



Seaweed

Seaweed trade cools in 2025; innovation and investment gather pace

Seaweed trade remains a sizeable and increasingly visible segment of global aquatic food markets, characterized by high production concentration and dominated by a small number of trade routes. In 2025, world imports of seaweed for human consumption decreased to 323 310 tonnes from 342 030 tonnes in 2024, while exports fell to 286 040 tonnes (299 630 tonnes the previous year), confirming a declining trend in traded volumes. Against this backdrop, international trade continues to be anchored by Indonesia on the supply side and China in terms of demand.



Production

Global algae production for human and non-human use reached about 40 million tonnes in 2024, continuing a long-term upward trend, with the large majority produced through farming rather than capture. A simple continuation of the recent trajectory suggests that production in 2025 may have risen further, potentially approaching 41 million tonnes.

Specific to seaweed (HS code 1212.21), output is closely tied to aquaculture and remains highly concentrated in Asia, particularly Indonesia. This production structure matters for trade because the countries that dominate cultivation and processing also shape export availability, product mix and the direction of global flows. Differences in processing capacity are particularly important, since part of the trade is in consumer-ready edible products, while a large share is raw material for downstream processing into hydrocolloids and other food ingredients.



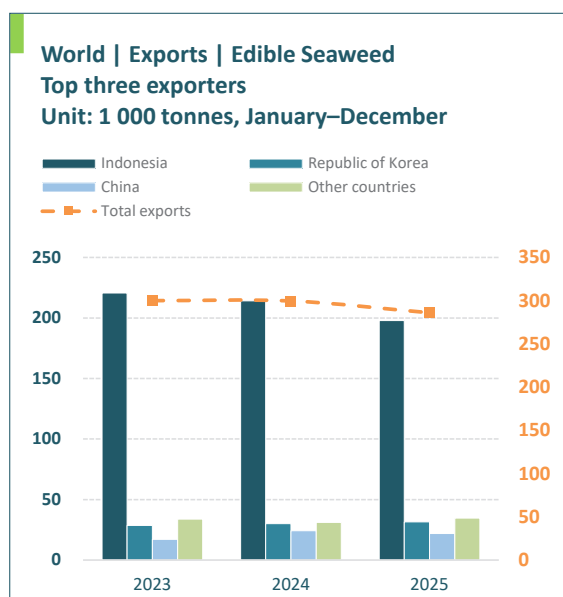
Indonesia's Ministry of Marine Affairs and Fisheries reported seaweed production on a wet-weight basis of 9.85 million tonnes in 2024 and a target of 14.14 million tonnes by 2029, with 2025 production estimated to remain broadly in line with 2024. In parallel, Indonesia's Ministry of National Development Planning is reported to have formulated an Integrated Seaweed Development Action Plan for 2026–2030, with a focus on increasing production, strengthening downstream processing and value-addition, and improving governance.

Regulation and sustainability are also becoming more prominent as the sector expands. In Ireland, the Maritime Area Regulatory Authority has published an explanatory note on the legislative framework for wild seaweed harvesting, reflecting the increasing focus on governance as commercial activity grows. In Southeast Asia, regional partners recently convened in the Philippines to advance collaboration under a seaweed aquaculture initiative, highlighting continued policy and programme attention given to improving farming practices and enhancing resilience in major producing areas.

In North America, the National Oceanic and Atmospheric Administration (NOAA) has identified Aquaculture Opportunity Areas (AoAs) in federal waters that may be suitable for seaweed farming, signaling ongoing efforts to expand domestic marine aquaculture. In Canada, federal support for a Seaweed Innovation Hub includes building a seed bank and testing processing technologies, reinforcing the growing emphasis on scaling production and value-addition.

International trade

Global trade volumes eased in 2025 after broadly stable levels in 2024; exports declined by 4.5 percent, while imports fell by 5.5 percent. Despite these lower global totals, the overall trade structure remained highly concentrated, with a small number of exporters supplying a few large import markets. Alongside these volume trends, the sector continues to evolve through investment in farming systems, processing, traceability and product development, as countries and companies position for higher-value markets.



Source: Author's own elaboration based on GTT, 2026, Global Trade Tracker. [Cited 1 April 2026]. www.globaltradetracker.com



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Exports

Indonesia¹ is the world's leading producer of tropical seaweed, mainly carrageenophytes (*K. alvarezii*/*E. cottonii*) and agarophytes (*Gracilaria* spp). In 2025, the country remained the dominant exporter by a wide margin, although shipments had fallen to 197 870 tonnes as compared to 214 160 tonnes in 2024 (-7.6 percent year-on-year) and 220 580 tonnes in 2023. Even with this reduction, Indonesia still accounted for about 69 percent of total world exports in 2025, underlining its central role in global supply.

In recent months, Indonesia's seaweed industry has continued to experience negative trends. As reported by local seaweed exporters, demand from the international market has slowed down; this is reflected in the declining exports of all product categories, including dried seaweed and end-products such as agar and carrageenan. Based on data from Indonesia's Statistics Bureau (BPS), total seaweed exports from January to March 2026 amounted to 44 104 tonnes valued at USD 65.3 million. This represented a year-on-year decline of 17.8 percent in volume and 11.2 percent in value compared with the first quarter of 2025. More than 80 percent of the exports comprised dried seaweed, while the remainder consisted mainly of agar and carrageenan products, including refined carrageenan, semi-refined carrageenan and alkali-treated *cottonii*. Exports of agar were recorded at around 1 547 tonnes valued at USD 18.6 million, while carrageenan exports totalled 17 720 tonnes valued at USD 112.5 million in 2025. The weaker demand has particularly affected the agar segment. Agar exports in the

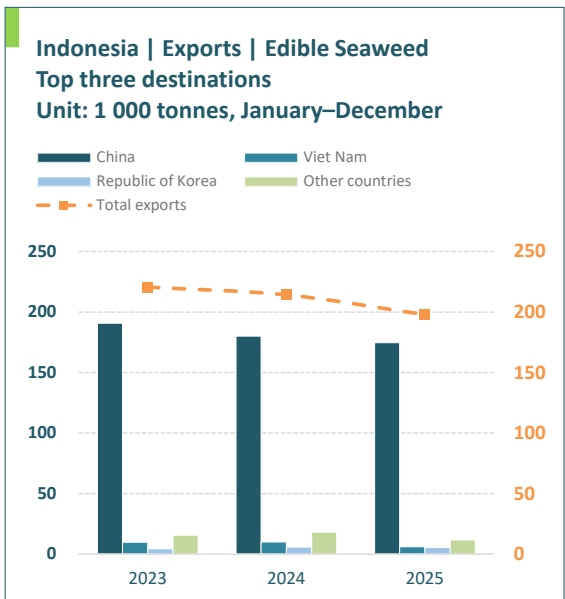
Seaweed exports

Indonesia -7.6% ↓

1. Source: UNIDO-GQSP Indonesia.

first quarter of 2026 reportedly declined by 31 percent in volume and 35.4 percent in value compared with the same period of 2025, with knock-on effects along the *Gracilaria* supply chain.

China continued to absorb the overwhelming majority of Indonesian shipments, although exports eased by 3.0 percent from 180 050 tonnes in 2024 to 174 560 tonnes in 2025. Despite the small decline, China's share of these exports increased from about 84 percent in 2024 to about 88 percent in 2025 as shipments from Indonesia to other markets contracted sharply.



Source: Author's own elaboration based on GTT, 2026. Global Trade Tracker. [Cited 1 April 2026]. www.globaltradetracker.com

Recent reporting highlights renewed investor interest in Indonesia's seaweed sector, which the government has identified as a strategic priority while noting that significant cultivation potential for seaweed remains underutilized. Alongside expansion in farming, policy and industry efforts are increasingly focused on moving up the value chain through improved processing, traceability and certification. These factors are important for markets like the European Union, which is an important destination for agar and carrageenan from Indonesia.

The Republic of Korea strengthened its position as the second-largest exporter, expanding shipments in a softer global market. Exports increased by 4.8 percent to 31 460 tonnes in 2025, which compares to 30 010 tonnes in 2024 and 28 570 tonnes in 2023. The country's export profile continued to show greater diversification than that of Indonesia. Exports to Japan, the Republic of Korea's largest destination, declined slightly from 12 720 tonnes to 12 060 tonnes, down 5.2 percent, but this was offset by stronger

Seaweed exports

Republic of Korea +4.8% ↑

shipments to China, which increased by 32.8 percent from 4 780 tonnes to 6 350 tonnes. Exports to Thailand rose from 3 570 tonnes to 3 820 tonnes, and shipments to other destinations increased modestly from 8 950 tonnes to 9 230 tonnes.

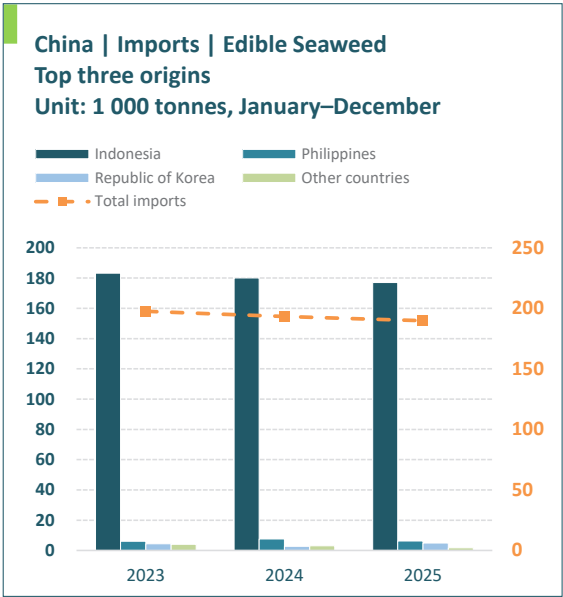
The Republic of Korea’s seaweed sector continues to have a strong presence in the higher-value edible segments. For instance, there is firm overseas demand for *gim*, which is dried laver produced mainly from species of *Pyropia* and traded largely as consumer-ready products such as dried, roasted or seasoned sheets and snacks. This higher degree of processing and branding helps explain why the Republic of Korea’s seaweed exports tend to achieve higher unit values than bulk-dried seaweed exports from major tropical suppliers. The Ministry of Oceans and Fisheries reported that 2025 *gim* exports up to 20 November reached an all-time record high value of USD 1.015 billion, supported by increased sales in major overseas markets, including North America and Europe. At the same time, price pressures and environmental constraints are accelerating innovation, with industry reports pointing to pilot-stage development of land-based cultivation as firms seek to stabilize supply.



Source: Author’s own elaboration based on GTT, 2026. Global Trade Tracker. [Cited 1 April 2026]. www.globaltradetracker.com

Imports

China remained the anchor market for global seaweed trade in 2025. Imports declined by 1.8 percent from 193 300 tonnes in 2024 to 189 800 tonnes in 2025, following 197 590 tonnes in 2023. Nevertheless, China still absorbed about 59 percent of total world imports in 2025, confirming that changes in Chinese demand have a decisive influence on overall trade volumes.



Source: Author's own elaboration based on GTT, 2026. Global Trade Tracker. [Cited 1 April 2026]. www.globaltradetracker.com

As mentioned above, China's sourcing remained heavily dependent on Indonesia. Shipments from the Philippines fell more sharply from 7 600 tonnes to 6 220 tonnes, down 18.2 percent, while imports from other origins declined from 3 060 tonnes to 1 720 tonnes. By contrast, imports from the Republic of Korea increased from 2 660 tonnes to 4 860 tonnes, up 82.7 percent. This points to a limited shift in sourcing within a market that remains structurally anchored to Indonesian supply.

Japan remained the second-largest importer and maintained volumes well above 2023 levels. Imports increased from 32 430 tonnes in 2023 to 41 370 tonnes in 2024, before easing to 39 670 tonnes in 2025, a year-on-year decline of 4.1 percent. Japan's sourcing structure remained highly concentrated in China and the Republic of Korea. Imports from China declined by 3.0 percent from 27 080 tonnes in 2024 to 26 260 tonnes in 2025, while shipments from the Republic of Korea fell from 12 550 tonnes to 11 910 tonnes, down 5.1 percent. Imports from other origins also dropped from 1 120 tonnes to 800 tonnes. However, Chilean supplies saw an increase from 620 tonnes to 700 tonnes, a small indicator of gradual diversification.

Seaweed imports

China	-1.8% ↓
Japan	-4.1% ↓

Japan's seaweed industry is increasingly framed around adaptation to environmental change and supply stability, particularly for nori. The Ministry of Agriculture, Forestry and Fisheries reports that, in nori cultivation, initiatives include introducing varieties with greater tolerance to high water temperatures and faster growth rates. The same policy context also highlights the use of new production approaches, including land-based aquaculture using underutilized coastal infrastructure as part of broader efforts to respond to changing marine conditions.



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Prices

Weaker demand and lower prices for dried *Gracilaria* have been reported in Indonesia. In April–May 2026, ex-farm prices were reported at around IDR 4 000 (USD 0.22) per kg or below in South Sulawesi, and around IDR 3 500 (USD 0.20) per kg in Karawang, West Java, compared with levels which are normally around IDR 5 000 (USD 0.28) per kg. The dried *Gracilaria* obtained from farmers is usually re-dried and cleaned by traders to reduce moisture content and impurities. At the start of 2026, processors were paying IDR 7 500–8 500 (USD 0.42–0.47) per kg for product meeting quality specifications of maximum 18 percent moisture content and less than 3 percent impurities. Over the course of several months, these prices dropped to around IDR 6 500–7 000 (USD 0.36–0.39) per kg.

Meanwhile, the carrageenan segment has remained more stable than the agar segment. From January to March 2026, exports of carrageenan products were reported at around 4 100 tonnes valued at USD 26.6 million, representing a 3.5 percent decline in volume and a 15.8 percent decline in value compared with the same period of 2025. Against this backdrop, ex-farm prices for *Kappaphycus alvarezii* and *Eucheuma cottonii*, the main carrageenan-bearing seaweeds produced in Indonesia, were reported to be relatively stable in 2026, ranging from IDR 18 000–22 000 (USD 1.00–1.23) per kg in South Sulawesi and around IDR 23 000–24 000 (USD 1.29–1.35) per kg in East Nusa Tenggara, two key *cottonii*-producing areas. Harvested seaweed from East Nusa Tenggara was reported to have better quality than seaweed from other areas, which is reflected in the higher farm-gate prices.

Outlook

Global seaweed trade is likely to remain shaped by a small number of major suppliers and buyers, with the Indonesia-China trade link continuing to anchor overall volumes. This structure implies that even limited shifts in Indonesian export availability or Chinese import demand can have a disproportionate effect on global totals and price formation. In the near term, market performance is expected to be influenced less by broad-based demand growth and more by supply-side conditions, including farming performance, logistics and processing capacity in the leading producing countries.

Developments beyond the core Asian trade routes indicate a wider set of growth pathways. In Europe, EU-supported initiatives in Denmark and Germany are promoting edible seaweed as a sustainable food source, combining research, entrepreneurship and education to support consumer-facing markets. Overall, as seaweed markets develop towards higher-value uses alongside food applications, a gradual diversification of products and revenue streams is expected.

Meanwhile, elevated fuel and energy costs remain an additional risk factor for the seaweed sector. Raised diesel and freight costs may increase the cost of transporting wet seaweed from remote producing areas to drying sites and processors, leading to increased export logistics costs. At the same time, the higher energy prices may affect drying and processing operations. These pressures are likely to weigh most heavily on bulk, lower-priced dried seaweed exports, reinforcing incentives to improve efficiency, as well as increase domestic processing and value-addition, where feasible.