

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
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Organization

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Twenty-third Session

DISCUSSION PAPER ON THE CONVERSION OF THE *REGIONAL STANDARD FOR LAYER PRODUCTS (Asia) (CXS 323R-2017)* INTO A WORLDWIDE STANDARD

(Prepared by the Republic of Korea)

Background

1. The development of the *Regional standard for laver products (Asia) (CXS 323R-2017)* was proposed at the 17th Session of the FAO/WHO Coordinating Committee for Asia (CCASIA17) in 2010¹.
2. During the plenary, CCASIA17 had agreed that a standard for laver products should be developed as a global standard in view of the significant amount of products exported outside the region and had recommended that the Republic of Korea submit the proposal for new work to the 31st Session of the Codex Committee on Fish and Fishery Products (CCFFP31).
3. In 2011, CCFFP31 noted that it was premature to consider an international standard for laver products considering that the current terms of reference did not cover the product and agreed not to start the new work at the time, but to encourage the CCASIA to develop a regional standard for laver products².
4. New work on the *Regional standard for laver products* was approved by the 34th Session of the Codex Alimentarius Commission (CAC34) in 2011³ and was adopted at the 40th Session of the Codex Alimentarius Commission (CAC40) in 2017⁴.
5. Since the adoption of the *Regional standard for laver products (Asia) (CXS 323R-2017)*, global production and consumption of seaweed have steadily increased, along with the expansion of the seaweed market and the growing need for the development of international guidance on seaweed safety. In particular, seaweed has gained attention for its potential and value as a sustainable “New Food” in the face of global challenges such as climate change and population growth.
6. In line with ongoing international efforts to promote sustainable agri-food systems, seaweed was identified as one of the six major topics within the New Foods and Production Systems (NFPS) category through the FAO Foresight Programme⁵. Discussion on NFPS topics was held at CAC44 in 2021, recognizing them as emerging opportunities and challenges with the potential to significantly impact the future of agri-food systems⁶.

Discussion on the development of Codex texts for seaweed

7. The 36th Session of the Codex Committee on Fish and Fishery Products (CCFFP36, 2024) noted considerable support for the development of a Codex standard, code of practice, or related texts on seaweed, and that CCFFP would be the most appropriate committee to undertake such work. However, since seaweed is currently not included in the terms of reference (ToRs) of CCFFP, the Codex secretariat noted that a proposal related to seaweed must first be submitted in accordance with the *Codex Procedural Manual*⁷, which would then be reviewed by the Executive Committee of the Codex Alimentarius Commission (CCEXEC) and be subject to a final decision by CAC⁸.

¹ REP11/ASIA, paragraph 144

² REP11/FFP, paragraph 176

³ REP11/CAC, paragraph 147

⁴ REP17/CAC, paragraph 16, Appendix III

⁵ CX/CAC 21/44/15 Add.1, paragraph 4

⁶ REP21/CAC, paragraph 124

⁷ *Codex Procedural Manual*, Section 2, Part 6 (Subsequent Procedure concerning publication and possible extension of territorial application of the standard)

⁸ REP24/FFP, paragraphs 38, 39 and 40

8. CAC47 (2024) discussed the possible adjournment of the CCFFP. The host country (Norway) and many Members expressed support for the continuation of the committee, highlighting the importance of developing new standards for seaweed, as well as reviewing and revising existing documents. As a result, CAC47 postponed any decision to adjourn CCFFP and noted that interested Members could submit relevant proposals for new work⁹.

Overview of laver products

9. Laver is an edible red algae belonging to the *Pyropia* genus which is mostly cultivated using nets in shallow coastal waters. Furthermore, laver is a plant-based food that is low in fat and high in protein, containing a variety of essential nutrients and bioactive compounds, and thus is recognized for its high nutritional value.

10. Laver products are generally produced and consumed in the form of dried, roasted, or seasoned laver. The product may come in various styles (e.g. a shredded fragment, a sheet, a rolled-sheet, a round lump).

11. Dried laver is the product of raw laver, which is washed, chopped/cut, molded, dehydrated and dried after harvesting (1st dried products). It may go through a re-drying process for long-term storage (2nd dried products). The product typically appears purplish-black, turning dark green upon roasting.

12. Roasted laver product is the product in which the dried laver products go through roasting without seasoning.

13. Seasoned laver is the product in which the dried laver is seasoned with any optional ingredients. It may be subject to any of the following methods; roasting, stir-/deep-frying, treating with edible oil, etc. before or after seasoning. Seasoned laver for brewing is the product in which the dried laver is broken and roasted/stir-fried. The product is already seasoned or added with seasoning when consumed. Boiling water is added before consumption¹⁰.

14. Laver grows in many regions, particularly in Asia. As of 2023, as shown in Table 1 (Appendix), approximately 2.83 million tonnes of *Pyropia* were cultivated in three East Asian countries or regions. Major producers include China (known as Zicai), Korea (Gim), and Japan (Nori), accounting for approximately 74.01%, 18.80%, and 7.09% of the global *Pyropia* aquaculture production, respectively¹¹.

Necessity to develop a worldwide standard

15. Since the final adoption of the *Regional standard for laver products* (Asia) (CXS 323R-2017) in 2017, global trade in laver products has shown a steady increase. The export value of laver products from five major Asian trading areas increased from USD 991 million in 2021 to USD 1,386 million in 2024, marking an increase of about 40% (see Table 3 in Appendix). In particular, Korean laver, which accounted for approximately 72% of the total export volume in 2024, was exported in the form of dried laver to 66 countries and seasoned laver to over 121 countries, with the total export value of laver products increasing from USD 599 million in 2020 to USD 995 million in 2024 (see Table 4 in Appendix).

16. As shown in Table 4 (Appendix), Korea's continental exports of laver products have increased steadily with particularly sharp growth in the Middle East and Africa, regions that had previously shown relatively low trade volumes.

17. Although the *Regional standard for laver products* (Asia) (CXS 323R-2017) has been adopted and global consumption and trade of laver products have increased significantly, the absence of a relevant international standard and national legislation in many non-Asian countries may cause confusion or pose a barrier to international trade.

18. Moreover, FAO has highlighted in its recent reports the need to address regulatory gaps in light of the growing consumption of seaweed¹². Therefore, conversion of the existing regional standard for laver products into a worldwide standard would contribute to consumer health protection, ensure product safety, and promote fair trade in the global market.

Recommendation

19. CCASIA23 is invited to consider supporting the proposal to convert the current regional standard (CXS 323R-2017) into a worldwide standard (i.e., Standard for laver products) and forward the project document (Appendix) to CAC for approval.

⁹ REP24/CAC, paragraphs 123 and 124

¹⁰ CXS 323R-2017

¹¹ Genetic resources for farmed seaweeds. 2018. FAO

¹² Report of the expert meeting on food safety for seaweed: current status and future perspectives. 2022. FAO

PROJECT DOCUMENT

PROPOSAL ON THE CONVERSION OF THE *REGIONAL STANDARD FOR LAYER PRODUCTS* (Asia) (CXS 323R-2017) INTO A WORLDWIDE STANDARD**1. The purpose and scope of the standard**

This standard aims to provide an internationally applicable document in accordance with the objectives of Codex Alimentarius Commission (CAC), which are to protect consumer health and promote fair practices in food trade, by considering the safety, high quality, and international market potential of laver products.

2. Relevance and timeliness

The Republic of Korea proposed the need for standardization of laver products at the 17th session of the FAO/WHO Coordinating Committee for Asia (CCASIA17) in 2010. Many Members expressed support, with one Member suggesting that due to the scale of trade, the standard should be developed as a worldwide rather than a regional standard.

Following the decision of CCASIA17, Korea proposed the development of a worldwide standard for laver products at the 31st session of the Codex Committee on Fish and Fishery Products (CCFFP31) held in 2011. However, some Members pointed out the committee's workload and the absence of seaweed within its terms of reference¹³.

Accordingly, CAC34 (2011) approved the development of a regional standard¹⁴, and the *Regional standard for laver products* (Asia) (CXS 323R-2017) was adopted at CAC40 (2017)¹⁵.

Although the *Regional standard for laver products* (Asia) (CXS 323R-2017) has been adopted and global consumption and trade of laver products have increased significantly, the absence of a relevant international standard and national legislation in many non-Asian countries may cause confusion or pose a barrier to international trade.

Moreover, FAO has highlighted in its recent reports the need to address regulatory gaps in light of the growing consumption of seaweed¹⁶.

Therefore, the conversion of the existing regional standard into a worldwide standard is essential for establishing clear definitions and terms, and quality criteria. This will contribute to protecting consumer's health, promoting fair trade practices, and ensuring the availability of high-quality laver products in the global market.

3. The main aspects to be covered

This standard will address quality and safety aspects related to laver products in line with their product characteristics to facilitate international trade. The main aspects to be covered include:

- Definition and types of the products;
- Essential composition and quality factors;
- Contaminants and hygiene;
- Packaging and labeling; and
- Methods of analysis for each quality factor

The Annex of this document contains examples of laver products.

4. An assessment against the criteria for the establishment of work priorities**General criterion**

The standard will meet the general criterion with regard to consumer protection and fair trade practice by:

- promoting consumer protection by stipulating requirements for the quality of laver products; and
- ensuring fair food trade practices, through the reference to the proper product name and definition.

¹³ REP11/FFP, paragraph 173

¹⁴ REP11/CAC, paragraph 147, Appendix VI

¹⁵ REP17/CAC, paragraph 16, Appendix III

¹⁶ Report of the expert meeting on food safety for seaweed: current status and future perspectives. 2022. FAO

Criteria applicable to commodities

a) Volume of production and consumption in individual countries and volume and pattern of trade between countries

Currently, only a limited number of seaweed species are used for commercial purposes. Five main genera, including *Pyropia*, account for approximately 95% of global seaweed production, and dependence on these species has steadily increased over the past two decades (see Figure 1).

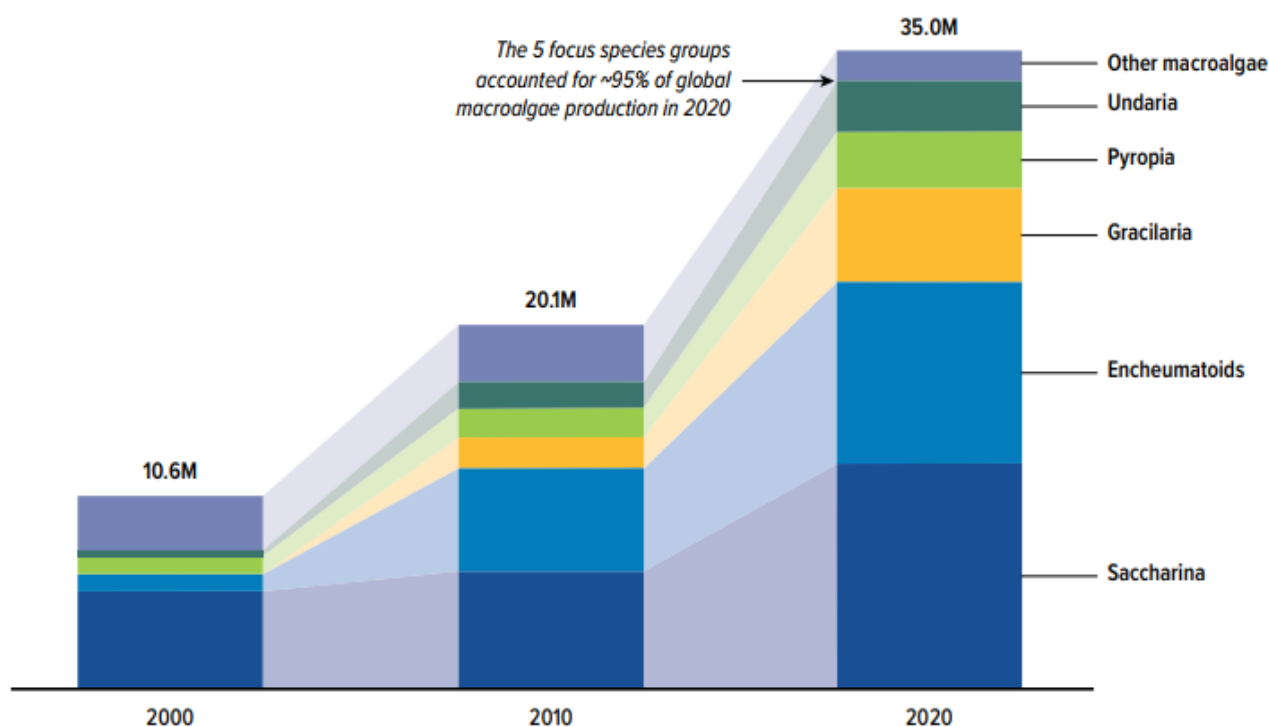
As shown in Tables 1 and 2, a total of 2.83 million tonnes of farmed *Pyropia* were produced by three East Asian countries or regions in 2023. The major producers are China (known as *Zicai*), Korea (*Gim*), and Japan (*Nori*), accounting for 74.01%, 18.80%, and 7.09% of global farmed *Pyropia* production, respectively¹⁷.

Since the adoption of the *Regional standard for laver products* (Asia) (CXS 323R-2017) in 2017, the global export value of laver products has continued to rise. The export value of laver products from five major Asian trading areas increased from USD 991 million in 2021 to USD 1,386 million in 2024, marking an increase of about 40% (see Table 3).

In particular, Korean laver, which accounted for approximately 72% of the total export volume in 2024, was exported in the form of dried laver to 66 countries and seasoned laver to over 121 countries, with the total export value of laver products increasing from USD 599 million in 2020 to USD 995 million in 2024 (see Table 4).

As shown in Table 4, Korea's continental exports of laver products have increased steadily and are traded globally not only in Asia but also in Europe, the Americas, and Oceania, with particularly sharp growth in the Middle East and Africa.

Figure 1. Volume growth of seaweed production 2000–2020 by species (tonnes, wet weight basis)



Source: Global seaweed 'New and emerging markets report' The world bank, 2023

¹⁷ Genetic resources for farmed seaweeds. 2018. FAO

Table 1. Aquaculture Production Volume of *Pyropia* in 2023

Country/area	<i>Pyropia</i> cultivation	
	Tonnes (wet weight)	Global market share (%)
World	2,836,741	100.00
Asia	2,836,741	100.00
China	2,099,390	74.01
Korea	533,249	18.80
Japan	201,100	7.09
Chinese taipei	211	0.00

Source: FAO Fisheries & Aquaculture – Global aquaculture production Quantity (1950-2023), May 2025

Table 2. Aquaculture Production Volume of *Pyropia* by Major Producing Countries/area (tonnes)

Country/area	2019	2020	2021	2022	2023
Total	2,981,393	3,045,946	2,776,518	2,959,524	2,833,950
China	2,123,040	2,220,180	1,991,620	2,176,580	2,099,390
Korea	606,873	536,127	547,413	550,221	533,249
Japan	251,362	289,396	237,255	232,490	201,100
Chinese taipei	118	243	230	233	211

Source: FAO Fisheries & Aquaculture – Global aquaculture production Quantity (1950-2023), May 2025

Table 3. International exports of laver products by country/area (tonnes, 1000 USD)

Country/area	2021		2022		2023		2024	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Total*	41,441	991,416	40,961	920,119	46,453	1,081,735	48,146	1,385,692
Korea	29,545	692,915	30,470	647,555	35,446	792,547	33,885	997,027
China	11,080	271,887	9,450	245,344	10,129	260,940	13,396	353,360
Japan	540	21,565	760	21,715	629	23,516	611	27,386
Chinese taipei	105	2,342	132	3,070	151	3,285	164	3,587
Hong Kong	172	2,706	149	2,436	98	1,446	89	1,331

* Based on countries with HS codes for laver products: Korea, China, Japan, Chinese taipei, and Hong Kong.

Source: Korea (Korea Trade Statistics Promotion Institute) / China, Japan, Chinese taipei, and Hong Kong (S&P Global – Global Trade Atlas (GTA)), May 2025.

Table 4. Exports of Korean Laver Products by Continent (tonnes, 1000 USD)

Continent	Item	2020		2021		2022		2023		2024	
		Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Asia	Dried laver	8,400	144,189	10,287	150,156	11,324	163,152	13,876	229,425	11,957	313,968
	Seasoned laver	7,142	210,739	8,216	237,895	8,504	193,828	9,564	216,554	9,163	236,215
Europe	Dried laver	875	18,118	1,399	28,184	1,681	33,626	2,101	47,164	2,271	73,316
	Seasoned laver	1,870	46,180	2,776	70,567	1,883	50,021	2,346	63,082	2,560	87,896
North America	Dried laver	457	9,882	531	10,800	595	11,382	569	11,784	521	14,004
	Seasoned laver	5,179	148,807	5,154	165,542	5,042	161,286	5,445	185,395	5,992	230,599
Latin America	Dried laver	29	646	53	1,162	34	810	17	430	12	490
	Seasoned laver	103	1,987	194	4,308	229	4,273	335	7,041	124	3,312
Oceania	Dried laver	11	198	14	230	14	252	32	653	18	486
	Seasoned laver	667	15,820	656	18,864	837	22,373	804	23,422	867	27,268
Middle East	Dried laver	4	148	4	146	3	118	7	210	5	215
	Seasoned laver	66	2,167	72	2,316	117	3,239	121	4,105	169	6,484
Africa	Dried laver	0.5	8	0.4	4	0.4	1	2	15	5	30
	Seasoned laver	4	131	5	150	7	190	10	205	15	340

Source: Korea Trade Statistics Promotion Institute

b) Diversification of national legislation and apparent resultant or potential impediments to international trade

Laver, the most widely consumed edible seaweed, is processed and distributed globally in various forms. However, as mentioned above, the lack of international standards reflecting the unique characteristics and quality requirements of laver products can cause trouble for fair trade of those commodities

c) International or regional market potential

In Asian countries where rice is a staple food, laver is a common side dish. It is widely used in dishes like Korean Gimbap or Japanese sushi, which consist of steamed rice and various ingredients rolled in dried or roasted laver, and is also enjoyed as a snack or side dish.

Since the adoption of the *Regional standard for laver products* (Asia) (CXS 323R-2017) in 2017, global trade of laver products has continued to grow (Table 3). As shown in Table 4, Korean exports of laver products have expanded to North and Latin America, Europe, Oceania, and Africa, with volumes increasing each year.

d) Amenability of the commodity to standardization

This proposal aims to convert the existing regional standard into a worldwide standard. The *Regional standard for laver products* (Asia) (CXS 323R-2017) has already been adopted, indicating that laver products are highly amenable to standardization.

e) Coverage of the main consumer protection and trade issues by existing or proposed general standards

Laver products must meet quality and safety requirements to protect global consumers and facilitate fair international trade. However, since a relevant global standard is currently absent, converting the existing regional standard into a worldwide standard is necessary to establish international quality criteria.

f) Number of commodities which would need separate standards indicating whether raw, semi-processed or processed

There is no need to elaborate separate standards.

g) Work already undertaken by other international organizations in this field and/or suggested by the relevant international intergovernmental body (ies)

None anticipated at this stage.

5. Relevance to the Codex strategic objectives

This proposal aligns with Strategic Goals 1, 3, and 4 of the Codex Strategic Plan 2026–2031, adopted by CAC47 (2024), particularly outcomes 1.4, 3.3, 4.1 and 4.3.

- Strategic Goal 1: Respond to Members' needs for protecting the health of consumers and ensuring fair practices in the food trade in an evolving global landscape by developing science-based standards and related texts
- Strategic Goal 3: Strengthen relationships with relevant international organizations, promoting a coordinated approach to address global challenges
- Strategic Goal 4: Maximize the impact of Codex by increasing the visibility and use of standards

6. Information on the relation between the proposal and other existing Codex documents

This proposal relates to the conversion of the *Regional standard for laver products* (Asia) (CXS 323R-2017), adopted at CAC40 (2017), into a worldwide standard.

The work will be undertaken with due consideration of relevant Codex texts, including the *General standard for food additives* (CXS 192-1995), the *General standard for the labelling of prepackaged foods* (CXS 1-1985), the *Recommended methods of analysis and sampling* (CXS 234-1999), the *General principles of food hygiene* (CXC 1-1969).

7. Identification of any requirement for and availability of expert scientific advice

None anticipated.

8. Identification of any need for technical input to the standard from external bodies so that this can be planned for

None is required.

9. The proposed time-line for completion of the new work

This work is expected to be completed within three sessions of the committee to which the work will be assigned.

Figure 1. Various Types and Consumption Forms of Laver Products

Item	Type of Laver products		Consumption forms	
Dried laver				
Roasted laver				
Seasoned laver				