

Desalination for Agriculture Market Forecasts to 2034 – Global Analysis By Water Source (Seawater, Brackish Water, Groundwater (Saline Aquifers), and Reused Water), Technology (Reverse Osmosis (RO), Multi-Stage Flash (MSF), Multi-Effect Distillation (MED), Electrodialysis, Nanofiltration, and Solar Desalination), System Type, Plant Capacity, Energy Source, Irrigation Type, Distribution Model, Application, End User, and By Geography

<https://marketpublishers.com/r/DF7EA29D0DC7EN.html>

Date: April 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: DF7EA29D0DC7EN

Abstracts

According to Statistics MRC, the Global Desalination for Agriculture Market is accounted for \$4.2 billion in 2026 and is expected to reach \$8.9 billion by 2034 growing at a CAGR of 9.9% during the forecast period. Water recycling systems encompass a range of technologies and processes designed to treat wastewater for reuse in applications ranging from agricultural irrigation to industrial processes and municipal supply. These systems address growing water scarcity concerns by transforming effluent into valuable resources, reducing freshwater extraction pressures, and promoting circular water management practices. The market includes physical filtration, biological treatment, membrane technologies such as reverse osmosis, and advanced oxidation processes deployed across residential, commercial, industrial, and agricultural sectors worldwide.

Market Dynamics:

Driver:

Escalating global water scarcity and freshwater depletion

Rapid population growth, urbanization, and climate change are intensifying pressure on finite freshwater resources across every continent. Regions once considered water-secure now face recurring droughts, while traditionally arid areas experience unprecedented stress on groundwater reserves. Industries, municipalities, and agricultural operations are increasingly turning to water recycling as a reliable alternative to freshwater extraction, recognizing treated wastewater as a drought-resistant supply source. This shift is further reinforced by declining costs of advanced treatment technologies and growing recognition that water security represents both operational necessity and competitive advantage, accelerating adoption across sectors previously dependent on conventional water sources.

Restraint:

High capital and operational expenditure

The substantial upfront investment required for advanced water recycling infrastructure continues to limit market accessibility, particularly for smaller municipalities and agricultural operations. Membrane bioreactors, reverse osmosis systems, and advanced oxidation processes demand significant capital outlay for equipment, installation, and facility construction. Ongoing operational costs including energy consumption, membrane replacement, and skilled labor further impact total cost of ownership. These financial barriers create implementation challenges in developing regions where water scarcity is most acute, while even in developed markets, budget constraints and competing infrastructure priorities can delay or scale back planned recycling projects despite clear long-term economic and environmental benefits.

Opportunity:

Integration with renewable energy systems

Combining water recycling facilities with solar, wind, or biogas energy generation presents compelling opportunities to address the sector's energy intensity challenges. Advanced treatment processes, particularly membrane-based systems, rank among the most energy-intensive water management solutions, with energy costs representing a substantial portion of operational expenditure. Co-locating recycling facilities with renewable energy installations reduces operational costs, improves carbon footprints, and enhances project viability in remote or off-grid locations. Emerging energy recovery

technologies, including anaerobic digestion of biosolids to generate operational power, further improve system economics while transforming water recycling facilities from energy consumers to energy producers within circular economy frameworks.

Threat:

Public perception and acceptance challenges

Negative public attitudes toward recycled water consumption, despite extensive scientific evidence confirming safety, pose significant barriers to expanded deployment. The 'yuck factor' associated with wastewater origins creates resistance to potable reuse applications, often generating political opposition that delays or derails projects during planning and permitting phases. Media coverage of perceived risks, even when scientifically unfounded, can influence public sentiment and complicate stakeholder engagement efforts. These perception challenges necessitate substantial investment in community education, transparent communication, and sometimes costly third-party validation to build acceptance, adding project complexity and timeline uncertainty that developers must navigate alongside technical and financial considerations.

Covid-19 Impact:

The COVID-19 pandemic had a complex impact on water recycling markets, simultaneously creating disruptions and accelerating certain adoption drivers. Supply chain interruptions delayed equipment deliveries and project installations during peak pandemic periods, while labor shortages affected construction timelines. However, heightened awareness of water security vulnerabilities and supply chain resilience prompted renewed focus on decentralized water solutions. Industries seeking operational independence increased investment in on-site recycling systems to reduce dependence on municipal infrastructure. Government stimulus packages in several countries included water infrastructure funding, with recycling projects prioritized for their dual benefits of economic stimulus and long-term resource security, ultimately strengthening market fundamentals.

The Membrane Filtration segment is expected to be the largest during the forecast period

The Membrane Filtration segment is expected to account for the largest market share during the forecast period, driven by the technology's versatility and proven effectiveness across diverse applications. Membrane bioreactors, reverse osmosis, and

ultrafiltration systems deliver high-quality treated water suitable for industrial processes, agricultural irrigation, and potable reuse applications. The technology's modular nature allows scalable deployment from small decentralized systems to large municipal facilities. Continuous advancements in membrane materials, fouling resistance, and energy efficiency are expanding economic viability while reducing operational complexity. The segment's dominance is reinforced by regulatory requirements increasingly specifying membrane-based treatment for higher water quality standards across jurisdictions worldwide.

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

Over the forecast period, the Advanced Oxidation segment is predicted to witness the highest growth rate, reflecting growing demand for treatment solutions capable of removing emerging contaminants including pharmaceuticals, personal care products, and per- and polyfluoroalkyl substances (PFAS) that conventional treatment methods cannot effectively address. These technologies generate highly reactive hydroxyl radicals to oxidize complex organic compounds, producing high-purity water suitable for sensitive applications including potable reuse and pharmaceutical manufacturing. Declining costs for ultraviolet-based systems and ozone generation equipment are expanding accessibility. Increasing regulatory scrutiny on micropollutants and growing public concern about water quality are accelerating adoption across both municipal and industrial sectors.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, supported by aging water infrastructure requiring replacement, stringent discharge regulations, and growing water stress in western states. The region's early adoption of water recycling technologies, combined with significant federal and state funding mechanisms for water infrastructure modernization, creates sustained market momentum. California's leadership in potable reuse regulations and major municipal recycling projects sets precedents influencing nationwide adoption. Strong industrial water management practices across manufacturing, power generation, and food processing sectors further drive demand. The presence of established technology providers and robust professional services infrastructure accelerates project development and operational optimization.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by acute water scarcity challenges combined with rapid industrialization and urbanization across the region. China's aggressive water pollution control policies and substantial investments in wastewater treatment infrastructure position it as a market leader, while India's expanding cities face critical water security challenges spurring recycling adoption. Singapore's world-leading water reuse programs demonstrate regional technological capability. Australia's drought-prone conditions drive continuous innovation in recycling applications across agricultural and municipal sectors. Growing industrial water demand from electronics manufacturing, textiles, and food processing industries, coupled with tightening environmental regulations, accelerates deployment of on-site recycling systems throughout the region.

Key players in the market

Some of the key players in Desalination for Agriculture Market include IDE Technologies, Veolia, Suez, Xylem, Acciona, Doosan Enerbility, Abengoa, Hyflux, Toray Industries, DuPont, Aquatech International, Metito, ACWA Power, VA Tech Wabag, and Kurita Water Industries.

Key Developments:

In March 2026, ACWA Power (now rebranded as Acwa) reported a landmark 2025, reaching a total desalination capacity of 9.2 million m³/day. The company successfully added 1.7 million m³/day of operational capacity and financially closed 15 projects worth SAR 70 billion, reinforcing its role in providing large-scale water solutions that support regional food security and municipal needs in the Middle East.

In March 2026, VA Tech Wabag secured a major contract worth over ₹1,000 crore (approx. \$120M) for the Chennai Water Grid project. The deal involves revamping a 45 MLD Tertiary Treated Reverse Osmosis (TTRO) plant, a critical development for water reclamation and reuse that provides high-quality water for industrial and potentially agricultural applications.

In January 2026, IDE Technologies signed a major contract with SIPCOT in Tamil Nadu, India, to build and operate a 60 MLD Seawater Reverse Osmosis (SWRO) desalination plant. The project, executed under a Public-Private Partnership (PPP), is designed to solve water scarcity challenges and support local industrial and water management needs for the next 15 years.

Water Sources Covered:

- Seawater
- Brackish Water
- Groundwater (Saline Aquifers)
- Reused Water

Technologies Covered:

- Reverse Osmosis (RO)
- Multi-Stage Flash (MSF)
- Multi-Effect Distillation (MED)
- Electrodialysis
- Nanofiltration
- Solar Desalination

System Types Covered:

- Membrane-Based Systems
- Thermal-Based Systems
- Hybrid Systems

Plant Capacities Covered:

- Small Scale (50,000 m³/day)

Energy Sources Covered:

- Grid-Powered Systems
- Solar-Powered Systems
- Wind-Powered Systems
- Hybrid Renewable Energy Systems

Irrigation Types Covered:

- Drip Irrigation
- Sprinkler Irrigation
- Surface Irrigation
- Precision Irrigation Systems

Distribution Models Covered:

- On-Site Desalination Systems
- Centralized Desalination Supply
- Modular Units

Applications Covered:

- Irrigation (Field Crops)
- Greenhouse Irrigation

High-Value Crops (Fruits & Vegetables)

Hydroponics & Controlled Environment Agriculture

Livestock Water Supply

End Users Covered:

Commercial Farms

Agribusiness & Plantations

Government & Public Irrigation Projects

Agricultural Cooperatives

Research & Pilot Projects

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

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY WATER SOURCE

- 5.1 Seawater
- 5.2 Brackish Water
- 5.3 Groundwater (Saline Aquifers)
- 5.4 Reused Water

6 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY TECHNOLOGY

- 6.1 Reverse Osmosis (RO)
- 6.2 Multi-Stage Flash (MSF)
- 6.3 Multi-Effect Distillation (MED)
- 6.4 Electrodialysis
- 6.5 Nanofiltration
- 6.6 Solar Desalination

7 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY SYSTEM TYPE

- 7.1 Membrane-Based Systems
- 7.2 Thermal-Based Systems
- 7.3 Hybrid Systems

8 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY PLANT CAPACITY

- 8.1 Small Scale (50,000 m³/day)

9 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY ENERGY SOURCE

- 9.1 Grid-Powered Systems
- 9.2 Solar-Powered Systems
- 9.3 Wind-Powered Systems
- 9.4 Hybrid Renewable Energy Systems

10 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY IRRIGATION TYPE

- 10.1 Drip Irrigation
- 10.2 Sprinkler Irrigation
- 10.3 Surface Irrigation
- 10.4 Precision Irrigation Systems

11 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY DISTRIBUTION MODEL

- 11.1 On-Site Desalination Systems
- 11.2 Centralized Desalination Supply
- 11.3 Modular Units

12 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY APPLICATION

- 12.1 Irrigation (Field Crops)
- 12.2 Greenhouse Irrigation
- 12.3 High-Value Crops (Fruits & Vegetables)
- 12.4 Hydroponics & Controlled Environment Agriculture
- 12.5 Livestock Water Supply

13 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY END USER

- 13.1 Commercial Farms
- 13.2 Agribusiness & Plantations
- 13.3 Government & Public Irrigation Projects
- 13.4 Agricultural Cooperatives
- 13.5 Research & Pilot Projects

14 GLOBAL DESALINATION FOR AGRICULTURE MARKET, BY GEOGRAPHY

- 14.1 North America
 - 14.1.1 United States
 - 14.1.2 Canada
 - 14.1.3 Mexico
- 14.2 Europe
 - 14.2.1 United Kingdom
 - 14.2.2 Germany
 - 14.2.3 France
 - 14.2.4 Italy

- 14.2.5 Spain
- 14.2.6 Netherlands
- 14.2.7 Belgium
- 14.2.8 Sweden
- 14.2.9 Switzerland
- 14.2.10 Poland
- 14.2.11 Rest of Europe
- 14.3 Asia Pacific
 - 14.3.1 China
 - 14.3.2 Japan
 - 14.3.3 India
 - 14.3.4 South Korea
 - 14.3.5 Australia
 - 14.3.6 Indonesia
 - 14.3.7 Thailand
 - 14.3.8 Malaysia
 - 14.3.9 Singapore
 - 14.3.10 Vietnam
 - 14.3.11 Rest of Asia Pacific
- 14.4 South America
 - 14.4.1 Brazil
 - 14.4.2 Argentina
 - 14.4.3 Colombia
 - 14.4.4 Chile
 - 14.4.5 Peru
 - 14.4.6 Rest of South America
- 14.5 Rest of the World (RoW)
 - 14.5.1 Middle East
 - 14.5.1.1 Saudi Arabia
 - 14.5.1.2 United Arab Emirates
 - 14.5.1.3 Qatar
 - 14.5.1.4 Israel
 - 14.5.1.5 Rest of Middle East
 - 14.5.2 Africa
 - 14.5.2.1 South Africa
 - 14.5.2.2 Egypt
 - 14.5.2.3 Morocco
 - 14.5.2.4 Rest of Africa

15 STRATEGIC MARKET INTELLIGENCE

- 15.1 Industry Value Network and Supply Chain Assessment
- 15.2 White-Space and Opportunity Mapping
- 15.3 Product Evolution and Market Life Cycle Analysis
- 15.4 Channel, Distributor, and Go-to-Market Assessment

16 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 16.1 Mergers and Acquisitions
- 16.2 Partnerships, Alliances, and Joint Ventures
- 16.3 New Product Launches and Certifications
- 16.4 Capacity Expansion and Investments
- 16.5 Other Strategic Initiatives

17 COMPANY PROFILES

- 17.1 IDE Technologies
- 17.2 Veolia
- 17.3 Suez
- 17.4 Xylem
- 17.5 Acciona
- 17.6 Doosan Enerbility
- 17.7 Abengoa
- 17.8 Hyflux
- 17.9 Toray Industries
- 17.10 DuPont
- 17.11 Aquatech International
- 17.12 Metito
- 17.13 ACWA Power
- 17.14 VA Tech Wabag
- 17.15 Kurita Water Industries

List Of Tables

LIST OF TABLES

Table 1 Global Desalination for Agriculture Market Outlook, By Region (2023–2034) (\$MN)

Table 2 Global Desalination for Agriculture Market Outlook, By Water Source (2023–2034) (\$MN)

Table 3 Global Desalination for Agriculture Market Outlook, By Seawater (2023–2034) (\$MN)

Table 4 Global Desalination for Agriculture Market Outlook, By Brackish Water (2023–2034) (\$MN)

Table 5 Global Desalination for Agriculture Market Outlook, By Groundwater (Saline Aquifers) (2023–2034) (\$MN)

Table 6 Global Desalination for Agriculture Market Outlook, By Reused Water (2023–2034) (\$MN)

Table 7 Global Desalination for Agriculture Market Outlook, By Technology (2023–2034) (\$MN)

Table 8 Global Desalination for Agriculture Market Outlook, By Reverse Osmosis (RO) (2023–2034) (\$MN)

Table 9 Global Desalination for Agriculture Market Outlook, By Multi-Stage Flash (MSF) (2023–2034) (\$MN)

Table 10 Global Desalination for Agriculture Market Outlook, By Multi-Effect Distillation (MED) (2023–2034) (\$MN)

Table 11 Global Desalination for Agriculture Market Outlook, By Electrodialysis (2023–2034) (\$MN)

Table 12 Global Desalination for Agriculture Market Outlook, By Nanofiltration (2023–2034) (\$MN)

Table 13 Global Desalination for Agriculture Market Outlook, By Solar Desalination (2023–2034) (\$MN)

Table 14 Global Desalination for Agriculture Market Outlook, By System Type (2023–2034) (\$MN)

Table 15 Global Desalination for Agriculture Market Outlook, By Membrane-Based Systems (2023–2034) (\$MN)

Table 16 Global Desalination for Agriculture Market Outlook, By Thermal-Based Systems (2023–2034) (\$MN)

Table 17 Global Desalination for Agriculture Market Outlook, By Hybrid Systems (2023–2034) (\$MN)

Table 18 Global Desalination for Agriculture Market Outlook, By Plant Capacity

(2023–2034) (\$MN)

Table 19 Global Desalination for Agriculture Market Outlook, By Small Scale (50,000 m³/day) (2023–2034) (\$MN)

Table 22 Global Desalination for Agriculture Market Outlook, By Energy Source (2023–2034) (\$MN)

Table 23 Global Desalination for Agriculture Market Outlook, By Grid-Powered Systems (2023–2034) (\$MN)

Table 24 Global Desalination for Agriculture Market Outlook, By Solar-Powered Systems (2023–2034) (\$MN)

Table 25 Global Desalination for Agriculture Market Outlook, By Wind-Powered Systems (2023–2034) (\$MN)

Table 26 Global Desalination for Agriculture Market Outlook, By Hybrid Renewable Energy Systems (2023–2034) (\$MN)

Table 27 Global Desalination for Agriculture Market Outlook, By Irrigation Type (2023–2034) (\$MN)

Table 28 Global Desalination for Agriculture Market Outlook, By Drip Irrigation (2023–2034) (\$MN)

Table 29 Global Desalination for Agriculture Market Outlook, By Sprinkler Irrigation (2023–2034) (\$MN)

Table 30 Global Desalination for Agriculture Market Outlook, By Surface Irrigation (2023–2034) (\$MN)

Table 31 Global Desalination for Agriculture Market Outlook, By Precision Irrigation Systems (2023–2034) (\$MN)

Table 32 Global Desalination for Agriculture Market Outlook, By Distribution Model (2023–2034) (\$MN)

Table 33 Global Desalination for Agriculture Market Outlook, By On-Site Desalination Systems (2023–2034) (\$MN)

Table 34 Global Desalination for Agriculture Market Outlook, By Centralized Desalination Supply (2023–2034) (\$MN)

Table 35 Global Desalination for Agriculture Market Outlook, By Modular Units (2023–2034) (\$MN)

Table 36 Global Desalination for Agriculture Market Outlook, By Application (2023–2034) (\$MN)

Table 37 Global Desalination for Agriculture Market Outlook, By Irrigation (Field Crops) (2023–2034) (\$MN)

Table 38 Global Desalination for Agriculture Market Outlook, By Greenhouse Irrigation (2023–2034) (\$MN)

Table 39 Global Desalination for Agriculture Market Outlook, By High-Value Crops (Fruits & Vegetables) (2023–2034) (\$MN)

Table 40 Global Desalination for Agriculture Market Outlook, By Hydroponics & Controlled Environment Agriculture (2023–2034) (\$MN)

Table 41 Global Desalination for Agriculture Market Outlook, By Livestock Water Supply (2023–2034) (\$MN)

Table 42 Global Desalination for Agriculture Market Outlook, By End User (2023–2034) (\$MN)

Table 43 Global Desalination for Agriculture Market Outlook, By Commercial Farms (2023–2034) (\$MN)

Table 44 Global Desalination for Agriculture Market Outlook, By Agribusiness & Plantations (2023–2034) (\$MN)

Table 45 Global Desalination for Agriculture Market Outlook, By Government & Public Irrigation Projects (2023–2034) (\$MN)

Table 46 Global Desalination for Agriculture Market Outlook, By Agricultural Cooperatives (2023–2034) (\$MN)

Table 47 Global Desalination for Agriculture Market Outlook, By Research & Pilot Projects (2023–2034) (\$MN)

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.

I would like to order

Product name: Desalination for Agriculture Market Forecasts to 2034 – Global Analysis By Water Source (Seawater, Brackish Water, Groundwater (Saline Aquifers), and Reused Water), Technology (Reverse Osmosis (RO), Multi-Stage Flash (MSF), Multi-Effect Distillation (MED), Electrodialysis, Nanofiltration, and Solar Desalination), System Type, Plant Capacity, Energy Source, Irrigation Type, Distribution Model, Application, End User, and By Geography

Product link: <https://marketpublishers.com/r/DF7EA29D0DC7EN.html>

Price: US\$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/DF7EA29D0DC7EN.html>