

Smart Aquaculture Market Forecasts to 2034 – Global Analysis By Solution Type (Smart Feeding Systems, Water Quality Monitoring Systems, Aquaculture Automation Systems, Fish Tracking & Monitoring Systems and Other Solution Types), Component, Technology, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Smart Aquaculture Market is accounted for \$6.2 billion in 2026 and is expected to reach \$18.9 billion by 2034 growing at a CAGR of 14.9% during the forecast period. Smart aquaculture refers to the integration of advanced digital technologies, automation, and data analytics into fish and seafood farming operations to improve productivity, sustainability, and resource management. These systems utilize sensors, IoT devices, artificial intelligence, and real-time monitoring tools to manage water quality, feeding schedules, fish health, and environmental conditions. Smart aquaculture helps reduce operational costs, minimize disease outbreaks, and optimize feed utilization while improving yield efficiency. Increasing global seafood demand and the need for sustainable aquaculture practices are driving adoption of intelligent farming technologies across commercial aquaculture operations worldwide.

Market Dynamics:

Driver:

Rising seafood consumption demand

Increasing population levels and changing dietary preferences are boosting demand for

fish and seafood products. Aquaculture producers are focusing on improving productivity and operational efficiency to meet growing consumption requirements. Smart monitoring systems help optimize feeding, water quality, and overall farm management. Governments are also supporting sustainable aquaculture development initiatives. Technological advancements in aquaculture automation are accelerating market growth. These factors are driving strong industry expansion.

Restraint:

Limited coastal connectivity infrastructure

Limited digital and transportation infrastructure in coastal farming regions continues to restrain smart aquaculture adoption. Many aquaculture farms lack reliable internet connectivity and advanced monitoring systems. This limits real-time data transmission and remote farm management capabilities. Infrastructure development costs remain high in remote coastal areas. Smaller aquaculture operators often face affordability challenges in adopting smart technologies. Power supply instability further affects operational efficiency in certain regions.

Opportunity:

AI-enabled fish health monitoring

Advanced artificial intelligence systems help identify diseases, behavioral changes, and environmental stress factors in aquatic species. This is driving AI-enabled fish health monitoring as aquaculture companies increasingly integrate machine learning algorithms, underwater imaging systems, and sensor-based analytics platforms to improve disease detection, optimize farm productivity, and reduce mortality rates across commercial aquaculture operations globally. Demand for precision aquaculture solutions is increasing rapidly. Investments in automated monitoring technologies are accelerating.

Threat:

Water pollution disease outbreaks

Contaminated water conditions can rapidly spread infections across fish and shrimp farming systems. Disease outbreaks often result in significant production losses and financial damage for operators. Environmental pollution further impacts aquatic

ecosystem stability and water quality. Climate variability also increases vulnerability to bacterial and viral infections. Maintaining healthy farming environments requires continuous monitoring and operational investment. These factors act as significant market threats.

Covid-19 Impact:

The COVID-19 pandemic disrupted seafood supply chains and affected aquaculture trade activities globally. Labor shortages and transportation restrictions initially impacted farm operations and distribution networks. However, the pandemic accelerated adoption of automation and remote monitoring technologies in aquaculture management. Producers increasingly focused on operational efficiency and disease monitoring systems. Digital transformation in aquaculture gained momentum during this period. Demand for sustainable seafood production also increased steadily. Overall, the pandemic supported long-term smart aquaculture adoption.

The feed management segment is expected to be the largest during the forecast period

The feed management segment is expected to account for the largest market share during the forecast period as enhanced operational efficiency across large-scale fish and shrimp farming operations globally. Smart feeding technologies enable accurate monitoring of feeding behavior and consumption patterns. Farmers increasingly adopt automated feed systems to reduce production costs and improve yield quality. Rising demand for sustainable aquaculture practices further strengthens segment dominance. Integration of AI and sensor technologies is improving feed efficiency continuously. These factors ensure strong market leadership.

The shrimp farms segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the shrimp farms segment is predicted to witness the highest growth rate due to rising adoption of advanced aquaculture technologies for disease control and productivity optimization across commercial shrimp farming operations. Smart aquaculture systems help improve water quality monitoring, feeding efficiency, and health management in shrimp farms. This is driving shrimp farms segment growth as producers increasingly invest in automated monitoring platforms, AI-based analytics systems, and precision aquaculture technologies to reduce mortality rates and enhance operational profitability.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share owing to high seafood consumption across countries such as China, India, Vietnam, Indonesia, and Thailand. The region benefits from extensive coastal farming infrastructure and expanding aquaculture investments. Governments are actively supporting modernization of seafood production systems. Adoption of smart monitoring technologies is increasing steadily among aquaculture operators. Export-oriented seafood industries further support market expansion.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR driven by growing investments in smart farming technologies across countries such as China, India, Japan, Vietnam, and Indonesia. Rapid adoption of AI-based monitoring systems is accelerating operational efficiency improvements. Government initiatives supporting sustainable aquaculture are further boosting market growth. Expansion of export-oriented seafood production is increasing technology adoption. Rising awareness regarding disease management is also supporting market expansion.

Key players in the market

Some of the key players in Smart Aquaculture Market include AKVA group ASA, Xylem Inc., Pentair plc, Innovasea Systems, Inc., ScaleAQ AS, Deep Trekker Inc., Aquabyte, Inc., eFishery, BioFishency Ltd., Steinsvik Group AS, Cermaq Group AS, Bluegrove AS, Tecnosea S.r.l., Johnson Controls International plc and Luxsol Corporation.

Key Developments:

In December 2025, Growth capital firm Vitruvian Partners acquired a majority ownership stake in Aquabyte, an AI-powered aquaculture software platform specializing in computer vision for fish welfare and sea lice monitoring.

In June 2025, Aquaculture supplier ScaleAQ entered into an agreement to acquire the Norwegian net-cleaning startup Probotic. The acquisition integrated Probotic's autonomous net inspection and robotic cleaning systems into ScaleAQ's international value chain to optimize marine farm operations.

Solution Types Covered:

Smart Feeding Systems

Water Quality Monitoring Systems

Aquaculture Automation Systems

Fish Tracking & Monitoring Systems

Other Solution Types

Components Covered:

Hardware

Software

Services

Sensors & Monitoring Devices

Other Components

Technologies Covered:

IoT & Connected Devices

Artificial Intelligence

Remote Monitoring Technology

Data Analytics Platforms

Other Technologies

Applications Covered:

Feed Management

Water Quality Management

Disease Monitoring

Stock Monitoring & Tracking

Other Applications

End Users Covered:

Fish Farms

Shrimp Farms

Aquaculture Research Institutes

Aquaculture Cooperatives

Other End Users

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of 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 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- 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

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