

Seaweed Packaging Market Forecasts to 2032 – Global Analysis By Source (Red Seaweed (Rhodophyta), Brown Seaweed (Phaeophyceae) and Green Seaweed (Chlorophyta)), Packaging Type (Films & Wraps, Pouches & Sachets, Blended Rigid Containers and Edible Coatings), Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Seaweed Packaging Market is accounted for \$809.55 million in 2025 and is expected to reach \$1351.85 million by 2032 growing at a CAGR of 7.6% during the forecast period. Seaweed packaging, which is made from natural polymers extracted from various seaweed and algae species, is a creative and environmentally responsible substitute for traditional plastic packaging. Because it is compostable, biodegradable, and frequently even edible, it is a sustainable option to cut down on waste from single-use plastics. The packaging made of seaweed decomposes naturally in a matter of weeks without leaving any toxic residues, in contrast to conventional plastics that can take centuries to break down. Seaweed is also renewable because it can grow quickly in the ocean without the need for fertilizer, freshwater, or arable land. Moreover, seaweed packaging, which has uses in everything from takeout containers to food wrapping, is becoming more and more well-known globally as a potential way to reduce plastic pollution and promote a circular economy.

According to the Indonesian Ministry of Marine Affairs and Fisheries (KKP), Indonesia did produce over 10 million tonnes of seaweed in 2023—specifically 10.7 million tonnes wet weight. The ministry has also set a target of 12.3 million tonnes by 2024, reinforcing Indonesia's position as one of the top global producers.

Market Dynamics:

Driver:

Increasing demand for sustainable products by consumers

Modern consumers are becoming more environmentally conscious and favoring brands and products that share their sustainable values. This change in consumer behavior has a direct impact on packaging decisions in a variety of industries. Seaweed packaging satisfies this need because it is safe, biodegradable, and occasionally even edible. Millennials and Gen Z in particular are more inclined to support businesses that use less plastic and implement environmentally friendly procedures. In response to this trend, the food and beverage, personal care, and e-commerce industries are investigating seaweed packaging options. Additionally, the increasing need for environmentally friendly packaging not only spurs innovation but also guarantees sustained market expansion for seaweed-based products.

Restraint:

High costs of production

The comparatively high production cost of seaweed in comparison to traditional plastics is one of the main factors limiting the market for seaweed packaging. Plastic can be mass-produced at a low cost using existing infrastructure, but packaging made from seaweed necessitates sophisticated processing methods, specialized machinery, and continuous research, all of which raise costs. This limits the widespread use of seaweed packaging by making it more expensive for small and medium-sized businesses. Furthermore, the initial outlay needed to establish packaging facilities and seaweed processing units may be a deterrent for new competitors. Cost competitiveness will continue to be a major barrier to market expansion until economies of scale are realized and production technologies improve.

Opportunity:

Expanding retail and e-commerce uses

Manufacturers of seaweed packaging have a bright future owing to the quick growth of retail packaging and e-commerce. The environmental impact of delivery materials like plastic bubble wrap, pouches, and mailers is coming under more and more scrutiny as

millions of packages are shipped every day. In this industry, seaweed-based packaging options such as cushioning materials, water-soluble bags, and biodegradable films can be sustainable substitutes. Moreover, eco-friendly packaging is being actively investigated by retailers and logistics firms looking to align with green consumer values. Seaweed packaging businesses can increase their reach and gain a sizable market share by partnering with major online retailers and capitalizing on the global e-commerce boom.

Threat:

Competition from alternative biodegradables

The increasing competition from other biodegradable packaging options like cornstarch, sugarcane bagasse, and packaging made from mushrooms, and bioplastics like PLA poses a serious threat to the seaweed packaging market. These substitutes are already more widely accepted, have more established production methods, and are sometimes less expensive. For example, paper-based packaging is well-established in retail and e-commerce, while cornstarch-based packaging is already widely used in the food service industry. Seaweed packaging's market share may be constrained by this fierce competition unless it can set itself apart with better performance, scalability, or affordability. Seaweed-based packaging might find it difficult to compete in a crowded sustainability market without distinctive positioning and increased awareness.

Covid-19 Impact:

There were both opportunities and challenges for the seaweed packaging market as a result of the COVID-19 pandemic. On the one hand, production slowed due to transportation delays, limitations on seaweed harvesting, and disruptions in global supply chains. High operating costs plagued small and medium-sized businesses, and many temporarily refocused their attention on the necessity of packaging, which was dominated by less expensive plastics. However, the pandemic raised awareness of safe packaging, sustainability, and health issues, which sparked interest in environmentally friendly substitutes. After the pandemic, the rise in e-commerce and the need for sanitary, single-use packaging also created new prospects for the use of seaweed packaging.

The red seaweed (rhodophyta) segment is expected to be the largest during the forecast period

The red seaweed (rhodophyta) segment is expected to account for the largest market share during the forecast period because of its high concentration of carrageenan and agar, which are essential for the production of biodegradable films and coatings, red seaweed is perfect for making flexible, transparent, and long-lasting packaging materials. Red seaweed packaging is widely used in the food and beverage industry and provides an environmentally friendly alternative to plastics while preserving freshness and extending shelf life. Its scalability, along with the growing demand for sustainable packaging around the world, has made red seaweed the leading raw material segment driving innovation and growth in the seaweed packaging industry.

The pouches & sachets segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the pouches & sachets segment is predicted to witness the highest growth rate. The growing need for flexible, lightweight, and sustainable packaging solutions across sectors like food, beverages, cosmetics, and personal care is driving this expansion. Seaweed-based sachets and pouches are a great substitute for traditional single-use plastic packaging because of their superior biodegradability and compostability. They have a competitive advantage because of their capacity to uphold product safety, lessen their impact on the environment, and appeal to environmentally conscious customers. Additionally, the global increase in packaged goods consumption and e-commerce speeds up their adoption, making pouches and sachets the seaweed packaging segment with the fastest rate of growth.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share, mainly because of its robust presence of important producers, well-established aquaculture industry, and plentiful seaweed resources. Large-scale seaweed cultivation is dominated by nations like China, South Korea, Japan, and Indonesia, which guarantees a consistent and affordable supply of raw materials for packaging applications. Growing consumer awareness of eco-friendly alternatives and government initiatives to reduce plastic pollution further encourage market expansion in this area. Furthermore, Asia-Pacific's dominance in the global seaweed packaging market has been cemented by the region's robust food and beverage industry, rising demand for environmentally friendly packaging, and the active involvement of startups and academic institutions.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, driven by stricter environmental laws, prohibitions on single-use plastics, and a sharp rise in consumer demand for eco-friendly goods. With significant investments in R&D, encouraging government regulations, and growing use of eco-friendly packaging in the retail, e-commerce, and food service industries, the US and Canada are leading the way. The market is expanding at an accelerated rate due to corporate sustainability commitments and growing consumer awareness of the negative effects of plastics. Moreover, North America is becoming the region with the fastest rate of growth for seaweed-based packaging solutions as both startups and well-established companies expand their operations.

Key players in the market

Some of the key players in Seaweed Packaging Market include AGreenPlus, BZEOS, EnviGreen, Evo & Co., Evoware, FlexSea, KELP INDUSTRIES LTD, LOLIWARE Inc, Marine Innovation, Notpla Ltd, Teredo, Sea6 Energy, Sundial Foods, GreenBite and Skipping Rocks Lab.

Key Developments:

In December 2024, Sea6 Energy Private Limited and State-owned oil major HPCL have entered into a Memorandum of Understanding (MoU) for R&D collaboration to take up joint development and commercialization of technologies for valorizing seaweed biomass. Through this MoU, HPCL and Sea6 Energy will work together to develop and scale up technologies that transform seaweed biomass into fuels and chemicals.

In November 2024, B'ZEOS has successfully closed our seed round led by Faber, with participation from ICIG Ventures, the venture capital unit of International Chemical Investors Group (ICIG). This achievement marks a significant milestone in our mission to scale up our innovative, compostable seaweed-based packaging solutions.

In July 2024, FlexSea has developed both a biodegradable material suited to plastics processing technologies and ingredients geared to beauty formulation. The biomaterials company will be presenting its offer—and showing its relevance in the circular packaging space—at the Edition Sp?ciale by LUXE PACK trade event in Paris.

Sources Covered:

Red Seaweed (Rhodophyta)

Brown Seaweed (Phaeophyceae)

Green Seaweed (Chlorophyta)

Packaging Types Covered:

Films & Wraps

Pouches & Sachets

Blended Rigid Containers

Edible Coatings

Applications Covered:

Food & Beverage Packaging

Pharmaceuticals

Cosmetics & Personal Care

Retail Packaging

End Users Covered:

Fast-moving Consumer Goods (FMCG)

Hospitality & Food Service

Retail Chains

Healthcare

Agriculture

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

2 PREFACE

- 2.1 Abstract
- 2.2 Stake Holders
- 2.3 Research Scope
- 2.4 Research Methodology
 - 2.4.1 Data Mining
 - 2.4.2 Data Analysis
 - 2.4.3 Data Validation
 - 2.4.4 Research Approach
- 2.5 Research Sources
 - 2.5.1 Primary Research Sources
 - 2.5.2 Secondary Research Sources
 - 2.5.3 Assumptions

3 MARKET TREND ANALYSIS

- 3.1 Introduction
- 3.2 Drivers
- 3.3 Restraints
- 3.4 Opportunities
- 3.5 Threats
- 3.6 Application Analysis
- 3.7 End User Analysis
- 3.8 Emerging Markets
- 3.9 Impact of Covid-19

4 PORTERS FIVE FORCE ANALYSIS

- 4.1 Bargaining power of suppliers
- 4.2 Bargaining power of buyers
- 4.3 Threat of substitutes
- 4.4 Threat of new entrants
- 4.5 Competitive rivalry

5 GLOBAL SEAWEED PACKAGING MARKET, BY SOURCE

- 5.1 Introduction
- 5.2 Red Seaweed (Rhodophyta)
- 5.3 Brown Seaweed (Phaeophyceae)
- 5.4 Green Seaweed (Chlorophyta)

6 GLOBAL SEAWEED PACKAGING MARKET, BY PACKAGING TYPE

- 6.1 Introduction
- 6.2 Films & Wraps
- 6.3 Pouches & Sachets
- 6.4 Blended Rigid Containers
- 6.5 Edible Coatings

7 GLOBAL SEAWEED PACKAGING MARKET, BY APPLICATION

- 7.1 Introduction
- 7.2 Food & Beverage Packaging
 - 7.2.1 Fresh Produce
 - 7.2.2 Processed Foods
 - 7.2.3 Ready-to-Eat Meals
- 7.3 Pharmaceuticals
- 7.4 Cosmetics & Personal Care
- 7.5 Retail Packaging

8 GLOBAL SEAWEED PACKAGING MARKET, BY END USER

- 8.1 Introduction
- 8.2 Fast-moving Consumer Goods (FMCG)
- 8.3 Hospitality & Food Service
- 8.4 Retail Chains
- 8.5 Healthcare
- 8.6 Agriculture

9 GLOBAL SEAWEED PACKAGING MARKET, BY GEOGRAPHY

- 9.1 Introduction
- 9.2 North America

- 9.2.1 US
- 9.2.2 Canada
- 9.2.3 Mexico
- 9.3 Europe
 - 9.3.1 Germany
 - 9.3.2 UK
 - 9.3.3 Italy
 - 9.3.4 France
 - 9.3.5 Spain
 - 9.3.6 Rest of Europe
- 9.4 Asia Pacific
 - 9.4.1 Japan
 - 9.4.2 China
 - 9.4.3 India
 - 9.4.4 Australia
 - 9.4.5 New Zealand
 - 9.4.6 South Korea
 - 9.4.7 Rest of Asia Pacific
- 9.5 South America
 - 9.5.1 Argentina
 - 9.5.2 Brazil
 - 9.5.3 Chile
 - 9.5.4 Rest of South America
- 9.6 Middle East & Africa
 - 9.6.1 Saudi Arabia
 - 9.6.2 UAE
 - 9.6.3 Qatar
 - 9.6.4 South Africa
 - 9.6.5 Rest of Middle East & Africa

10 KEY DEVELOPMENTS

- 10.1 Agreements, Partnerships, Collaborations and Joint Ventures
- 10.2 Acquisitions & Mergers
- 10.3 New Product Launch
- 10.4 Expansions
- 10.5 Other Key Strategies

11 COMPANY PROFILING

- 11.1 AGreenPlus
- 11.2 BZEOS
- 11.3 EnviGreen
- 11.4 Evo & Co.
- 11.5 Evoware
- 11.6 FlexSea
- 11.7 KELP INDUSTRIES LTD
- 11.8 LOLIWARE Inc
- 11.9 Marine Innovation
- 11.10 Notpla Ltd
- 11.11 Teredo
- 11.12 Sea6 Energy
- 11.13 Sundial Foods
- 11.14 GreenBite
- 11.15 Skipping Rocks Lab

List Of Tables

LIST OF TABLES

Table 1 Global Seaweed Packaging Market Outlook, By Region (2024-2032) (\$MN)

Table 2 Global Seaweed Packaging Market Outlook, By Source (2024-2032) (\$MN)

Table 3 Global Seaweed Packaging Market Outlook, By Red Seaweed (Rhodophyta) (2024-2032) (\$MN)

Table 4 Global Seaweed Packaging Market Outlook, By Brown Seaweed (Phaeophyceae) (2024-2032) (\$MN)

Table 5 Global Seaweed Packaging Market Outlook, By Green Seaweed (Chlorophyta) (2024-2032) (\$MN)

Table 6 Global Seaweed Packaging Market Outlook, By Packaging Type (2024-2032) (\$MN)

Table 7 Global Seaweed Packaging Market Outlook, By Films & Wraps (2024-2032) (\$MN)

Table 8 Global Seaweed Packaging Market Outlook, By Pouches & Sachets (2024-2032) (\$MN)

Table 9 Global Seaweed Packaging Market Outlook, By Blended Rigid Containers (2024-2032) (\$MN)

Table 10 Global Seaweed Packaging Market Outlook, By Edible Coatings (2024-2032) (\$MN)

Table 11 Global Seaweed Packaging Market Outlook, By Application (2024-2032) (\$MN)

Table 12 Global Seaweed Packaging Market Outlook, By Food & Beverage Packaging (2024-2032) (\$MN)

Table 13 Global Seaweed Packaging Market Outlook, By Fresh Produce (2024-2032) (\$MN)

Table 14 Global Seaweed Packaging Market Outlook, By Processed Foods (2024-2032) (\$MN)

Table 15 Global Seaweed Packaging Market Outlook, By Ready-to-Eat Meals (2024-2032) (\$MN)

Table 16 Global Seaweed Packaging Market Outlook, By Pharmaceuticals (2024-2032) (\$MN)

Table 17 Global Seaweed Packaging Market Outlook, By Cosmetics & Personal Care (2024-2032) (\$MN)

Table 18 Global Seaweed Packaging Market Outlook, By Retail Packaging (2024-2032) (\$MN)

Table 19 Global Seaweed Packaging Market Outlook, By End User (2024-2032) (\$MN)

Table 20 Global Seaweed Packaging Market Outlook, By Fast-moving Consumer Goods (FMCG) (2024-2032) (\$MN)

Table 21 Global Seaweed Packaging Market Outlook, By Hospitality & Food Service (2024-2032) (\$MN)

Table 22 Global Seaweed Packaging Market Outlook, By Retail Chains (2024-2032) (\$MN)

Table 23 Global Seaweed Packaging Market Outlook, By Healthcare (2024-2032) (\$MN)

Table 24 Global Seaweed Packaging Market Outlook, By Agriculture (2024-2032) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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