

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
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World Health
Organization

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Agenda item 5

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON FISH AND FISHERY PRODUCTS

Thirty-seventh Session

Working by correspondence

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INFORMATION ON ACTIVITIES OF FAO AND WHO RELEVANT TO THE WORK OF CCFFP

(Prepared by FAO and WHO)

FAO's work on harmful algal blooms and biotoxins

Harmful algal blooms (HABs) substantially affect food safety and food security by causing contamination or mass mortalities among aquatic organisms. Enhancing HABs monitoring and forecasting and toxins monitoring presents an opportunity to manage the risk and for the establishment of early warning systems for HAB occurrences, including food contamination, foodborne illnesses, and mass mortalities. In this regard, FAO, the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) and the International Atomic Energy Agency (IAEA) agreed to join efforts, and FAO in 2023 took the lead to develop the Joint FAO-IOC-IAEA technical guidance for the implementation of early warning systems for harmful algal blooms to assist competent authorities and pertinent institutions engaged in consumer protection or environmental monitoring in establishing early warning systems for HABs in their regions (marine and brackish waters), particularly those impacting food safety or food security (benthic HABs, fish-killing HABs, pelagic toxic HABs, and cyanobacteria HABs).¹ Complementing this effort, FAO, in collaboration with IOC-UNESCO and the IAEA convened an Expert Meeting on Marine Biotoxins and Harmful Algal Bloom Monitoring on 6 - 9 October 2025 in Rome, Italy, which resulted in the development of the *Joint FAO/IOC-UNESCO/IAEA guidance on monitoring of algal toxins in bivalve molluscs – Including monitoring of harmful algae and management of harvesting and production areas*². This initiative builds on recent initiatives on ciguatera poisoning^{3, 4} and bivalve mollusc sanitation.

FAO's work on bivalve mollusc sanitation

International trade has been one of the main driving factors for the rapid growth in the production of bivalve molluscs during the last six decades. However, only a few countries have effective monitoring programmes for bivalve molluscs. In response to the need for international guidance for implementing bivalve mollusc sanitation programmes, FAO and WHO developed the Joint FAO-WHO Technical guidance for the development of the growing area aspects of Bivalve Mollusc Sanitation Programmes. The guidance was updated by FAO and the FAO Reference Centre for Bivalve Sanitation, the United Kingdom Centre for Environment, Fisheries and

¹ FAO, IOC and IAEA. 2023. *Joint FAO-IOC-IAEA technical guidance for the implementation of early warning systems for harmful algal blooms*. Fisheries and Aquaculture Technical Paper, No. 690. Rome, FAO. <https://doi.org/10.4060/cc4794en>

² FAO, IOC-Unesco and IAEA. 2026. *Joint FAO-IOC-IAEA guidance on monitoring of algal toxins in bivalve molluscs – Including monitoring of harmful algae and management of harvesting and production areas*. Food Safety and Quality Series No. 34. Rome. <https://doi.org/10.4060/ca8817en>

³ FAO and WHO. 2020. *Report of the Expert Meeting on Ciguatera Poisoning*. Rome, 19–23 November 2018. Food Safety and Quality No. 9. Rome. <https://doi.org/10.4060/ca8817en>

⁴ FAO. 2020. *Monitoring and preventing ciguatera poisoning* [online course]. FAO eLearning Academy. Rome. <https://elearning.fao.org/course/view.php?id=648>

Aquaculture Science (Cefas), with a second edition available in English,⁵ Spanish,⁶ and French.⁷ The guidance also served as the basis for developing four e-learning courses on bivalve sanitation, jointly developed by FAO and Cefas, targeting policymakers, development practitioners and programme managers, sectoral specialists and researchers, bivalve farmers, trainers, and extension agents. As of February 2026, the four courses are offered online in English⁸ and French,⁹ with the initial two courses also available in Spanish.¹⁰

FAO's work on microplastics and food safety

The FAO report "Microplastics in food commodities"¹¹ was presented to the 19th Session of the COFI Sub-Committee on Fish Trade (COFI:FT), which suggested that FAO play a role in the development of standardized testing.¹² CCMAS43 (2024) being informed of the significance of employing suitable sampling and testing methodologies, recommended that FAO and WHO keep CCMAS informed about initiatives concerning microplastics to guide evaluation strategies and eventually enhance the associated work. FAO is planning an Expert Consultation jointly with the International Atomic Energy Agency (IAEA) in 2026 to provide the necessary information on sampling and testing methods for microplastics to CCMAS.

Joint FAO/WHO's work on food safety of cell-based food

Cell-based seafood is seen as a possible new food source. The Joint FAO-WHO report about food safety aspects of cell-based food¹³ was presented during the 19th Session of COFI:FT. In response to Members' request for scientific evidence on food safety implications, FAO is planning an expert meeting to elucidate the food safety implications and to assess the current status and prospects of this novel food source through a food system approach. The outcomes of the expert meeting will provide essential insights into the technology's potential to enhance food security and nutrition, establishing the basis for subsequent work in this area.

FAO's work on import notifications for fisheries and aquaculture products

Diverse inspection frameworks and requirements to assure consumer protection in importing countries pose one of the most significant challenges for food exporters of aquatic products. Exporters frequently struggle to comprehend import controls, resulting in food products being rejected, detained, or destroyed. Since 2016, FAO has analysed import notifications of aquatic products from the leading importing countries and made them publicly available to promote transparency and disseminate information. The resulting data is organised into six categories: chemical, microbiological, histamine, toxins, parasites, and a broad category known as "other causes". The analysis is available on the FAO GLOBEFISH website¹⁴, and seaweed has been recently added. Raw data on import notifications is publicly available in the FAO FishstatJ¹⁵ database, which contains rejections, detentions, recalls, and issues reported by competent authorities in Australia from 2019 to 2025, and in China, the European Union, Japan, and the United States of America from 2016 to 2025. An analysis of the notifications, prepared for the 20th Session of the COF-FT, can inform CCFFP37 about food safety issues found in international trade for aquatic products¹⁶.

FAO's work on food fraud for fisheries and aquaculture products

⁵ FAO and WHO. 2021. *Technical guidance for the development of the growing area aspects of Bivalve Mollusc Sanitation Programmes. Second edition.* Food Safety and Quality Series No. 5A. Rome. <https://doi.org/10.4060/cb5072en>

⁶ FAO y OMS. 2021. *Orientación técnica para el desarrollo de los aspectos relativos a las zonas de cría de los programas de saneamiento de moluscos bivalvos.* Serie Inocuidad y calidad de los alimentos, No. 5A. Roma. <https://doi.org/10.4060/cb5072es>

⁷ FAO et OMS. 2022. *Guide technique pour l'élaboration du volet zones conchyliques des programmes de contrôle sanitaire des mollusques bivalves.* Série Sécurité sanitaire et qualité des aliments No. 5A. Rome. <https://doi.org/10.4060/cb5072fr>

⁸ FAO. 2019. *Bivalve mollusc sanitation: Growing area risk profile* [online course]. FAO eLearning Academy. Rome. <https://elearning.fao.org/course/view.php?id=481>

⁹ FAO. 2023. *Contrôle sanitaire des mollusques bivalves : profil de risques des zones de production conchylique* [cours en ligne]. Académie Numérique de la FAO. Rome. <https://elearning.fao.org/course/view.php?id=913>

¹⁰ FAO. 2023. *Saneamiento de moluscos bivalvos: perfil de riesgo de la zona de cría* [curso en línea]. Academia de aprendizaje electrónico de la FAO. Roma. <https://elearning.fao.org/course/view.php?id=911>

¹¹ Garrido Gamarro, E. & Costanzo, V. 2022. *Microplastics in food commodities – A food safety review on human exposure through dietary sources.* Food Safety and Quality Series No. 18. Rome, FAO. <https://doi.org/10.4060/cc2392en>

¹² FAO. 2023. *COFI Sub-Committee on Fish Trade – 19th Session, Bergen, Norway, 11–15 September 2023.* Fisheries and Aquaculture Division. Rome. <https://www.fao.org/fishery/en/meeting/41402>

¹³ FAO and WHO. 2023. *Food safety aspects of cell-based food.* Rome. <https://doi.org/10.4060/cc4855en>

¹⁴ FAO. 2026. Globefish. <https://www.fao.org/in-action/globefish/markets---trade/import-notifications-for-fisheries-and-aquaculture-products/en>

¹⁵ FAO. 2026. FishstatJ. <https://www.fao.org/fishery/en/statistics/software/fishstatj>

¹⁶ FAO. 2025. Import notifications for aquatic products. Sub-committee on fish trade. <https://openknowledge.fao.org/server/api/core/bitstreams/378fd506-cb4d-4b71-aab1-0814395f4192/content>

The fisheries and aquaculture sector is among the food sectors most vulnerable to fraud¹⁷. For this reason, FAO collaborated with the International Atomic Energy Agency (IAEA) to produce a joint publication detailing tools to combat food fraud in the aquatic sector while convening experts from multiple countries to present case studies illustrating prevalent instances of food fraud in the fisheries and aquaculture sector, their frequency, and the implications for public health. The report was published in February 2026¹⁸.

FAO expert meeting on microbiological risk assessment of helminths parasites in foods

An FAO expert meeting on microbiological risk assessment of helminths parasites in foods convened in Rome, Italy on 6-10 October 2025 reviewed recent scientific developments, data, and evidence, including on disease burden, attribution to food commodities of highest public health concern, analytical methods in food commodities and control measures. The protozoan helminths identified as most important for foodborne risk (listed alphabetically) include *Diphyllobothriidea*, *Spirometra*, *Echinococcus* spp., *Taenidae*, *Metastrongylidae*, *Anisakidae*, *Ascarids* (*Ascarididae*, *Toxocaridae*, *Ascarididae*), *Gnathostomatidae*, *Trichinellidae*, *Trichuridae*, *Fasciolidae*, *Heterophyidae* and other intestinal flukes, *Opisthorchidae*, and *Troglorematidae*. The full report is under development, and the summary report was published¹⁹.

Joint FAO/WHO's work on food allergens

In response to the requests by Codex Committees on Food Hygiene (CCFH) and the Codex Committees on Food Labelling (CCFL) for scientific advice on food allergens and evidence related to the consumers understanding of the issue, FAO and WHO convened a series of expert meetings on the risk assessment of food allergens since 2020.

The experts recommended the global priority food allergens: cereal containing gluten (i.e. wheat and other *Triticum* species, rye and other *Secale* species, barley and other *Hordeum* species, and their hybridized strains), **crustacean**, egg, **fish**, peanut, milk, tree nuts (hazelnut, cashew, walnut, pistachio, pecan, almond), sesame²⁰. Through risk assessment, reference doses, based on health-based guidance values for each of the priority and other allergens were recommended²¹. The evidence in support of precautionary allergen labelling to address unintended allergen presence in foods were established²². The expert meeting also discussed whether it was scientifically justifiable that containing certain ingredients derived from priority allergenic foods could be exempted from mandatory declaration on packaged foods²³.

In June 2025, an expert consultation in Rome emphasized that food allergens are a unique category of food safety hazards, requiring distinct risk assessment and management approaches. A framework²⁴ was developed to guide evidence-based decision-making on labelling, process control, and risk communication throughout the supply chain. This process is applicable to all food business operators, regardless of size, and is essential for justifying precautionary allergen labelling (PAL). The full report is under development, and the summary report was published²⁵.

Ad hoc FAO/WHO Expert Meeting: Water quality in agrifood systems and food safety

The report of the Ad hoc FAO/WHO Expert Meeting on water quality in agrifood systems and food safety implications, with focus on chemical contaminants (May 2025, Rome) has been published²⁶ and a webinar on the outcome of the report was held on 10 February 2026²⁷. The webinar summary will be published in due course.

¹⁷ FAO Fisheries and Aquaculture Circular Overview of Food Fraud in the Fisheries Sector (2018)

¹⁸ FAO. 2026. *Joint FAO/FAO-IAEA Centre report on food fraud in the fisheries and aquaculture sector*. Fisheries and Aquaculture Technical Paper, No. 742. Rome. <https://doi.org/10.4060/cd8244en>

¹⁹ FAO expert meeting on the microbiological risk assessment of helminths in foods. Summary and Conclusions <https://openknowledge.fao.org/handle/20.500.14283/cd7348en>

²⁰ Part 1 Priority food allergens. <https://doi.org/10.4060/cb9070en>

²¹ Part 2 Threshold for the priority food allergens. <https://doi.org/10.4060/cc2946en> and Part 5 Threshold for other food allergens. <https://doi.org/10.4060/cc8387en>

²² Part 3 Precautionary labelling. <https://doi.org/10.4060/cc6081en>

²³ Part 4 Exemptions. <https://doi.org/10.4060/cc9554en>

²⁴ <https://openknowledge.fao.org/handle/20.500.14283/cd6046en> and <https://www.who.int/publications/m/item/ad-hoc-joint-fao-who-expert-consultation-on-risk-assessment-of-food-allergens-guidance-for-risk-assessment>

²⁵ Ad hoc Joint FAO/WHO Expert Consultation on Risk Assessment of Food Allergens – guidance for risk assessment. Summary and Conclusions. <https://openknowledge.fao.org/handle/20.500.14283/cd6046en>

²⁶ <https://openknowledge.fao.org/items/7c7c1909-531b-4a7f-adbe-68aaa51f435e> and <https://www.who.int/publications/i/item/9789240117105>

²⁷ <https://www.fao.org/food-safety/news/detail/webinar-to-launch-the-joint-fao-who-report--prioritizing-food-safety-issues-related-to-chemical-water-quality-in-agrifood-systems----10-february-2026/en>

Matters for information from the 101st meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA)

The 101st JECFA meeting (October 2025)^{28, 29} evaluated the safety of certain food contaminants, specifically inorganic and organic arsenic species. Arsenic exists widely in the environment, and it is known that **fish and fishery products** such as seaweed contain it to some extent.

JECFA reaffirmed that inorganic arsenic (iAs) is a known human carcinogen, causing lung, bladder, and skin cancers, and that new research supports an association between arsenic exposure and ischemic heart disease (IHD).

Exposure assessments showed that in areas with low arsenic contamination in drinking water (<10 µg/L), mean dietary iAs exposure ranged from <0.05 to 0.8 µg/kg bw per day, with high consumers (e.g., seaweed eaters) reaching up to 3.8 µg/kg bw per day. These levels exceed the point of departure (POD) by at least 2.5-fold. In areas with contaminated water (>10 µg/L), mean exposures ranged from 0.4 to 52.5 µg/kg bw per day, with P95 values up to 131.3 µg/kg bw per day, far surpassing the POD. JECFA concluded that health risks are well established in highly contaminated regions and that even moderate contamination poses potential concerns.

WHO's work on a web-based tool for listeriosis risk assessment in foods

The Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA) developed risk assessment models for listeriosis on Ready-to-eat (RTE) diced cantaloupe, frozen vegetables, and **RTE cold-smoked fish**³⁰. WHO has developed a user-friendly web-based risk assessment tool³¹, and published eight articles related to risk assessment for *Listeria monocytogenes* in foods including **seafood**³², the description of the developed quantitative risk assessment models for the above three food commodities³³ and the updated parameters of the dose-response model³⁴.

The tool provides an overall risk estimate for scenario analysis. The dose-response model, incorporating both the virulence class of the *L. monocytogenes* strain and demographic factors such as age and sex, can be used, which improves the accuracy of risk estimation across population groups and strain types. The tool also allows users to assess the impact of different testing strategies and sample sizes, supporting informed decision-making under varied production and surveillance conditions. A FAO/WHO side-event was held at the margins of CCFH55 (December 2025) to introduce the tool³⁵.

Integration of data from New Approaches Methodologies into food chemical safety assessments

Advances in science are rapidly expanding the application of New Approach Methodologies (NAMs), including in vitro, in silico, and other non-animal testing methods. An update to Environmental Health Criteria (EHC) 240: Principles and Methods for the Risk Assessment of Chemicals in Food, which can be applied notably to food safety assessment of **aquatic products**, was proposed to incorporate NAMs. The FAO/WHO Joint Meeting on Pesticide Residues (JMPR) and JECFA agreed to update EHC 240 to provide guidance on general principles for the use of NAMs in the safety assessment of chemicals in food, while remaining adaptable to future scientific and technological developments. A dedicated joint working group is expected to undertake this revision.

Selected capacity building activities that contribute to the implementation of Codex texts in fisheries and aquaculture

HACCP training sessions for fisheries and aquaculture

FAO, in collaboration with the Codex Secretariat, has developed and delivered online 3 day training on PRP/GHP and HACCP for the fisheries and aquaculture sector, drawing on FAOs [GHP and HACCP Toolbox for Food Safety](#) and the [Code of Practice for Fish and Fishery Products](#). The 2024 and 2025 sessions, in English and Spanish/English, had high participation (1400 and 400 participants respectively), reflecting strong demand for capacity building in this area. The training emphasized the Codex-aligned approach that effective HACCP systems must be built on robust prerequisite and hygienic practices, and provided practical

²⁸ [https://www.who.int/groups/joint-fao-who-expert-committee-on-food-additives-\(jecfa\)/publications](https://www.who.int/groups/joint-fao-who-expert-committee-on-food-additives-(jecfa)/publications)

²⁹ <https://doi.org/10.4060/cd3748en>

³⁰ <https://openknowledge.fao.org/server/api/core/bitstreams/7be15013-c4a0-4fc3-9088-4db8a2fe6a43/content> and <https://www.who.int/publications/m/item/jemra-of-listeria-monocytogenes-in-foods-part-2-risk-assessment-models>

³¹ https://worldhealthorg.shinyapps.io/Shiny_graLm/

³² <https://doi.org/10.3390/foods13071111>; <https://doi.org/10.3390/foods13050716>; <https://doi.org/10.3390/foods13030359>; <https://doi.org/10.3390/foods12244436>

³³ <https://doi.org/10.3390/foods13233831>; <https://doi.org/10.3390/foods13223610>; <https://doi.org/10.3390/foods14132212>

³⁴ <https://doi.org/10.3390/foods13050751>

³⁵ <https://www.fao.org/fao-who-codexalimentarius/meetings/detail/en/?meeting=CCFH&session=55>

sector-specific examples covering processing establishments, aquaculture farms and fishing vessels.

FAO workshop on the Safety and Quality of Water in Fisheries

A regional FAO Workshop on the Safety and Quality of Water in Fisheries was held in Choluteca, Honduras, in April 2025, hosted by SENASA Honduras.

Participants highlighted differences in national regulatory frameworks, infrastructure challenges, and the need for greater harmonization. Recommendations included developing supplementary guidance, such as case studies and monitoring protocols, and aligning decision trees with national regulations and Codex Codes of Practice. Strengthened collaboration among Codex, JEMRA, and national authorities was emphasized to support consistent and safe water use in fisheries and facilitate compliance in international trade.

FAO/WHO INFOSAN regional meeting, a focus on scombrototoxin fish poisoning (SFP)

A simulation exercise on scombrototoxin fish poisoning (SFP) was conducted during the FAO/WHO INFOSAN regional meeting in Asia-Pacific on 29 November 2024. SFP remains a significant food safety challenge globally. In some countries, it accounts for the largest share of fish-borne illness linked to inadequate handling practices. INFOSAN reported 19 of 26 chemical contamination events (2020–2021) involving histamine in products such as tuna, mackerel, and anchovies. Between 2016 and 2023, trading partners issued approximately 380 histamine-related import notifications, indicating continuing difficulties in managing this hazard in international trade.

The exercise simulated the response to an INFOSAN-notified food safety event, enabling participants to apply the risk analysis framework, including risk assessment, risk management, and communication among national and international stakeholders. Participants discussed options to reduce food losses during recalls, promoted the use of Codex standards, and identified regulatory, technical, and capacity gaps.

Key messages emphasized raising awareness of conditions that promote histamine formation, communicating health risks (especially for sensitive groups), and improving hygiene and cold-chain practices, particularly among small-scale fishers. The exercise drew on relevant Codex standards, FAO/WHO scientific reviews, and the FAO/WHO histamine sampling plan tool (www.fstools.org).

Other relevant initiatives and partnerships

Formalization of the Collaboration with UNESCO's Intergovernmental Oceanographic Commission (IOC)

In the past decade, FAO has engaged in a highly productive collaboration with IOC in various domains related to HABs. The FAO food safety program has progressed significantly due to cooperation with the IOC, bolstering FAO's program priority areas for better nutrition and a better environment. This is increasingly vital in light of climate change, which challenges the prediction of HABs and subsequently affects food security, food safety, and the environment. For this reason, FAO has recently joined the Intergovernmental Panel on Harmful Algal Blooms (IPHAB). The Executive Summary for the Seventeenth Session of the IOC-FAO IPHAB, as well as the adopted decisions and recommendations, are publicly available³⁶, as well as the documents for the Session^{37, 38, 39}.

Reappointment of Cefas as FAO Reference Centre

Cefas has been reappointed as the FAO Reference Centre for Bivalve Mollusc Sanitation for another four years.⁴⁰ The Reference Centre endorses the FAO vision to advocate for safe, sustainable bivalve shellfish, acknowledging the significance of wild-caught and aquaculture production in global food security and trade. The Reference Centre is dedicated to partnering with Responsible Authorities, Official Laboratories, industry, and academia. Annual activities can be found in yearly reports.⁴¹

³⁶ The Executive Summary for the Seventeenth Session of the IOC-FAO IPHAB. [Cited 30 May 2025]. [OceanExpert | Document](#)

³⁷ Documents for the the Seventeenth Session of the IOC-FAO IPHAB [Cited 30 May 2025] [OceanExpert - A Directory of Marine and Freshwater Professionals](#)

³⁸ The Executive Summary for the Seventeenth Session of the IOC-FAO IPHAB. [Cited 30 May 2025]. [OceanExpert | Document](#)

³⁹ Documents for the the Seventeenth Session of the IOC-FAO IPHAB [Cited 30 May 2025] [OceanExpert - A Directory of Marine and Freshwater Professionals](#)

⁴⁰ FAO Reference centre work programmes and annual reports. [Cited 30 April 2025].

<https://www.cefas.co.uk/icoe/seafood-safety/designations/fao-reference-centre/work-programmes-and-annual-reports/>

⁴¹ Centre for Environment, Fisheries and Aquaculture Science (CEFAS). *Work programmes and annual reports – FAO Reference Centre for Bivalve Mollusc Sanitation*. [Cited 30 April 2025]. <https://www.cefas.co.uk/icoe/seafood-safety/designations/fao-reference-centre/work-programmes-and-annual-reports/>

Antimicrobial resistance

Growing concerns over antimicrobial use in aquaculture, reinforces the urgent need to reduce reliance on antimicrobials in aquaculture through better management and innovation. In April 2024, FAO launched the "Reduce the Need for Antimicrobials on Farms for Sustainable Agrifood Systems Transformation" (RENOFARM) initiative.⁴² This ten-year global initiative⁴³ aims to significantly reduce antimicrobial use across agrifood systems, including aquaculture, by promoting good health services, good production practices, reasonable alternatives to antimicrobials, and good incentives. Pilot programs are underway in Indonesia, Uganda, and Nigeria, focusing on improved biosecurity, farmer training, and adopting effective antimicrobial alternatives. RENOFAARM aligns with the Quadripartite One Health approach and directly supports national AMR action plans.

⁴² FAO. *Reduce the need for antimicrobials on farms for sustainable agrifood systems transformation (RENOFARM)*. <https://www.fao.org/antimicrobial-resistance/background/fao-role/renofarm/en/>

⁴³ FAO. 2024. FAO launches global 10-year initiative to reduce the need for antimicrobials for sustainable agrifood systems transformation. Rome. <https://www.fao.org/newsroom/detail/fao-launches-global-10-year-initiative-to-reduce-the-need-for-antimicrobials-for-sustainable-agrifood-systems-transformation/en>