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Agriculture Drone Market - Global Outlook & Forecast 2023-2028

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Report description:

The global agriculture drone market size is expected to grow at a CAGR of 22.94% from 2022 to 2028.

MARKET TRENDS & OPPORTUNITIES

Unleashing the Potential of Drone-As-A-Service

One significant trend emerging from the evolution of drone technology is the concept of "Drone-as-a-Service." This term refers to the allocation of drone-based services that allow businesses to employ the power of aerial automation in infrastructure & drone hardware without investments. This trend is revolutionizing the way farmers approach their operations. This innovative concept involves the utilization of drones as a service rather than farmers owning and operating their fleet of drones. Under this model, specialized companies provide drone-based services to farmers, offering a range of capabilities tailored to their specific needs.

Shift Towards Smart Farming, Digital Farming, Precision Agriculture

Automation is a key aspect of smart farming and digital farming. Agriculture drones automate various traditionally performed tasks, saving time and reducing labor requirements. Drones can autonomously survey fields, collect data, and perform aerial spraying or seeding tasks. This automation allows farmers to focus on higher-value activities such as data analysis, decision-making, and implementing precision agriculture techniques. Agriculture drones' time and labor savings improve efficiency, productivity, and, ultimately, better crop quality.

INDUSTRY RESTRAINTS

High Initial Cost & Regulatory Barriers

Agriculture drones, especially those with advanced features and sensors, are expensive. The high cost of drones poses a barrier to entry for many farmers, particularly small-scale farmers or those operating in developing regions with limited financial resources. The cost includes the drone and additional software, training, and maintenance expenses. High costs limit adoption and slow agriculture drone market growth, particularly in price-sensitive markets.

SEGMENTATION INSIGHTS

INSIGHTS BY TYPE

The fixed-wing type segment dominates the global agriculture drone market. Fixed-wing drones have gained popularity in agriculture due to their ability to cover large areas efficiently. These drones offer longer flight times and carry heavier payloads, making them suitable for crop monitoring, mapping, and spraying tasks. However, fixed-wing drones cannot hover in place like multi-rotor drones, which limits their ability to perform tasks that require stationary flight.

Segmentation by Type

- Fixed-Wing
- Multi-Rotor
- Hybrid

INSIGHTS BY SENSOR TYPE

The global agriculture drone market is categorized into four types of sensors- RGB, multi-spectral, Thermal, and Lidar. Multi-spectral accounts for the highest share of the industry as this sensor technology allows the farmer to see further than the naked eye. The multiple bands of light captured by these sensors facilitate precise analysis of plant vigor, canopy cover, leaves, and other plant parts. Without multi-spectral data, early detection of plant diseases, weeds, and pests and calculating vegetative biomass would be nearly impossible. As a result of these factors, the demand for multi-spectral sensors in the agriculture drone market is expected to continue growing.

Segmentation by Sensor Type

- Multi-Spectral
- RGB
- Thermal
- Others

INSIGHTS BY PAYLOAD CAPACITY

The global agriculture drone market comprises a wide range of payload capacity of agriculture drones. Some drones fall into the range of below 10 KG, 10-30 KG, and the bigger drones fall into the above 30 KG category. Agriculture drones with below 10 KG payload capacity held the highest share in the industry in 2022 but are likely to grow steadily during the forecast period. Drones with a payload capacity below 10 kg are typically used for small-scale agriculture operations and tasks that do not require heavy payloads. They are suitable for capturing detailed imagery of crops, detecting plant health issues, and generating accurate maps of fields.

Segmentation by Payload Capacity

- Below 10 KG

- 10-30 KG
- Above 30 KG

INSIGHTS BY OPERATION MODE

The remote control operation mode held the largest global agriculture drone market share in 2022. In this mode, operators have real-time control over the drone's flight path, payload release, and data collection. Remote control operation provides flexibility and adaptability, as operators can adjust the drone's movements and actions. However, autonomous drones account for the lowest share but are likely to boost the industry with expected revenue of around USD 3.80 billion by 2028. Further, remote control drones held a bigger share than autonomous ones due to convenience and safety.

Segmentation by Operation Mode

- Remote Control
- Autonomous

INSIGHTS BY DISTRIBUTION CHANNEL

The global agriculture drone market is segmented into two distribution channels: direct and indirect. Indirect channels account for a bigger share than direct channels, as in this market, there are several retailers and intermediaries through which people can easily buy agriculture drones. Indirect distribution is favored by manufacturers who may not have extensive sales and distribution networks or prefer to leverage the expertise of established intermediaries.

Segmentation by Distribution Channel

- Indirect
- Direct

GEOGRAPHICAL ANALYSIS

North America accounted for the highest share of the global agriculture drone market, in 2022, due to large-scale farming operations and the availability of advanced technology. Further, the presence of key drone manufacturers and technology providers in the region has propelled the growth of drones. APAC region has also witnessed substantial growth in the agriculture drone market, primarily driven by countries such as China, Japan, and Australia. Due to increasing government initiatives and support, APAC will likely grow at the highest CAGR in the global agriculture drone market.

Segmentation by Geography

- North America
  - The U.S.
  - Canada
- Europe
  - France
  - Germany
  - Italy
  - The U.K.
  - Spain

- APAC
  - China
  - Japan
  - Australia
  - India
  - South Korea
- Latin America
  - Brazil
  - Argentina
  - Mexico
- Middle East & Africa
  - Saudi Arabia
  - South Africa
  - Israel
  - Turkey

COMPETITIVE LANDSCAPE

The global agriculture drone market is highly competitive and diverse, with the presence of numerous established players as well as new entrants. Major global agriculture drone market players include DJI, Parrot SA, PrecisionHawk, Trimble Inc., AeroVironment Inc., Yamaha Motor Co., Ltd., and AgEagle Aerial Systems Inc. These players occupy a significant industry share and are constantly engaged in mergers and acquisitions, partnerships, and collaborations to strengthen their market position.

Key Company Profiles

- DJI
- Parrot Drone
- Trimble
- AgEagle Aerial Systems
- AeroVironment
- Yamaha Motor
- XAG

Other Prominent Vendors

- Aerial Drobotics
- AKSATA
- American Robotics
- Asteria Aerospace
- ATMOS UAV
- AVULAR
- Ayaan Autonomous Systems
- Delair
- Dragonfly
- Hubblefly Technologies
- IAI
- JIYI

- MICRODRONES
- Nileworks
- OPTiM Corporation
- Sky-Drones Technologies
- Thanos Technologies

KEY QUESTIONS ANSWERED:

1. How big is the agriculture drone market?
2. What is the growth rate of the global agriculture drone market?
3. Which region dominates the global agriculture drone market share?
4. What are the significant trends in the agriculture drone market?
5. Who are the key players in the global agriculture drone market?

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