Robots Solve Problems for Farmers in Southeast Asia

Farmers have long resisted agtech solutions, preferring instead to rely on tried and tested practices that they have used for decades, even when those traditional methods may not optimise yield or revenue. Gradually, however, changing climates and improved technology are leading to the acceptance of robots for agriculture in Southeast Asia.

Demand for Robots is Growing

Already, Statista found, there is growing demand for robots for farming solutions in Southeast Asia. That demand is driven by an aging farming population, labour shortages in some sectors, traditional methods becoming less efficient and less cost-effective, and a need for sustainable farming practices. Farmers are realising that leveraging robotics for precision agriculture allows for better crop management and higher yields. Consumer demand is a driver, too, due to greater awareness of food safety and quality issues.

Ease of use is also making adoption of robots easier for farmers. In the past, Universal Robots Regional Director of Asia-Pacific James McKew told Tech in Asia, farmers were resistant to advanced technologies such as automation or robotics and preferred traditional methods. Most farmers believed robots were too expensive to purchase, inflexible, space-hogging, and needed engineers to run them. Now, however, cobots - agricultural robots used collaboratively - are actually versatile, flexible, adaptable, and cost-effective. Farmers don't need to worry about programming them, either, since they have become easy to implement, operate and maintain.

The main purpose of cobots, Aaron Raj at Tech Wire Asia explained, is to enhance productivity and provide insights for decision-making. While farmers have preferred people for harvesting because flowers and fruits requires a soft touch, cobots now have capabilities that can allow them to solve staff shortages in harvesting or pollination, where it is harder to find sufficient labour. There is also a growing trend of using drones for crop monitoring and spraying, again reducing the need for manual labour.

These shifts don't mean that developing the robots and gaining adoption is always easy. Countries like Thailand and Vietnam have large rice production industries, Statista noted, while Indonesia and Malaysia have significant palm oil production, so robotics companies need to consider unique local factors such as different crop types and farming practices when they develop and market their robots.

Robotics companies also need to make sure they can explain their services simply and completely so that they can persuade farmers to use them. Successful pioneers in the industry have partnered with experienced farmers who act as references for their community, for example, and with distributors who already have connections to the farmers when they sell seed, fertiliser or other products.

Start-ups play a Key Role in Robotics in Southeast Asia

While large tech companies from India or China as well as other markets are strong competitors, small start-ups in Southeast Asia have made inroads in the region. Those firms are part of the broader market of more than 270 agrifoodtech start-ups that Antara said already call Southeast Asia home.

In the Philippines, for instance, Filrobotics Technologies aims to foster a culture of learning through the design and development of service robots. It is developing autonomous navigation systems for agricultural machinery which improve working conditions for Filipino farmers and overcome the shrinking agricultural labour sector.

Garuda Robotics designs, manufactures and operates autonomous drone systems that it says enable high-resolution up-to-date aerial maps and accurate tree count data that could save up to 25 percent of farmer's fertiliser costs every year. Farmers can access their drone maps easily, add information, share notes, view key performance indicators such as tree count, and increase planting efficiency so they can maximise their yield. The accurate

count of palms enables budgeting for the right amount of fertiliser and labour at their clients in Southeast Asia in markets including Singapore, Malaysia and Indonesia.

Singrow has developed innovative agritech solutions for producing fruits and vegetables, Tech in Asia observed. It collaborated with Universal Robots and Augmentus on building an integrated AI model that helps to identify flowers and strawberries, which it uses for cobots for harvesting and pollination systems.

Ci-Agriculture has developed precision agriculture for local agriculture. They use big data analytics and smart sensing in farm management systems that integrate weather analysis, satellite imagery, sensors and drones to improve yields and productivity. Founded in 2014, it has developed solutions to help Indonesian farmers and works on enhancing the value chain to improve food sustainability and health.

BIOPS Agrotekno has developed an IoT technology that provides precise and automated irrigation by measuring temperature, humidity, light intensity, rain intensity, and wind speed and direction. Its smart irrigation system senses the environment and precisely waters the plantation while connected to the internet. Productivity for some crops increased by 40 percent compared to traditional horticulture methods, it says, while operational costs dropped by half and water usage decreased by 40 percent.

While these and other start-ups won't resolve all of the farmers' challenges immediately, their solutions can help farmers improve their efficiency and revenue significantly amidst increasing climate change and labour shortages.

#Agriculture #Farmers #SoutheastAsia #Robots #Cobots #Sustainability #ClimateChange #Automation #Singrow #BiopsAgrotekno #CI-Agriculture #Filrobotics #GarudaRobotics