

# Smart Crop Mobility Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2024 - 2032

<https://marketpublishers.com/r/S16421B0D7EBEN.html>

Date: October 2024

Pages: 200

Price: US\$ 4,850.00 (Single User License)

ID: S16421B0D7EBEN

## Abstracts

The Global Smart Crop Mobility Market was valued at USD 4.3 billion in 2023 and is expected to grow at a CAGR of 13.6% between 2024 and 2032. A key factor driving this growth is the significant labor shortage in the agricultural sector, particularly in developed regions, where younger generations are shifting away from farming. This has led to increased adoption of advanced mobility solutions like autonomous tractors and robotic harvesters as farmers seek automation to maintain productivity and ensure efficient crop management. Precision agriculture requires highly accurate positioning and movement to optimize crop management. Smart crop mobility technologies offer precise field navigation, targeted input application (such as fertilizers and pesticides), and efficient harvesting.

These systems integrate GPS, sensors, and AI to deliver centimeter-level accuracy, crucial for maximizing yield and resource efficiency. As a result, the growing demand for resource optimization is fueling the adoption of these consistent and precise smart mobility solutions. The market is segmented by product into autonomous tractors, robotic harvesters, drones/UAVs, mobile robots, and more. In 2023, autonomous tractors held over 30% of the market share, with their ability to revolutionize precision farming.

These tractors, equipped with advanced GPS and RTK systems, achieve sub-inch accuracy in navigation and tasks, leading to more efficient use of seeds, fertilizers, and water while minimizing environmental impact. In terms of applications, the smart crop mobility market is divided into field crops, orchards and vineyards, greenhouse operations, specialty crops, and others. The field crops segment is projected to surpass USD 4 billion by 2032. Innovations in irrigation systems, incorporating mobility and

intelligence, are optimizing water use for field crops. These advanced mobile systems autonomously adjust their position and spray patterns using real-time data from soil sensors and weather forecasts.

They not only enhance water conservation but also boost crop yields by detecting and addressing equipment issues in real time—particularly important for water-scarce regions. In North America, the U.S. dominated the market, accounting for over 85% of the regional share in 2023. The U.S. agricultural sector is increasingly embracing the Robotics-as-a-Service (RaaS) model, where farmers opt for subscription-based services instead of purchasing costly smart farming equipment. This model is particularly beneficial for small and medium-sized farms, as it reduces the need for large capital investments while offering access to the latest technology. RaaS providers handle maintenance, upgrades, and technical support, allowing farmers to focus on their core operations, thus driving innovation and advancements in agricultural robotics

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