



COMMITTEE ON FISHERIES

SUB-COMMITTEE ON FISH TRADE

Eighteenth Session

Written Correspondence Procedure: 8 April to 8 May 2022

Virtual Plenary sessions: 7, 8, 9 and 20 June 2022

FOOD SAFETY AND QUALITY FOR FISHERIES AND AQUACULTURE PRODUCTS

Executive Summary

This document reviews recent developments in food safety related to market access for fisheries and aquaculture products, FAO activities on food quality and safety in the fisheries and aquaculture sectors carried out in the past two years FAO's work concerning scientific advice to the Codex Alimentarius Commission and support provided to Members to implement Codex standards.

Suggested action by the Sub-Committee

- Recommend future areas of work for ensuring food safety in the fisheries and aquaculture sectors in a changing environment;
- Comment and provide guidance on FAO's overall work in the area of quality and safety for fisheries and aquaculture products, particularly scientific advice to the Codex Alimentarius processes, and capacity building for the implementation of Codex Standards, Guidelines and Codes of Practice;
- Suggest additional areas for data collection and dissemination in relation to food safety and quality; and
- Illustrate and share national experiences of market access issues related to food safety for fisheries and aquaculture products.

RECENT DEVELOPMENTS IN THE STANDARD-SETTING PROCESS WITHIN CODEX ALIMENTARIUS

1. The Codex Alimentarius guides and promotes the elaboration and establishment of definitions and requirements for foods to assist in their harmonization and facilitate international trade. Codex standards and related texts are periodically revised to ensure their consistency and reflect current scientific knowledge and other relevant information. In 2021, after six years of inactivity, the Codex Committee for Fish and Fishery Products started to work by correspondence to include additional species in the Codex standards for fish and fishery products. Activities of FAO and the World Health Organisation (WHO) were presented to the 35th Session of the Codex Committee for Fish and Fishery Products, which supported the work delivered by the two UN organizations and expressed particular interest in FAO's work on microplastics and the development of a guidance document on seaweed safety.¹ The last Session of the Codex Alimentarius Commission (CAC44) agreed on and adopted the following Codex texts relevant to fishery products:

- Proposals for new work for the establishment of maximum levels for methylmercury in orange roughy and pink cusk eel, the development of guidance on the prevention and control of food fraud, and the establishment of food labelling information using technology;
- A priority list of veterinary drugs for evaluation or re-evaluation by the Joint FAO/WHO Expert Committee on Food Additives;
- Principles and Guidelines for the Assessment and Use of Voluntary Third-Party Assurance Programmes and the Guidance on Paperless Use of Electronic Certificates;
- Revised Code of Practice to Minimise and Contain Foodborne Antimicrobial Resistance, and the Guidelines on Integrated Monitoring and Surveillance of Foodborne Antimicrobial Resistance;
- The dissolution of the Task Force on Antimicrobial Resistance, considering the completion of their mandate;
- Editorial corrections to most species names in Section 2.1, product definition of the English version of the Standard for Canned Sardines and Sardine-Type Products.²

2. Further information can be found in the reports from the Commission and Codex Committees³.

¹ [fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FMeetings%252FCX-722-35%252FFinal%2Breport%252FREP21_FFPe.pdf](https://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FMeetings%252FCX-722-35%252FFinal%2Breport%252FREP21_FFPe.pdf)

² One Member stated that two species, *Sardinella fimbriata* and *Sardinella sirm* had not been introduced in the Standard for Canned Sardines and Sardine-Type Products, despite the decision of CCFFP 22 (1996) to include them. Following a suggestion from the Codex Secretariat considering the Procedure for inclusion of additional species in the Codex standards for fish and fishery products, CAC44 agreed to refer this question for further consideration to CCFFP36, scheduled to meet in early 2023.

³ [fao.org/fao-who-codexalimentarius/committees/en/](https://www.fao.org/fao-who-codexalimentarius/committees/en/)

SCIENTIFIC ADVICE AND POLICY GUIDANCE PROVIDED BY FAO

Ciguatera poisoning

3. Many issues require urgent attention regarding Ciguatera poisoning risk management and research. The primary identified needs for risk management were the definition of clear protocols to avoid the risk of consuming toxic seafood, mainly by local people and tourists, and by consumers purchasing imported seafood from specific areas. Building on the FAO/WHO Report of the Expert Meeting on Ciguatera Poisoning,⁴ published in 2020, FAO, in collaboration with the International Atomic Energy Agency (IAEA) and the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), developed an e-learning course on monitoring and preventing ciguatera poisoning⁵. This e-learning course targets food safety and fishery authorities, policymakers, doctors and health managers primarily. It is also designed for trainers and students interested in ciguatera poisoning, fishers and fish processing workers.

Bivalve molluscs

4. International trade has been the main driving factor for the rapid growth in the production of bivalve molluscs during the last six decades. However, only a very limited number of countries have effective monitoring programmes for bivalve molluscs. In this regard, the need for developing international guidance for implementation of bivalve mollusc sanitation programmes was addressed by FAO and WHO through the development of the Joint FAO-WHO Technical guidance for the development of the growing area aspects of Bivalve Mollusc Sanitation Programmes, recently updated by FAO and the FAO Reference Centre for Bivalve Sanitation, the United Kingdom Centre for Environment Fisheries and Aquaculture Science (Cefas), updated the content and the second edition is available online in English and Spanish.⁶ The guidance also serves as the basis for developing a three module e-learning course 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. The first two modules are available online: “Growing area risk profile”⁷ and “Growing area assessment and review”.⁸

Harmful algal blooms (HABs)

5. HABs have a significant impact on food safety and security due to contamination or mass mortality of aquatic organisms. Having forecast or early warning systems could help mitigate the effects of HABs and reduce the occurrence of HAB events. Surveillance systems have been developed to monitor HABs in many countries. However, the lead time or the type of data collected may not be sufficient to effectively take action for food safety management measures or other purposes, such as transferring aquaculture products to other areas. In this regard, FAO is leading the development of a Joint FAO-IAEA-IOC Technical Guidance for the Implementation of Early Warning Systems for HABs. The document will guide competent authorities and relevant institutions involved in consumer protection or environmental monitoring to implement early warning systems for HABs in specific areas that may affect food safety or food security.

⁴ [fao.org/3/ca8817en/CA8817EN.pdf](https://www.fao.org/3/ca8817en/CA8817EN.pdf)

⁵ elearning.fao.org/course/view.php?id=648

⁶ English version [fao.org/documents/card/en/c/cb5072en/](https://www.fao.org/documents/card/en/c/cb5072en/) and Spanish version [fao.org/publications/card/es/c/CB5072ES/](https://www.fao.org/publications/card/es/c/CB5072ES/)

⁷ elearning.fao.org/course/view.php?id=481

⁸ elearning.fao.org/course/view.php?id=629

Seaweeds

6. Increased cultivation and utilisation of seaweed are expected to be essential pillars of sustainable food security and become an integral part of the aquatic economy shortly. Many factors can affect the presence of hazards in seaweed. However, legislation and guidance documents on seaweed production and utilisation are generally lacking. In this regard, FAO and WHO developed a background document identifying food safety hazards linked to the consumption of seaweed and aquatic plants, which can serve as a basis for undertaking further work in this area. The 35th Session of the Codex Committee on Fish and Fishery Products agreed on considering additional work in the area, as presented by FAO and WHO and based on the background document, to develop relevant Codex guidance.⁹ The document was consolidated during an expert meeting held in October 2021 and will be published in 2022.

Microplastics

7. Considering that fisheries and aquaculture products are not the only contributors to the dietary exposure of microplastics, the 17th Session of the COFI Sub-Committee on Fish Trade requested FAO to carry out an exposure assessment to include other relevant food commodities. In this regard, FAO developed a background document compiling information on the occurrence of microplastics in all commodities, microplastic contamination along food value chains, plastic migration from food contact materials and packaging, and a review of the existing literature on the toxicity of the most common plastic monomers, polymers, and additives. The report was consolidated during an expert meeting held in January 2022 and will be published in 2022. This process set up the basis for future risk assessment exercises and provided information that can be used for the formulation of risk management options.

Group B Streptococcus (GBS) disease

8. In 2015, GBS sequence type 283 (ST283) in Singapore caused the only reported foodborne outbreak of invasive GBS disease. The episode was linked to the consumption of raw freshwater fish. Over 20 percent of cases were healthy adults without comorbidities, which is unusual for GBS. Subsequent investigations found that ST283 GBS had been common among GBS-causing diseases in humans and tilapia across Southeast Asia for at least 20 years. In contrast, it was almost non-existent outside this region. Given the novelty of the outbreak, FAO carried out a risk profiling, which led to a report that consolidates current knowledge, identifies data gaps for GBS ST283 along the freshwater fish supply chain in Southeast Asia and provides risk management options.¹⁰

Vibrio parahaemolyticus and *V. vulnificus*

9. Globally, *Vibrio parahaemolyticus* and *Vibrio vulnificus* represent important human pathogens associated with seafood consumption. In order to provide an update on the state-of-the-art advice regarding risk assessment for *V. parahaemolyticus* and *V. vulnificus* in seafood, a FAO/WHO expert meeting was convened at Cefas, Weymouth, the United Kingdom of Great Britain and Northern Ireland between 13 and 15 May 2019. The expert working group subsequently noted several critical developments in the last decade. These included: (1) the emergence of highly pathogenic strains, (2) a significant geographical and time distribution spread of seafood associated *Vibrio* infections occur as a response to climate change, (3) the importance of demographic considerations, (4) the advent of a range of new approaches for good practices, and (5) the emergence of a variety of new methods for monitoring and control, such as those utilising genomics and satellite imagery. The report was published in 2021 and is available on the FAO website.¹¹

⁹ [fao.org/fao-who-codexalimentarius/meetings/detail/en/?meeting=CCFFP&session=35](https://www.fao.org/fao-who-codexalimentarius/meetings/detail/en/?meeting=CCFFP&session=35)

¹⁰ [fao.org/documents/card/en/c/cb5067en](https://www.fao.org/documents/card/en/c/cb5067en)

¹¹ [fao.org/publications/card/es/c/CB5834EN/](https://www.fao.org/publications/card/es/c/CB5834EN/)

Water quality

10. In 2019, the Codex Committee on Food Hygiene noted the importance of water quality in food production and processing, requesting that FAO and WHO provide guidance for scenarios where the use of “clean water” was indicated in Codex texts, in particular, for irrigation water, clean seawater, and the safe reuse of processing water. To facilitate this work and build on previous work in this area that resulted in the publication of a Joint FAO-WHO Meeting Report on Safety and Quality of Water Used in Food Production and Processing¹², FAO and WHO established a group of experts and convened expert meetings in July 2021. The expert group developed a fit-for-purpose concept and decision support system approach to safe water use within different sectors, including fisheries and aquaculture. The meeting report will be published in 2022, and a summary is already available.¹³

Fish consumption

11. New evidence has become available regarding the risks and benefits of fish consumption. For this reason, FAO and WHO will update the Report of the Joint FAO/WHO Expert Consultation on the Risks and Benefits of Fish Consumption published in 2010.¹⁴ This will be done through an expert consultation that will draw a number of conclusions on the health benefits and risks associated with fish consumption and recommend a series of steps that Members should take to evaluate and manage them better, more effectively communicating these risks and benefits to their citizens. It will also set a framework for assessing the net health benefits or risks of fish consumption, providing guidance to the Codex Alimentarius Commission in managing risks, taking into account the existing data on the benefits of eating fisheries and aquaculture products.

Digital solutions

12. The complexity of food supply chains and the growing importance of global food trade creates challenges for food safety management. Tracing the origins of unsafe food is becoming more complex and time-consuming. Many countries have implemented more rigorous food control systems for food imports, while others still need assistance to develop them. In this regard, FAO developed technical guidance for the implementation of e-notification systems for food control,¹⁵ tailored to national needs and resources, which includes the system’s legal basis, structure and operational parameters, and infrastructure and human resource requirements. The guidance will be made available in 2022.

Antimicrobial resistance (AMR)

13. The importance and urgency of addressing the increasing global threat of AMR through a coordinated, multi-sectoral, One Health¹⁶ approach in the context of the 2030 Agenda for Sustainable Development was recognised again by the FAO Conference in 2019. The FAO Action Plan on AMR, launched in 2021 and set to run until 2025, contributes towards building resilience in the food and agriculture sectors by limiting the emergence and spread of AMR.¹⁷ Antimicrobial misuse contributes to the increasing rates of AMR, negatively impacting the advances made in medicine, public health, veterinary care, food and agriculture production systems, and food safety. Good aquaculture practices (GAQPs) and adherence to seafood safety protocols, according to cultured species, systems and local environmental conditions can help ensure that cultured aquatic species kept in healthy conditions, resulting in a high-quality product, which is safe to consume and does not impede trade. These can minimize antibiotic residues and AMR. Awareness-raising and capacity enhancement for relevant

¹² [fao.org/documents/card/es/c/ca6062en/](https://www.fao.org/documents/card/es/c/ca6062en/)

¹³ [fao.org/3/cb7395en/cb7395en.pdf](https://www.fao.org/3/cb7395en/cb7395en.pdf)

¹⁴ [fao.org/publications/card/es/c/e38f7e8d-a28f-5e91-93ee-389b006e4248/](https://www.fao.org/publications/card/es/c/e38f7e8d-a28f-5e91-93ee-389b006e4248/)

¹⁵ Part of a project entitled “Digital solutions in support of improved official food control services”.

¹⁶ [fao.org/3/cb7869en/cb7869en.pdf](https://www.fao.org/3/cb7869en/cb7869en.pdf)

¹⁷ [fao.org/documents/card/en/c/cb5545en/](https://www.fao.org/documents/card/en/c/cb5545en/)

stakeholders along the value chain is necessary, and should include governance authorities, industry representatives, farmers and producers, and input or service providers.

SPS ISSUES IN THE FISHERIES AND AQUACULTURE SECTOR – ANALYSIS OF IMPORT NOTIFICATIONS FOR FISHERIES AND AQUACULTURE PRODUCTS

14. One of the most significant difficulties for exporters of fisheries and aquaculture products is the variety of existing inspection frameworks and requirements in different markets to ensure consumer protection. Based on these requirements and inspection protocols, products can be rejected, recalled, detained or destroyed. FAO has been systematically analysing the import notifications of the European Union, Japan and the United States of America, all of which are major import markets, since 2016. The compiled data and analysis are made publicly available, organised by causes: chemical, microbiological, histamine, toxins, parasites, and a broad category called “other causes”. The analysis is published on the GLOBEFISH website.¹⁸ In addition, raw data on import notifications is publicly available as a workspace in FAO FishstatJ.¹⁹

Import notifications for fisheries and aquaculture products in 2020

15. In 2021, the European Union recorded 221 import notifications through the Rapid Alert System for Food and Feed (RASFF). Most notifications were associated with the category “other causes” (92 cases), followed by chemical causes (58 cases), microbiological causes (37 cases) and the presence of parasites (20 cases). The fifth-largest cause of import notifications was the presence of toxins (eight cases) and histamine above the maximum levels, with six cases recorded. Among the other causes category, the main issue was poor temperature control, with more than half of the cases. The main chemical issue was mercury above maximum levels with 23 notifications, 19 of which were recorded in swordfish. The main microbiological problem was *Listeria monocytogenes* with 17 cases. The only parasite found was *Anisakis*, and among the eight notifications due to toxins and their poisonings, diarrhetic shellfish poisoning was the most reported. There was a slight decrease in notifications from 2020 (227) to 2021 (221). However, the “other causes” category increased from 77 recorded cases in 2020 to 92 cases in 2021. The same trend occurred for parasitic causes, with 14 recorded cases in 2020 and 20 in 2021, while chemical causes decreased from 62 to 58 in the same period. Similarly, cases due to microbiological issues decreased from 57 in 2020 to 37 in 2021. Cases due to toxins and histamine levels also decreased.

16. In Japan, in 2021, a total of 121 import notifications of fisheries and aquaculture products were recorded by the Ministry of Health, Labour and Welfare (MHLW). There was a substantial increase in the total number of cases of import notifications from 86 in 2020 to 121 in 2021. Most import notifications were due to microbiological issues with 94 cases, followed by chemical with 25 cases and by toxins with two cases. In 2021, among the microbiological issues, the presence of Coliform bacteria was the leading cause, representing 63 percent under the microbiological category and 49 percent of the total notifications in 2020. The main chemical problem was related to antibiotics, such as enrofloxacin and furazolidone, primarily detected in shrimp. The only marine biotoxins recorded was diarrhetic shellfish, which was detected in clams. While notifications due to chemical issues and toxins cause decreased, microbiological causes increased from 47 cases in 2020 to 94 in 2021.

17. The United States of America, in 2021, recorded a total of 1 012 import notifications of fisheries and aquaculture products in the Import Refusal Report (IRR) system of the Food and Drug Administration (FDA). Most import notifications were associated with “other causes” (476 cases), followed by microbiological issues (400 cases). The third-largest cause of notifications was linked to chemical causes with 90 cases, followed by histamine above the maximum levels with 46 cases recorded. Among the “other causes” category, the main problem was products found unfit for human

¹⁸ [fao.org/in-action/globefish/import-notifications/en/](https://www.fao.org/in-action/globefish/import-notifications/en/)

¹⁹ [fao.org/fishery/en/statistics/software/fishstatj/en](https://www.fao.org/fishery/en/statistics/software/fishstatj/en)

consumption with 366 cases, representing 77 percent of this category and 36 percent of the total import notifications of fisheries and aquaculture products. The main microbiological issue was the presence of *Salmonella* with 384 cases, mostly detected in shrimp. The main chemical issues recorded were residues of veterinary drugs, with 44 cases, mostly found in shrimp. “Other causes” increased from 419 cases in 2020 to 476 in 2021, microbiological issues from 219 in 2020 to 400 in 2021, chemical causes rose from 72 cases in 2020 to 90 in 2021, and histamine causes from 20 cases in 2020 to 46 in 2021.

RELEVANT CHANGES IN FOOD SAFETY-RELATED REGULATIONS SELECT MAJOR IMPORTERS

European Union

18. In the European Union, three significant amendments and implementation rules have been enacted or entered into force since November 2019, addressing the following food safety-related issues:

- Amendment of the general plan for risk communication promoting an integrated risk communication framework to be followed both by the risk assessors and the risk managers in a coherent and systematic manner both at the Union and national level. It now shall pursue to raise awareness and understanding of the specific issues under consideration, including cases of divergences in the scientific assessment during the entire risk analysis process, ensure consistency, transparency and clarity in formulating risk management recommendations and decisions and provide a sound basis, and ensure the provision of information to consumers about risk prevention strategies and contribute to the fight against the dissemination of false information²⁰;
- Definition of recognised methods for the detection of marine biotoxins and practical and general arrangements for official controls on fishery products, in particular for the organoleptic examinations, freshness indicators and poisonous fishery products²¹;
- Highlighting that food business operators shall create an appropriate food safety culture, controlling it, and providing its evidence, stressing the importance of food safety and hygiene protocols being adopted by all employees, with clear communication between them, having controls being performed timely and efficiently, documentation kept up to date and ensuring appropriate training and supervision²².

Canada

19. The Canadian Food Inspection Agency (CFIA), under the Safe Food for Canadians Regulations (SFCR), has adopted a risk-based approach to inspection. The main modifications to the CFIA’s fish import procedures include changes to import notification and release of shipments, importer licenses and associated import fees, CFIA Inspection processes and requests for re-inspections. In addition, Fish Import Notifications are no longer required by the CFIA to obtain the release of a shipment, with the import declaration being the only requirement. Although the Safe Food for Canadians Regulations came into force on 15 January 2019, certain requirements came into force in 2020 and 2021 for specific commodities, types of activity and enterprise sizes.

²⁰ Regulation (EU) 2019/1381 on the transparency and sustainability of the EU risk assessment in the food chain amends and modifies some articles (6, 8a, 8b, 8c, 22, 25, 28, 32a, 32b, 32c, 32 d, 38, 39, 40, 41 and 61) of Regulation (EC) No 178/2002.

²¹ Commission Implementing Regulation (EU) 2019/1139 amending Regulation (EC) No 2074/2005 with regard to official controls on food of animal origin in relation to requirements concerning food chain information and fishery products and to the reference to recognized testing methods for marine biotoxins, entered into force on 14 December 2019.

²² Commission Regulation (EU) 2021/382 amending Regulation EC No 852/2004 and entered into force on 24 March 2021.

RECENT DEVELOPMENTS IN FAO CAPACITY BUILDING FOR FOOD SAFETY AND QUALITY²³

20. FAO continued its capacity-building activities in food safety and quality for fisheries and aquaculture products by:

- Supporting Members to meet major market requirements, to implement and comply with SPS requirements by assisting in the implementation of Codex Standards and texts;
- Organising training programmes to disseminate market access requirements related to food safety and quality, traceability and labelling, including in collaboration with other institutions such as Cefas²⁴;
- Supporting the organization of international food safety courses and conferences, fostering the participation of developing countries.
- Disseminating information on food safety-related regulatory requirements, including import notifications, on the GLOBEFISH website and FishstatJ.^{25,26}

²³ Please see [COFI:FT/XVIII/2022/Inf.7](#) for further information on specific capacity-building activities.

²⁴ cefas.co.uk/icoe/seafood-safety/designations/fao-reference-centre/work-programmes-and-annual-reports/

²⁵ fao.org/in-action/globefish/import-notifications/en/

²⁶ fao.org/fishery/en/statistics/software/fishstatj/en