

Appendix 4.2

**Smart Aquafarm Feeder and Monitoring System in Highly Turbid Conditions
Onsite Project Meeting and Field Visit in Brunei and Malaysia
Report/Minutes Form**

I. Organizer:

Name:	Assoc. Prof. Dr. Lim Tiong Hoo, Assoc. Prof. Ts. Dr. Farhan Bin Mohamed
Position:	Research Fellow
Institution:	Universiti Teknologi Brunei (UTB), Universiti Teknologi Malaysia (UTM)

II. Program:

Date: 26-27 January 2026 (Brunei); 29-30 January 2026 (Malaysia)

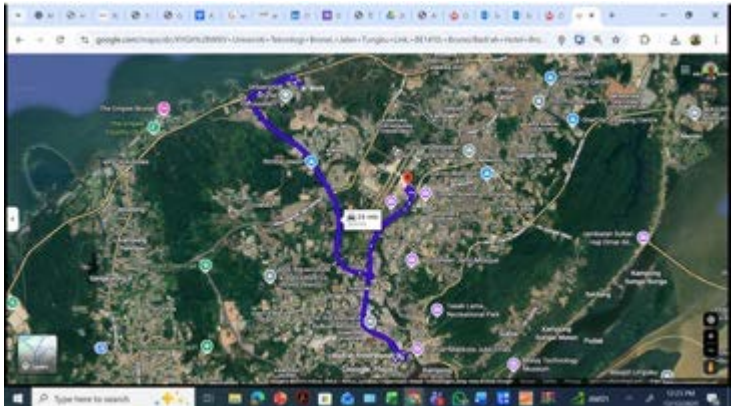
Venue:

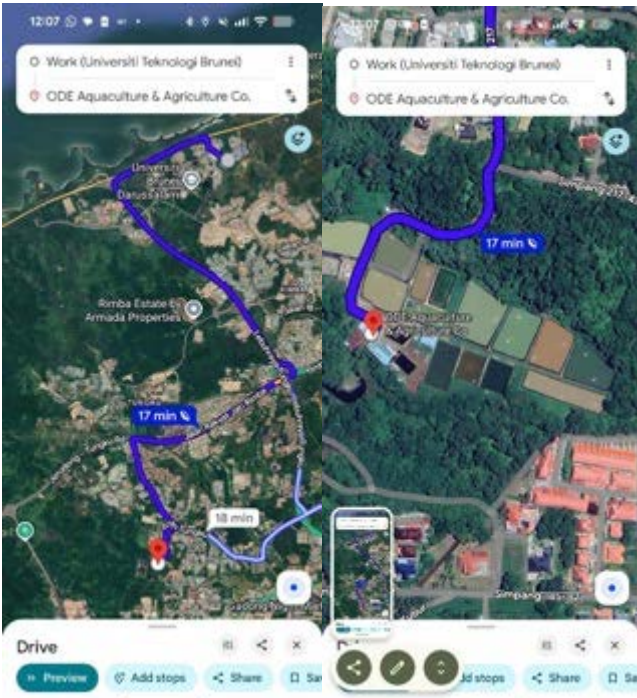
1. January 26, 2026: (Brunei)
 - a. Morning Session: Universiti Teknologi Brunei, Jalan Tungku Link Gadong, BE1410, Brunei
 - b. Afternoon Session: O.D.E Aquaculture and Agriculture Co., Simpang 217, Bandar Seri Begawan, Brunei Darussalam, BE2119
2. January 27, 2026: (Brunei)
 - a. Morning Session: Golden Corporation Sendirian Berhad, Lot 19 Spg 245, Kg Serampang Industrial Site, Tutong TA2541, Brunei Darussalam
 - b. Afternoon Session: Universiti Teknologi Brunei, Jalan Tungku Link Gadong, BE1410, Brunei
3. January 29, 2026: (Malaysia)
 - a. Morning session: Fisheries Research Institute (FRI), Gelang Patah, Institut Penyelidikan Perikanan, 81550 Gelang Patah, Johor
 - b. Afternoon session: Hyatt Place Johor Bahru Paradigm Mall, Paradigm Mall, Jln Mewah Ria 2, Taman Bukit Mewah, 81200 Johor Bahru, Johor
4. January 30, 2026: (Malaysia)
 - a. Morning session:
 - i. UTM Vice Chancellor Official Residence, Jalan Ilmu, UTM, 80990 Johor Bahru, Johor
 - ii. Media and Game Innovation Centre of Excellence (MaGICX), T03, Level 1, University Industry Research Laboratory (UIRL), Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor Darul Ta'zim

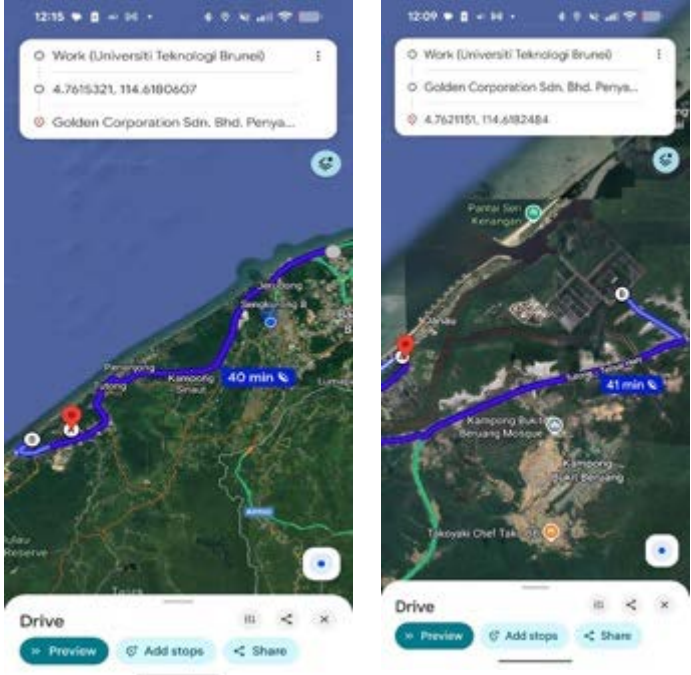
- b. Afternoon session: Hyatt Place Johor Bahru Paradigm Mall, Paradigm Mall, Jln Mewah Ria 2, Taman Bukit Mewah, 81200 Johor Bahru, Johor

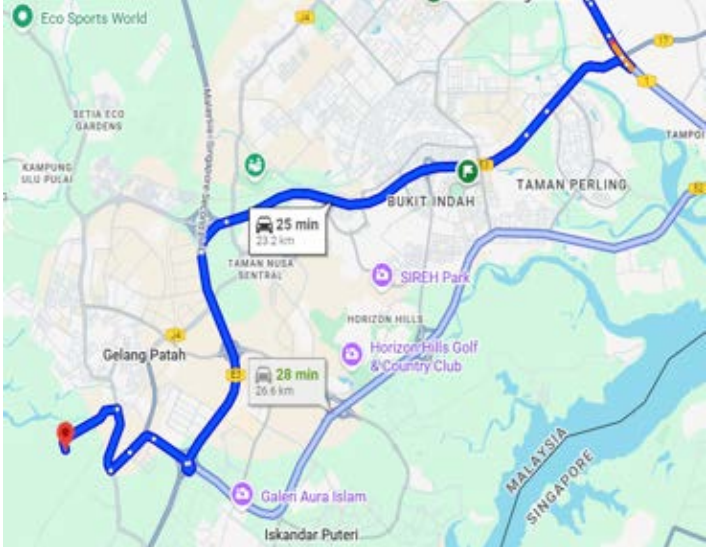
Program Agenda:

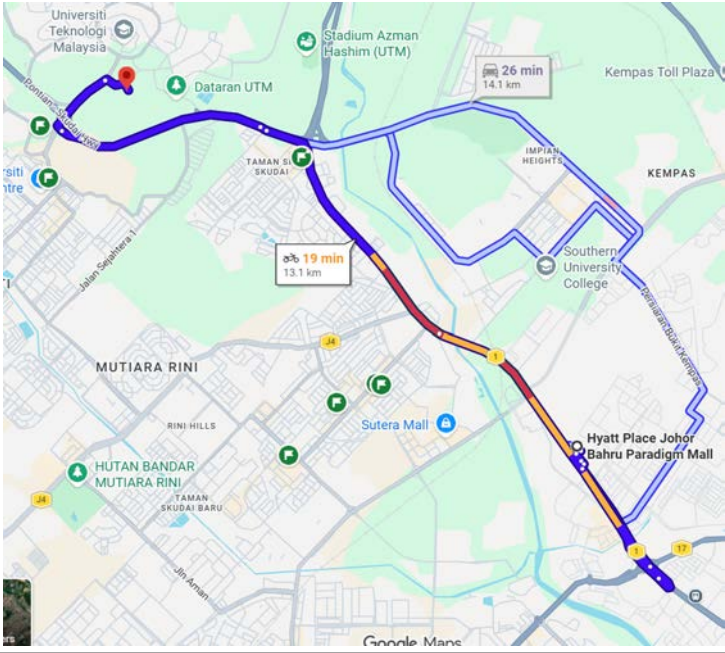
1. Project updates per institution
 - a. DOST-ASTI
 - b. UTB
 - c. UTM
 - d. TUP-V
2. Project deliverables & timeline update
 - a. Discussion of Budget Expense/Monitoring as of January 2026
 - b. Aquafarm Field visits
 - c. SAqFeeder web page introduction
3. Other activities
 - a. Plan for new grant proposal 2026
4. Project technical discussion
5. Other project matters

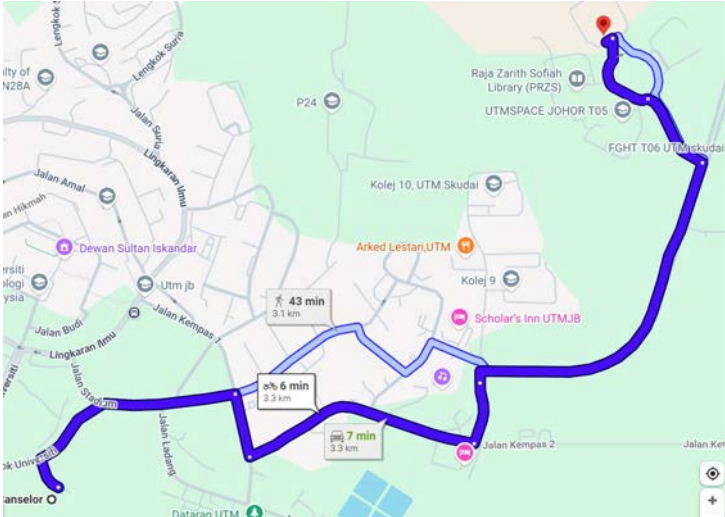
Date	Time	Activities
Jan, 25 2026	All day	<ul style="list-style-type: none"> • Arrival of participants in Brunei and Check in To Badiah Hotel 
Jan, 26 2026	08:30am	<ul style="list-style-type: none"> • Registration in UTB
	09:00am	<ul style="list-style-type: none"> • Introduction by Program Leader
	10.00am	<ul style="list-style-type: none"> • Coffee Break and networking
	10.30am	<ul style="list-style-type: none"> • Introduction to UTB CrAFT
	11.00am	<ul style="list-style-type: none"> • UTB Campus tour
	12.00pm	<ul style="list-style-type: none"> • Lunch

	<p>13.30pm</p>	<ul style="list-style-type: none"> • Depart for ODE Agriculture and Aquaculture Prawn Farm 
	<p>15.00pm</p>	<ul style="list-style-type: none"> • Tea Break
	<p>15:30pm</p>	<ul style="list-style-type: none"> • Sharing Session and Discussion with ODE Farm.
	<p>17:00pm</p>	<ul style="list-style-type: none"> • End of Day

<p>Jan 27, 2026</p>	<p>08:00am</p>	<ul style="list-style-type: none"> • Depart to Golden Corporation Sdn Bhd, Tutong, Shrimp Farm 
	<p>09:00am</p>	<ul style="list-style-type: none"> • Visit to Golden Corporation Sdn Bhd, Tutong, Shrimp Farm
	<p>10:00am</p>	<ul style="list-style-type: none"> • Visit to Semaun Fish Solar Farm
	<p>11:00am</p>	<ul style="list-style-type: none"> • Discussion with Golden Corp Owner
	<p>11:30am</p>	<ul style="list-style-type: none"> • Depart to UTB
	<p>12:30pm</p>	<ul style="list-style-type: none"> • Lunch
	<p>14:00pm</p>	<ul style="list-style-type: none"> • Sharing session and Technical Talk by ASTI, TUPV and UTM to UTB communities
	<p>15:30pm</p>	<ul style="list-style-type: none"> • Tea Break and Networking
	<p>16:00pm</p>	<ul style="list-style-type: none"> • Future Collaborative Research and Student/Staff Exchange Programme Discussion with UTB's Faculty Members
<p>Jan 28, 2026</p>	<p>All Days</p>	<ul style="list-style-type: none"> • Depart to Johor, Malaysia from Brunei via Singapore by flight. • Lunch at Changi Airport. • Rental van arrived at 3:00PM and departed Changi Airport. • Check-in to Hyatt Place Paradigm Mall Johor Bahru.
<p>Jan 29,</p>	<p>8:30-9:00 AM</p>	<ul style="list-style-type: none"> • Day 1 – Breakfast at Hyatt Place. Depart for FRI

2026		aquafarm at 9:00 AM.
	9:30 AM-12:00 PM	<ul style="list-style-type: none"> • Visiting aquafarm site • Field visit to the aquafarm sites of FRI Gelang Patah and meeting with the director, researchers, and technicians. <ul style="list-style-type: none"> ○ Venue: Fisheries Research Institute, Gelang Patah, Johor, Malaysia ○ Purpose of visit: <ul style="list-style-type: none"> ▪ Gather feedback on the design of the shrimp autofeeder prototype ▪ Insights from the aquafarm technicians, owners, and researchers ▪ Sharing of current deployed technologies in the aquafarm • Route Map from Hyatt Place to FRI: 
	12:00 PM -2:00 PM	<ul style="list-style-type: none"> • Fellowship Lunch at Hyatt Place
	2:00 PM – 5:00 PM	<ul style="list-style-type: none"> • Introduction of the Participants • Opening Remarks by Ts. Dr. Farhan Bin Mohamed • Overview of the 2-day Meeting Activities by Chan Vei Siang • Keynote Addresses and Project Update Presentation by each institution’s representative: <ul style="list-style-type: none"> ○ Speaker 1. Introduction of DOST-Advanced Science and Technology Institute, Philippines by Engr. Eduardo D. Piedad Jr. ○ Speaker 2. Introduction of Technological University of the Philippines - Visayas, Philippines by Engr. Ace Zander Antonio

		<ul style="list-style-type: none"> ○ Speaker 3. Introduction of Universiti Teknologi Brunei, Brunei by Dr. Lim Tiong Hoo ○ Speaker 4. Introduction of Universiti Teknologi Malaysia, Malaysia by Mr. Chan Vei Siang ● Explore additional avenues for continued partnership opportunities with identified new problem statements
	6:30 PM – 10:00 PM	<ul style="list-style-type: none"> ● Dinner and excursion (Bazar Karat and Culture Walk @ Johor Bahru)
Jan 30, 2026	07:00 AM – 07:30 AM	<ul style="list-style-type: none"> ● Day 2 – Gather and depart for UTM at 07:30 AM
	08:00 AM – 10:00 AM	<p>Visiting Universiti Teknologi Malaysia (UTM)</p> <ul style="list-style-type: none"> ● Breakfast with Vice Chancellor – Prof. Dr. Mohd Shafiq Bin Mohd Rahim ● Venue: UTM Vice Chancellor Official Resident ● Purpose of visit: Discussion with VC for potential inter-institution collaboration ● Route Map from Hyatt Place to UTM Vice Chancellor Official Resident: 
	10:00 AM-1:00 PM	<ul style="list-style-type: none"> ● Field visit to the research centre/s of UTM and meeting with the directors, researchers, and technicians. <ul style="list-style-type: none"> ○ Venue: Media and Game Innovation Centre of Excellence (MaGICX), Johor Bahru, Johor, Malaysia ○ Purpose of visit:

		<ul style="list-style-type: none"> ▪ Visit UTM’s research and innovation centres ▪ Discussion with researchers in MaGICX for potential collaboration, including interactive agriculture technologies, digital twin, applied AI, etc. <ul style="list-style-type: none"> • Route Map from UTM Vice Chancellor Official Resident to MaGICX: 
	1:00 PM – 3:00PM	<ul style="list-style-type: none"> • Fellowship Lunch at MaGICX • Friday Prayer
	3:00 PM – 5:00 PM	<ul style="list-style-type: none"> • Project planning and budget utilization review • SAqFeeder web page presentation and review • Discuss post-project sustainability strategies and future directions
	6:30 PM – 7:30 PM	<ul style="list-style-type: none"> • Dinner at Hyatt Place Paradigm Mall Johor Bahru

III. Participants:

Brunei Event (26-27 January 2026):

No.	Name	Organization	BN Itinerary (check in/out)
1	Engr. Eduardo D. Piedad Jr.	DOST - ASTI	25-28 January 2026
2	Gerwin P. Guba	DOST - ASTI	25-28 January 2026
3	Dr. Farhan Bin Mohamed	MaGICX UTM	25-28 January 2026
4	Mr. Chan Vei Siang	MaGICX UTM	25-28 January 2026
5	Engr. Ace Zander C.	TUPV	25-28 January 2026

	Antonio		
6	Engr. Gregorio Crisostomo	TUPV	25-28 January 2026
7	Dr. Eric A. Malo-oy	TUPV	25-28 January 2026
8	Engr. Gershom A. Defe	TUPV	25-28 January 2026
9	Dr. Lim Tiong Hoo	UTB	Local participant
10	Nurun Najeebah Az-Zahra binti Pg Dato Seri Setia H Tashim	UTB	Local participant
11	Dk Norhafizah Binti Pg Hj Muhammad	UTB	Local participant
12	Datin Paduka Professor Dr Hjh Zohrah Binti Hj Sulaiman	UTB	Local participant
13	Dr. Syazana binti Abdullah Lim @ Suzana Lim Swee Ling	UTB	Local participant
14	Dr Mohammad Saiful Bin Hj Omar	UTB	Local participant
15	Dr Tan Soon Jiann	UTB	Local participant
16	Dr. Mohamed Hasnain Isa	UTB	Local participant
17	Ir. Dr. Kenneth Siok Kiam Yeo	UTB	Local participant

Malaysia Event (29-30 January 2026):

No.	Name	Organization	MY Itinerary (check in/out)
1	Engr. Eduardo D. Piedad Jr.	DOST - ASTI	28-31 January 2026
2	Gerwin P. Guba	DOST - ASTI	28-31 January 2026
3	Dr. Farhan Bin Mohamed	MaGICX UTM	Local participant
4	Prof. Dr. Shafry Bin Rahim	MaGICX UTM	Local participant
5	Dr. Mohd Yazid Bin Idris	MaGICX UTM	Local participant
6	Mr. Chan Vei Siang	MaGICX UTM	Local participant
7	Ms. Zuridah Saadan	MaGICX UTM	Local participant
8	Mr. Azmi Bin Rani	FRI	Local participant
9	Mdm. Fadzilah Yusof	FRI	Local participant
10	Engr. Ace Zander C. Antonio	TUPV	28-31 January 2026

11	Engr. Gregorio Crisostomo	TUPV	28-31 January 2026
12	Dr. Eric A. Malo-oy	TUPV	28-31 January 2026
13	Engr. Gershom A. Defe	TUPV	28-31 January 2026
14	Dr. Lim Tiong Hoo	UTB	28-31 January 2026
15	Nurun Najeebah Az-Zahra binti Pg Dato Seri Setia H Tashim	UTB	28-31 January 2026

IV. Summary of the activities corresponding to the objectives.

The aim of this program was to observe and analyze the implementation of the project across both Brunei and Malaysian partner institutions. The itinerary was organized strategically to optimize travel costs for Philippine participants.

The meeting and site visits commenced in Brunei from 26-27 January 2026, followed by the team’s travel to Johor, Malaysia on 28 January 2026, where subsequent meetings and field visits were conducted from 29-30 January 2026.

The primary objectives of this collaborative meeting were as follows:

1. Project Review and Assessment

- a. A detailed presentation was delivered covering the SAqFeeder project’s progress, achieved milestones, recent developments, and ongoing activities. Key highlights included:
 - i. DOST-ASTI: Successfully addressed water quality sensor contamination through the implementation of sprinkle cleaning mechanisms.
 - ii. TUPV: Completed development of a solar-powered shrimp autofeeder integrated with a mechanical tray for shrimp size monitoring and custom monitoring dashboard.
 - iii. UTB: Successfully deployed the autofeeder system in operational shrimp farms.
 - iv. UTM: Finalized and launched the SAqFeeder project homepage.
- b. The team examined and addressed obstacles, potential risks, and implementation barriers encountered during project execution, developing collaborative approaches for resolution and risk management:
 - i. Identified the need to stabilize TUPV’s autofeeder due to its tall structure and potential instability.
 - ii. Enhanced the Lite version IoT box through waterproofing improvements using epoxy resin on cable entry points and implementing buffer solution calibration for sensors.
- c. Budget expenditure and utilization were evaluated prior to project

closure to ensure financial compliance and accountability, with approximately 93% utilization achieved, demonstrating strong progress.

2. Site Visit and Stakeholder Collaboration

- a. Comprehensive field inspections were conducted in both Brunei and Malaysia to evaluate project deployment and identify operational considerations. Sites visited included:
 - i. Brunei: ODE Agriculture and Aquaculture farm and Golden Corp farm
 - ii. Malaysia: Fisheries Research Institute in Gelang Patah, Johor, and UTM research facilities
- b. Active participation and constructive discussions among stakeholders facilitated the exchange of perspectives, experiences, and best practices for optimizing project outcomes:
 - i. Brunei cultivation methods: Observed the deployment of UTB's prototype and sustainable solar-powered shrimp equipment (powering aeration, blowers, and lighting systems).
 - ii. Malaysia cultivation methods: Learned about previous IoT projects for water quality monitoring that were discontinued due to funding constraints. Noted ongoing challenges with water sensor contamination and corrosion in saltwater environments. Observed current computer vision installations for monitoring shrimp size, though without tray mechanisms.
- c. The UTB-UTM visits strengthened collaborative commitments and enhanced inter-institutional partnerships through direct engagement, extending beyond the project scope to include academic collaboration opportunities, such as student exchange programs and postdoctoral fellowships.

3. Future Planning and Sustainability

- a. Consensus was established on upcoming activities, task assignments, and delivery schedules to maintain project momentum and ensure clear accountability across all partner institutions:
 - i. Deploy the project website and IoT dashboard to the DOST-ASTI server.
 - ii. Update the website with documentation and insights from the field trips.
 - iii. Deploy the TUPV autofeeder at Siason Farm in the Visayas region.
 - iv. Complete procurement of the Lite version SAqFeeder, finalize the prototype, and execute deployment at FRI.
 - v. Scheduled online meetings on March, May, and September 2026 for frequent progress updates and preparation for ASEAN IVO Forum 2026.

- b. The team discussed strategies for long-term sustainability and future development directions beyond the project's completion timeline, identifying three key technological opportunities:
 - i. Biomass Volume Detection: Implementation of sonar or acoustic technology to identify biomass volume, enabling farmers to calculate optimal feed quantities for shrimp or fish (as requested by Philippines and Brunei), and supporting AI-driven feed automation models.
 - ii. Enhanced Water Quality Monitoring: Utilization of near-infrared combined with red band technology to improve water quality assessment accuracy.
 - iii. Sensor Maintenance Solutions: Development of automated sensor cleaning systems incorporating ultrasonic, UV, or waterjet technologies.
- c. The team explored avenues for continued collaboration, mutual support, and resource coordination through potential funding mechanisms.
 - i. ASEAN IVO 2027
 - ii. Southeast Asia-Europe Joint Funding Scheme
 - iii. Horizon Europe
 - iv. ASEAN-Korea Cooperation Fund 2026
 - v. BIMP-EAGA-ROK Cooperation Fund (BKCF)
- 4. Changes in workplan: No modifications to the original work plan were required, as all scheduled activities and milestones were completed successfully according to the planned timeline.
- 5. Changes in budget allocation:
 - a. Flight Costs: Minor variations in airfare expenses occurred due to price fluctuations in the airline industry and bookings made in proximity to departure dates.
 - b. Accommodation Savings: A promotional rate was secured at Hyatt Place Johor Bahru, resulting in reduced lodging costs compared to the initially budgeted amount.

V. Others.



Introductory and welcome session by UTB Program Leaders



Visit indoor tilapia farm facility at ODE Farm



Visit shrimp farm facility at ODE Farm



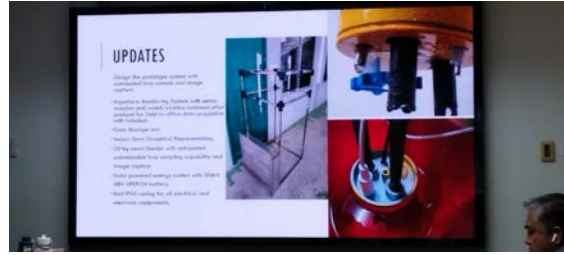
UTB campur tour



Visit tilapia farm facility at Golden Corporation Sdn Bhd



Visit shrimp farm facility at Semaun Fish Solar Farm



Sharing session and Technical Talk by ASTI, TUPV and UTM to UTB communities



Field visit to the aquafarm sites of FRI Gelang Patah



Day 1 progress update meeting at Hyatt Place Johor Bahru



Breakfast meeting with Vice Chancellor of UTM (More photos:

https://drive.google.com/drive/folders/1H5jUZxvRU7oMjQxB8wtHdu_h74WW-ZA0)



Tour at Media and Game Innovation Centre of Excellence (MaGICX) UTM



Day 2 way forward meeting at Hyatt Place Johor Bahru

ASEAN IVO and SAqFeeder in the media:

- 1) Official UTM Instagram:
https://www.instagram.com/p/DUNVtW1kQ_K/?img_index=4&igsh=MXB2Y3p2YTQ5Zm13bA==
- 2) Official UTM Facebook:
<https://www.facebook.com/share/p/1GQtcJ39Wg/?mibextid=wwXlfr>

VI. Workshop Evaluation Questionnaire

WORKSHOP EVALUATION QUESTIONNAIRE

Workshop Name: Onsite Project Meeting and Field Visit in Brunei and Malaysia

Location: Brunei and Malaysia

Date: 26-27 Jan 2026 and 29-30 Jan 2026

Participant Name (optional): Engr. Gregorio Crisostomo; Dr. Dk Dr Nurun Najeebah Az-Zahra binti Pg DSP Hj Md Tashim; Engr. Eduardo Jr Piedad; Dr. Lim Tiong Hoo

Institution /Company name of participant (optional): Technological University of the Philippines Visayas; Universiti Teknologi Brunei; DOST-Advanced Science and Technology Institute; Universiti Teknologi Brunei

Job Title: Associate Professor, Lecturer, S&T Fellow II, Associate Professor



ICT Virtual Organization of ASEAN Institutes and NICT (ASEAN IVO)

Please give us your comments here:

The activities are very commendable as they were able to address the objectives of the visit.

I truly enjoyed the experience and learned a lot. Great choices for the hotel accommodation and meeting venue, everything was smooth and comfortable. The visits to the Fisheries Research Institute (FRI) and the Shrimp Farm in Johor were especially valuable, as well as the visit to UTM MAGICX added great insight and inspiration.

The workshop enabled the project team to be updated with each other's current development and to ideate related ideas for future collaborative projects in ASEAN IVO or other funding grants. The team has identified the challenges of the current project and the current needs of the stakeholders, which serve as benchmarks for future innovation in the ICT field of aquaculture.

Well organised event with lots of collaboration opportunities
