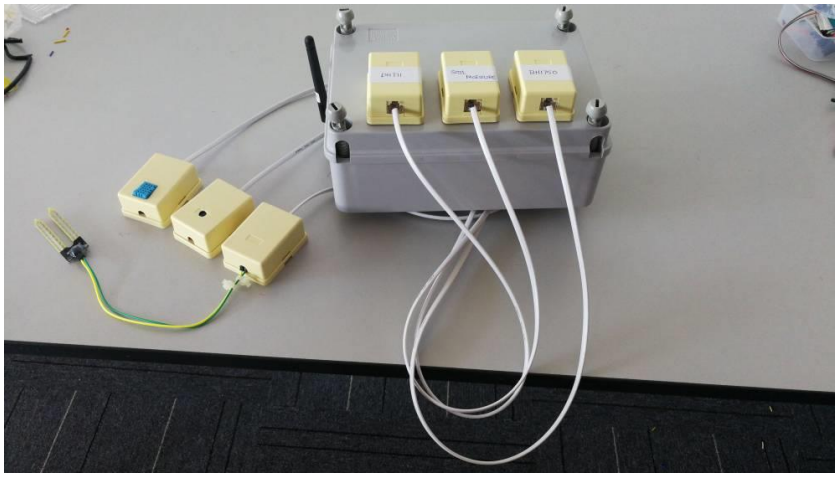
Precision Agriculture for Sarawak Rural Community

Swinburne research team works with agriculture business partner Satoyama Farm Sdn Bhd to conceptualise and develop the franchise system. We jointly called this system as Soil-to-Table. Swinburne-Satoyama partnership has established three facets of capability in the franchise system. These are facets are agriculture science, Internet-of-Things technologies, and business model for small farmers. Satoyama Farm has tested this system at its own farm successfully. System has created social impacts which includes

- high food productivity
- low environmental impact
- stable crop supply
- food security

By engaging Swinburne students, they have gained multidisciplinary knowledge on agriculture practices, sensor technologies, software applications, communication technologies and data analytics.



Swinburne-Satoyama strategy is based on providing proprietary agricultural technology solutions that are vertically integrated into farm production chain. These include feed stock and IoT technology solutions for data collection via low power wireless network. Environmental and productivity data are correlated to ensure high product quality and traceability across the value chain. When small farmers operate based on Soil-To-Table franchise system, constant monitoring and feedback loop can be provided to the small farmers to ensure transparency, sustainability and traceability whilst adhering to and complying with international standards.

Swinburne researchers mentored students to develop chicken operation management, soil and plants operation management, and cloud system for daily update between small farmers and Satoyama Farm. Students have experienced first-hand interaction with farmers, agriculture scientists, and businessmen. Students learned how to develop systems that fulfil competing requirements and expectation from different stakeholders.

Swinburne-Satoyama idea is not only to mitigate the primitive techniques related to agriculture but also serve the community by opening new avenues for employment. Franchise

system is extensive with easy implementation. The core function of the system is to monitor the growth of crop and livestock (i.e. Chicken) using digitalization which provides accurate results. By having this system, it is a huge benefit for the small-scale farmer's in rural community to monitor more than one agriculture land at the same time. Monitoring process is performed remotely, it will help the small-scale farmers to gain more valuable information's which is more crucial for the business needs. Precision agriculturetransformation can help farmers build a business case and provide a process whereby farmers can identify the digital agriculture technologies that are appropriate for their circumstances. This franchise system will accelerate the business to reach new heights and also be more profitable for small scale farmers in rural community.

Sustainable future for small scale farmer is by rising in their incomes and living standards, Swinburne team is committed to improving the livelihoods of smallholder farmers and their community by improving their agriculture practise and yields by digitization. Our strategic partnership with Satoyama have helped to improve the small-scale farmers planting on Misai Kuching which improve their yields and increase the quality and consistency of the crops.

Swinburne Satoyama is working closely with small scale farmers to work smarter, faster and more creatively towards a better future for Sarawak rural community in agriculture sector.