The World's First Intelligent Plantations: Here and Soon

Developments are being led by Felda Agricultural Services and MIMOS in six critical areas.

BY AVANTIKUMAR

Felda Agricultural Services (FAS)—a subsidiary of Felda Holdings, which provides R&D services to the Felda Group—and Malaysian applied research agency MIMOS have inked a deal to develop the world's first intelligent plantations. The collaboration will be in six areas, said organisation representatives.

MIMOS Chairman, Dato' Suriah Abdul Rahman, said that new applications for FAS would be developed, based on its Micro Electro Mechanical System (MEMS) sensor, semantic, wireless and grid computing technologies.

"These tools will be used to enhance FAS's R&D and advisory services to the Felda Group, which oversees some 740,000 hectares of oil palm plantations," said Rahman. "One of the key thrusts of this collaborative venture is to develop an intelligent platform based on frontier ICT technologies for remote and accurate monitoring of soil conditions and crop parameters in Felda estates."

"The other is to develop an information system based on MIMOS's semantic technology, and harnessing FAS's 40-year knowledge of in-field variability for strategic usage to enhance the productivity of Felda's oil palm plantations," she said.

The collaboration is expected to herald a new era of precision agriculture, marrying ICT with agriculture whereby digital databases will guide estate management, which should lead to higher profitability.

First Move

Rahman said that MIMOS' Sensor Technology platform uses MEMS technology integrated with electronic and wireless modules, whereby MEMS sensors collect in-field data and relay the information automatically to crop databases.

"Apart from eliminating manual assessment through soil sampling, this automated system would be able to capture critical data to aid decision making in the plantations" she said. ""Worldwide, this is the first move to use MEMS-based technology towards increasing palm oil productivity."

However, she said, FAS and MIMOS would use frontier tools and technologies to widen the scope of analytical data usage to make explicit FAS' tacit knowledge for more strategic purposes.

Felda Chairman Tan Sri Dr Mohd Yusof Noor said that the collaboration is a significant step forward for the industry because sophisticated technology will be brought to bear to re-engineer some of the existing practices in oil palm plantations.

"The collaboration also involved the transformation of data collected through the Intelligent Plantation System to be transposed into the data collected by FAS over the last 40 years to enhance FAS's ability to forecast yields, draw site specific information for better estate management and analyse data for decision making," said Dr Noor. "Felda aims to be a respected and successful global enterprise in the palm oil business. In an environment where rising plantation costs, volatile commodity prices and labour issues impact profitability, technology becomes an important enabler towards improvements in yield and quality." 🌐