Appendix 4.2

AI-Driven Smart Horticulture for Climate Sensitive Plant using Soil Analysis and Image Processing: A Tropical Perspective
Project Meeting and Site Visit at Universiti Teknologi Brunei (UTB) and HARQ Enterprise and Gropoint Sdn Bhd
Report/Minutes Form

I. Organizer:

Name:	Associate Professor Dr. Lim Tiong Hoo
Position:	Project Member
Institution:	Universiti Teknologi Brunei

II. Program:

Date: 14-15 July 2025
Venue: Universiti Teknologi Brunei, Brunei

Program Agenda:

Project Members will arrive at Bandar Seri Begawan on 13 July 2025 (Sunday).

Day 1: 14 July 2025 (Monday)
Project Review Meeting and Sharing Session at UTB

08:30am	Arrival of IVO Project Team at MMU
09:00am	Welcome remarks by the Dean of Faculty of Engineering
09:15am	Introduction of Electrical and Electronic Engineering by UTB EEE Program Leader
10.00am	Coffee break and networking
10:30am	Introduction and Talk by Director of CrAFT
11:00am	Talk by Brunei Team on the Development of Smart Greenhouse Project in Brunei
12:30pm	Lunch break
14:00pm	Visit to HARQ Enterprise to visit the Water Wall cooling systems project.
16.30pm	Sharing session by HARQ Enterprise on their current chilli plant project
17:30pm	End of Day 1

Day 2: 15 July 2025 (Tuesday)
Site Visit to the Gropoint Sdn Bhd at Kampong Tungku, Gadong and UTB Research Facilities

08:30am	Visit to Gro-point Sdn Bhd, Kg Tungku, Gadong
09:00am	Strawberry Farm tour
10:00am	Coffee Break
10:30pm	Chilli and Lettuce Greenhouse visit
11:30pm	Discussion with Gropoint Sdn Bhd.
12:30pm	Lunch break
13:30pm	Visit to UTB CrAFT Lab
15.00pm	Coffee break
15.30pm	Project Update and Discussion
17:30pm	Host Dinner Event

III. Participants:

No.	Name	Organization
1	Dr. Lim Tiong Hoo	UTB, Brunei
2	Dr. Nurun Najeebah Az-Zahra binti Pg Dato Seri Setia Haji Mohammad Tashim	UTB, Brunei
3	Muhammad Wafiq Haji Abd Zariful	UTB, Brunei
4	Hj Ismit bin Hj Mohamad	UTB, Brunei
5	Dr. Phon Sovatna	NIA, Cambodia
6	Mr. Long Touch	NIA, Cambodia
7	Dr. Khanthanou Luangxaysana	NUOL, Laos
8	Dr. Phutsavanh Thongphanh	NUOL, Laos
9	Dr. Lee It Ee	MMU, Malaysia
10	Dr. Tan Swee Leng	MMU, Malaysia
11	Dr. Syazana Lim	Director CRaFT, UTB, Brunei
12	Dr. Tan Soon Jiaan	Dean of Engineering, UTB
13	Dr. Sheik Mohammed Sulthan	PL, EEE, UTB, Brunei

IV. Summary of the activities corresponding to the objectives

1. *Briefly describe the objectives of the event*

   1. To understand the waterwall greenhouse implementation in HARQ Enterprise

   The Project Meeting at UTB serves as a critical checkpoint for project members to understand the current deployment of the real Smart Greenhouse in HARQ

enterprise install by UTB and identify key challenges/drawbacks that may hinder the physical progress of the project in their respective countries.

2. To facilitate interdisciplinary knowledge sharing on cutting-edge smart agriculture solutions

The sharing sessions led by UTB Centre of Research For ArgoTech and Food (CrAFT) and Faculty of Engineering (FEng) aim to promote a cross-disciplinary dialogue on sustainable agriculture. These sessions will explore the integration of automation, AI, and legal-technological frameworks in modern farming practices, with a special focus on high-value crops like rice.

3. To enrich research understanding through immersive field exposure and practical engagement

The site visit to Gropoint Sdn Bhd at Kampong Tungku offers participants direct exposure to real-world applications of smart farming systems. Gropoint Sdn Bhd grows strawberry, Lettuce and Chilli in this temperature controller Greenhouse. These hands-on visits are designed to deepen participants' understanding of how theoretical concepts are translated into functional, context-specific solutions. Interacting with field experts and observing ongoing practices will enable researchers to gather practical insights.

2. Describe the activities corresponding to the objectives.

Objective 1: In the first day, the team visited to HARQ Enterprise to understand the Water Wall cooling systems project. The team were shown the implementation of the cooling pad, the chiller, and the negative fans as seen in figure 1. The team also has the chance to experience the cooling systems which is currently in used in HARQ. The visit ended with a discussion with HARQ Enterprise on their current chilli plant project highlighting the challenges and limitation of the greenhouse's Cooling Systems.

Figure 1a – Inspecting the waterwall installation.

Figure 1b. Negative Fans Inspection

Figure 1c. Chiller Demonstration

Figure 1d: Experiencing Chilli Greenhouse in the HARQ

Objective 2: In the afternoon, Project members were brief by the Director of Crat and visited UTB Centre of Research For ArgoTech and Food (CrAFT) to see the existing Agroponic development and Vertical Rice Farming project Figure 2. This session has allowed the team to understand existing project in UTB and create avenue for new project. It provide and strengthen project coordination among project members, and ensure that all collaborative efforts are effectively aligned with the overall research objectives and timeline.

Figure 3a – Presentation by the Director of CrAFT

Figure 3b – Discussion on project Collaboration

Figure 3c – Visit to UTB Vertical Rice Farming

Figure 3d – Visit to UTB Innovation Lab

Objective 3: In the morning, the team visited the Gropoint Sdn Bhd to experience the temperature control greenhouse which are used for Strawberry. However, the strawberry have just harvested and the owner is waiting for new seedling to arrive. The team also visited the production of Chilli commercially in 2 different Greenhouse as seen in Figure 3.

2. *Describe, in detail, if there are changes in the work plan, project schedule, budget allocation, etc. from the initial proposal.*
   Original Requested budget: USD5620.94
   (omitted)

V. Others.

pictures here.