Sensors and Software Give Farmers a Huge Boost in Adapting to Climate Change
A Start-up Story – Mertani, Indonesia

With climate change causing storms and floods as well as droughts, Indonesian farmers need solutions so they can still grow their crops. Mertani provides locally developed devices and algorithms to help farmers and the government prepare for whatever happens.

Mertani Delivers a Multitude of Solutions

"We help our users, government and private companies to monitor the environment and microclimate data real-time and act to improve the effectiveness or efficiency of crops," Mertani head of marketing Aufa Sabili explained.

Mertani uses software and a multitude of hardware to support its clients. Solutions include sensors for monitoring water and air quality, a weather monitoring system that provides real-time information, an early warning system to predict floods, and solutions for monitoring groundwater, river or seawater levels.

"We programme our IoT infrastructure end-to-end," said Mertani head of business development Ashif. "We produce domestically. That makes Mertani applicable for private or government users, as they usually need to procure devices from Indonesia. We are based here and can provide support services. We offer warranties if they have problems. Also, we can provide more competitive pricing because our engineers and operations are based here."

Clients Rely on Mertani

Mertani has several areas of focus, Aufa explained. One is to help private agriculture and industrial companies increase efficiency and effectiveness by understanding real-time water, air, soil, humidity and temperature data. Each company uses it based on their types of crops.

Second, clients use the technology for environmental sustainability monitoring and reporting. Along with providing updates about the data environment to comply with government regulations, they also use the data to plan policies or agendas. The central and local governments use the data for governance.

Most of Mertani's users are big plantations or industrial firms. One of its biggest customers has a water management team in its fields, for instance, so it is shifting from manual to digital data collection. Farms can also collect data related to forest fires and have an early warning system for flash floods. Mertani also helps the government to manage water quality, which is an environmental issue. "As the climate changes, it's the main issue that we have," Aufa said.

Mertani also has clients in other sectors, including mining. "As long as we can help with environmental issues, we help them."

Mertani has had success in getting agricultural firms large and small to adopt its solution. For larger customers, it adds value by interpreting the analytics and climate change impacts. Since it's hard to explain the services to smaller farmers and they may already have mental assumptions about how to farm, though, Mertani partners with the government. For these small farmers and farmer groups, Mertani also shares knowledge and best practices so they can understand the benefits of the platforms and devices.

Mertani Uses Multi-Channel Sales Practices

"In terms of sales," Aufa said, "we tap into the pain points of each of our clients and see how we can help. We combine soft selling with understanding their problems and how remote monitoring and using data can help them be efficient and effective. Then they increase the efficiency and effectiveness of their operations."

“We have a sales team and a digital marketing team,” Aufa said. “We provide updates on our projects in LinkedIn and our website. We also have offline sales with the government and corporates. We demonstrate with a free trial program so they can feel the impact of the tools and have confidence to use them.”

For additional marketing, Aufa said, “we focus on storytelling around agriculture or plantations, around the activities of our clients. We share articles, research conducted internally, and research papers or journals. For example, we upload articles about fertilisation and hydroponics in our website and our blogs. We share stories in LinkedIn or to our clients in WhatsApp. We build stories about agriculture and how our tools or devices can help our clients.”

Maintaining a Competitive Advantage

Mertani expects that it can maintain a competitive advantage because of its local presence. It devoted more than five years to develop its hardware, using research grants and engineers based in Indonesia. It developed a cloud data management system that uses data logs and IoT that can be integrated with sensors that match use cases for real time monitoring. Mertani also developed in-house software for monitoring and analytics. “These building blocks are our solution. They provide a competitive advantage.”

Aufa said it’s also easier for Mertani to reach economies of scale because of lower production costs. Because it develops its solutions in-house in Indonesia, it can use domestic materials. “Being based in Indonesia, we can provide customer service quickly. When our government approaches us for digitalisation or for simplification, we can deal with it. Our deployment is based on industry needs.”

Forecast Revenue

Mertani sees a large market for its services among the thousands of farmers in Indonesia. Along with charging a fee for the devices, Mertani also charges a subscription fee for the software. It has deployed almost 500 devices so far and expects the market to grow significantly via its sales, marketing and partner activities.

Mertani Makes a Difference

The entire team at Mertani focuses on making a difference in the lives of people in Indonesia, Ashif said. “The lives of the population can be improved using our solution. The data is real-time and accurate. Using data efficiently and seeing activity can be beneficial, helping one farmer group at a time, one company at a time. It's also environmentally sustainable. If we install water level sensors for a couple of rivers, this helps the government to mitigate the risk of floods. Using technologies like this can help accelerate solutions and risk mitigation. We also think about the impact as reducing loss, whether it's money or even loss of lives. People can come home earlier, so they have more time with their family. What they want to do is to spend time with their kids. If they can also have better water quality and so on, we are happy.”