

**CODEX COMMITTEE ON FOOD HYGIENE
(Fifty-fourth Session)
Nairobi, Kenya
11 – 15 March 2024**

European Union Comments on

Agenda item 6:

**DRAFT GUIDELINES FOR THE SAFE USE AND REUSE OF WATER IN
FOOD PRODUCTION AND PROCESSING (ANNEX II ON WATER RE-
USE IN FISH AND FISHERY PRODUCTS (renamed from Fishery Products)
AT STEP 4 AND ANNEX III ON THE PRODUCTION OF MILK AND
MILK PRODUCTS (renamed from Dairy Products) AT STEP 4)**

**CX/FH 24/54/7
(Reply to CL 2024/01-FH)**

*Mixed Competence
European Union Vote*

In response to the request for comments, the European Union and its Member States (EUMS) would like to make the following comments.

I. General Comments

The EUMS would like to thank and congratulate European Union, Chile and the International Dairy Federation (IDF) with the progress made on the drafting of the Guidelines for the Safe Use and Reuse of Water in Food Production (Annex II on Fish and Fishery Products and Annex III on Milk and Milk Products). The EUMS generally support the draft, subject to the considerations of the comments made below and the outcome of the discussions at CCFH54.

In reply to the specific recommendation made by the electronic working group, the EUMS:

- prefer to maintain and possibly further develop an Annex IV on technologies;
- support a restricted revision of the General Section with the purpose to introduce a cross-reference to this new Annex IV and of the Annex I on Fresh Produce with the purpose to introduce a cross-reference to this new Annex IV and to make specific recommendations on technologies, relevant for Annex I.

II. Comments on Annex II

- General comment: the EUMS suggest adding a specific part on molluscs, gastropods and echinoderms, with an example of decision tree. Rationale: all examples are on fish; it would be useful to give one example on shellfish.
- General comment: the EUMS suggest including specific control parameters, and their reference values, necessary to determine the suitability of these types of water for use in fish markets, shipping centres, etc. Rationale: To avoid uncertainty and disparity of criteria.
- General comment: the EUMS propose to have practical examples on the characterization of the quality of the water from the alternative source. Rationale: to facilitate decision to determine the suitability of these types of water for use in fish markets, shipping centers, etc.
- General comment: Figures 1, 3 and 4: the EUMS consider that the figures still need some work to clarify. The colours used seem to be for a reason but the reason isn't clear, so a key might be necessary. Decision trees should not combine answers to questions e.g. yes to 2,3,4 each answer should lead to either a single following question or a decision.
- Para 5: the EUMS propose the following changes: "Water has multiple applications in the fisheries and aquaculture sectors, and water quality could impact the safety of the final product. This annex provides guidance on ensuring **that the** quality of water in contact with fishery products which is used and reused in aquaculture and ~~in~~ **during processing on** vessels and fish and fishery products processing facilities on land **is fit for purpose.**". Rationale: Clarity of the language.
- Title: The EUMS suggest reviewing the title in to simply Fishery Products". Rationale: "fish" is defined in CXC 52-2003 and "fishery products" is included in the draft (Paragraph 11). The definition includes "any species of fish", so including fish. Another option is to change the definition in Paragraph 11 as follows: "**Fish and** fishery products: Any species of fish, including crustaceans, molluscs (including live bivalve molluscs), marine gastropods, echinoderm, tunicates, or part of them intended for human consumption." The adopted rewording should be applied throughout the document.
- Para 8: "The purpose and scope of this annex is to provide recommendations for the microbiologically safe sourcing, use and reuse of water in production and processing of fish and fishery products for human consumption by applying the principle of 'fit for purpose' risk-based approach." Only microbiologically safety is mentioned here. The EUMS wonder if marine biotoxins are included. This should be clarified.
- Para 10: the EUMS propose to delete this paragraph referring to definitions in the general part. Rationale: consistency with Annexes I and III.
- Para 11: The EUMS suggest modifying the definition of "processing facilities" as follows: "Processing facilities: A facility (**vessel or on land establishment**) where harvested fish and fishery products are **depurated**, processed, graded, and packed for further transportation and consumption. Rationale: Depuration is a process particular to the safe production of live bivalve molluscs and should be identified accordingly. There are activities that could be carried out in vessels too. There is a definition of facility in

CXC 52-2003: “any premises where fish or fishery products are prepared, processed, chilled, frozen, packaged or stored. For the purposes of this Code, premises also include vessels.”. The definition could also be amended based on that definition. Finally, the EUMS propose to clarify what is included in “processing”.

- Heading 5: the EU MS propose to modify the title as follows: “USE OF WATER IN AQUACULTURE PRODUCTION SITES (REARING), ~~HARVESTING—AND ON-BOARD PRESERVATION.~~” Rationale: the paragraph considers mainly two activities: the aquaculture sites, and the water to be used there and the on-board preservation. No reference is made to harvesting. It could be considered to split this section between aquaculture production (paragraphs 12-13) and On-board preservation (paragraphs 14 to 16). Rationale: clearly separate the two activities.
- Para 13 (third bullet point): the EUMS propose to the following change: “Elaboration and implementation of fit-for-purpose assessment considering the specific waterborne hazards (e.g. marine microbiological **and biotoxin** contaminants) that may impact the safety and quality of the fishery product(s). In case of **fish** catchment ~~of fish~~, seasonal and climatic factors affecting source water quality in the immediate area should be included“. Rationale: Biotoxin hazards should be identified separately as a source of contamination that will not be addressed by only considering microbiological hazards as they result from the consumption of toxic marine phytoplankton which will not be addressed by pathogenic checks + editorial.
- Paragraph 14: the EUMS find this paragraph descriptive and not containing any recommendation on the use or reuse of water. The EUMS therefore wonder if this paragraph is needed.
- Para 15: The EUMS propose the following changes: “If seawater is used on fishing vessels, it must only be taken from offshore areas that are some distance away from pollution sources to ensure that the water is of suitable quality. There should be no cross-contamination between the point at which seawater is taken from offshore sources and **bilge water**, wastewater streams and engine coolant outlets **or other objectionable substances** on a fishing vessel”. Rationale: to clarify and enlarge the prohibitions in order to be sure about the quality of seawater.
- Para 16 first bullet point: “When seawater or refrigerated seawater is used for on board product preservation, the potential hazards (e.g. faecal pollution or contamination with endogenous marine flora) conveyed via the water should be considered in the further processing steps”. The EUMS consider that the paragraph should be deleted. Rationale: contradiction with point 15.
- Para 16 second bullet point: the sentence should be deleted and substituted with: ”Seawater should be clean and free from particulate material, marine biotoxins and of suitable salinity”. Rationale: The second bullet section is poorly worded and requires reworking and should be clearer.
- Para 16 (third bullet point): the EUMS propose to delete the last part of the sentence “and don’t add contamination to the fish or fishery product”. Rationale: actually obvious, so can be omitted.

- Heading 6: the EUMS propose to amend as follows: “FISHERY PRODUCTS PROCESSING PLANT **FACILITIES**”. Rationale: consistency with the definition.
- Para 17: The EUMS propose the following change: “Water is used in ~~fishery products~~ **processing** facilities for a variety of applications, including, washing fishery products, cleaning process areas, cooling, and other processing purposes such as **depurating**, brining, cooking and glazing. The characteristics of the process activity (e.g., direct contact with food) and the intended use of the fishery product (e.g., raw consumption or not) should be considered for the quality of water used. Water used as ingredient or water that comes into direct contact with fishery products or food contact surfaces should be of potable quality.” Rationale: Clarity and consistency of language to align with the definitions. Depuration should be identified as a process.
- Para 18: The EUMS propose to replace twice “non-potable water” by “clean water”. Rationale: “Non-potable water” is too broad while the use of clean water is in line with the definition of this wording.
- Para 20 first bullet point: the EUMS suggest the following changes: “for ~~purification~~, depuration, conditioning⁵ or reimmersion, in the case of live bivalve molluscs.” Rationale: no clear difference between purification and depuration. Depuration is the term used in the Code of practice for fish and fishery products for live bivalve molluscs, the EUMS suggest keeping only the term depuration.
- Para 23 and 24: “Processing plants” should be replaced by “Processing facilities”. Rationale: consistency with definition and rest of the Annex II.
- Para 24: the EUMS propose the following changes: “Coastal **water** sources, ~~used for abstraction of sea water in land based processing plants,~~ **are not** ~~cannot be~~ guaranteed to be free from pathogens, ~~from the~~ marine biota or ~~from~~ faecal contamination, and ~~cannot~~ must be classified as fit-for-purpose ~~sources without the~~ through appropriate monitoring and control measures. Seawater from offshore sources (geographically away from ~~inland~~ estuarine or inland pollution) is generally considered safe. However, depending on the geographical region and temperature, seawater can hold indigenous potentially pathogenic bacteria, such as Vibrio spp., that may require control.”. Rationale: clarity
- Section 7 and para 25: the EUMS consider it appropriate to move the whole paragraph 25 to the (current) section 10.1. Consequently, the Section 7 would disappear. Rationale: better to put all recommendations on chemical treatment together.
- Para 26: the EUMS propose to amend as follows “~~Treated wastewater or~~ Water **recycled from fishery production and processing or** originating from agricultural activities (e.g. hydroponics) may be reused, as long as the microbiological quality of the wastewater is safe and thorough controlled”. Rationale: Not only treated wastewater can be reused.
- Para 27: The EUMS propose the following change: “Water reuse can be made more efficient by targeting the water quality requirements to specific processes. Matching water quality requirements with the type of water use requires ~~an analysis of the critical control points (CCPs) and~~ an evaluation of the potential for contamination of the food products **by a risk assessment**. Reuse of water in the processing facility should be integrated into **existing good hygiene practices (GHP)/HACCP** programs alongside the development of frameworks for water reuse in food/production and processing.”

Rationale: Correct terminology. The application of HACCP principles to primary production is not yet generally feasible, GHP should be added.

- Paragraph 30: the EUMS are wondering if this paragraph is needed. It could be a footnote to the third bullet point of paragraph 29. Rationale: simplification of reading;
- Para 31: the MS consider it appropriate to move the first sentence to Section 10. Rationale: This is a risk management recommendation, which fits better in water safety management section 10 than in the section 9 on fit for purpose assessment.
- Para 32: The EUMS propose the following changes:” ~~The possible~~ CCPs should aim at controlling (e.g., freezing as control measures for parasites) ~~of the~~ **most significant** pathogens ~~most significant~~ for the fish production. These pathogens should be identified by a case-by-case assessment (e.g., based on epidemiological data). In **the** case of marine or estuarine fish, *Vibrio parahaemolyticus* (Vp) is often of most concern but this ~~highly~~ depends on the **geographical** origin/area where the seawater is collected. In case of freshwater **and estuarine** aquaculture, faecal (enteric) pathogens ~~mostly represent~~ **is** the primary public health risks”. Rationale: Clarity. Estuarine waters can also be heavily impacted by faecal pathogens and therefore this should be highlighted as a particular risk factor to be considered in any health assessment.
- **Example of DT to quantify magnitude the risk of faecal pathogens in freshwater aquaculture (Adapted from Figure 4 of MRA33) In the DT no reference to molluscs is made.** Rationale: The word “magnitude” is a noun.
- Para 37: The EUMS suggest modifying the sentence as follows: “Similar to freshwater aquaculture, when one or several risk factors have been identified by this DT, the possible presence of faecal pathogens should be considered **a risk that should be controlled by a CCP, until control measures have been introduced and validated.** Detailed information on the possible control measures at the descaling and degutting step can be found in Section 6 of the Codex Code of Practice for fish and fishery products or in national guides. The use of potable water at this step should also be applied for contact surfaces (knives, cutting boards). Keeping the fish at a low temperature (e.g. 4°C) is one of the most important measures related to fish preservation and microbial pathogen die-off after death. Seawater pathogens (e.g. Vp) may need to be considered when cross-contamination can occur at this stage between freshwater and seawater products.” Rationale: Correct terminology for risk and CCP + CCPs are already validated control measures regardless of the existence of other validated control measures.
- Para 38: the EUMS suggest the following change: “In case of on-board handling and processing of marine or estuarine fish, the DT in Figure 3 can be used to ~~magnitude~~ **quantify** hazardous events (e.g. unacceptable presence of Vp) due to the use of seawater.” Rationale: “magnitude” is not a verb.
- Para 39: The EUMS suggest modifying the sentence as follows: “The ~~magnitude~~ **risk** of hazardous event depends on the on-board activities such as degutting, cavity-washing and the storage conditions. Keeping the fish on-board at a low temperature (e.g. 4°C) is again one of the most important measures. When one or several risk factors have been identified by the DT, the possible presence of pathogens such as Vp should be considered ~~as a CCP~~ **a risk that should be controlled at a CCP** until the handling and processing

have been reviewed to control the risk and this revision has been validated. The risk can be further reduced if seawater can be used from areas that are known to be less contaminated or when the possibility exists to use potable water on-board.” Rationale: Correct terminology for risk and CCP.

- Para 41: The EUMS suggest to modify the sentence as follows: “Similar to handling and processing of freshwater fish, when one or several risk factors have been identified by this DT, the possible presence of pathogens such as Vp should be considered as a CCP a risk that should be controlled at a CCP ~~until control measures have been introduced and validated~~ during on-shore handling and processing. Risk factors and control measures are similar as for post-harvest handling and processing of freshwater fish.” Rationale: Correct terminology for risk and CCP + CCPs are already validated control measures regardless of the existence of other validated control measures.
- **Figure 3: Example of DT to magnitude quantify the risk of pathogens such as Vp, in on-board marine or estuarine handling and processing of fish** (*Adapted from Figure 6 of MRA33*). Rationale: The word magnitude is a noun.
- Para 47: the EUMS propose to include the following note after the word chlorine dioxide, “Attention must be paid to the possible formation of potentially toxic compounds such as chloramines when adding chlorine to seawater”. Rationale: To be consistent with the Code of Practice for Fish and Fishery Products.
- Paragraph 47: the EUMS consider that the last sentence could be removed. When CCFH agrees on including in the guidance an Annex IV on technologies, it could be replaced by a sentence such as: “Detailed recommendations on technologies to reuse water can be found in Annex IV.”
- Para 55: the EU MS suggest deleting the first part of the paragraph. Rationale: redundant and out of the scope. Only the sentence “The selection of parameters should be prioritized according to the outcomes of a fit for purpose assessment of the water system and its historical data” should be maintained.

III. Specific comments on Annex III

Overall:

- Para 2 and 19: “Dairy products” should be replaced by “Milk products”. Rationale: consistency with the rest of the draft Annex III;
- From para 23 on: The headings **“WATER INTENDED FOR REUSE”, “TECHNOLOGIES FOR RECOVERY AND TREATMENT OF WATER FOR REUSE”, “WATER REUSE FIT-FOR-PURPOSE ASSESSMENT”, “WATER SAFETY MANAGEMENT”** and **“EXAMPLES OF FIT-FOR-PURPOSE REUSE WATER APPLICATIONS”** should not be in bold. Rationale: they are subheadings of **“DAIRY MANUFACTURING PLANT”** and should be differentiated from that heading.

Specific:

- Para 5, second sentence: The EUMS propose the following change:
 - o "... to provide for practical and applicable **use and** reuse of water in the dairy sector." Rationale: the guidance contains also recommendations on the use of water in general.
 - o Delete "since this provides a significant opportunity to limit the need for external water sources³. Rationale: it is already mentioned in para. 3.
- Definitions: the EUMS suggest to organize the filtration process as follows, to mention them in the order of increasing effect: Permeate: the fluid derived from milk or other milk products obtained after removing milk constituents by membrane filtration (**Micro-filtration (MF)**), Ultra-filtration (UF), **Nano-Filtration (NF)**, ~~Micro-filtration (MF)~~, Reverse Osmosis (RO) **and/or** Reverse Osmosis & Polishing (ROP); ~~Nano-Filtration (NF)~~ (from MRA40). Rationale: editorial + several techniques might be used consequently.
- Para 13, first sentence: The EUMS propose the following change: "New water sources used for rinsing, cleaning and disinfecting the product contact surfaces of **milking processing** equipment, tanks, vessels and facilities ..." Rationale: At primary production, processing normally does not take place + consistency with the rest of the text on primary production.
- Para 17: The EUMS propose the following change: "Differentiation should be made between ~~for food contact applications of water with direct or indirect contact with food materials~~ **water that is used in food or on surfaces that come into contact with food** (e.g. ingredient water, water used to wash, clean, or disinfect food contact surfaces) **and water that will not come into contact with food, either directly or indirectly** ~~and non-food contact applications of water (e.g. technical steam, boiler feed, water needed to extinguish fires, or to wash vehicles (other than food and food ingredient transport vehicles **tanks or vessels**), for cooling towers, to water lawns to clean external surfaces or to flush toilets". Rationale: the paragraph as written is cumbersome and lacks clarity~~
- Para 20: the EUMS suggest adding an additional bullet point: "**for cleaning non-food-contact surfaces (walls, floors);**". Rationale: even if it is less interesting in terms of saving drinkable water, not mentioning seems to exclude the possibility.
- Para 21, last sentence: The EUMS propose the following change: "... Sampling of water for microbiological testing is relevant **for regular verification and** upon any suspicion of contamination of the **supply** water on the premises.". Rationale: in order to take into account the case of regular verification and not only the case of suspicion +. for clarity. The paragraph is on supply water.
- Para 23: The EUMS propose an additional paragraph after paragraph 23: "**The recommendations made below as regards the fit-for-purpose assessment and the water safety plan for reuse of water, as appropriate, should be applied to externally sourced water if not potable water.**" Rationale: The sections on "fit-for-purpose assessment" and the "water safety plan" are specifically addressed to the reuse of water, while the recommendations are also relevant for the use of externally sources water.

- Para 25, first bullet: The EUMS propose the split into two bullets. Rationale: two different elements to evaluate.
- Para 27: the EUMS suggest redrafting this paragraph as follows: “27. **External** Technical expertise, ~~outside the dairy manufacturing plant,~~ might be needed for the design of safe water reuse systems in dairy operations.” Rationale: simpler, editorial.
- Para 32: the EUMS suggest reorganising the process mentioned within the parentheses, for consistency with their comment on paragraph 6: (e.g. by UV treatment, thermal treatment, microbiocidal treatment, biological filters, **MF**, UF, ~~MF~~, NF or RO filtration.
- Para 33, fourth sentence: The EUMS propose the following change: “Chemical disinfection of water will inevitably generate **disinfectant residues** ~~disinfection by-products whether it is externally sourced water or reuse water.~~”. Rationale: More appropriate, precise wording + the Section is on the recovery of water, not on externally sourced water.
- Para 35, first sentence: The EUMS propose the following change: “A thorough hazards analysis of water should be conducted for each step of water usage from ~~externally sourcing of water, to~~ recovery, ...”. Rationale: The Section is on reuse water, not on externally sourced water.
- Para 35, first bullet: The EUMS propose the following change: “• the microbiological hazards present in the ~~original~~ water sources from which the reuse water supplies, ...”. Rationale: “Original” is confusing in this Section on water reuse since it might refer to the original externally sourced water.
- Para 39: on the last bullet point, the EUMS would like to indicate that cross-contamination with indirect contact should also be taken into account: “• measures to reduce the likelihood of cross-contamination and inadvertent reuse of water for **direct or indirect** food contact applications, which can introduce potential hazards,”
- Para 41: 4th bullet point, the EUMS propose the following change: “If water of different qualities is mixed intentionally **or unintentionally**, the mixed water should always be categorized as that of the lower quality water used in the mixing.” Rationale: we should also consider the possibility of an unintentional mixing of water of different qualities.
- Para 42, 2nd bullet point: The EUMS propose the following change: “Ensure the tightness of the RO membranes to avoid microbiological hazards bypassing the membranes. The “flux” and “life” of the membranes should be monitored and documented to identify when replacement should occur (based on the recommendations by the manufacturer **or the results of monitoring and verification if they reveal premature wear compared to the recommendations of the manufacturer** to ensure their effectiveness and proper performance.” Rationale: Usually, FBO adapts recommendations from the manufacturer according to the situation.
- Para 47: The EUMS propose the following change at the beginning: “All water **for reuses** should be included...”. Rationale: it is not clear what is meant by “All water uses”. Within the context, it is understood that this is only on reuse water.

- Para 53: on the second sentence, the EUMS suggest to make the following modification “When non-reconditioned water is fit for purpose, and when the food is subjected to microbiocidal treatments at a later step, there are no CCPs related to the verification of reconditioning performance **about microbiological hazards.**” Rationale: only these hazards will be controlled by the microbiocidal treatment mentioned above.
- Para 54: the EUMS propose the following change: “To improve the microbiological quality of water, **treatments such as** heating, chlorination, ozonation or UV treatment can be used.” Rationale: there are also other treatments possible, so this should only be examples.
- Para 55: the EUMS propose the following change: “The parameters of validated water reconditioning processes (such as total organic compounds (TOC), chemical oxygen demand (COD), biological oxygen demand (BOD), turbidity, pH or conductivity, based on the nature of the process) should be monitored, with occasional verification by microbiological **or physicochemical** testing.”. Rationale: Not all parameters mentioned in the sentence can be verified by microbiological tests.
- Para 62: the EUMS suggest modifying the last sentence as follows “Such water should often be discarded **or have a new sanitizing treatment.**” Rationale: for completeness. .
- Para 73: the EUMS suggest modifying the last sentence as follows “Treatment/purification steps such as **UF, NF and** RO ~~and UF~~ should be considered.”, Rationale: to take into account nanofiltration and for consistency with our comment in para 6.