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Post-Harvest Loss Reduction Market Forecasts to 2034 – Global Analysis By Stage of Supply Chain (Harvesting Stage, Post-Harvest Handling, Storage, Processing, Transportation & Logistics, and Distribution & Retail), Crop Type, Solution Type, Technology, Application, End User, and By Geography

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Abstracts

According to Stratistics MRC, the Global Post-Harvest Loss Reduction Market is accounted for $7.9 billion in 2026 and is expected to reach $17.6 billion by 2034 growing at a CAGR of 10.5% during the forecast period. Post-harvest loss reduction encompasses technologies, equipment, and practices designed to minimize crop deterioration and waste from the moment of harvest through final consumption. This market addresses the critical challenge of food loss, which accounts for approximately one-third of all food produced globally, representing significant economic, environmental, and food security implications. Solutions range from improved harvesting tools and cold storage infrastructure to advanced packaging materials, digital monitoring systems, and processing technologies deployed across agricultural supply chains worldwide.

Market Dynamics:

Driver:

Rising global food security concerns and population growth

Escalating food demand from a growing global population, projected to reach nearly 10

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billion by 2050, is intensifying focus on reducing post-harvest losses as a critical strategy for enhancing food availability without expanding agricultural land. Governments and development organizations increasingly recognize that preventing losses throughout supply chains offers one of the most cost-effective approaches to addressing hunger and malnutrition. With an estimated 1.3 billion tons of food lost annually, improving harvest efficiency, storage conditions, and transportation infrastructure directly translates to increased food accessibility. This imperative is driving substantial public and private investment in loss reduction technologies across developing and developed agricultural economies.

Restraint:

High infrastructure costs in developing regions

Significant capital requirements for cold storage facilities, refrigerated transport, and modern processing equipment present formidable barriers to adoption in regions where post-harvest losses are most severe. Smallholder farmers and local cooperatives in developing nations often lack access to financing mechanisms that would enable investment in loss reduction infrastructure, perpetuating a cycle of waste and economic inefficiency. The fragmented nature of agricultural supply chains in these regions further complicates coordinated infrastructure development. While lower-cost alternatives such as hermetic storage bags and solar-powered cold rooms are emerging, the gap between available solutions and comprehensive infrastructure needs remains substantial, constraining market penetration in high-loss geographies.

Opportunity:

Digital agriculture and IoT-enabled monitoring solutions

Advancements in sensor technology and connectivity are creating unprecedented opportunities for real-time monitoring across agricultural supply chains. Internet of Things (IoT) devices can continuously track temperature, humidity, and gas levels in storage facilities, alerting operators to conditions that could accelerate spoilage. Blockchain platforms enable traceability that reduces handling delays and identifies loss points within supply chains. Mobile applications are empowering smallholder farmers with actionable information on optimal harvest timing and storage techniques. These digital solutions offer relatively low-cost, scalable approaches to loss reduction, opening new market segments among small-scale producers and creating opportunities for technology providers to address previously underserved agricultural communities.

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Threat:

Climate change exacerbating storage and handling challenges

Increasing frequency of extreme weather events and shifting temperature patterns are complicating traditional post-harvest management practices across agricultural regions. Unpredictable rainfall during harvest seasons leads to rapid spoilage of moisture-sensitive crops, while rising ambient temperatures accelerate deterioration rates in facilities lacking climate-controlled storage. Prolonged heat waves stress cold chain infrastructure, increasing energy costs and system failures. These climate-driven disruptions create operational uncertainties that make it difficult for farmers and supply chain operators to consistently implement loss reduction practices, potentially increasing waste levels despite technological investments and threatening the reliability of established supply chain infrastructure.

Covid-19 Impact:

The COVID-19 pandemic exposed critical vulnerabilities in global food supply chains while simultaneously accelerating adoption of post-harvest loss reduction technologies. Lockdown measures disrupted transportation networks and labor availability, leading to unprecedented spoilage at harvest and processing stages as farmers faced barriers to market access. This crisis prompted rapid investment in on-farm storage solutions, decentralized processing facilities, and digital market linkages to build supply chain resilience. Consumer shifts toward longer shelf-life products during lockdown periods drove innovation in preservation technologies and packaging. The pandemic fundamentally elevated awareness of supply chain fragility, resulting in sustained policy support and private investment in loss reduction infrastructure globally.

The Storage segment is expected to be the largest during the forecast period

The Storage segment is expected to account for the largest market share during the forecast period, reflecting the critical role of preservation infrastructure in preventing losses between harvest and market access. Traditional storage methods often result in substantial deterioration from pests, moisture, and temperature fluctuations, making modern solutions essential across all agricultural regions. This segment encompasses cold storage facilities, controlled atmosphere warehouses, hermetic storage systems, and silos that maintain product quality over extended periods. The substantial infrastructure investment required for storage solutions, combined with the lengthy

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duration crops spend in storage relative to other supply chain stages, ensures this segment maintains its dominant position as governments and agribusinesses prioritize storage capacity expansion.

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

Over the forecast period, the Fruits segment is predicted to witness the highest growth rate, driven by the extreme perishability of fruit crops and their high economic value per unit. Fresh fruits typically experience loss rates exceeding 30% in developing regions due to delicate handling requirements, precise temperature management needs, and susceptibility to ethylene-induced ripening during transport. Rising global demand for exotic and off-season fruits has intensified focus on supply chain technologies that extend shelf life and maintain quality across long-distance trade routes. Innovations in modified atmosphere packaging, ethylene scrubbers, and specialized cold chain infrastructure are increasingly tailored to fruit-specific requirements, accelerating adoption and investment in this high-value crop category.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, supported by highly developed cold chain infrastructure, advanced agricultural technologies, and strong regulatory frameworks for food quality and safety. The region's consolidated agricultural supply chains enable rapid adoption of sophisticated loss reduction solutions across harvesting, storage, and transportation stages. Significant private sector investment in automation, digital monitoring, and predictive analytics further enhances loss prevention capabilities. Consumer expectations for year-round availability of fresh produce drive continuous innovation in preservation technologies. The presence of major agribusiness corporations and technology providers headquartered in the region ensures North America maintains its market leadership throughout the forecast period.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, fueled by massive agricultural output, rapid cold chain infrastructure development, and growing government initiatives to address food security challenges. Countries including China, India, and Vietnam are investing substantially in modern storage facilities, refrigerated transport networks, and processing capabilities to reduce estimated losses exceeding 30% for perishable crops. Rising middle-class populations

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demanding higher quality fresh produce drive commercial investment in cold chain infrastructure. International development organizations are partnering with regional governments to implement loss reduction programs targeting smallholder farmers. As infrastructure gaps narrow and technology adoption accelerates across diverse agricultural systems, Asia Pacific emerges as the fastest-growing market for post-harvest loss reduction solutions.

Key players in the market

Some of the key players in Post-Harvest Loss Reduction Market include BASF SE, Syngenta AG, Bayer AG, Corteva Agriscience, Deere & Company, AGCO Corporation, TOMRA Systems ASA, B?hler Group, Nestl? SA, Cargill Incorporated, JBT Corporation, Trimble Inc., CNH Industrial NV, Mahindra & Mahindra Ltd, and Rockwell Automation Inc.

Key Developments:

In January 2026, Bayer announced the expansion of its Direct-to-Seed rice system in Asia, which significantly reduces the moisture content and maturation variability of the harvest, directly lowering the risk of post-harvest paddy spoilage.

In November 2025, Syngenta and Amoeba SA announced a partnership to commercialize biological solutions in the EU and UK. This includes a new bio-fungicide designed to protect cereal crops from fungal infections that typically lead to significant post-harvest spoilage.

In November 2025, AGCO’s GSI (Grain Systems International) division announced a new line of 'Smart Grain Bins' featuring automated aeration systems that trigger based on AI-predicted weather patterns to maintain optimal internal temperatures.

Stage of Supply Chains Covered:

- Harvesting Stage
- Post-Harvest Handling
- Storage
- Processing

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- Transportation & Logistics
- Distribution & Retail

Crop Types Covered:

- Fruits
- Vegetables
- Cereals & Grains
- Oilseeds & Pulses
- Dairy Products
- Meat & Seafood
- Flowers & Ornamental Plants

Solution Types Covered:

- Equipment
- Services
- Software & Digital Solutions

Technologies Covered:

- Cold Storage Technologies
- Controlled Atmosphere Storage
- Modified Atmosphere Packaging (MAP)

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- Drying & Dehydration Technologies
- Irradiation Technologies
- Post-Harvest Chemical Treatments
- Smart Monitoring Systems (IoT-Based)
- Sorting, Grading & Quality Inspection Technologies

Applications Covered:

- On-Farm Applications
- Warehousing & Storage Facilities
- Food Processing Units
- Retail & Distribution Centers
- Export & Trade Logistics

End Users Covered:

- Farmers & Producer Organizations
- Food Processing Companies
- Distributors & Wholesalers
- Retailers & Supermarkets
- Government & NGOs

Regions Covered:

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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

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- 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

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- 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

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- Company Profiling
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  - 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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List Of Tables

LIST OF TABLES

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Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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