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**Guidelines for the safe use and reuse of water in food production and processing (CXG 100-2023):
Proposed draft Annex II on Fish and fishery products and Annex IV on Water fit-for-purpose
assessment, safety management, and technologies for recovery and treatment of water for reuse**

(Comments of India, Malaysia, Morocco, Nigeria, Republic of Korea, Russian Federation, Singapore,
Uganda, United Republic of Tanzania (URT), United States of America (USA))

India

India appreciates the work done by chair and co-chairs of the EWG in drafting the Annex II on Fish and fishery products and Annex IV on Water fit-for-purpose assessment, safety management, and technologies for recovery and treatment of water for reuse.

India has following inputs on the recommendations of the EWG:

1. India supports the inclusion of text in paragraph 11 as this gives more clarity. However, the text may be shifted to the section 6, water use, as it seems more relevant there. The first sentence of paragraph 11 is being repeated in paragraph 6 and can be removed. Further, the definition of clean water can be referenced to Code of Practice for Fish and Fishery Products (CXC 52-2003) in paragraph 10, where all the other definitions of this COP are being referred to.
 2. India supports Option 1 in section 6, water use, as this option elaborates on water use in different areas related to fish and fishery products.
 3. India supports Option 1 in figure 4 as this option is articulated well and easier to interpret.
- **India proposes following technical comments on the draft Annexes II and IV presented as Appendix I and Appendix II of the Agenda item**

Annex II

1. In Section 6, paragraph 15, the last part of the sentence, "...capabilities of the operator" is not clear. India proposes to revise the sentence as: "*Consideration should be given to the potential reusable water sources of the operation, the different applications of the reused water, available recovery and treatment technologies, and the technical and operational capacity to monitor and maintain water quality of the operator.*"

Rationale: To improve clarity by specifying the type of capacity being referred to.

2. In Section 6, paragraph 16, India proposes to add one more example of water use: "for thawing frozen fish and fishery products."

Rationale: To enhance completeness by providing an additional relevant example.

3. In Section 6, paragraph 17, India proposes to revise the last bullet point of subhead (a) as: Example: drinking water from a public/municipal water supply system, artificial seawater. ~~When sourced from a municipality or a well, the potable quality of the water should be verified.~~ The potable quality of the water should be verified.

Rationale: Potable water should be verified to meet potable quality standards, regardless of its source, to ensure it is safe for human consumption.

Annex IV

1. In paragraph 14, bullet point 4, India proposes to include the following phrase at the end of the sentence:
“as self-draining systems minimize biofilm formation and contamination risk during downtime”

Rationale: To strengthen the justification by explaining its benefit.

➤ India would like to propose following editorial comments in the Annexes of the guidelines:

Annex II

1. In Section 2, paragraph 7, revise the last sentence as “This Annex also provides examples of ~~D~~decision ~~T~~trees for determining fit-for-purpose use and reuse of water for fish and fishery products focusing on fish or fishery products that could be eaten raw or undercooked.”

Rationale: To ensure correct capitalization of common nouns for consistency.

2. In Section 6, paragraph 17, subset (b), last bullet point, Example: offshore sea water or deep ground water ~~water~~. Rationale: to avoid repetition.

3. In Section 6, paragraph 17, subset (c), first bullet point, revise the sentence as: “**This type of water** can be used..

Rationale: To ensure grammatical consistency by using complete sentences in bullet points.

4. In Section 7, paragraph 26, revise as “Water recovered from food, certain agricultural activities (e.g., hydroponics), processing activities (such as cooling) or treated wastewater, are good examples of water that can be reused as long as its microbiological quality is fit-for-purpose for its ~~planned~~ **planned** use. Its use could be ~~expended~~ expanded for additional applications after treatment. Any water treatment processes should be effectively monitored, controlled and recorded. ”

5. In Section 8, paragraph 30, revise the first sentence as “It is important to note the ~~dept~~ **depth** of the water fit-for-purpose assessment

6. In Section 8, paragraph 32, last bullet point, revise the first sentence as “Any water ~~that~~ can be used but after a water fit-for-purpose assessment”

7. Table 1 can be shifted to immediate next page of paragraph 33, where it has first been mentioned.

Rationale: To enhance readability.

8. In paragraph 39, the second sentence may be rephrased as “~~In several cases, it will not be possible to exclude at the stage of production and processing that fish will not be consumed raw or undercooked.~~ **In several cases, it is impossible to guarantee during the production and processing stage that the fish won't be eaten raw or undercooked.** When not possible to guarantee that the fish will be cooked, the recommendations in these guidelines i-on the..... ”

Rationale: The original sentence contains double negatives and hence might be slightly unclear.

9. In paragraph 40, the last sentence may be revised as “Alternatively, a water fit-for-purpose assessment should be outsourced or the capacity to perform ~~grown~~ **the assessment should be developed.**”

Rationale : To complete the sentence and improve clarity.

10. In paragraph 42, the last sentence may be rephrased as “Since prevention of (faecal) contamination is a good hygiene practice for any fish production, this example DT could be applied independently of **whether** the fish is consumed cooked or not” to enhance clarity.

11. In paragraph 71, the last sentence may be revised as “Guidance on resistance to chlorination by different

microbiological hazards ~~in~~ **is** provided in Table 1.”

Annex IV

1. In Section 4, Definitions, the definition of indicator microorganisms should be modified as “microorganisms used as an indicator of quality, process efficacy, or the hygienic status of food, water, or the environment, commonly used to suggest conditions that would allow the potential presence or proliferation of pathogens, a failure in process hygiene or in food processing. Examples of indicator microorganisms include mesophilic aerobic bacteria, coliforms, **faecal** ~~fecal~~ coliforms, generic *E. coli*

and Enterobacteriaceae.

2. In paragraph 9, the first sentence may be rephrased as “The identification of known and potential microbiological hazards that have capacity to ~~cause damage to~~ **compromise** water safety should be conducted at each step,…”
3. In paragraph 14, bullet point 2 should be revised as “Facility design should ensure pipes, pipelines, tanks and taps used ~~for~~ for food contact purpose cannot be interchanged with or contaminated by similar equipment used for non-food-contact water. ”
4. India proposes to revise the bullet point 3 of paragraph 16 as “Special attention should ~~be made~~ **given** to check the integrity of gaskets and seals for pipelines and valves connected to piping to enhance clarity.
5. Paragraph 55 should be revised as “Continuous monitoring, regular maintenance ~~and~~, cleaning and correct calibration of the treatment parameters are essential to maintain the microbiocidal effect.

Malaysia

Malaysia appreciates the work of the Electronic Working Group chaired by the EU, co-chaired by Honduras, India, Mauritania, Morocco, and the International Dairy Federation (IDF) on the Guidelines for the Safe Use and Reuse of Water in Food Production and Processing (CXG 100-2023): Proposed Draft Annex II on Fish and Fishery Products and Annex IV on Water Fit-For-Purpose Assessment, Safety Management, and Technologies for Recovery and Treatment of Water for Reuse.

For the proposed draft Annex II on Fish and fishery products:

1. Malaysia supports paragraph 11 without amendment;
2. In Section 6, Malaysia prefers option 1 because it covers a comprehensive framework including aquaculture production, onboard vessels and land-based processing facilities. This detailed structure provides broader coverage and clearer guidance across the entire supply chain; and
3. For figure 4, Malaysia prefers option 2 because the decision tree is practical, structured progression offering clarity, focus and practical guidance aligning with effective risk management principles.

Malaysia also supports the proposed draft Annex IV ‘Water fit-for-purpose assessment, safety management, and technologies for recovery and treatment of water for reuse’.

With regards to the General Section and Annexes I and III of CXG 100-2023, Malaysia supports the proposed changes, given that it involved consequential amendments related to the adoption of the new annexes.

Morocco

Remarque générale : Le Maroc recommande l’avancement des deux annexes II et IV dans le processus par étape.

Position nationale :

- Avant-projet d’annexe II sur le poisson et les produits de la pêche :
 - Paragraphe 11 : le Maroc soutient le maintien de ce paragraphe qui précise l’utilisation des différentes catégories d’eau.
 - Section 6 : le Maroc soutient l’option 1 qui est bien structurée et qui traite également le secteur de l’aquaculture.
 - Figure 4 : le Maroc soutient l’option 1 qui est bien structurée et visualise clairement si l’eau en question est adaptée aux fins prévues ou pas.

Nigeria

ANNEX II ON FISH AND FISHERIES PRODUCTS (Fish and fishery products)

Nigeria appreciate the work done by EWG and supports retention of option 1.

Rationale

Nigeria recognized that the 2nd option (Option 2) does not address the aquaculture production aspect, whereas the first option (option 1) is more organized and deals in detail with the various links in the sector that are concerned with water use, such as Water use in onshore processing facilities

Republic of Korea

Annex II

1. Section 6

- Regarding Section 6 on Water Use, Republic of Korea supports Option 1.

We find that Option 1 includes practical, step-by-step measures that food business operators can apply and can also be utilized in establishing future food safety management systems.

1. Figure 4 (Example of DT to determine fit-for-purpose water used for post-harvest handling):

- Republic of Korea supports Option 1

Option 1 provides a tool that allows for the stepwise and easy application of water management criteria tailored to the intended use of water (e.g., washing, storage, transport, processing).

Russian Federation

The Russian Federation supports the development of these documents and the general principles set out in them.

In Annex II "Fish and fishery products":

- in section 4 "Definitions", we support the retention of paragraph 11, provided that the definition of "clean water" is linked to the Code of Practice for Fish and Fishery Products, and that chemical hazards are taken into account and risks are assessed also for drinking/clean water in specific scenarios.

- in section 6 "Water source" we support option 1.

- in section 8 "Water use or reuse fit-for-purpose assessment", containing Figure 4 "Example of DT to determine fit-for-purpose water used for post-harvest handling and or processing of fish and fishery products, potentially eaten raw or undercooked", we consider option 2 as the most convenient. We believe it is more practical and understandable, allowing for further detailing of the blocks.

- In Table 1 "Risk Ranking on the most significant waterborne microbiological hazards of relevance to fish and fishery products and their resistance to disinfection by chlorine" after the line "Viruses" it is necessary to add the indicator of water contamination for aquaculture with microbial DNA encoding antibiotic resistance to antimicrobial drugs of a number of clinically significant groups (beta-lactamases, macrolides, aminoglycosides, tetracycline and sulfonamides), as well as to biocides such as quaternary ammonium compounds, with a note on its implementation after the development and validation of the corresponding determination method.

In Annex IV "On water fit-for-purpose assessment, safety management, and technologies for recovery and treatment of water for reuse":

- in section 6 "Water safety management", table 1 "Example of risk-based hazard analysis worksheet", footnote № 10 "*Not included in the scope of this guide, but subject to inclusion in the hazard analysis*", related to chemical hazard, shall be supplemented with references to documents regulating the identification of chemical hazard factors in water, as well as containing indicators of the quality and safety of reused water in chemical terms.

Singapore

Singapore thanks the EU, Honduras, India, Mauritania, Morocco, and IDF for their excellent work in chairing the EWG and incorporating feedback from two comprehensive consultation rounds. We appreciate the consideration of outcomes from the FAO/WHO Joint Workshop organised by Honduras in Apr 2025.

Regarding Annex II (Fish and fishery products):

Singapore supports maintaining paragraph 11, which provides essential context linking established "clean water" definitions from CXC 52-2003 with the new fit-for-purpose approach.

Singapore supports Option 2 (paragraphs 21-25) as it provides a clearer, more practical framework focusing on seawater use.

Regarding Annex IV (Water fit-for-purpose assessment):

Singapore supports the revised title "Water fit-for-purpose assessment, safety management, and technologies for recovery and treatment of water for reuse" as it accurately reflects the comprehensive scope covering assessment, management, and treatment technologies. This enhanced title provides better clarity for users seeking specific guidance on water safety management.

Regarding cross-references:

Singapore supports all proposed cross-references to Annex IV in the General Section and other annexes, as they enhance document coherence and guide users to relevant detailed technical guidance, improving the overall usability of the guidelines.

Uganda

Uganda would like to appreciate the work done by the Electronic Working Group chaired by the EU and co-chaired by Honduras, India, Mauritania, Morocco, and the International Dairy Federation (IDF) on the Guidelines for the safe use and reuse of water in food production and processing: Annex II on Fish and fishery products and Annex IV on Water fit-for-purpose assessment, safety management, and technologies for recovery and treatment of water for reuse.

Uganda provides the following comments

Annex II 'Fish and Fishery Products

Section 4. Definitions

Paragraph 11: Uganda supports the removal of paragraph 11 because it is an informative explanation rather than a definition, and the definition of water fit-for-purpose is already fully provided in the mother document, CXG 100-2023. The proposal is to put the information provided in this paragraph under Section 1: Introduction. This would provide a more general guidance to the users of the document.

Section 6: Water use

Clause 6.1: Uganda supports Option 1 because it is more comprehensive and inclusive, covering water use across aquaculture production, onboard vessels, seawater contexts, and land-based processing facilities. Option 1 reflects the realities of many countries' fisheries sectors, which rely primarily on freshwater bodies, whereas Option 2 focuses almost exclusively on seawater, which is not applicable to landlocked. Option 1 therefore better accommodates inland aquaculture and freshwater fisheries while still addressing seawater considerations where relevant.

Section 8: Water use or reuse fit-for-purpose assessment

8.1.2 Figure 4: Example of DT to determine fit-for-purpose water used for post-harvest handling or processing of fish and fishery products, potentially eaten raw or undercooked.

Uganda supports Option 1 because it provides a clearer, more detailed, and user-friendly decision tree that breaks down specific post-harvest activities, making it easier for operators to determine fit-for-purpose water. It also makes it possible for the FBOs to include in other post-harvest activities depending of the post-harvest handling scenarios and context.

Annex IV on water fit-for-purpose assessment, safety management, and technologies for recovery and treatment of water for reuse

Uganda supports the proposed draft on water fit-for-purpose assessment, safety management, and technologies for recovery and treatment of water for reuse.

Conclusion: Uganda supports the proposals of the EWG. Uganda agrees with the revisions made to Annex II and Annex IV, the introduction of cross-references to strengthen coherence across CXG 100-2023, and the proposed updates to Annexes I and III to ensure clarity and alignment with the new guidance. Uganda also concurs with the decision not to include technology use examples at this stage, given that none were proposed during the EWG's work.

Finally, Uganda supports the advancement of the Annexes II and IV in the step process

United Republic of Tanzania (URT)

Tanzania position:

Tanzania appreciates the work undertaken by the Electronic Working Group and provide the following comments:

Paragraph 11: Tanzania supports to the content of paragraph 11 but it is not clear if the location is appropriate. Appearing under definitions, it is not necessarily defining “water fit-for-purpose unless it is rephrased to definition.

Rationale: The paragraph provides clarity regarding the approach to the concept of water fit for purpose

Section 6: Tanzania prefers option 1.

Rationale: It is more clear in details and arrangement which provides clearer differentiation between water uses in aquaculture, fishing vessels, and land-based processing establishments

Figure 4: Tanzania prefers option 1 of the decision tree.

Rationale: It is well arranged and it is encouraging smooth implementation of the standard by small scale producers

Revision of General sections and Annexes I and III: Tanzania supports revisions to the General Section and Annexes I and III of CXG 100-2023 by introducing cross-references to Annex IV and proposes advancement of Annexes II and IV in the step process.

United States of America (USA)

The United States of America appreciates the work of the European Union, Honduras, India, Mauritania, Morocco, and the International Dairy Federation in preparing the proposed draft Annex II Fish and Fishery Products. The U.S. further notes and appreciates the inclusion of many of our comments provided during the EWG session.

Responses to the EWG cochair’s specific questions on the proposed draft Annex II Fish and Fishery Products in Agenda item 5 CX/25/55/5:

1. The U.S. supports the inclusion of paragraph 11 provided appropriate edits are undertaken to the current text in paragraphs 11, 27-28 (in Option 1), 30, and Figure 5 to provide consistency and clarity throughout the annex. The U.S. supports that the safety of all water used in fish and fishery products should be assessed before use, however the depth of this assessment varies based on the specific situation. The current paragraph 30 acknowledges this concept and provides that a simple assessment is required for both potable and clean water, whereas a more in-depth assessment is needed for other types of water. This concept is not consistently presented in paragraphs 11, 27-28 (in Option 1), and Figure 5, which makes the document unclear.
2. The U.S. supports Option 1 in Section 6, noting our comments above on paragraphs 27-28.
3. The U.S. does not have a preference between Options 1 and 2 for Figure 4.

Additional Comments to Agenda item 5 CX/FH25/55/5 Appendix I (Proposed Draft Annex II Fish and Fishery Products):

1. Paragraph 21. We resubmit our previous language for the paragraph to read:

“In primary production, any source of water can be used provided that the risks have been previously assessed, that the water complies with predefined microbiological quality criteria (based on the outcome of a water fit-for-purpose assessment) and that water quality is regularly monitored. The type and source of water used in aquaculture systems varies by species, geographical location, and water availability.”
2. Paragraph 32. This paragraph is intended to provide general recommendations on the minimum microbiological quality of water used for certain purposes. The 4th bullet is unclear as written and does not provide a recommendation for the microbiological quality of water for an identified purpose. We suggest this bullet be deleted or be revised to provide a recommendation for the microbiological quality of water for a stated purpose.
3. The asterisks in Figures 4 and 5 associated with “clean (sea) water” refer to the statement “When seawater is used, the risk depends on the origin of seawater, e.g. the seawater from high seas has a lower risk compared to seawater from coastline.” We agree that seawater from the high seas has a lower risk than seawater near the coastline. However, the inclusion of this statement as a note to the term “clean (sea) water” in the Figures infers that seawater collected near the coastline may be

considered “clean (sea) water” and therefore could be used in contact with fish and fishery products that will be eaten raw or undercooked without a water fit-for-purpose assessment. We suggest the asterisks and the above statement be deleted in Figures 4 and 5.