

CORMARKET ESTIMATES & TREND ANALYSIS

# Precision Farming Market

Market, By Component (Hardware, Software & Services)

Market, By Technology (Variable Rate Technology, Remote Sensing, Guidance Systems)

Market, By Application (Variable Rate Application, Field Mapping, Crop Scouting, Yield Monitoring)



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# Chapter 1 Methodology and Scope

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## 1.1 Research Methodology

We have implemented a mix of primary and secondary research for our market estimates and forecasts. Secondary research formed the initial phase of our study, where we conducted extensive data mining, referring to verified data sources such as independent studies, government and regulatory published material, technical journals, trade magazines, and paid data sources such as Hoover's, Factiva, and so on. This formed the basis of our estimates.

For forecasting, the following parameters were considered:

- Market drivers and restraints along with their current and expected impacts
- Technological scenario and expected developments
- End-use industry trends and dynamics
- Trends in consumer behavior

We assigned weights to these parameters and quantified their market impact using weighted average analysis to derive an expected market growth rate.

All our estimates and forecasts have been verified through exhaustive primary research with Key Industry Participants (KIPs) which included:

- Market leading companies
- Technology providers

The key objectives of primary research were:

- To validate our data in terms of accuracy and acceptability
- To gain an insight into the current market and future expectations

## 1.2 Research Scope & Assumptions

- The report provides market estimates for the base year 2015 and a yearly forecast till 2024 in terms of revenue (USD Billion) ***unless stated otherwise***. The market for each technology and application segment has been provided on a regional basis for the above-mentioned forecast period.

- The key industry dynamics, regulatory scenario, key Products, and applications have been evaluated to understand their impact on the demand over the forecast period. Growth rates were estimated using correlation, regression, and time-series analysis.
- We have used a bottom-up approach for market sizing, analyzing key regional markets, dynamics, and trends for various applications. The global market has been estimated by integrating regional markets.
- Market estimates have been verified through feedback obtained through primary interviews with key industry participants
- Inflation has not been accounted for in order to estimate the market
- Numbers may not add up due to rounding off
- In the tables, “E” stands for “estimated values”, whereas “F” stands for “forecast values”
- The **North America** regional Precision Farming market includes the U.S. Canada, and Mexico
- The **Europe** regional Precision Farming market includes UK and Germany
- The **Asia Pacific** regional Precision Farming market includes Japan, China, and India
- The **South America** regional Precision Farming market includes Brazil.
- The **MEA** regional Precision Farming market includes Middle East and Africa

### 1.3 List of Data Sources

List of **secondary sources** include, but are not limited to:

- EPM
- New Food Magazines
- Company annual reports

List of **primary sources** include, but are not limited to:

- xxxxxxxxxxxxxxxx
- xxxxxxxxxxxxxxxx
- xxxxxxxxxxxxxxxx

## Chapter 2 Executive Summary

*Increasing awareness for quality standards has led to enhanced adoption*

The precision farming market is expected to grow at a CAGR of xx% over the forecast period. The increasing adoption of the new technologies for enhnacing the yield and productivity has led to the enormous rise to the market.

*Field mapping market is expected to dominate the market over the forecast period.*

The field mapping market is expected to dominate the market with a share of xx% in 2015 and is expected to continue over the forecast period.

XX  
XX

## 2.1 Precision Farming– Industry Snapshot & Key Buying Criteria, 2014 – 2025

The Precision Farming industry growth prospects look bullish throughout the forecast period owing to the rapid development in the oil & gas, pharmaceutical and chemical sectors in the emerging countries which include Asia Pacific, Middle East and Africa.

**TABLE 1      Precision Farming– Industry Snapshot & Key Buying Criteria, 2014– 2025**

Market Size 2014-2024	2014	2015	2025
	Revenue: USD 2.75 Billion	Revenue: USD xx Billion	Revenue: USD xx Billion
Regional revenue trends	Region	2015	2024
	North America	xx%	xx%
	Europe	xx%	xx%
	Asia Pacific	xx%	xx%
	Latin America	xx%	xx%
	MEA	xx%	xx%
Market summary	<p>Rising awareness for the quality throughput among the industries such as pharmaceuticals, oil &amp; gas and food &amp; agriculture has led to the increased demand in the market.</p> <p>xxx xxx</p>		
Potential growth opportunities	<p>➤ Increasing adoption of new technologies in farming</p> <p>➤ xx</p> <p>➤ Xxxx</p>		
PESTEL analysis	<p>The global precision farming market is anticipated to witness a remarkable growth over the forecast period, owing to the increased quality awareness among consumers.</p> <p>xxx xxx</p>		
Key buying criteria	<p>➤ Strong R&amp;D and product innovation to meet diverse consumer needs</p> <p>➤ Competent distribution channel and regional presence</p> <p>➤ Product development to ensure customized offerings</p>		



**TABLE 2 Global Precision farming market, 2014 – 2025 (USD Billion)**

Market size	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR (2016 – 25)
Revenue (USD Billion)	2.75	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%

The global precision farming market was valued at USD xx billion in 2015 and is estimated to reach USD xx billion by 2025, growing at a CAGR of xx% from 2016 to 2025.

**TABLE 3 Global Precision farming market estimates and forecasts by technology, (USD Billion), 2014– 2025**

Technology	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR (2016 – 25)
Guidance Systems	1.23	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%
Remote Sensing	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%
Variable Rate Technology	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%
Total	2.75	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%

The guidance systems segment generated the highest revenue in 2015 and is expected to maintain its dominance throughout the forecast period.

**TABLE 4      Global precision farming market estimates and forecasts by component, (USD Billion), 2014– 2025**

Component	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR (2016 – 25)
Hardware	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%
Software	0.87	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%
Services	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%
Total	2.75	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%

The hardware segment generated the highest revenue in 2015 and is expected to maintain its dominance throughout the forecast period. **The market for hardware was valued at USD xx Billion in 2015 and is expected to reach USD xx Billion by 2025, growing at a CAGR of xx% from 2016 to 2025.**

XX  
XX

Application	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Variable Rate Technology	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.2
Telematics	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
Yield Monitoring	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
Weather Data	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Soil Data	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
Drone Technology	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1
GPS Tracked Tractors	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
Autonomous Tractors	0.05	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Plant Disease Detection	0.05	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Water Management	0.05	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Other Applications	0.05	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
<b>Total</b>	<b>2.8</b>	<b>3.5</b>	<b>4.2</b>	<b>5.0</b>	<b>5.8</b>	<b>6.6</b>	<b>7.4</b>	<b>8.2</b>	<b>9.0</b>	<b>9.8</b>	<b>10.6</b>

[illegible]

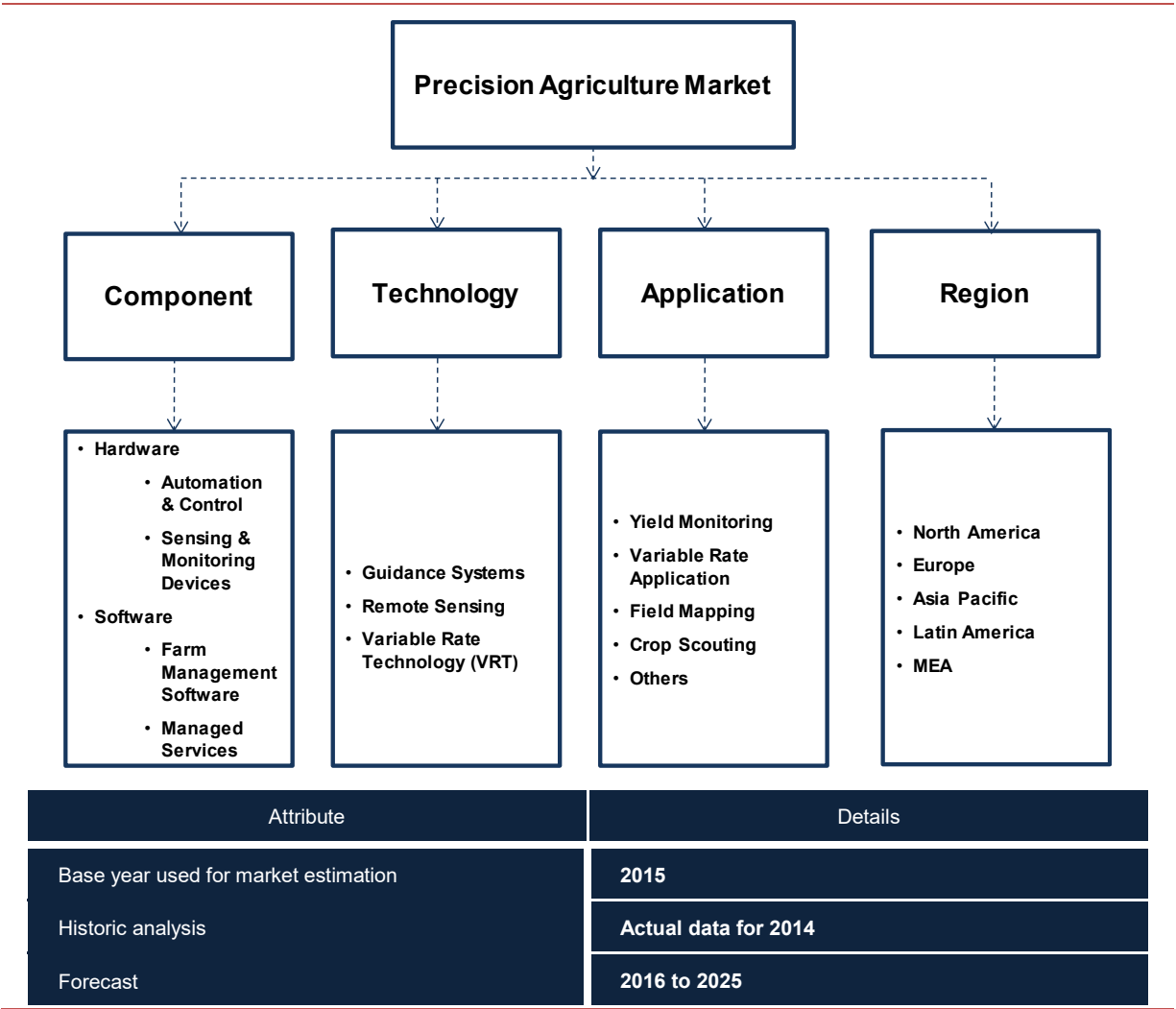
The field mapping segment is estimated to be the largest revenue generating segment and is expected to maintain its dominance over the forecast period.

[illegible]

## Chapter 3 Precision Farming Industry Outlook

### 3.1 Market segmentation

FIG. 1 Market segmentation



Precision agriculture or site specific crop management (SSCM) or satellite farming is a farming management concept based on measuring, observing and responding to intra and inter-field variability of crops. The goal is to provide a decision support system (DSS) for farm management while preserving resources and optimizing the return on inputs. In precision agriculture, the farmers collect real-time data on soil, weather & air quality and crop maturity, and labor costs and availability for making the smart decisions.

With the precision agriculture, the center collects all the data and process the real-time data for helping the farmer with regards to fertilizing, planting, and harvesting crops. The sensors are placed all over the field which are used for measuring the humidity and temperature of the soil. The picture of the field is also taken using the robotic drones and satellite imagery for analyzing the crop maturity. The Precision farming market is segmented into four broad categories based on **components, technology, application and region.**

In the first level, the market has been segmented by **component, into hardware, and software components** deployed in conducting dynamic precision farming operations, such as,

Operation/ Activity	Component
<b>Hardware</b>	
<ul style="list-style-type: none"> <li>Automation &amp; Control</li> </ul>	<ul style="list-style-type: none"> <li>Display systems</li> <li>GPS systems</li> <li>Guidance &amp; steering</li> <li>Drones</li> <li>Mobile devices</li> <li>Flow &amp; application control devices</li> </ul>
<ul style="list-style-type: none"> <li>Sensing &amp; Monitoring Devices</li> </ul>	<ul style="list-style-type: none"> <li>Yield monitors</li> <li>Sensors                             <ul style="list-style-type: none"> <li>Moisture sensors</li> <li>Temperature sensors</li> <li>Nutrient sensors</li> </ul> </li> </ul>
<b>Software</b>	
<ul style="list-style-type: none"> <li>Software</li> </ul>	<ul style="list-style-type: none"> <li>Farm Management Software</li> </ul>
<b>Services</b>	
<ul style="list-style-type: none"> <li>Services</li> </ul>	<ul style="list-style-type: none"> <li>Managed Services</li> <li>Professional services                             <ul style="list-style-type: none"> <li>Integration and consulting services</li> <li>Maintenance and support services</li> </ul> </li> </ul>

In the second level, the market has been segmented by **technology**,

- **Guidance systems:** The introduction of the GPS technology has influenced the manufacturer to develop the guiding systems for helping the farmers. These guidance systems help in improving the in-field efficiency, reduces the application overlap and increases the ability to work at night which has further led to the cost savings for the producers. These systems are available to all the farmers in two basic forms which include automated and manual guidance.
- **Remote sensing** (Pressure sensors, Flow meters, Soil moistures sensors): Remote sensing is used for identifying and collecting the information without any physical contact with the object and the information is gathered through devices detecting infrared light, electromagnetic radiation, visible light and near-infrared light. In agriculture field, the remote sensing produces the measurements which include humidity, air and soil temperature, plant width and diameter, crop height, and wind conditions. The technology is installed on the various equipment's such as GPS, and UAVs and can provide farmers with crop scouting capabilities, and precision maps.
- **Variable rate technology (VRT):** VRT is the arrangement of agricultural machinery, controllers and aligned sensors, accustomed to accomplish variable-rate applications of crop yield inputs

In the third level, the market has been segmented by **application**

- **Yield Monitoring:** Yield monitoring is one of the aspect of the precision agriculture which provides adequate information to the farmers and helps in making the appropriate decisions about the fields. Yield monitors allow the farm equipment to gather information which include moisture levels, gain yields, and soil properties. This information help the farmers to take decisions related to fertilize or seed, harvest and effects of weather on fields. The yield monitoring can be segregated further into two categories which include; on-farm monitoring and off-farm monitoring
- **Variable Rate Application:** regulation of the quantity of crop input such as fertilizer, seed, pesticides or lime to counterpart productivity conditions and crop yield potential in the field

- **Field Mapping:** Tracking precise field locations along with significant information about topography of the location in consideration
- **Crop Scouting:** Here we analyze crop pest infection ratio as in comparison to crop produce, in order to assess potential pest effectiveness and associated disease control interventions
- **Others:** Others applications inculcates supplementary precision farming solicitations such as farm labor management, weather tracking and forecasting

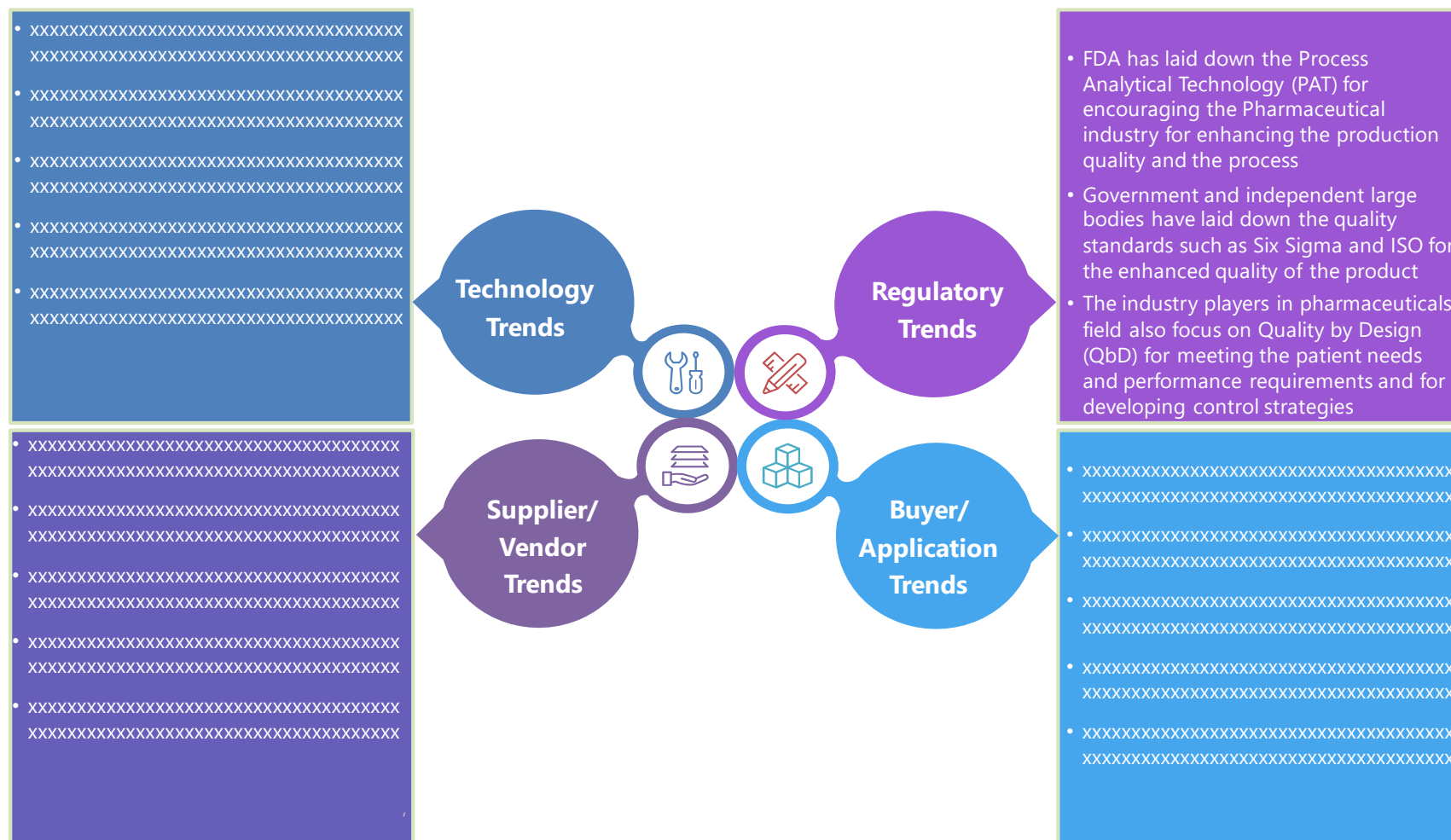
In the fourth level, the market has been segmented by region as follows:

- **The North American** regional Precision Farming market includes the U.S., Canada and Mexico
- **The European** regional Precision Farming market includes Germany, the UK, and other countries
- **The Asia Pacific** regional Precision Farming market includes Japan, China, and India
- **The South American** regional Precision Farming market includes Brazil, and rest of South America
- **The MEA** regional Precision Farming market includes the Middle East and Africa





FIG. 3 Market dynamics



### 3.3.1 Market driver analysis

**Key:**



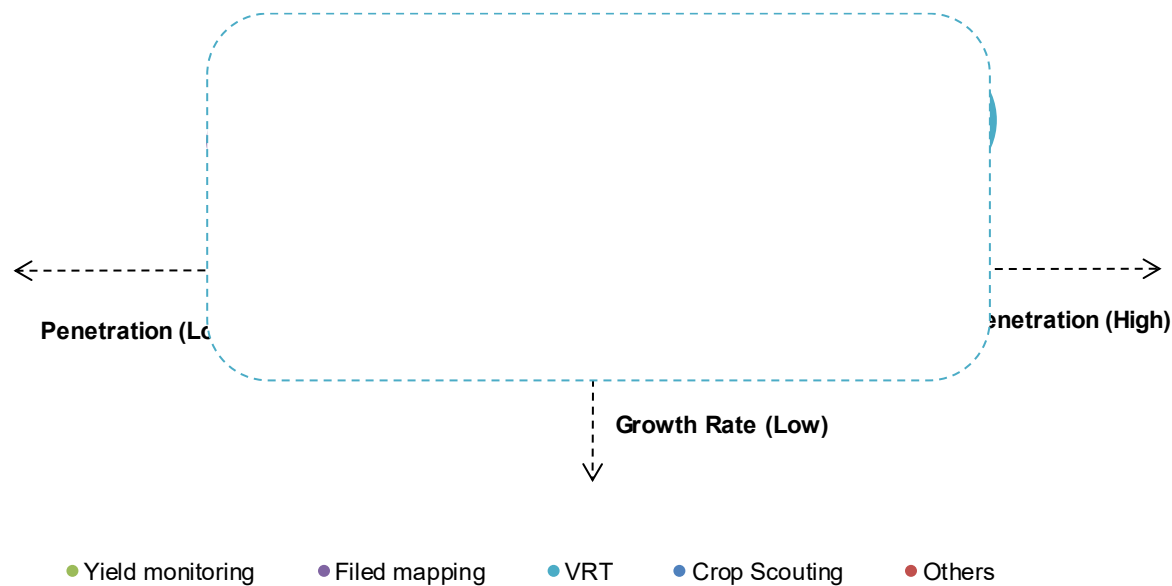
[Back to Table of Contents](#)

**FIG. 4 Porter's five forces analysis**

[illegible]

3.5 Penetration & Growth Prospect Mapping

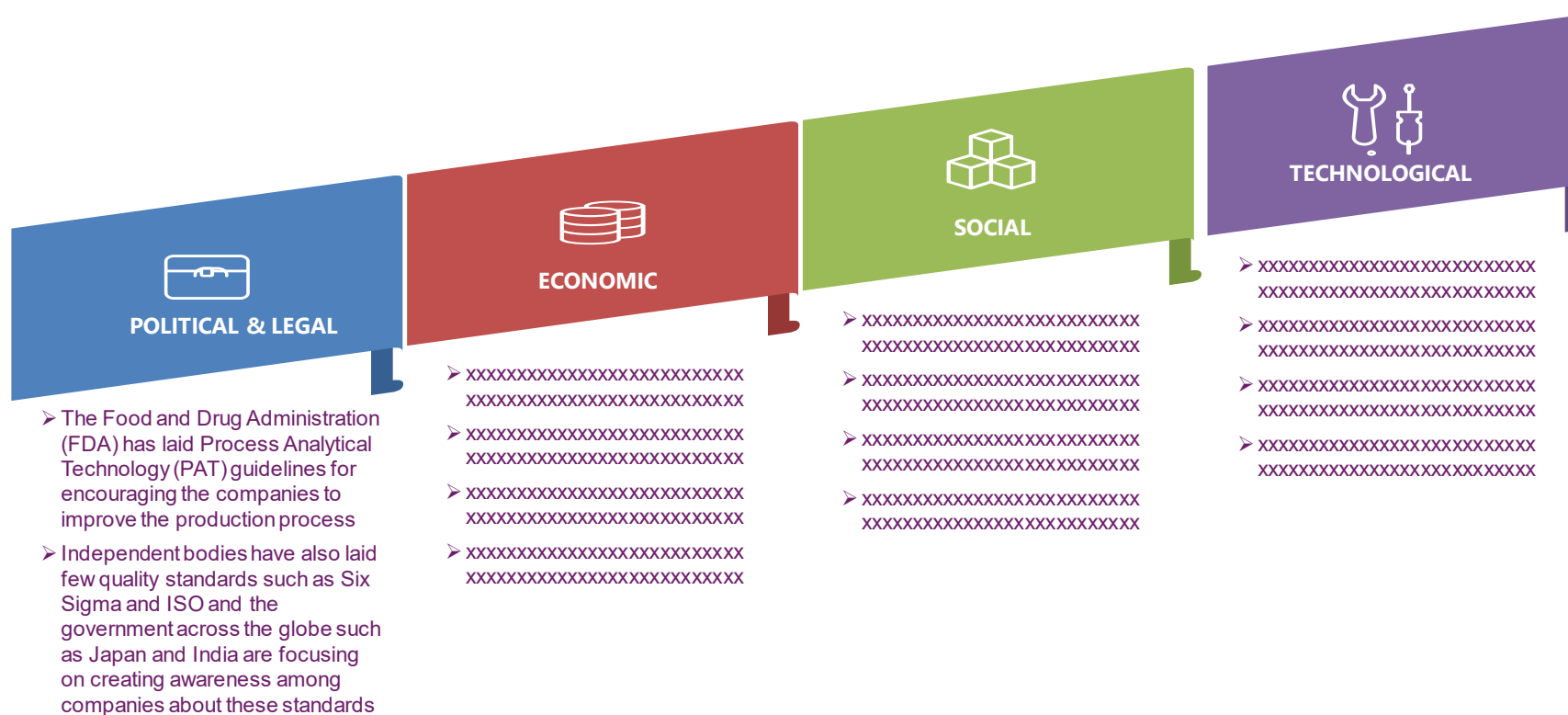
FIG. 5 Penetration & growth prospect mapping



XX  
XX

### 3.6 Precision Farming– PESTEL Analysis

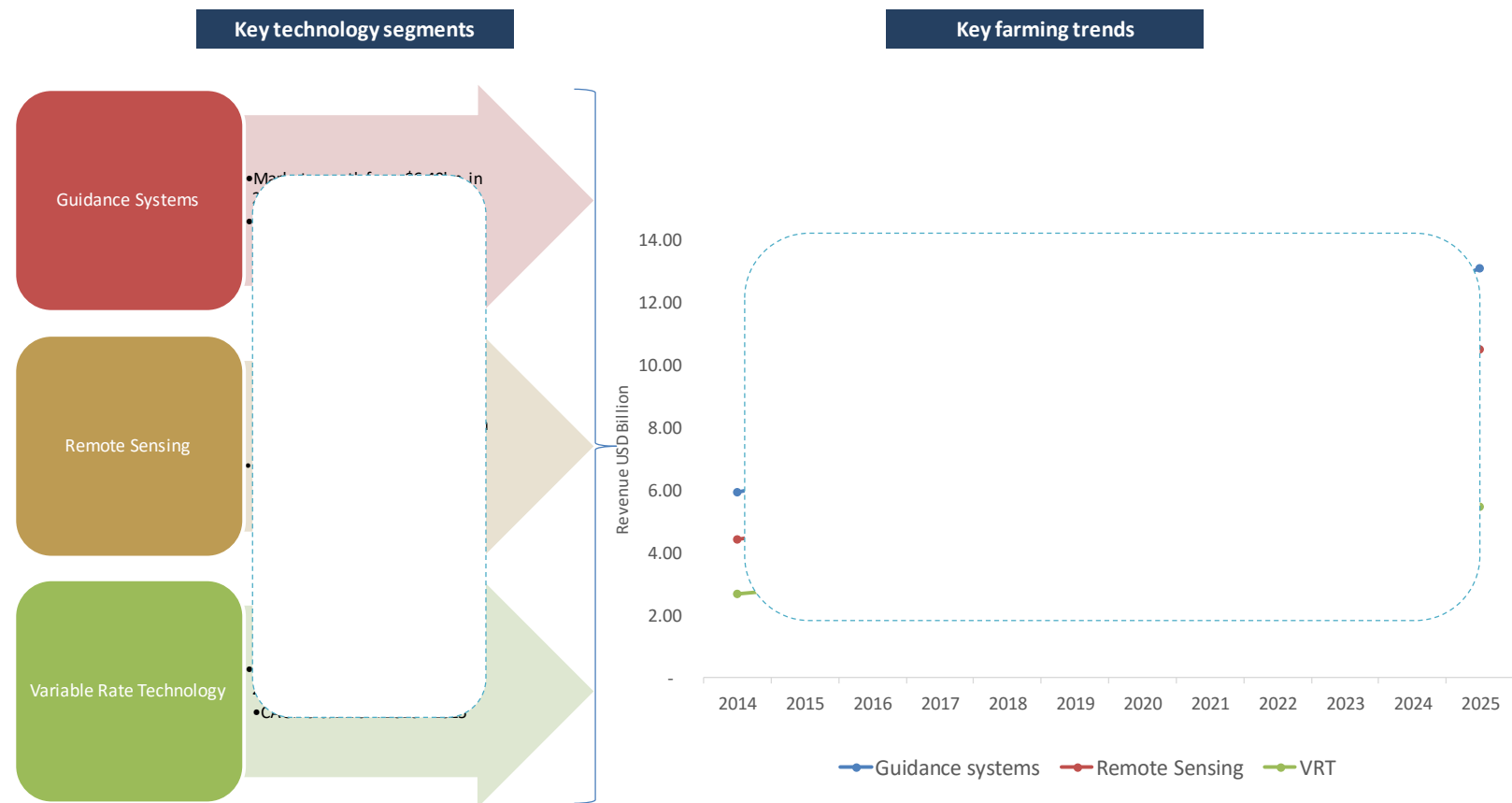
FIG. 6 Precision Farming– PESTEL Analysis



Source: EPM, New Food Magazines, Spectroscopy Journal, Journal of Molecular Spectroscopy, Company Annual Reports, Primary Interviews, Grand View Research

## Chapter 4 Precision Farming: Technology Estimates & Trend Analysis

FIG. 7 Precision farming market technology outlook key takeaways



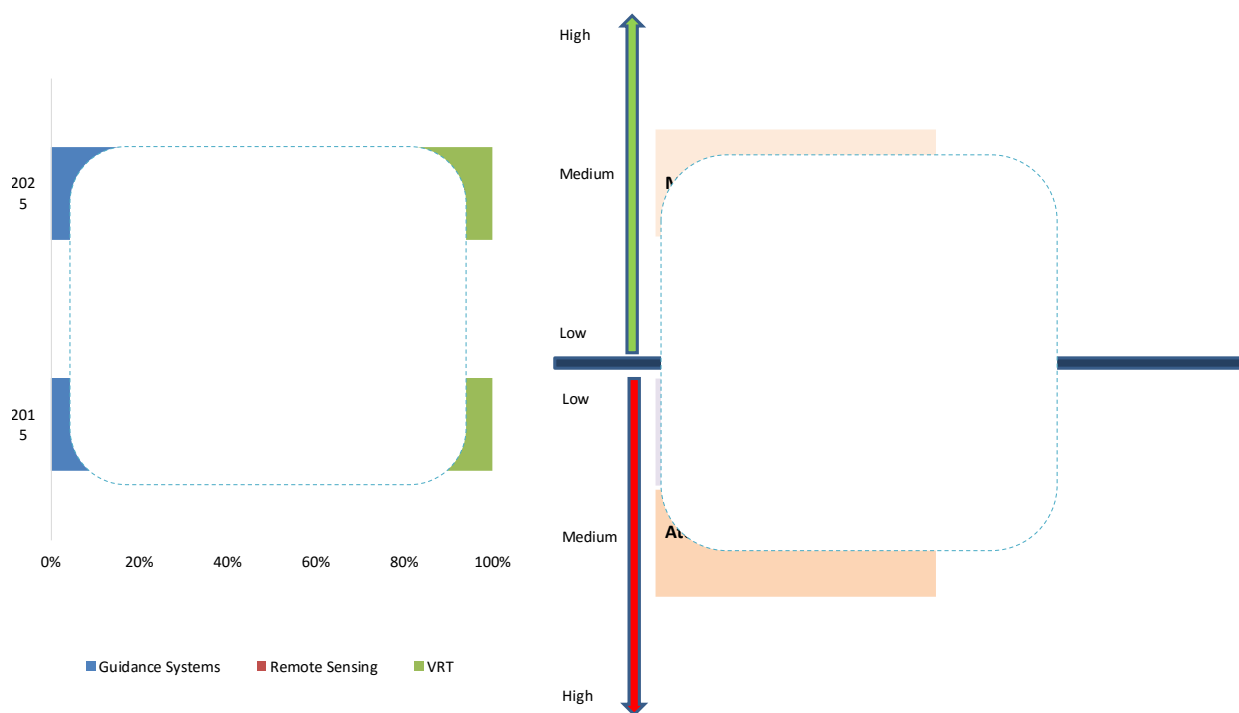
### 4.1 Precision Farming Market: Technology Movement Analysis

*VRT market is anticipated to witness significant growth over the forecast period*

The Precision Farming industry is segmented based on technology to molecular, mass and atomic. Variable rate technology market is expected to dominate the market over the forecast period.

XX  
XX

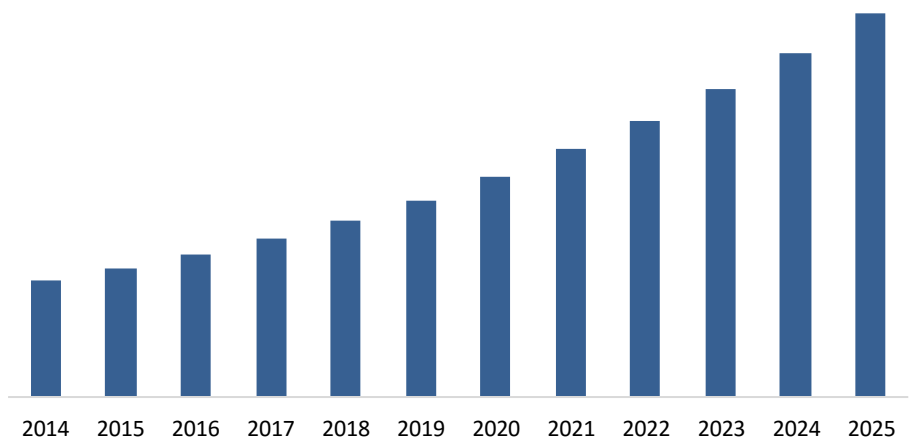
FIG. 8 Precision Farming market: Technology movement analysis



Being a relatively untapped sector in Asia Pacific, particularly in China and India, the Precision Farming technology occupied a marginal proportion of the market share in 2015. However, with the developing technology and increasing miniaturization of technologies in these two countries, Precision Farming are expected to gain prominence and are expected to exhibit a significant growth over the forecast period.

4.1.1      Guidance Systems

FIG. 9      Global guidance systems market, 2014 – 2025 (USD Billion)



XX

XX



Region	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
North America	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3
Europe	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
Asia-Pacific	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
Latin America	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8
Middle East & Africa	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7
Global	3.0	3.3	3.7	4.1	4.5	4.9	5.3	5.7	6.1	6.5	6.9	7.3

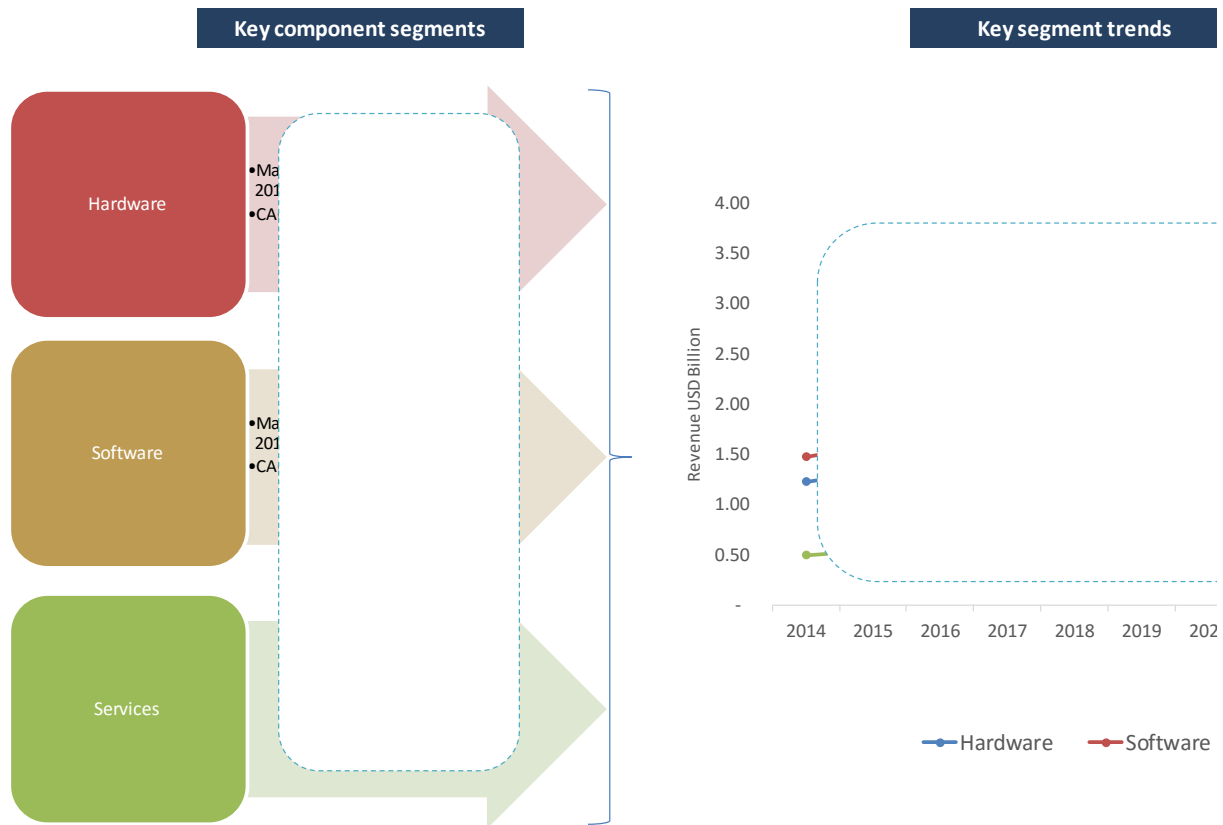
[illegible]

The global guidance system market was valued at USD xx billion in 2015 and is expected to reach USD xx billion by 2025, growing at a CAGR of xx% from 2016 to 2025.

[illegible]

## Chapter 5 Precision Farming: Component Estimates & Trend Analysis

FIG. 10 Precision Farming market component outlook key takeaways

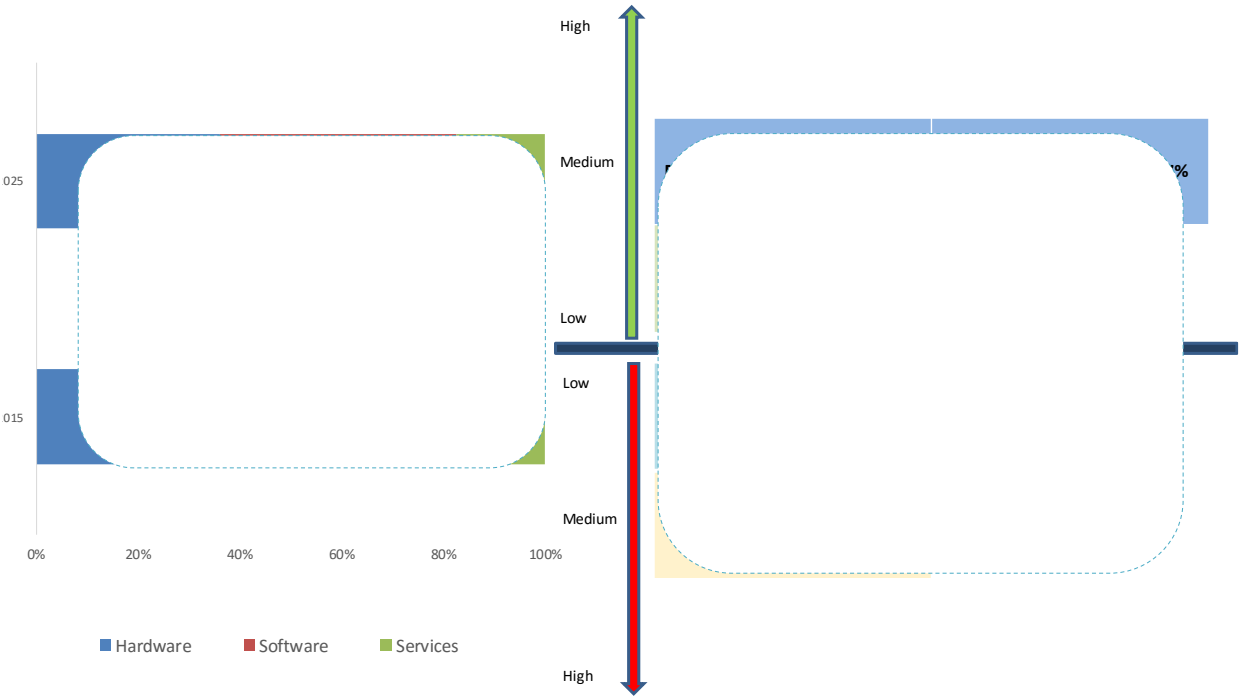


5.1 Precision Farming Market: Component Movement Analysis

*The hardware market is expected to dominate the application segment over the forecast period*

The hardware segment dominated the overall Precision Farming industry in 2015 with a market share of xx% and is expected to remain the highest revenue generating segment over the next eight years.

FIG. 11 Precision farming market: Component movement analysis

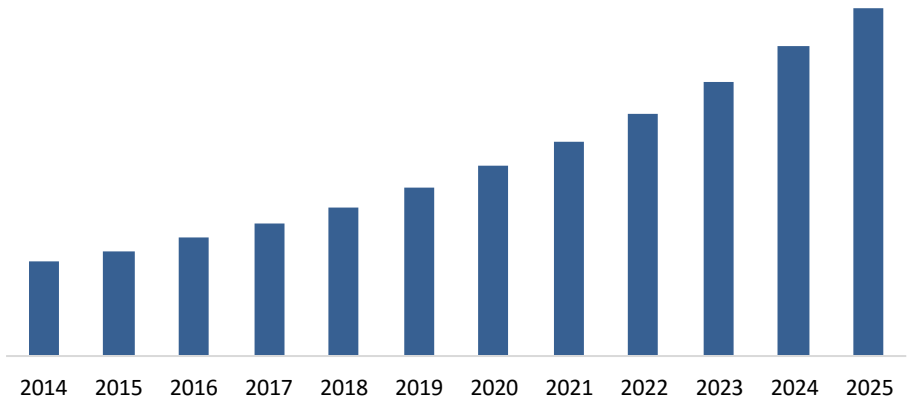


The hardware market is expected to grow with a CAGR of xx% from 2016 to 2025. The increasing awareness and demand for enhanced quality food and for maximum yields is expected to fuel the precision farming demand in the component segment.

5.1.1 Hardware

XX  
XX

FIG. 12 Global precision farming market for hardware, 2014 – 2025 (USD Billion)



Region	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
North America	120.5	125.3	130.1	135.8	140.2	145.7	150.4	155.9	160.2	165.1	170.5
Europe	95.2	98.7	102.3	106.5	110.8	115.1	119.4	123.7	128.0	132.3	136.6
Asia-Pacific	110.8	115.4	120.9	126.2	131.5	136.8	142.1	147.4	152.7	158.0	163.3
Latin America	45.6	47.1	48.6	50.1	51.6	53.1	54.6	56.1	57.6	59.1	60.6
Middle East & Africa	30.1	31.6	33.1	34.6	36.1	37.6	39.1	40.6	42.1	43.6	45.1
Global Total	302.2	312.1	323.0	333.2	343.4	353.6	363.8	373.9	384.0	394.1	404.2

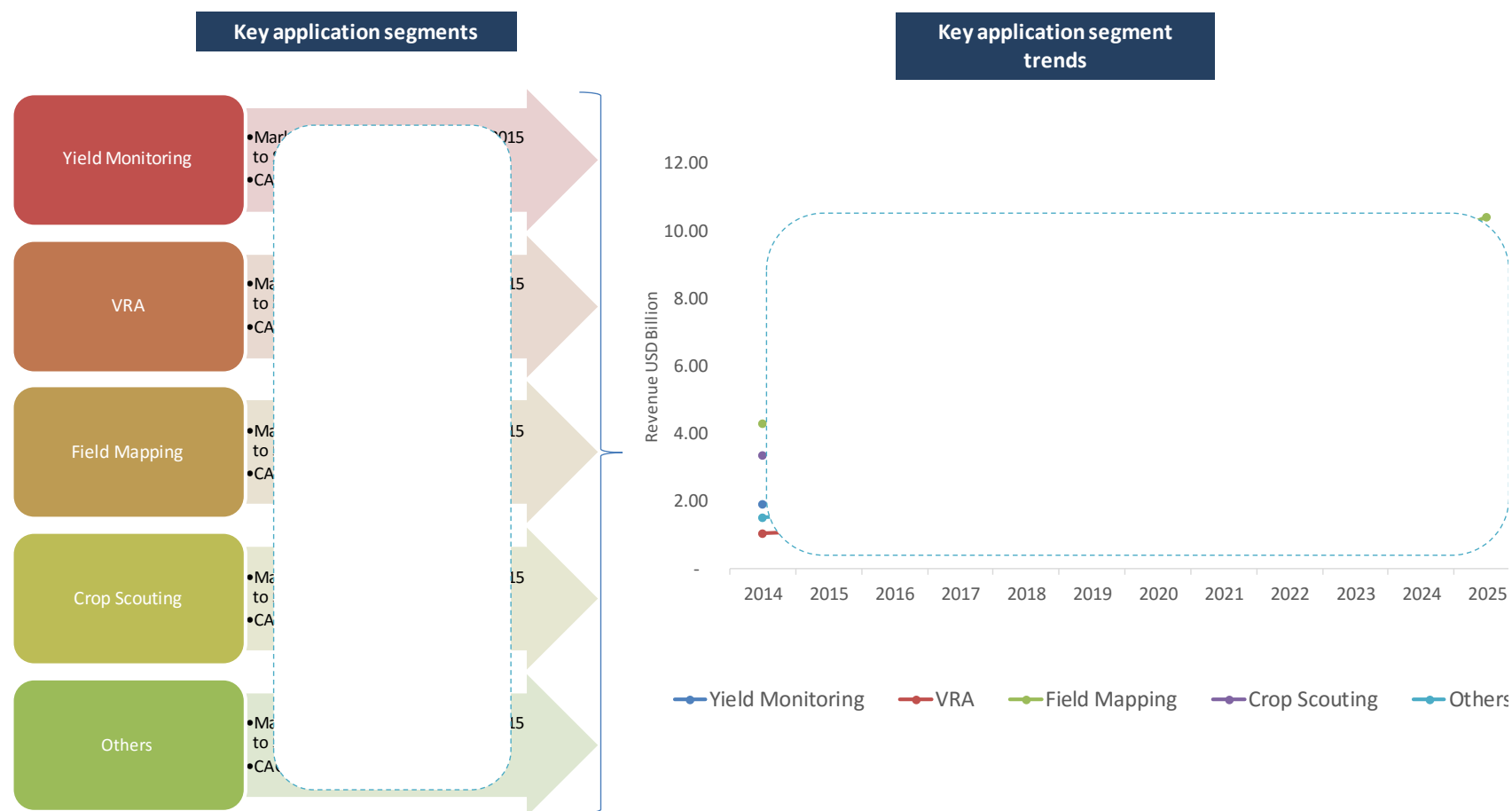
[illegible]

The global hardware market was valued at USD xx billion in 2015 and is expected to reach USD xx billion by 2025, growing at a CAGR of xx% from 2016 to 2025.

[illegible]

## Chapter 6 Precision Farming: Application Estimates & Trend Analysis

FIG. 13 Precision Farming market application outlook key takeaways

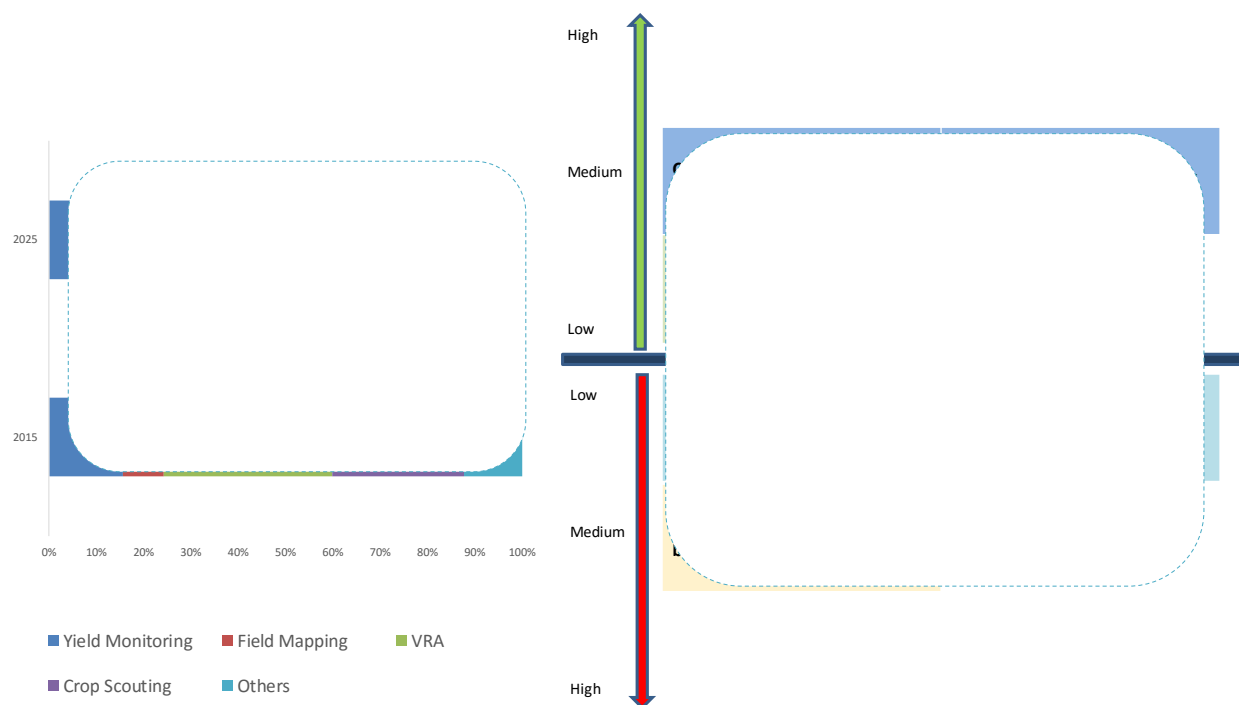


## 6.1 Precision Farming Market: Application Movement Analysis

*The field mapping market is expected to dominate the application segment over the forecast period*

The field mapping segment dominated the overall precision farming industry in 2015 with a market share of xx% and is expected to remain the highest revenue generating segment over the next eight years.

FIG. 14 Precision Farming market: Application movement analysis

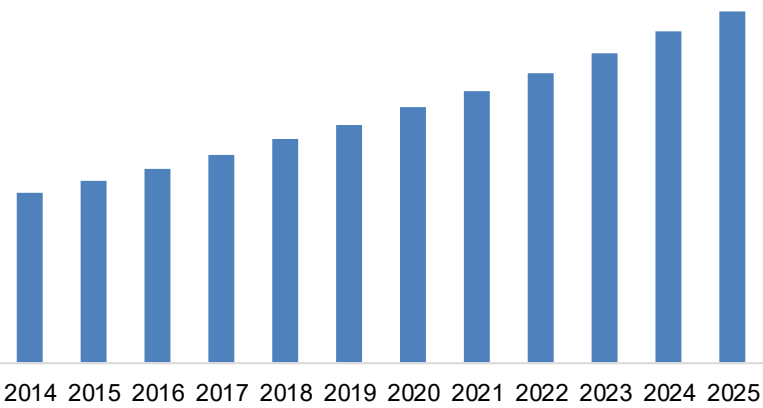


The field mapping market is expected to grow with a CAGR of xx% from 2016 to 2025. The increasing awareness and demand for enhanced quality food and for maximum yields is expected to fuel the precision farming demand in the application segment.

6.1.1 Yield monitoring

XX  
XX

FIG. 15 Global precision farming market for yield monitoring, 2014 – 2025 (USD Billion)





Region	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
North America	12.5	13.2	14.1	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0
Europe	10.8	11.5	12.3	13.1	14.0	15.0	16.0	17.0	18.0	19.0	20.0
Asia-Pacific	8.7	9.5	10.3	11.2	12.1	13.0	14.0	15.0	16.0	17.0	18.0
Latin America	5.4	5.8	6.2	6.7	7.2	7.7	8.2	8.7	9.2	9.7	10.2
Middle East & Africa	3.2	3.5	3.8	4.1	4.5	4.9	5.3	5.7	6.1	6.5	6.9
Global Total	40.6	43.5	46.7	50.1	53.8	57.6	61.2	64.7	68.3	71.9	75.5

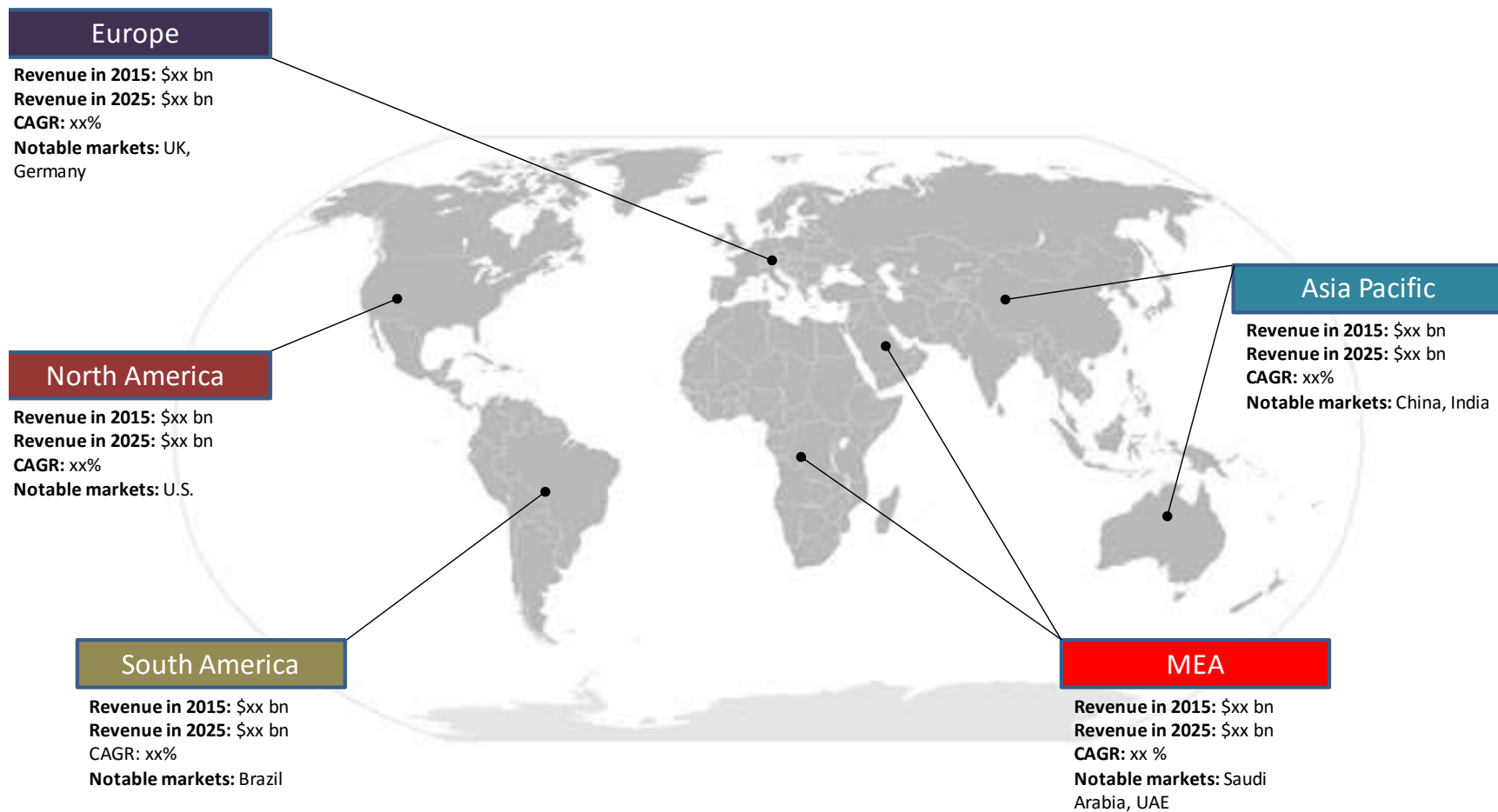
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The global yield monitoring market was valued at USD xx billion in 2015 and is expected to reach USD xx billion by 2025, growing at a CAGR of xx% from 2016 to 2025.

[illegible]

## Chapter 7 Precision Farming: Regional Estimates & Trend Analysis

FIG. 16 Regional marketplace: Key takeaways

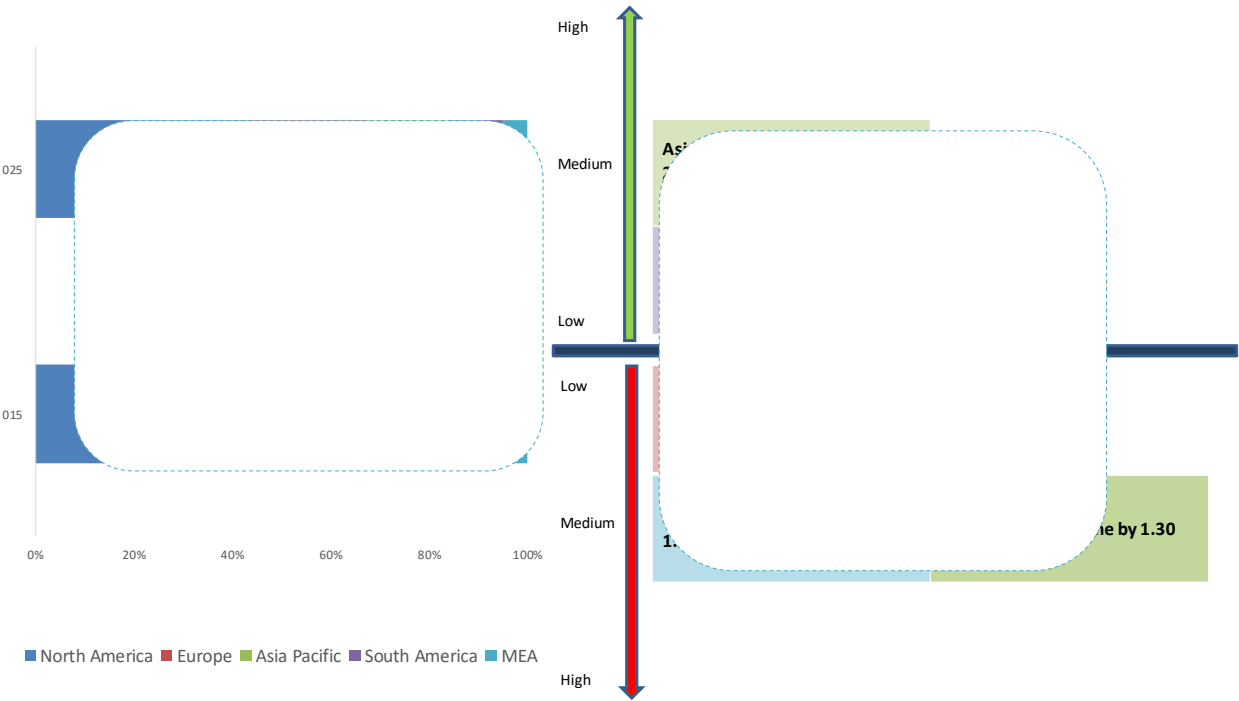


7.1 Precision Farming market share by region, 2015 & 2024

Asia Pacific is projected to witness highest growth and become the maximum revenue generating region by 2024

North America regional market dominated the global precision farming industry in terms of revenue in 2015, with a market share of xx%. Increasing government investments in for the enhanced technology has led to the enormous application in Precision Farming. Furthermore, Asia Pacific is expected to witness enormous growth over the forecast period.

FIG. 17 Regional outlook, 2015 & 2024



The Asia Pacific regional market is expected to witness a significant gain in revenue share during the forecast period. Its market share is expected to increase from xx% in 2015 to xx% in 2025.

## 7.2 North America

The global precision farming market is expected to grow over the forecast period owing to the increased demand of precision farming technologies.

Technology	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
GPS	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3
Variable Rate Technology	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
Drone	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
IoT	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
AI	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Cloud	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
Big Data	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
Other	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
<b>Total</b>	<b>3.0</b>	<b>3.3</b>	<b>3.6</b>	<b>3.9</b>	<b>4.2</b>	<b>4.5</b>	<b>4.8</b>	<b>5.1</b>	<b>5.4</b>	<b>5.7</b>	<b>6.0</b>	<b>6.3</b>

[illegible]

Remote Sensing dominates the North American regional precision farming market. The market for segment was valued at USD xx billion in 2015 and is expected to reach over USD xx billion by 2025, growing at a CAGR of xx% over the forecast period.

[illegible]

FIG. 18 North America Precision Farming market by technology, 2014 - 2025 (USD Billion)

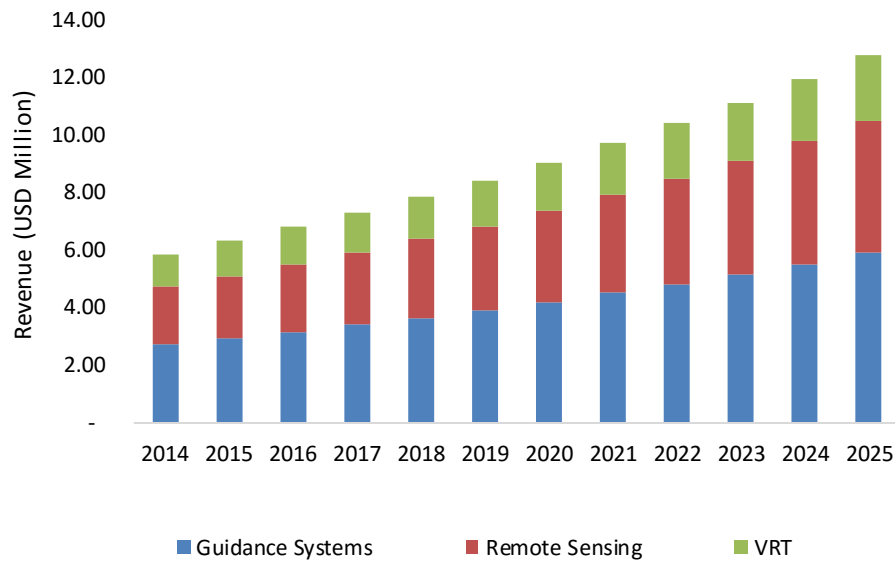


TABLE 10 North America precision farming market by component, 2014 – 2025 (USD Billion)

Component	2014 H	2015 E	2016 F	2017 F	2018 F	2019 F	2020 F	2021 F	2022 F	2023 F	2024 F	2025 F	CAGR (2016 – 24)
Hardware	0.56	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%
Software	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%
Services	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx%

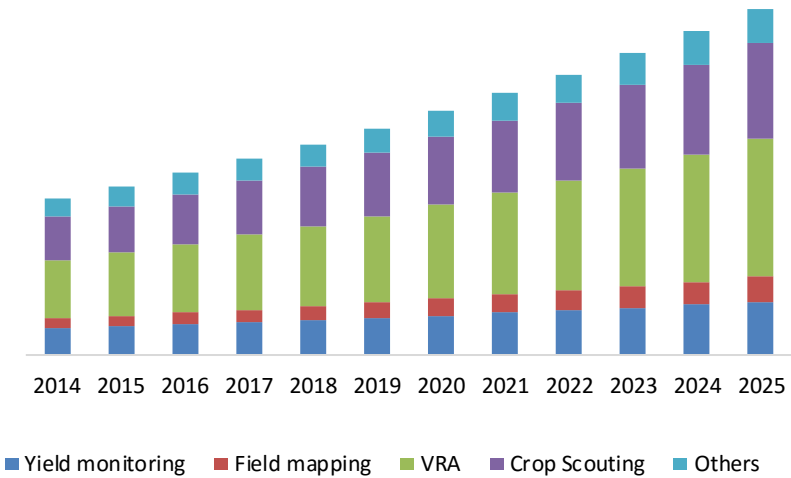
Hardware component is expected to grow the fastest at CAGR of xx% over the forecast period. The segment was valued at USD xx Billion and is projected to reach USD xx Billion by 2025 over the forecast period.

Application	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Variable rate fertilization	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3
Variable rate seeding	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
Variable rate irrigation	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
Variable rate herbicide application	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
Variable rate insecticide application	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Variable rate fungicide application	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
Variable rate tillage	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
Variable rate planting	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7
Variable rate harvesting	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
Variable rate crop rotation	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
Variable rate soil testing	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
Variable rate weather monitoring	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
Variable rate pest monitoring	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Variable rate disease monitoring	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
Variable rate nutrient monitoring	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
Variable rate water monitoring	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7
Variable rate soil moisture monitoring	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
Variable rate crop yield monitoring	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1
Variable rate crop health monitoring	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
Variable rate crop stress monitoring	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
Variable rate crop quality monitoring	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
Variable rate crop maturity monitoring	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Variable rate crop growth monitoring	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
Variable rate crop development monitoring	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
Variable rate crop phenology monitoring	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7
Variable rate crop yield prediction	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
Variable rate crop quality prediction	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
Variable rate crop maturity prediction	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
Variable rate crop growth prediction	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Variable rate crop development prediction	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
Variable rate crop phenology prediction	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
Variable rate crop yield estimation	0.6											

[illegible][illegible]

FIG. 19

North America precision farming market by application, 2014 - 2025 (USD Billion)



## Chapter 8 Competitive Landscape

### 8.1 Company Profiles

#### 8.1.1 ABB Group

##### 8.1.1.1 Company overview

ABB Ltd. is a global multinational company that primarily engages in robotics, automation, and power technology areas. The company formed through a merger of Allmann Svenska Elektriska Aktiebolaget, Sweden, and Brown Bovari & Cei, Switzerland. Its product segment includes drives, high voltage products, measurement & analytics, mechanical power transmission products, metallurgy products, and low voltage products & systems. It also offers motors and generators, PLC automation, power

protection & automation products, power converters & inverters, robotics, semiconductors, and transformers. The systems segment of the company offers control systems, collaborative production management, enterprise software, Flexible Alternating Current Transmission Systems (FACTS), electric vehicle charging infrastructure, HVDC, high voltage cables, and marine vessels. The others segment of the company offers offshore wind connections, power consulting, network management, power electronics, safety, and substation & electrification. It also offers turbo-charging and UPS & power condition.

Key Statistics

Establishment year: 1988  
Headquarters: Switzerland  
Employee strength: 140,400 (2015)  
Market relevance: OEM

##### 8.1.1.2 Financial performance

Financial	2013	2014	2015
Revenue	41,848	39,830	35,481
Gross Profit	11,992	11,215	10,134
Operating Income	4,387	4,178	3,049
Net Income	2,787	2,594	1,933

Note: USD Million



### 8.1.1.3 Product benchmarking

Product	Application/Feature
<b>FTPA2000-260</b>	It finds applications in semiconductor, pharmaceutical & life sciences, fine chemical & specialty chemical, commodity chemical, and Original Equipment Manufacturer (OEM)
<b>FTPA2000-300 series</b>	These analyzers are particularly well suited for composition determination of process streams in industries such as refining, petrochemicals, polymers, chemicals, pharmaceuticals, and foods
<b>FTPA2000-HP260X</b>	FT-NIR process analyzer for hydrocarbon and petrochemical applications
<b>FTPA2000-SC series</b>	Wet process analyzers for semiconductor, FPD, and solar cell manufacturing
<b>TALYS ASP500 series</b>	TALYS are fiber optics based industrial FT-NIR analyzers designed for in-line monitoring and control of batches or continuous processes. Its seamless installation enables reactor profiling, real-time determination of process endpoint, cycle-time reduction, process characterization, and early troubleshooting
<b>FTPA2000-260PH</b>	FT-NIR process analyzer for pharmaceutical and life sciences industries
<b>FTPA2000-HP20</b>	The ABB HF alkylation process acid analyzer is an FT-NIR-based process analyzer that offers a reliable solution to the problems faced by the HF alkylation operators
<b>FTPA2000-HP460</b>	FT-NIR process analyzer for hydrocarbon and petrochemical applications
<b>TALYS ASP300 series</b>	Wet bath monitoring analyzers

#### 8.1.1.4 Recent developments

- In April 2015, ABB Ltd. and Universite Laval delivered a measurement instrument for astronomy SITELE, which was a Wide-field imaging Fourier transform spectrometer
- In March 2013, ABB Ltd. announced that it had been chosen to supply system integration, process analyzers, and related services for Cheniere Energy's Sabine Pass liquefied natural gas export facility in Cameron Parish, Louisiana
- In June 2012, ABB Ltd. launched an infrared spectrometer, MB-Rx to monitor chemical processes at both pilot plants and laboratories. This device was used for monitoring reaction kinetics and key parameters of the reaction such as intermediate and end products.
- In November 2011, ABB acquired Powercorp, Australia, a renewable power automation company. This acquisition helped ABB in strengthening its portfolio of control technologies used to manage the integration of renewable energy sources.
- In November 2010, ABB acquired Baldor, U.S. This acquisition helped ABB to expand its business and to access Baldor's industrial customer base in North America.

- 8.1 AG Leader Technology**
- 8.2 AGCO Corporation**
- 8.3 Agjunction, Inc.**
- 8.4 Cropmetrics LLC**
- 8.5 Deere & Company**
- 8.6 Dickey-John Corporation**
- 8.7 Precision Planting, Inc.**
- 8.8 Raven Industries**
- 8.9 SST Development Group, Inc.**
- 8.10 Trimble, Inc**

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