



# HIVE Fully Automated Agriculture System



## Introduction

By the year 2050, the world population will rise to **\$0.74 billion**, which would require the agriculture industry to increase food production to feed such a large population. Also, the labor force in the agriculture industry is decreasing year by year. Therefore, we would like to address the labor efficiency problem in today's agriculture industry by using AI and IoT technology.

Also, the opportunities in this industry are growing with an annual growth rate of 12.7%. High demand for agtech products and services such as the adoption of remote sensing technology and guidance technologies are fueling the growth of precision farming. The statistic represents precision farming industry will generate revenue of **\$2,386 million** by 2025 worldwide.



Our products will combine many types of agricultural technology to form a fully automated farming network, thereby improving overall efficiency. This system will allow various plug-ins to fulfill different agricultural tasks including irrigation, spraying pesticides, weeding, etc.

## Solution

By using HIVE's drone-based solutions, large agriculture firms will greatly improve accuracy and efficiency, ultimately resulting in more efficiency and precision from our real-time AI recommendations.

HIVE is a one-stop platform that provides farmers with an end-to-end precision farming service solution that is fast and safe. These services provide farmers with functions such as crop inspection, irrigation, crop protection, soil assessment, and real-time insight report.

### One drone Multiple Solutions



**CROP INSPECTION** A drone equipped with multispectral cameras will hover over the designated farmland, holistically viewing the crop's growth, track progress, crop fertility, and scouting for potential threats to the crops. The farmers will set the schedule of the drone hovering over the fields, such as daily, weekly or monthly depending on their farming needs. These drones will be AI-enabled and automated, which will allow them to provide real-time data to the farmers. This will enable the farmers to identify the issues, take necessary steps and monitor the improvements.

**IRRIGATION** In addition to crop inspection, these drones can be fitted with irrigation sprayers. This will allow the drone to precisely irrigate the crops in an even manner, efficiently use water and cover a larger mass of land than a human within one-fourth of the time.

**CROP PROTECTION** Under the help of AI, past data and crop monitoring the UAV identifies the areas affected by pesticides, wildlife, and weather and undertakes effective adjustments by precisely aiming these areas that meet the exact need of each affected area. The data is further analyzed over the years to create a more accurate forecast and only warning through trends and patterns.

**SOIL ASSESSMENT** The data retrieved from drone monitoring will provide critical information on soil characteristics such as moisture, pH level, soil composition, temperature, slope, elevation and more. This will enable a more accurate soil sampling, recommending the most productive of the most appropriate crops that would have a higher yield for the specific farmland. This will save time and money.

**REAL-TIME INSIGHT REPORT** Based on AI, a range of drone-based sensing aerial imagery of the designated farmland is captured. This data is further analyzed with the baseline data to identify measurable plant traits and characteristics. Through our App, the farmer will be provided with real-time insight reports and necessary expert recommendations to make decisions.



## Methodology

### HOW DO WE MEASURE OUR SUCCESS?

Metric	Measure	Description
Revenue (Monthly)	Dollars by product	Monthly income is your sales for the month—how much money you earn when you engage in business. Therefore, by calculating the sales of our products and comparing them with our peers, we can clearly understand whether our products have achieved our targets.
Customer Review	Amount of good reviews and/or reviews	A customer review is an important criterion for measuring the success of a product. Because good reviews can make our products needed by more customers, and bad reviews will greatly affect the reputation of our products. According to the survey, consumers will first look at the bad reviews to measure whether they need to buy the product.
Market position	Third-party rating such as Payscale, Statista, etc.	Analysis will rank our company against our major competitors.
ROI (Annually)	Percentage	Return on investment (ROI) is a financial concept that measures the profitability of an investment. It's exceptionally useful for measuring success over time and taking the guesswork out of making future business decisions.

### HOW DO WE PRICE OUR PRODUCTS?

Category	Item	Price
[US Farmers' annual income]	Small-scale farms income	\$72,481
	Large-scale farms income	\$348,811
	Spraying Pesticide	\$5,252
	Weeding	\$5,410
[Purchase our machine]	Monitoring	\$9,946
	Total fee	\$17,648
	Our product price	\$15,990

**Formulas:** Acres \* Price/Acre = Total fee  
 Subscription policy: \$12/Acre/Year  
 Standard small farm: 3-acre  
 Assumption: Drones work once a week  
 Total times: 52 times

**[Examples]**  
 30 Acres \* \$12/Acre \* 52 = \$15,000 Year: 1.03  
 3 Acres \* \$12/Acre \* 52 = \$1,560 Year: 10.26



## Conclusion

The total revenue of agtech is **\$2.4 billion**, and the forecast market value of autonomous farming is predicted to be **\$9.53 billion** in 2023, indicating that there will be a bright outcome in the agtech field.

Monitoring Drones, Unmanned Aerial Vehicle (UAV) and robot cultivate are irreplaceable trends in agricultural machine application. Since crop information could be required conveniently and operated more efficiently, it is an important auxiliary technology for future agricultural development.

Agricultural technology is a fast-developing industry aimed at solving a lot of societal needs. The implementation of such a new innovative drone farming system will influence the labor force in the agricultural sector. HIVE can provide an integrated automated agriculture system. This essentially acts as a production line that can be run fully autonomously and the farmers and monitor all risks and progress remotely. This idea is a great way of solving a global issue get still transforming trapped value into new value for the agricultural sector.

**2020-2025** (Phase 1) 20% of U.S. agtech market

**2026-2030** (Phase 2) 80% of U.S. agtech market

- SOCIETY**
  - Increase global food supply
  - Ensure global food security
  - Improve eco-efficiency
  - Make the service affordable for the farmers
- CONSUMER**
  - Provide real-time crop data analytics and health report
  - Monitor early pest and disease detection
  - Irrigate precisely and improve the water efficiency
  - Reduce crop planting costs and increase agricultural income
- INDUSTRY**
  - Transform agricultural development methods
  - Optimize agricultural structure and layout
  - Concentrate on saving natural resources and production factors
  - HIVE provides an automated agricultural system with AI which will combine multiple precise agricultural devices in one connected network
- ENTERPRISE**
  - At HIVE, we believe in using technology to make work safer and more efficient. Our proven drone solutions simplify the collection and analysis of geospatial data, allowing professionals in surveying, agriculture, engineering and humanitarian aid to make better decisions faster.