foresight programme, FAO is working on a report on this topic that will be published in the coming months. The report will provide a comprehensive analysis of the food safety and regulatory implications associated with personalized nutrition, focusing specifically on food supplements and functional foods. It will illustrate examples of regulatory frameworks for these products across different countries and provide insights into trends and innovations. The report will also examine consumer behaviour and will offer different perspectives for a way forward.

4.13 Food safety in the context of limited food availability

4.13.1 Lipid-based nutrient supplements (LNS) and ready-to-use therapeutic food (RUTF) are fortified foods designed to prevent and treat malnutrition in children. LNS and RUTF are delivered by humanitarian organizations such as the World Food Programme (WFP), the United Nations Children's Fund (UNICEF) and Médecins Sans Frontières, as part of nutritional programmes to treat malnutrition or severe wasting in children over a specified period of time. They are often produced locally in regions experiencing food insecurity. Before consumption, all edible oils used in products such as LNS/RUTF must be refined to remove undesirable substances and create a palatable, shelf-stable product, a process that typically involves the use of heat.

4.13.2 However, the refining process of edible oils can lead to the formation of heat-induced contaminants such as 3-monochloropropane-1,2-diol (3-MCPD) fatty acid esters and glycidyl fatty acid esters (GEs), with high levels typically observed in refined palm oil, used extensively in the manufacture of LNS/RUTF products. Studies on experimental animals have shown that these substances or their metabolites can be toxic, raising concerns about their presence in food.

4.13.3 FAO, in collaboration with the WFP, UNICEF and Médecins Sans Frontières, released a report titled *Food safety in the context of limited food availability – Risk assessment of 3-MCPD and fatty acid esters in nutrient supplements and therapeutic food*²⁸. The report provides an overview of risk assessments for 3-MCPD and GEs previously performed by the Joint FAO/WHO Expert Committee on Food Additives (JECFA), European Food Safety Authority (EFSA) and other authorities, based on chronic exposure. As the use of LNS/RUTF is intended to be of finite duration and confined to a specific life stage, this report also provides a risk assessment of less-than-lifetime exposure to 3-MCPD (including 3-MCPD fatty acid esters) and GEs via nutrient supplements and therapeutic food.

4.13.4 The report identifies thresholds for concentrations of 3-MCPD and glycidol equivalents in LNS/RUTF products that are considered to represent a level of exposure of low concern for human health. Moreover, any theoretical risks from these contaminants must be weighed against the benefits of these products in managing malnutrition in children and infants experiencing food insecurity.

5. Matters arising from WHO

5.1 World Health Assembly Resolution and The Update of WHO Global Strategy for Food Safety

5.1.1 The WHO Global Strategy for Food Safety 2022-2030 was adopted by the WHO World Health Assembly 75 in May 2022 (Resolution WHA 75(22)).²⁹ It updates the last strategy in order to address current and emerging challenges, incorporate new technologies, and include innovative approaches for strengthening national food safety systems. This request was made by Member States in recognition that food safety remains a public health priority with a critical role in the achievement of the 2030 agenda for sustainable development.

5.1.2 In developing this strategy WHO has had the support from the Technical Advisory Group on Food Safety: Safer Food for Better Health, consulted widely with scientific experts, with WHO Regional Advisors for food safety, international partners such as FAO and WAHO, Member States and public consultation. Existing regional food safety frameworks and food safety strategies were also considered, as well as the recommendations and guidelines of the Codex Alimentarius and the FAO food safety priorities.

5.1.3 The WHO Global Strategy for Food Safety has been developed to guide and support Member States in their efforts to prioritize, plan, implement, monitor and regularly evaluate actions towards the reduction of the burden of foodborne diseases by continuously strengthening food safety systems and promoting global cooperation.

5.1.4 For the first time there are indicators proposed to measure the impact and the implementation of the activities to strengthen food control systems. The impact indicator is calculated by the Foodborne Disease

²⁸ <https://openknowledge.fao.org/items/edad8a64-d912-4a6a-b663-a6c3fe955725>
²⁹ [https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75\(22\)-en.pdf](https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75(22)-en.pdf)

Burden Epidemiology Reference Group (FERG) refers to the global estimated number of cases from the five foodborne pathogens: *Campylobacter* spp., Enteropathogenic *E. coli* - EPEC, Enterotoxigenic *E. coli* - ETEC, Shiga toxin-producing *E. coli* - STEC, and Non-typhoidal *Salmonella* Enterica. This indicator was collected from FERG and refers to data from 2010 that was published in 2015. FERG 2021-2024 is updating this data³⁰. It takes into consideration the 5 most frequent bacterial causes of diarrheal foodborne diseases. The progress indicator aims to measure the implementation of the strategy. They are extracted from the International Health Regulation (IHR, 2005) assessment. The indicator on Multisectoral collaboration mechanism for food safety events is extracted from the Joint External Evaluation (JEE) report³¹. The other progress indicator also comes from the IHR but is extracted from the State Party Self-Assessment Annual Reporting (SPAR)³².

5.1.5 WHO is preparing a mapping tool to support Member States in the development of their national roadmaps to guide the implementation of the Strategy, WHO Regional Offices are working with their Member States to assess food control systems and prepare national roadmaps and workplans to guide the implementation of the strategy.

5.1.6 The WHO established the WHO Alliance for Food Safety, a network comprising WHO Collaborating Centres and various partners. This alliance supports the implementation of the WHO Global Strategy for Food Safety 2022-2030, with a particular focus on accelerating actions to improve foodborne disease surveillance. This includes enhancing public health laboratories, epidemiological capacities, and involving the healthcare sector.

5.2 WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Diet and Health

5.2.1 The following WHO guidelines related to healthy diets were released in 2023: i) **Saturated fatty acid and trans-fatty acid** intake for adults and children; ii) **Total fat** intake for the prevention of unhealthy weight gain in adults and children; iii) **Carbohydrate** intake for adults and children; and iv) Use of **non-sugar sweeteners**.

5.2.2 The WHO guideline on **polyunsaturated fatty acid** intake for adults and children and the WHO guideline on use of **low-sodium salt substitutes** are currently being finalized and are planned for release in early 2025 and end of 2024, respectively.

5.3 WHO guidelines on the optimal intake of animal source foods

5.3.1 WHO has initiated work on developing guidelines on the optimal intake of animal source foods which will include guidance on commonly consumed animal source foods (including red meat, dairy and fish) and plant alternatives (legumes, whole grains, nuts/seeds and soy). In addition to health effects of consuming these foods, elements of sustainability, environmental impact, and microbial and chemical risk will be considered when developing the guidance.

5.4 WHO guidance on the consumption of “Ultra-processed” foods

5.4.1 WHO is developing guidance on the consumption of highly processed (AKA “ultra-processed”) foods, in a two-step process. The first step will be the development of a more objective, operational definition of ultra-processed foods than is currently used, and thus more amenable to use in applications such as nutrient profile models. The second step will be the development of a WHO guideline on consumption of ultra-processed foods (informed by the operational definition).

5.5 WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Policy Actions

5.5.1 Following the WHO guideline development process, the NUGAG Subgroup on Policy Actions is working on developing guidelines on priority food environment policies. The guideline on policies to protect children from the harmful impact of **food marketing**³³ and the guideline on **fiscal policies** to promote healthy diets³⁴ were launched in July 2023 and June 2024, respectively. The guideline on **nutrition labelling policies** has been finalized and is being prepared for peer review and public consultation. The NUGAG Subgroup on Policy Actions will meet virtually in September 2024 to review the outcomes of a rapid updated search of evidence for the **school food and nutrition policy guideline** and to finalize the recommendations.

5.6 Food classification, including nutrient profiling, to support food environment policies

30 <https://www.foodbornediseaseburden.org/ferg/estimates>

31 <https://extranet.who.int/sph/jee>

32 <https://extranet.who.int/e-spar>

33 <https://www.who.int/publications/i/item/9789240075412>

34 <https://www.who.int/publications/i/item/9789240091016>

5.6.1 As part of its normative mandate, WHO has been working on establishing nutrient profile models (NPMs) for over a decade^{35,36}. WHO has developed region-specific models in five WHO regions to support governments in implementing policies to protect children from the harmful impact of marketing of foods and non-alcoholic beverages^{37,38,39,40,41} and a region-specific model in one WHO region to support implementation of multiple food environment policies, including front of pack warning labels, marketing restrictions, school food procurement policies, and taxation⁴²**Error! Hyperlink reference not valid.**classifying foods for policies to improve food environment.

5.7 WHO guideline on the prevention and management of wasting and nutritional oedema (acute malnutrition) in infants and children under 5 years

5.7.1 WHO released the guideline on the prevention and management of wasting and nutritional oedema (acute malnutrition)⁴³ in December 2023, which, for the first time, includes recommendations and good practice statements on prevention of wasting. The key prevention message in this guideline is the multi-sectoral and multi-system approach to delivering the interventions for the prevention of wasting (i.e., prioritizing multi-sectoral approaches involving health, food, water, sanitation, and hygiene (WASH), and social protection systems) as outlined in the Global Action Plan on Child Wasting⁴⁴. The updated recommendation on the quantity and duration of RUTF for treatment of severe wasting and/or nutritional oedema was also included as part of the guideline.

5.8 WHO guidelines on complementary feeding of infants and children 6-23 months of age

5.8.1 In October 2023, WHO published guidelines on complementary feeding of infants and young children. The guidelines reiterated the long-standing recommendation for continued breastfeeding for 2 years or beyond. It stated that for infants and young children 6-23 months of age who are not breastfed or who need supplemental milk, either milk formula or animal milk is an acceptable alternative. Complementary foods should be introduced at 6 months of age. A diverse diet, including animal-source foods, fruits, vegetables, nuts, pulses and seeds is important. Starchy staple foods should be minimized. When cereal grains are used, whole cereal grains should be prioritized. Foods high in sugar, salt and trans fats, sugar-sweetened beverages, and non-sugar sweeteners should not be consumed. Where nutrient requirements cannot be met with unfortified foods alone, children 6–23 months of age may benefit from nutrient supplements or fortified food products.

5.9 WHO technical support on the Code of marketing of breast-milk substitutes

5.9.1 WHO and UNICEF co-hosted a Global Congress on Implementation of the International Code of Marketing of Breast-milk Substitutes in Geneva in June 2023. Delegates from some 130 countries engaged in knowledge transfer and technical assistance with experts on the Code. The Congress covered six key themes that are essential for effective Code implementation: 1) building political will; 2) identifying and managing industry interference; 3) implementing the Code into national law; 4) strengthening coordination and governance mechanisms in national laws; 5) monitoring and enforcing Code laws; and 6) taking action. Countries shared their successes and challenges with Code implementation, particularly highlighting stories of industry interference in the legislative and monitoring processes. Each country developed road maps or workplans to continue work on strengthening national legislation, monitoring and enforcement of the Code. In several regions networks have been built to continue sharing information and assistance across countries.

5.9.2 WHO and UNICEF hosted regional workshops on Code implementation in Sri Lanka (November 2022), Nepal (May 2023), Côte d'Ivoire (March 2024) and Uzbekistan (May 2024). WHO updated the online training course about the Code to use the most recent learning technologies and make it more accessible. The course

³⁵ WHO. Nutrient profiling: Report of a WHO/IASO technical meeting. (2010):

https://apps.who.int/nutrition/publications/profiling/WHO_IASO_report2010/en/index.html

³⁶ [https://www.fao.org/fao-who-codexalimentarius/sh-](https://www.fao.org/fao-who-codexalimentarius/sh-proxy/pt/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FMeetings%252FCX-720-43%252FCRDs%252FNFSUD43_CRD37x.pdf)

https://www.fao.org/fao-who-codexalimentarius/sh-proxy/pt/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FMeetings%252FCX-720-43%252FCRDs%252FNFSUD43_CRD37x.pdf

³⁷ WHO/EURO Nutrient profiling model (2015):

https://www.euro.who.int/_data/assets/pdf_file/0005/270716/Nutrient-children_web-new.pdf

³⁸ WHO/WPRO Nutrient profiling model (2016): <https://www.who.int/publications/i/item/9789290617853>

³⁹ WHO/SEARO Nutrient profiling model (2017): <https://apps.who.int/iris/handle/10665/253459>

⁴⁰ WHO/EMRO Nutrient profiling model (2017):

https://applications.emro.who.int/dsafi/EMROPUB_2017_en_19632.pdf

⁴¹ WHO/AFRO Nutrient profiling model (2019): <https://apps.who.int/iris/handle/10665/329956>

⁴² WHO/PAHO Nutrient profiling model (2016):

https://iris.paho.org/bitstream/handle/10665.2/18621/9789275118733_eng.pdf

⁴³ <https://www.who.int/publications/i/item/9789240082830>

⁴⁴ <https://www.childwasting.org/>

is directed towards health workers, policymakers, public health practitioners and others with responsibilities for putting the Code into effect.

5.9.3 At the request of the World Health Assembly, WHO developed guidance on regulatory measures aimed at restricting digital marketing of breast-milk substitutes, containing 11 recommendations for Member State action⁴⁵. The recommendations highlight new marketing tactics that were not possible without digital technologies and describe legislative solutions to addressing them.

5.9.4 The 2024 Code Status Report⁴⁶ analysed the provisions of the Code covered in national legislation for all 194 WHO Member States. The report found that 146 countries (comprising 91% of all global annual births) now have laws on at least some provisions in the Code, although only 33 countries' laws are substantially aligned with the Code. Monitoring and enforcement are needed for laws to effectively improve breastfeeding — the exclusive breastfeeding rate is 53% in countries where monitoring and enforcement procedures are spelled out in the Code legislation compared to only 27% in countries that do not include these procedures. The report included case studies from Azerbaijan, Pakistan and Sierra Leone highlighting the impacts of industry interference in Code legislation as well as ways to defend against it.

5.10 *Elimination of industrially produced trans-fatty acids*

5.10.1 In May 2018, WHO called for the global elimination of industrially produced of *trans*-fatty acids (TFA) by 2023. To achieve successful TFA elimination, WHO recommends governments to adopt either of the two best-practice policies: 1) Mandatory limit of 2 grams of TFA per 100 grams of total fats and oils in all foods; and 2) Mandatory ban on the production or use of partially hydrogenated oils (PHO) as an ingredient in all foods. WHO has released the REPLACE action package and other tools and provided capacity-building assistance to support country efforts.⁴⁷ In June 2024, WHO released its fifth annual progress report "Countdown to 2023: WHO 5-year milestone report on global *trans*-fat elimination 2023"⁴⁸. The report shows that at the end of 2023, 53 countries have implemented best-practice policies for tackling TFA in food, with 3.7 billion people protected globally⁴⁹. While the ambitious target to fully eliminate TFA from the global food supply by the end of 2023 has not been fully met, there has been remarkable progress made towards this goal in every region of the world. In 2023 alone, new best-practice policies became effective in seven countries: Egypt, Mexico, Nigeria, North Macedonia, Philippines, the Republic of Moldova and Ukraine. In January 2024, WHO awarded its certificates validating progress in eliminating industrially produced TFA to five countries: Denmark, Lithuania, Poland, Saudi Arabia and Thailand⁵⁰. WHO recommends that all countries enact best-practice policies and strengthen their mechanisms to monitor and enforce the policies. WHO also encourages suppliers of oils and fats and food manufacturers to remove industrially produced TFA from their products. To provide countries with further guidance on healthier alternatives, WHO is currently developing a guideline on tropical oils consumption.

5.11 *Population sodium/salt intake reduction*

5.11.1 WHO continues to support Member States to reduce population sodium intake, and achievement of the nine global voluntary targets, including a 30% relative reduction in mean population sodium intake by 2030, with a goal of achieving an intake of < 2,000 mg/day sodium; and a 25% relative reduction in the prevalence of raised blood pressure by 2030, so as to contain the prevalence of raised blood pressure. The updated menu of policy options and cost-effective interventions remain of critical importance to sodium reduction. WHO has published several tools and technical documents to support Member States, industry and communities in reducing population sodium intake including: The SHAKE Technical Package for Salt Reduction, which is currently being updated and will be re-released in 2024, the Action Framework for developing and implementing public food procurement and service policies to promote healthy diets (2021), the Global Sodium Benchmarks for different food categories (second edition released in 2024)⁵¹ and the Sodium Country Score Card, hosted within the GIFNA database, which tracks country progress towards introducing policies for sodium reduction. The first Global Report on Sodium Reduction was launched in March 2023. WHO is also working on a "step-by-step" guidance on national adaptation of the WHO sodium targets, either the WHO global sodium benchmarks or regional sodium targets⁵² where available.

⁴⁵ <https://www.who.int/publications/i/item/9789240084490>

⁴⁶ <https://www.who.int/publications/i/item/9789240094482>

⁴⁷ <https://www.who.int/teams/nutrition-and-food-safety/replace-trans-fat>

⁴⁸ <https://www.who.int/publications/i/item/9789240089549>

⁴⁹ <https://gifna.who.int/summary/TFA>

⁵⁰ <https://www.who.int/news/item/29-01-2024-who-awards-countries-for-progress-in-eliminating-industrially-produced-trans-fats-for-first-time>

⁵¹ <https://www.who.int/publications/i/item/9789240092013>

⁵² WHO South-East Asia Region Sodium Benchmarks for Packaged Foods ([9789290210818-eng.pdf](https://www.who.int/publications/i/item/9789290210818-eng.pdf) (who.int)); Updated PAHO Regional Sodium Reduction Targets (PAHONMHRF210016_eng.pdf)

5.12 Alcohol

5.12.1 Public health warning labels offer countries an opportunity to inform the public about the potential impact of alcohol consumption on health and safety. According to the 2024 WHO Global Status Report on Alcohol and Health and Treatment of Substance Use Disorders⁵³, 55 countries reported requiring at least one warning label on pregnancy, underage drinking, drink-driving and/or cancer included on alcoholic beverage containers in 2019. Two to four times warning labels required are about underage drinking (34.5%), drink-driving (30.3%) or pregnancy (22.3%) compared to cancer warnings (8.6%). This is equivalent to saying that only 5.8% of the people living in the 55 countries requiring warning labels can see a mandatory warning about cancer risks associated with alcohol consumption. The WHO Global Status Report recalls the growing consensus about the need to warn people about alcohol's link with cancer as well as the likelihood of people with this knowledge supporting other effective alcohol policies.

5.12.2 From August 2023 to July 2024, WHO provided direct technical advice to countries and delivered several training and capacity-building activities on alcoholic beverage labelling in 30 countries in the WHO African, European, South-East Asian, and Western Pacific regions. The topics included the regulation of health warnings, alignment of national regulations to international and regional standards, development of public health evidence-based arguments to counteract vested interests, role and functioning of the CCFL/CODEX, WTO, WHO and other stakeholders and updates on the evidence, among others. This highlights the interest of countries to apply the lessons from global evidence about the health consequences of alcohol consumption into concrete policy measures.

5.12.3 In 2024, the International Agency for Research on Cancer (IARC) published the Handbooks of Cancer Prevention Volume 20A: Reduction or Cessation of Alcoholic Beverage Consumption, which concludes that there is sufficient evidence that alcohol cessation reduces alcohol-related carcinogenesis. In particular, there is evidence that the risk of cancers of the oral cavity and oesophagus can be reduced by decreasing or ceasing the consumption of alcoholic beverages⁵⁴. IARC Subsequent handbooks will review population-level interventions to reduce alcohol consumption.

5.12.4 Recent studies on alcohol labelling report that (i) health warnings are an effective policy option to increase knowledge about the fact that alcohol consumption increases the risk of some cancers⁵⁵; (ii) interventions with multiple types of rotating alcohol container labels likely substantially decrease alcohol use (moderate certainty) and reduce alcohol sales (high certainty)⁵⁶; (iii) health warnings are associated with lower product appeal, higher risk perceptions and reduced intentions to try, buy and binge with outcomes similar by gender and age⁵⁷; (iv) the efficiency of potential buyers' perception results from many elements, including the sign's placement, size and colours, a connection between graphic and textual information and the colour of the packaging material and label⁵⁸; (v) label information provided only digitally in a QR code may not reach everyone equally (usage rate 2.6 per 1000 among those who purchased alcohol)⁵⁹; and (vi) nutrition-related claims have the potential to mislead consumers about the healthiness of alcohol products⁶⁰.

5.13 World Health Assembly Decision on Traditional Food Markets

5.13.1 The WHO World Health Assembly 75, in May 2022⁶¹, requested the WHO Director-General to update the interim guidance on reducing public health risks associated with the sale of live wild animals of mammalian species in traditional food markets in order to answer questions on the scope of the guidance, including the species that the guidance covers (mammalian species or mammalian species plus other species) and farmed or wild live animals.

5.13.2 Member States are requested to develop plans to support country implementation of the interim guidance on reducing public health risks associated with the sale of live wild animals of mammalian species in traditional food markets – infection prevention and control and to report on progress made in updating the interim guidance on reducing public health risks associated with the sale of live wild animals of mammalian species in traditional food markets – infection prevention and control and the country support plans every two years until 2030.

5.13.3 WHO called for experts and selected 19 experts on the topics related to food markets to form the Guidelines Development Group that will support the update of the document. The first meeting happened in

⁵³ <https://www.who.int/publications/i/item/9789240096745>

⁵⁴ <https://www.nejm.org/doi/10.1056/NEJMSr2306723>

⁵⁵ [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(24\)00102-6/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(24)00102-6/fulltext)

⁵⁶ [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(24\)00097-5/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(24)00097-5/fulltext)

⁵⁷ <https://onlinelibrary.wiley.com/doi/10.1111/add.16475>

⁵⁸ <https://ojspb.edu.pl/empas/article/view/274>

⁵⁹ <https://onlinelibrary.wiley.com/doi/10.1111/dar.13676>

⁶⁰ <https://www.sciencedirect.com/science/article/pii/S1326020023052834?via%3Dihub>

⁶¹ [https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75\(23\)-en.pdf](https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75(23)-en.pdf)

November 2023 with the definition of the research criteria for the systematic reviews that will support the elaboration of the recommendations. The WHO commissioned the systematic reviews and the GDG will meet in the second half of 2024 to start drafting the recommendations.