KOICA–ESCAP Joint Capacity-Building Training Programme 2026

Brisbane and Melbourne, Australia
20–30 October

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Summary

Brisbane, Australia, with study visits in Melbourne
20–30 October 2026

1. Purpose
This report summarizes the proceedings and outcomes of the KOICA–ESCAP Joint Capacity-Building Training Programme on Digital Technologies for Addressing Climate Change Impact in the Pacific, held in Brisbane, Australia, from 20 to 30 October 2026. It explains the programme's relevance to Fiji, Tonga, Samoa and Solomon Islands, the technical and practical lessons covered, and the national action plans prepared for follow-up. Building on the previous training programmes, the 2026 programme placed particular emphasis on AI, public-sector information tasks and practical applications for climate adaptation.

- Dates and venue: 20–30 October 2026, Brisbane, Australia, with study visits in Melbourne on 23 October.
- Organizers and partners: KOICA and ESCAP, with substantive support from Jeju National University and the APNIC Foundation.
- Participants: Government officials and university specialists from Fiji, Samoa, Solomon Islands and Tonga, together with lecturers and experts from partner institutions.
- Main objective: Strengthen the capacity of Pacific Island institutions to use digital technologies and data for climate adaptation, disaster preparedness and public services.

2. Objectives and Alignment with KOICA–ESCAP Mandates

- Equip public officials with practical knowledge of AI, generative AI and data analysis, including the selection of suitable applications and review of their outputs.
- Identify country-specific needs in climate information, connectivity, staff capability and institutional coordination, and relate technical options to these needs.
- Develop draft national action plans with activities, implementation periods, indicative resources and monitoring measures.
- Support the Astana Ministerial Declaration on Digital Inclusion and Transformation, the APIS Action Plan 2022–2026 and the Technology and Connectivity theme of the 2050 Blue Pacific Continent Strategy.

3. Programme Highlights
The programme combined expert lectures, guided exercises, research briefings, study visits and country group work. The sequence moved from AI foundations and generative AI to information workflows, data preparation and application cases, followed by mini-project practice and national planning.

- Country presentations: National reports introduced climate exposure, digital initiatives, institutional responsibilities and capacity needs, providing the context for later discussions.
- Practical sessions: Four workbook practices addressed structured prompting, sequential information workflows, rainwater-asset data cleaning and visualization, and the configuration and evaluation of customized AI assistants.
- Application cases: APNIC Foundation initiatives, federated learning and PumonAI, remote sensing, and Project FIREfly linked technical concepts with implementation conditions.
- Study visits: CSIRO Clayton, Melbourne Connect and Science Gallery Melbourne on 23 October, and CSIRO Brisbane on 26 October, complemented the classroom programme.
- Facilitated group work: Mini-project discussions and mentoring led into national action-plan presentations, feedback and closing reflections.

4. Country Insights — National Reports

- Tonga: Dispersed islands and exposure to cyclones, storm surges, drought and sea-level rise make reliable public warnings a priority. Digital identity and data-exchange initiatives provide a basis for integrated services, while outer-island connectivity, backup communications and specialist skills require further support.
- Fiji: Cyclones, floods and coastal change affect settlements and infrastructure. National digital and cybersecurity strategies, climate-reporting tools and population data support planning, but last-mile access, interoperability and recurring maintenance remain important constraints.

- Samoa: Coastal communities face cyclones, heavy rainfall, erosion and damage to reefs and fisheries. Research partnerships support remote sensing, environmental monitoring and drone applications. Rural coverage, equipment costs, power reliability and specialist staffing affect their wider use.
- Solomon Islands: Cable connectivity, digital financial services, meteorological upgrades and geospatial training are expanding technical options. Reliable observations, field communications and inter-agency data exchange are necessary to turn these investments into timely climate information.

5. Technical Session Highlights — Key Takeaways

- AI foundations: Define the public-service problem, assess the available data and cost of errors, and plan for evaluation, accountability and maintenance.
- Generative AI: Clear instructions and reference material improve relevance, while human review remains necessary for factual accuracy, privacy and official publication.
- Data and workflows: Preserve source records, document corrections and check that summaries, formulas and charts retain the original information.
- Federated learning: Collaboration across institutions requires compatible data, site-level evaluation and clear governance, alongside protection of locally held records.
- Environmental monitoring: Sensors, imagery and communications should be selected for the local hazard, operating conditions and maintenance capacity.
- Sustainable digital services: Power, staffing, transport, repairs and equipment replacement are part of project design and financing.

6. National Action Plans — Summary of Country Drafts

- Tonga: A bilingual citizen weather and early-warning application for 2027–2028, combining official information, accessible presentation and staged development and rollout.
- Samoa: A community climate early-action pilot in three villages, with nine monitoring nodes, authorized data exchange, bilingual alerts and regular preparedness exercises.
- Solomon Islands: A twelve-month rainfall-monitoring and ocean-observation programme, integrating equipment rehabilitation, new observations, data exchange and staff training.
- Fiji: A twelve-month staff AI-awareness plan and a six-to-nine-month water-security pilot on Batiki Island, using asset mapping, monitoring and reviewed decision support.

7. Considerations

- Inclusion and accessibility: Provide local-language and low-bandwidth services, and retain several communication channels for remote communities.
- Data governance: Agree standards, permissions, publication procedures and responsibility for information quality.
- Operational sustainability: Include staff capacity, power, maintenance and recurring costs alongside the initial investment.
- Responsible AI: Test systems against defined tasks, protect sensitive information and retain human responsibility for public decisions.

8. Monitoring, Evaluation and Learning

- Outputs: Practical work, staff training, country-plan milestones and progress on proposed pilot systems.
- Outcomes: Service availability, alert reach and delivery time, message comprehension, data quality and use of information in public services.
- Data sources: Exercise records, system logs, community drills, surveys and national progress reports.
- Learning: Review pilot findings and country milestones with the responsible institutions and use the results to improve implementation.

9. Recommendations and Next Steps

- Finalize the draft plans through national consultations, confirm focal points and refine technical designs and costs.
- Discuss technical assistance, training and financing with KOICA, ESCAP, Jeju National University, the APNIC Foundation and other relevant partners.
- Begin with manageable pilots, provide for operations and maintenance, and review performance before expansion.

Outline

Dates: 20–30 October 2026

Venue: Brisbane, Australia, with study visits in Melbourne / Mode: In person / Language: English

Organizers: Korea International Cooperation Agency (KOICA) and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)

Supporting partners: Jeju National University, Republic of Korea, and the APNIC Foundation

Participants: Representatives from Fiji, Samoa, Solomon Islands and Tonga, and experts from partner institutions

Executive Summary

From 20 to 30 October 2026, KOICA and ESCAP convened officials and specialists from four Pacific Island Countries in Brisbane for training on digital technologies for climate adaptation. The programme combined AI lectures, guided practice, study visits and national planning. Participants examined prompting, information workflows, data analysis and AI assistants, alongside application cases in distributed learning and environmental monitoring. Research exchanges in Melbourne and Brisbane complemented the classroom sessions. Country groups prepared draft action plans on public weather information, community monitoring, environmental observations, staff training and water security. The plans provide a basis for technical refinement, national approval and discussions on implementation support.

Key 2026 Outcomes

- Practical training in AI concepts, generative AI and data workflows relevant to climate-related public services.
- Four draft national action plans setting out priority activities, implementation periods, indicative resources and monitoring targets.
- Research exchanges and discussion among Pacific institutions, programme partners and Australian host institutions on applications and follow-up needs.

Background

Pacific Island Countries contribute minimally to climate change but face severe impacts from sea-level rise, salinization, tropical cyclones, floods and droughts. Dispersed communities, limited specialist capacity and gaps in connectivity make the collection and delivery of climate information difficult. Reliable digital infrastructure and practical data skills are important for adaptation and disaster preparedness. Building on previous training, the 2026 programme focused on practical AI applications, institutional learning and country planning, in line with regional priorities for digital inclusion and the Asia-Pacific Information Superhighway.

Objectives

- Equip officials with practical knowledge of AI, generative AI and data analysis for climate adaptation and public services.
- Identify national constraints in connectivity, data governance, technical skills and institutional responsibilities.
- Apply structured prompting, information workflows, data preparation and assistant evaluation to relevant examples.
- Develop draft national action plans with activities, milestones, resource needs and monitoring indicators.
- Promote exchange among Pacific Island Countries, research institutions and programme partners, supporting regional commitments on digital inclusion and resilience.

Programme

19 Oct (Mon): Arrivals and Preparation
Arrival of participants in Brisbane. Preparation meeting for ESCAP, Jeju National University and the APNIC Foundation.
Organizers: ESCAP, Jeju National University and the APNIC Foundation.

Day 1 — 20 Oct (Tue): Orientation and Country Reports
09:00–09:20 Opening: Mr. Tae Hyung Kim, Chief, ICT and Development Section, ICT and Disaster Risk Reduction Division, ESCAP; representative of the APNIC Foundation.
09:20–12:00 Orientation and AI readiness: programme introduction and understanding AI technology, Prof. Byung Gul Lee; logistical arrangements, ESCAP; Q&A.
12:00–14:00 Networking lunch.
14:00–16:00 Country presentations: national reports from Fiji, Samoa, Solomon Islands and Tonga on digital and climate action.
Lead moderator: Prof. Byung-Gul Lee.

Day 2 — 21 Oct (Wed): AI Foundations and Generative AI
09:00–12:00 Building AI Foundations: core concepts of AI, machine learning and deep learning; Principles and Latest Trends in Generative AI (text, image and video). Lecturer: Prof. Byung Gul Lee, Jeju National University.
12:00–14:00 Lunch.
14:00–17:00 Hands-on prompt engineering and application of generative AI tools for workflow automation and content creation. Facilitator: Prof. Won-Bae Na, Pukyong National University.
Lead moderators: Prof. Byung-Gul Lee and Mr. Tae Hyung Kim.

Day 3 — 22 Oct (Thu): AI Practice Exercises
09:00–12:00 Hands-on data analytics and AI integration: basic data preprocessing and visualization; configuring and evaluating customized AI assistants using no-code/low-code platforms, such as Google AI Studio. Facilitator: Prof. Won-Bae Na.
12:00–13:00 Lunch.
15:00–19:00 Travel to Melbourne from Brisbane Airport T2, Domestic Terminal.
Lead moderators: Prof. Byung-Gul Lee, Mr. Tae Hyung Kim and Mr. Sungwhan Lee.

Day 4 — 23 Oct (Fri): Melbourne Study Tour
09:00–10:00 Departure from ibis Styles Kingsgate Hotel for CSIRO Clayton
10:00–12:30 CSIRO Clayton visit; reception at the Clayton Central Precinct, Research Way
12:30–13:00 Transfer to Melbourne Connect, Carlton
13:10–14:00 Lunch near Science Gallery Melbourne
14:00–15:00 Melbourne Connect tour, 700 Swanston Street
15:00–16:00 Science Gallery Melbourne visit, 114 Grattan Street
16:00–17:00 Return transfer to ibis Styles Kingsgate Hotel
Coordination: APNIC Foundation, ESCAP, Prof. Byung-Gul Lee and Mr. Sungwhan Lee.

Day 5 — 24 Oct (Sat): Return to Brisbane
11:00–12:00 Return to Brisbane.
12:00–17:00 Free time: wrap-up and self-directed study.
Lead moderators: Prof. Byung-Gul Lee and Mr. Siope Vakataki ‘Ofa.

Day 6 — 25 Oct (Sun): Self-Directed Study
All day Free time and self-directed study.

Day 7 — 26 Oct (Mon): CSIRO Brisbane Study Visit
09:00–12:00 CSIRO Brisbane study tour, organized by the APNIC Foundation.
14:00–17:00 Wrap-up on lessons from the CSIRO study tour.
Lead moderators: APNIC Foundation and Prof. Byung-Gul Lee.

Day 8 — 27 Oct (Tue): Digital Development and AI Applications
09:00–12:00 Introduction: Ellisha Heppner, APNIC Foundation. PumonAI: Multi Institutional Collaboration via Federated Learning for Pneumonia Screening in Indonesia, Dr. Agung Alfiansyah, Universitas Prasetiya Mulya.
12:00–14:00 Lunch.
14:00–17:00 Project FIREfly 2.0: Enhancing Forest Fire Monitoring and Biodiversity Conservation with an UAV-Based IoT System, Dr. Dinesh Bhatia, RMIT University Vietnam. Q&A and session summary.
Lead moderators: APNIC Foundation, Prof. Byung-Gul Lee and Mr. Siope Vakataki ‘Ofa.

Day 9 — 28 Oct (Wed): AI Mini-Projects
09:00–12:00 Group discussions on planning AI mini-projects for practical problem solving related to climate change.
12:00–14:00 Lunch.
14:00–17:00 AI mini-project practice and mentoring: prototype development.
Lead moderators: Prof. Byung-Gul Lee and Mr. Siope Vakataki ‘Ofa.

Day 10 — 29 Oct (Thu): National Action Plans
09:00–12:00 National discussions on AI action plans addressing climate change impacts.
12:00–14:00 Lunch.
14:00–17:00 Action plan presentations, expert feedback and strategic recommendations.
Lead moderators: Prof. Byung-Gul Lee and Mr. Siope Vakataki ‘Ofa.

Day 11 — 30 Oct (Fri): Reflections and Closing
09:00–12:00 Country reflections and next steps: Fiji, Samoa, Solomon Islands and Tonga; remarks by programme partners and closing ceremony.
12:00–14:00 Farewell lunch.
14:00–17:00 City tour.
Lead moderators: Prof. Byung-Gul Lee and Mr. Siope Vakataki ‘Ofa.

31 Oct (Sat): Departures
Departure of participants from Brisbane Airport T1, International Terminal.

National Reports

4.1 Tonga

Overview

Tonga comprises about 170 islands spread across a large ocean area. The tropical maritime climate has a wet season from November to April and a dry season from May to October. The population is approximately 106,000, with about 74% living on Tongatapu. The country report estimates GDP at USD 679 million and remittances at about 39% of GDP.

Cyclones, heavy rainfall, storm surges, drought and extreme heat affect agriculture, fisheries, infrastructure and public health. Cyclones Gita in 2018 and Harold in 2020 illustrate the country's exposure. Sea-level rise adds to coastal erosion, inundation and saltwater intrusion, increasing pressure on settlements and essential services.

Role of digital technology

Submarine fibre-optic cables, mobile telecommunications and satellite connectivity support public communication and digital government. National digital public infrastructure includes TongaPass for authentication, MOSIP for digital identity and an API data-exchange platform. These developments are intended to connect government applications and support climate-data sharing, disaster management, risk dashboards and recovery assistance. The Tonga Meteorological Service and disaster-management authorities coordinate early warnings through several public communication channels.

Constraints and capacity needs

Priorities include stronger capacity in GIS, remote sensing, AI, data analytics and cybersecurity. Dispersed infrastructure requires reliable power, backup communications and arrangements for continued service during disruption. Fragmented data standards and limited specialist staffing complicate integration. Long-term financing and training are needed alongside investment in infrastructure, particularly for outer-island services.

4.2 Fiji

Overview

Fiji comprises more than 330 islands covering approximately 18,300 km², with dispersed maritime communities. The climate is tropical maritime, with a wet season from November to April and a dry season from May to October. The population is projected at about 902,623 in 2026. Tourism remains important to the economy, with preliminary 2025 earnings of FJ$2.81 billion.

Cyclones and heavy flooding cause repeated losses. The country report identifies Tropical Cyclone Vaianu in April 2026 and recalls losses equivalent to 31% of GDP from Tropical Cyclone Winston in 2016. The observed sea-level trend around Fiji was approximately 4–5 mm per year over 1992–2024. Rising seas, ocean warming and acidification threaten reefs, fisheries and coastal communities, while relocation work at Nabavatu and Cogea reflects the consequences for settlements.

Digital transformation for climate action

The National Digital Strategy 2025–2030 guides the development of infrastructure and digital services. The National Cybersecurity and Resilience Strategy 2026–2031 was launched in March 2026. Other developments include the Fiji Digital Climate Transparency Tool, launched in April 2026 for greenhouse-gas and climate reporting, and the Fiji Population Grid 2026, published in July using 100 m × 100 m cells. The Fiji Meteorological Service provides weather and marine forecasts, while GCF/CREWS proposal development seeks to expand multi-hazard early warnings.

Outstanding issues

Remote last-mile connectivity, recurring maintenance costs and shortages of GIS and data-science skills remain constraints. Digital services also require common data standards, interoperability and security safeguards. Sustained operating resources are necessary if systems are to serve maritime communities reliably.

4.3 Samoa

Overview

Samoa's four main islands are Upolu, Savai'i, Manono and Apolima. The population was 205,557 at the 2021 census. Agriculture, fisheries, tourism and remittances support the economy. Coastal settlements are exposed to tropical cyclones and heavy rainfall during the November–April wet season. Although Samoa contributes less than 0.0005% of global emissions, warming, coral bleaching, vector-borne disease risks and shoreline erosion have serious local consequences.

Digital transformation

Mobile networks, broadband and submarine cables connect national institutions. Research partnerships have expanded the use of remote sensing and environmental observations, including training introduced in 2022, blue-carbon monitoring with the U.S. Forest Service in 2023, and aerial and underwater drone applications. These capabilities support the collection and interpretation of information about land, coasts and marine environments.

Early-warning arrangements link observations with forecasting, public communication and local action. SMS, radio and web services provide channels for disseminating information. The proposed community early-action pilot builds on these functions by bringing local monitoring, government data and village preparedness procedures together.

Outstanding issues

Rural coverage gaps, high equipment and data costs, power outages and limited specialist capacity constrain wider use. Skills are needed in GIS, Internet of Things technologies and data science. Continuing funding for operations, maintenance and staff development is important if monitoring equipment and digital services are to remain useful beyond initial projects.

4.4 Solomon Islands

Overview

Solomon Islands is an archipelagic country in the Coral Triangle, with high marine diversity and rugged terrain. The population was approximately 686,878 in 2020, with GDP per capita of about USD 2,258. Agriculture accounts for around 34% of GDP, alongside forestry and fishing. Climate risks include intense rainfall, tropical cyclones, drought, warming and above-average sea-level rise, with earthquake and tsunami hazards adding to exposure.

Digital transformation

Digital-economy initiatives include M-SELEN mobile money, which brought about 20,000 users into digital finance, a regulatory sandbox and a Digital Innovation Unit within the Ministry of Communication and Aviation. UNDP-supported Digital Jam Jar tools provide another example of digital payments. Mobile connections reach approximately 71.8% of the population, supported by the Coral Sea Cable System.

Meteorological improvements include rehabilitation of eight surface stations and construction of three upper-air stations under AMOS-RD. Geospatial capacity is being developed through MACBLUE training in open-source GIS and remote sensing using SPC's Digital Earth Pacific platform. KOICA-supported laser-imaging equipment, undersea drones, tablets and laptops contribute to integrated vulnerability and adaptation assessments. Climate Finance Writeshops support project preparation.

Outstanding issues

The dispersed geography makes field maintenance, communications and the collection of reliable observations difficult. Closer links between meteorology, environmental monitoring and disaster management are needed to turn observations into useful warnings. Data integration, specialist training and resources for maintaining equipment are central to the rainfall and ocean-observation proposal.

4.5 Review of the National Reports

Country findings

Tonga's priorities centre on reliable warnings, resilient outer-island communications and the integration of public services through national digital infrastructure. The planned weather application offers an additional public channel, while the national report makes clear that skills, power and backup communications remain necessary.

Fiji combines national digital strategies and climate-information tools with the practical difficulties of serving maritime communities. The action plans therefore address both the capacity of government staff to use AI and a defined local service: monitoring water security on Batiki Island.

Samoa's experience in research and remote sensing provides a basis for village-level monitoring. Its proposal places particular emphasis on connecting observations with understandable warnings, local procedures and community drills. Maintenance and specialist capacity will be important to the continuity of the pilot.

Solomon Islands highlights the observation network and the links between climate data and disaster management. Connectivity improvements and geospatial training create opportunities, but additional equipment, rehabilitation and data exchange must be supported by staff and operating resources.

Priorities and risks

- Reliable connectivity, backup power and communications for remote communities and field sites.
- Agreed data standards and access arrangements linking observations, forecasts and public services.
- Training for technical staff and public officials, with clear responsibility for maintenance and service delivery.
- Continuing finance for operations, repairs, replacement equipment and community engagement.

Recommendations

Follow-up should align the country plans with national responsibilities and existing systems. Technical reviews should confirm the available data, site conditions, operating costs and scope of each pilot. Country institutions and programme partners can then discuss the support required for implementation and review progress against agreed indicators.

Presentations

5.1 Core Concepts of Artificial Intelligence, Machine Learning and Deep Learning

Prof. Byung-Gul Lee, Jeju National University

Purpose

This lecture introduced the concepts public officials need when considering AI for government services and climate adaptation. It explained artificial intelligence as the broader field, machine learning as the use of data to learn patterns, and deep learning as a form of machine learning based on multilayer neural networks. The emphasis was on informed selection and oversight of technology.

Key messages

- The choice of method should follow the problem, available data and cost of errors. A complex model is not always the most suitable solution.
- Data preparation, independent evaluation and monitoring after deployment are essential parts of an AI project.

Technical scope

The lecture distinguished supervised, unsupervised and reinforcement learning, then followed the process from data preparation to model development, evaluation and deployment. Neural-network examples covered inputs, weights, hidden layers, loss, backpropagation and repeated adjustment. Convolutional networks, recurrent networks and transformers illustrated applications to images, time-series records and language. A sea-surface-temperature example distinguished historical trend analysis from a forecasting task.

Recommended actions

Define the intended service, establish whether suitable data can be used, and agree how performance, human review, accountability and maintenance will be assessed before commissioning an AI system.

5.2 Principles and Applications of Generative AI

Prof. Byung-Gul Lee, Jeju National University

Purpose

The session introduced generative AI and its use in drafting, analysis and administrative work. It explained how language models generate responses and how reference material, prompts and different input formats influence the result. The lecture also considered agentic workflows that use tools to carry out a sequence of tasks.

Key messages

Generative AI can assist with preparing and interpreting information, but a fluent response still requires checking. Retrieval-augmented generation connects a response with reference documents; it does not remove the need to inspect facts and sources. Tokens and context limits affect how much information a model can process, while clear requests help keep the response relevant to the task.

Technical scope

Exercises progressed from a broad coastal-adaptation request to a detailed policy-writing prompt, chart interpretation and an agentic travel-planning example. Illustrative coastal-infrastructure images introduced multimodal analysis. The distinction between generating a draft and authorizing an operational action was important for official use.

Recommended actions

Use approved reference material, specify the audience and required format, and retain human responsibility for publication and decisions. Review outputs for accuracy, fairness, privacy and safety before wider use.

5.3 Hands-on Prompt Engineering

Prof. Won-Bae Na, Pukyong National University

Purpose

This practice examined how to communicate clearly with a generative AI assistant. Climate-related examples showed the difference between a broad question and an instruction that identifies the audience, local setting, task and limits of the response. The Role, Context, Task and Constraint framework provided a consistent starting point.

Key messages

- A useful prompt states who the assistant is addressing, what information it should use and the form of the required answer.
- Prompting is an iterative process: prepare the request, inspect the response, identify weaknesses and revise.

Technical scope

The guided exercise used a low-lying community facing saltwater intrusion and damage to taro crops. Tasks compared vague and detailed prompts, developed a structured explanation and adapted the response for a spoken community meeting. Review covered word limits, respectful language, tone and unsupported additions such as invented statistics or place names. The scenarios and sample responses served as teaching examples.

Recommended actions

Keep the prompt and response together so that revisions can be reviewed. Check technical advice against appropriate information and adapt the final wording to the people who will use it.

5.4 Generative AI for Information Workflows and Communication

Prof. Won-Bae Na, Pukyong National University

Purpose

The second practice applied generative AI to a sequence of routine information tasks. Rather than treating each request separately, it showed how an initial body of information could be reorganized for management reporting and public communication while retaining the underlying facts.

Key messages

The exercise used synthetic post-disaster field notes transmitted by satellite phone. Participants were asked to turn the notes into a three-column executive table and then prepare a short advisory for another audience. The central requirement was consistency: quantities, locations, deadlines and urgent needs should remain traceable to the original notes as the format changed.

Technical scope

Sequential prompts supported extraction, organization, summarization and adaptation of tone. A review checklist compared the table and advisory with the original information and examined whether the draft introduced unsupported detail. The practice also considered how a workflow could be repeated for another set of approved records.

Recommended actions

Build review points into each stage of an AI-assisted workflow. Use synthetic data for practice and approved institutional systems for government records; verify public advice before release.

5.5 AI-assisted Data Preprocessing and Visualization

Prof. Won-Bae Na, Pukyong National University

Purpose

This exercise connected data preparation with institutional reporting. A synthetic inventory of rainwater-harvesting tanks contained inconsistent place names, spacing, capitalization and unknown capacity values. The task was to prepare a reliable provincial summary without changing valid source information.

Key messages

- Cleaning must preserve identifiers, row order and valid numerical values. An unknown capacity should remain blank rather than being recorded as zero.
- A summary and chart are useful only when their formulas, ranges and values can be checked against the cleaned records.

Technical scope

The practical sequence standardized names against an approved list and recorded corrections in a change log. Excel SUMIF formulas aggregated tank capacity by province, followed by a labelled column chart. Verification compared the raw and cleaned tables, tested formula ranges and totals, and checked the chart against the summary. Participants were directed to retain the datasets, formulas, chart and review record together.

Recommended actions

Use repeatable cleaning rules and retain the original records. Test generated formulas before relying on them, and exclude personal information, sensitive infrastructure coordinates and restricted records from public AI services.

5.6 Prototyping and Evaluating Customized AI Assistants

Prof. Won-Bae Na, Pukyong National University

Purpose

The fourth practice introduced the configuration and evaluation of a task-specific assistant in a no-code or low-code environment. It combined an institutional role, system instructions and approved reference material, with attention to how the assistant should respond when information is missing or a request falls outside its responsibilities.

Key messages

Configuring an assistant is different from training or fine-tuning a new model. Instructions and uploaded context can guide a response, but their effectiveness must be tested. Generation settings should be recorded so that responses can be compared; changing temperature alone does not establish factual accuracy.

Technical scope

The workbook called for tests covering an in-scope question, missing information, an unrelated request, an attempt to override instructions, sensitive information and metric units. Results were recorded as pass, partial pass or fail. Participants were then asked to identify a weakness, revise the configuration and repeat the test.

Recommended actions

Keep a record of the instructions, reference material, settings and test responses. Assess the assistant against a defined task and revise it before considering use with real institutional information.

5.7 Institutional Study Visits in Melbourne and Brisbane

APNIC Foundation and host institutions

Purpose

The study visits complemented the lectures by examining applied research, institutional collaboration and the communication of science. They provided settings for considering how research and technical expertise could support the climate and digital-service priorities discussed by the country groups.

Key messages

The Melbourne programme on 23 October combined CSIRO Clayton with Melbourne Connect and Science Gallery Melbourne. The CSIRO visit focused on applied scientific research and technological innovation. Melbourne Connect introduced an environment in which university researchers, businesses, government, start-ups and students work together. Science Gallery provided a different form of engagement through connections between science, art and the public.

Technical scope

The detailed itinerary allocated 10:00–12:30 to CSIRO Clayton, 14:00–15:00 to Melbourne Connect and 15:00–16:00 to Science Gallery Melbourne. The subsequent CSIRO Brisbane briefings on 26 October included water-resource visualization, ecosystem stress, crown-of-thorns starfish, adaptation-relevant road-network risk and climate resilience. These examples linked observations and analysis with information that agencies could use in planning and service delivery.

Recommended actions

Develop research contacts around a defined national problem. Consider access to data, the agency that would use the results, technical support and the resources needed to maintain an application after a pilot.

5.8 APNIC Foundation and Sustainable Digital Development in the Pacific

Ellisha Heppner, Portfolio Manager, Grants, APNIC Foundation

Purpose

The presentation outlined the Foundation's work on Internet infrastructure, human capability, innovation and digital transformation. It introduced grant-supported projects and partnerships, including ISIF Asia and Foundation Community Assistance, and related them to the practical conditions for digital development in Pacific economies.

Key messages

Pacific examples covered community connectivity, IPv6 deployment and incident-response capacity. Reliable services depend on people and operating arrangements as well as equipment. Electricity, consultation with authorities and landowners, transport, shipping and dependence on individual specialists can determine whether a project continues to function.

Technical scope

The sustainability discussion emphasized national priorities, coordination among donors and partnerships that continue beyond a funding cycle. Operations, maintenance, upgrades, specialist staff and eventual replacement were treated as costs to be included in the original project design. Regional cooperation and the Pacific diaspora were identified as sources of technical capacity.

Recommended actions

Assign a local institutional owner and include recurrent costs and staff development in proposed projects. Use partner discussions to address national priorities and avoid fragmented investments.

5.9 Federated Learning and the PumonAI Case

Dr. Agung Alfiansyah, Universitas Prasetiya Mulya

Purpose

The session introduced federated learning as an approach to collaboration between institutions that retain raw data at their own sites. PumonAI provided the application case, drawing on pneumonia-screening research across hospitals in Indonesia. The material connected model design with institutional responsibilities, communications and responsible use.

Key messages

A coordinating server distributes a model, participating institutions train locally, and model updates are combined to refresh the shared model. The guide distinguished horizontal, vertical and transfer-learning settings, and explained how different populations, labels, dataset sizes and collection periods can affect performance. Keeping raw data locally does not by itself remove privacy or security risks.

Technical scope

The PumonAI presentation described seven hospitals, five on Java and two outside Java, linked to a university coordinating server. Local XNAT systems supported image storage, review, anonymization and annotation. DenseNet-121 illustrated image classification. Repeated exchanges of large model updates made network latency and transmission volume important design issues; singular value decomposition was presented as a compression approach. An autoencoder-based method examined unusual or unsuitable inputs. Further work included clinical integration, wider collaboration and investigation of differences between populations and sites.

Recommended actions

Before adopting federated learning, establish a common task, compatible data, site-level evaluation and clear partner responsibilities. Compare the additional engineering and governance requirements with simpler ways of meeting the same need.

5.10 Remote Sensing and Environmental Information

Purpose

The remote-sensing material introduced how observations collected without physical contact can support environmental monitoring. It connected passive and active sensing with satellite imagery, spectral information and the representation of land and water in digital images.

Key messages

An image is a numerical record as well as a visual product. Pixel-value exercises linked digital numbers and brightness with simple categories such as sea, forest and buildings. Examples of spatial resolution showed why the choice of imagery affects the detail that can be interpreted. Supervised and unsupervised classification introduced different approaches to identifying land-cover categories.

Recommended actions

Choose imagery suited to the scale and purpose of the monitoring task. Check classification and interpretation against local observations, and build staff capacity to understand the limitations of a map before using it in planning.

5.11 Project FIREfly and Environmental Monitoring Using UAV–IoT Technologies

Dr. Dinesh Bhatia, RMIT University Vietnam

Purpose

Project FIREfly illustrated how low-cost ground sensors, unmanned aerial vehicles and Internet connectivity can support monitoring in remote environments. The lecture traced the original forest-fire concept through field deployment and the wider environmental applications explored in FIREfly 2.0.

Key messages

The original system combined smoke, temperature and humidity measurements with a drone relay, thermal imagery and a dashboard. Solar power, low-power operating modes and intermittent communications addressed the difficulty of reaching forest sites. The presenter described Thailand field work and the use of LoRa, WiFi and 4G in a hybrid network.

Technical scope

FIREfly 2.0 included three forest sites with three super nodes and fifteen child nodes, camera and acoustic observations, and a browser-based dashboard. Further trial work covered bird identification and precision seed dropping for restoration. Discussion of Pacific applications considered local hazard requirements, radio range, salt, humidity and storm conditions. Mangrove and coffee-monitoring examples were presented as concepts requiring further testing and appropriate sensors and models.

Recommended actions

Agree one hazard, one pilot site and an agency responsible for alerts and response. Test communications, power and weather resistance locally, retain maintenance capacity and review performance before adding sites or linking the system to national services.

5.12 AI Mini-Projects, National Planning and Closing Reflections

Prof. Byung-Gul Lee and Mr. Siope Vakataki ‘Ofa

Purpose

The final part of the programme connected the technical sessions with national priorities. Mini-project discussions and mentoring on 28 October were followed by action-plan presentations on 29 October and country reflections and closing remarks on 30 October.

Key messages

Country groups considered how digital tools could address a defined institutional or climate-related problem. The proposals ranged from public weather information and community observations to staff training and water monitoring. This work required attention to the agency responsible, the information available, the intended users and the resources needed for operation. The different proposals reflected the responsibilities and priorities of the participating institutions.

Recommended actions

- Retain the practical work and country proposals as a basis for further technical review and national consultation.
- Confirm institutional focal points, refine costs and implementation steps, and discuss support with relevant programme partners.
- Use the proposed milestones and indicators to review a pilot before expanding the service or adding further applications.

National Action Plans

The draft National Action Plans identify country priorities, implementation steps and resource requirements. The following periods, budgets and targets are proposed for follow-up and remain subject to national approval and financing.

6.1 Tonga — Citizen Weather and Early-Warning Mobile Application

Goal

Provide a single bilingual Tongan and English Android/iOS application for approved forecasts, warnings, marine information and climate products. The application would add a mobile channel alongside radio, SMS, websites and community warning systems.

Context and institutional setup

The proposal responds to the need for accessible official information across island groups. It identifies MEIDECC, Tonga Meteorological Services and the Information and Digital Transformation Department as the lead institutions. Tonga Met would approve forecasts and warnings, while IDT would manage the delivery service and application infrastructure.

Implementation strategy

- Provide current and three-hour forecasts, a ten-day outlook, temperature, wind and rainfall information, and official severe-weather and cyclone bulletins with issue times, affected areas and validity periods.
- Include marine forecasts, sea-state and coastal information, rainfall and ocean outlooks, drought and seasonal information, radar and satellite imagery, preparedness guidance and official contacts.
- Establish secure ingestion and structured content APIs, publication records, caching, monitoring and push-notification queues, with human authorization and tested fallback arrangements.
- Offer island-group preferences without mandatory registration, high-contrast warnings, screen-reader support, a low-data mode and cached content for use when connectivity is limited.

Outputs and milestones

- Months 1–3, 2027: Agree governance and requirements, inventory content, assess API feasibility and establish baseline measures.
- Months 4–9, 2027: Develop prototypes, data integrations, bilingual content and alert pipelines; undertake security testing.
- Months 10–18, 2027–2028: Pilot across island groups, gather accessibility feedback, improve reliability and prepare national Android/iOS rollout.
- Months 19–24, 2028: Complete operational handover, monitor performance and evaluate the service.

Indicative resources

The proposed budget is USD 200,000: USD 80,000 for the application and backend; USD 50,000 for piloting, training and outreach; USD 20,000 for translation, content and accessibility; USD 20,000 for security and hosting; USD 10,000 for operations and support; and USD 20,000 for contingency.

Monitoring and evaluation

Proposed indicators include monthly active users, application availability, notification delivery time, content freshness, user satisfaction and coverage across island groups.

6.2 Samoa — Community Climate Early-Action System

Goal

Pilot a community climate early-action system in three selected villages, linking observations and official climate information with timely warnings and local preparedness.

Institutional setup

The Ministry of Natural Resources and Environment and Disaster Management Office would provide the accountable lead. Meteorology and water-resource authorities would provide technical oversight, with the National University of Samoa contributing research, ICT and GIS support.

Implementation strategy

- Test low-cost rainfall, river-level and water-storage telemetry across the three villages, with nine validated monitoring nodes in total.
- Establish a permissioned dashboard and API exchange connected to authorized government data feeds.
- Disseminate Samoan and English alerts through SMS, radio and television, supported by village-led operating procedures and at least two simulation drills at each site per year.

Outputs and milestones

- January–June 2027: Establish baseline assets and site risks, obtain community consent, agree governance and data-sharing arrangements, and complete technical design and approval.
- July–December 2027: Procure and calibrate nine telemetry nodes, integrate GIS and data services, establish backup alert channels and conduct pilot workshops and exercises.
- January–December 2028: Monitor data quality and uptime, refine local procedures, conduct drills, assess cost and reach, and prepare handover and options for expansion.

Indicative resources

The two-year budget is USD 360,000. The 2027 allocation is USD 225,000, including USD 68,000 for nine nodes and USD 48,000 for GIS and cybersecurity. The 2028 allocation is USD 135,000, including sensor servicing, community training and drills.

Expected outcomes and indicators

The pilot aims for at least 90% monthly data availability across the nine nodes, at least 80% alert reach during exercises and at least 75% verified comprehension of messages during community drills. Monitoring would also inform the assessment of operating costs, community reach and the arrangements needed to sustain or expand the service.

6.3 Solomon Islands — Rainfall Monitoring and Ocean Observation

Goal

Improve the availability and use of rainfall and coastal observations for forecasting, early warnings and services to vulnerable communities.

Institutional setup

The Ministry of Communication and Aviation, Ministry of Environment and Climate Change, and Solomon Islands Meteorological Service would coordinate the proposed programme, linking technical observations with disaster-management requirements.

Implementation strategy

- Integrate satellite rainfall estimates with automatic weather stations, rain gauges and C-Band weather-radar information to improve monitoring coverage.
- Deploy additional coastal water-level sensors, wave buoys and tide gauges at priority high-risk locations to observe tides, waves, sea-level change and coastal hazards.
- Combine rehabilitation and maintenance with better data integration, communications, staff training and the use of observations in early-warning services.

Outputs, milestones and indicative resources

The proposal sets out a twelve-month programme with a total indicative budget of SBD 1,463,000:

- Months 1–2: Assessment and planning — SBD 80,000.
- Months 3–4: Maintenance and rehabilitation — SBD 300,000.
- Months 5–6: Monitoring improvements — SBD 250,000.
- Months 7–8: Data integration and communications — SBD 280,000.
- Months 9–10: Training and early-warning integration — SBD 250,000.
- Months 11–12: Evaluation and sustainability planning — SBD 170,000.

A contingency reserve of SBD 133,000 is included in the total.

Expected outcomes and monitoring

The intended results are more reliable hydro-meteorological information, reduced equipment downtime, stronger inter-agency coordination and more timely warnings for vulnerable coastal communities. Review would follow the completion of each implementation phase and examine data availability, equipment operation and the use of observations in forecasting and warning services.

6.4 Fiji — Staff AI Awareness and Batiki Island Water Security

Goal and institutional setup

The Ministry of Rural and Maritime Development and Disaster Management proposes two related activities: staff training in the use of AI and a smart water-security pilot on Batiki Island in Lomaiviti Province. The Divisional Planning Office Eastern would coordinate the water pilot.

Staff training

The twelve-month plan aims to train all headquarters, divisional and district staff to use AI safely and effectively when preparing situation reports, community advisories and climate-adaptation briefs. The proposed sequence is:

- Month 1: Obtain approval, survey staff needs and review the tools to be used.
- Month 2: Pilot a training package.
- Months 3–4: Deliver training at headquarters and divisional level.
- Months 5–12: Provide district follow-up, remote sessions and monthly clinics, with supervisor verification checks.

Smart water-security pilot

The pilot would establish a low-cost monitoring and decision-support system to address shortages associated with rainwater harvesting. Water-level and rainfall monitoring would be combined with drone mapping and GPS surveys of tanks, collection systems and distribution assets.

Offline-capable field reports and AI-assisted analysis would summarize trends, estimate days of supply from usable storage and daily demand, and flag unusual values for verification. A designated officer would review critical alerts before operational action. The information would support preparedness and coordination alongside local judgment.

Phasing and indicative resources

The proposed duration is six to nine months, with an indicative budget of USD 45,000 and a planning range of USD 30,000–60,000. This covers sensors, drone surveys, digital-platform integration, baseline assessments and local training.

Outputs and indicators

The staff plan targets full training coverage. The water pilot proposes mapping all agreed priority assets, obtaining at least 85% usable scheduled sensor data and ensuring that all critical AI-generated alerts are reviewed and verified by a designated officer before action.

6.5 Review of the National Action Plans

The country plans translate the programme's themes into distinct national proposals. Tonga focuses on a public channel for official weather and climate information. Samoa brings observations, warnings and preparedness together at village level. Solomon Islands seeks to strengthen rainfall and ocean observations, while Fiji combines institutional training with a defined island water-security pilot.

The proposals differ in scale, technology and implementation period. They share requirements for dependable data, clear institutional roles, practical training and continuing finance. Warning services need publication procedures and accessible communication; monitoring systems need calibration, maintenance and reliable field communications; and AI-assisted work needs review by staff who understand the service and its users.

Follow-up should confirm national priorities and responsibilities, refine costs and technical designs, and identify the support required from programme partners. The proposed milestones and indicators provide a basis for reviewing pilots before expansion. Attention to maintenance, staffing and recurring costs will be necessary throughout implementation, alongside discussion of the initial investment.

Considerations

- Inclusion and accessibility: use plain language, local languages and several communication channels, with attention to remote communities and people with disabilities.
- Data governance and interoperability: agree standards, access arrangements, publication procedures and responsibility for data quality.
- Connectivity and sustainability: provide for power, communications, staffing, maintenance and replacement within project costs.
- Responsible AI: check accuracy, protect sensitive information, document limitations and retain human responsibility for official decisions.

Monitoring, Evaluation and Learning

The practical exercises include review of prompts, source records, formulas, charts and assistant responses. Country-level follow-up should connect this attention to quality with the milestones and indicators in each proposed plan.

Country-level tracking

- Output indicators: practical work, staff trained, implementation milestones and progress on pilot systems.
- Outcome indicators: service availability, data quality, alert reach and delivery time, user comprehension and use of information in public services.
- Data sources: system records, community drills, surveys, exercise results and country progress reports.
- Learning: review pilot findings with the responsible institutions, revise implementation arrangements and share relevant experience with programme partners.

Conclusions

The 2026 KOICA–ESCAP Joint Capacity-Building Training Programme brought together national officials, university specialists, lecturers and programme partners to examine digital technologies for climate adaptation in the Pacific. The combination of lectures, practical work, research visits and country planning addressed both the technical possibilities and the institutional conditions for their use. The emphasis on AI was relevant to routine public-sector tasks as well as to climate information and environmental monitoring.

The foundation lectures explained how AI models are developed and evaluated, and what officials should consider when selecting or overseeing a system. Guided practice then applied these ideas to prompting, information workflows, data cleaning, visualization and customized assistants. Keeping original records, checking outputs and repeating tests were recurring parts of the exercises. PumonAI and FIREfly added application cases in which communications, data control, local conditions and maintenance shaped the technical design. The study visits complemented these sessions with examples of applied research, institutional collaboration and public engagement.

The country reports described common exposure to climate hazards and continuing constraints in connectivity, data coordination and specialist capacity. They also showed why a single technical solution would not meet every national need. Tonga's proposed mobile application concerns access to approved public information. Samoa's proposal links village observations with warnings and preparedness. Solomon Islands focuses on the observation network and exchange of rainfall and ocean information. Fiji combines staff training with a defined water-security pilot. Their different scopes and budgets call for country-specific technical and institutional arrangements.

The draft action plans provide a practical starting point for follow-up. Their value will depend on how they are refined with national institutions and intended users, and on whether resources are available for continuing operation. Infrastructure and software need staff, procedures and maintenance; warning information needs accessible communication and a clear route to local action. AI-assisted work similarly requires review by people who understand the service and remain responsible for its use. These requirements should be considered alongside initial procurement and development costs.

The next stage should concentrate on preparing manageable implementation steps and reviewing their performance. The following actions are recommended:

- Finalize national priorities and focal points, refine technical designs and costs, and identify the decisions required before a pilot begins.
- Discuss technical assistance, training and financing with KOICA, ESCAP, Jeju National University, the APNIC Foundation and relevant national and regional partners.
- Strengthen data-sharing, publication and maintenance arrangements, and provide backup communications where services must continue during disruption.
- Use the country milestones and indicators to assess availability, reach, comprehension, data quality and operating costs before wider rollout.
- Retain practical outputs and pilot findings so that experience can inform later training, institutional planning and exchanges among Pacific countries.

The 2026 programme continues the work of earlier training by giving national teams further tools and application examples, together with draft plans directed at their own responsibilities. Sustained cooperation and national ownership will be needed to turn these proposals into reliable services for communities facing climate risks.

Annex A – Participants

Names of the Participants

	Nationality	Names	Job Positions	Completion
1	Fiji	Mr. Mitieli Cama	Deputy Secretary; Ministry of Rural and Maritime Development and Disaster Management, Suva	—
2	Fiji	Mr. Devesh Lal	IT Officer; Ministry of Rural and Maritime Development and Disaster Management, Suva	—
3	Fiji	Mr. Simione Nadakuitavuki Chambers Sorowale	Divisional Planning Officer; Ministry of Rural and Maritime Development and Disaster Management, Suva	—
4	Fiji	Ms. Matalita Seremana Cabealawa	Executive Planning Officer (Planning); Ministry of Rural and Maritime Development and Disaster Management, Suva	—
5	Solomon Islands	Mr. Reuben Lave Ziru	Manager Innovations – Digital Transformations; Ministry of Communication and Aviation, Honiara	—
6	Solomon Islands	Mr. Selwyn Suri	Senior Technology Officer; Ministry of Environment and Climate Change, Honiara	—
7	Solomon Islands	Dr. Edward Maru	Deputy Director; Solomon Islands Meteorological Service, Honiara	—
8	Tonga	Mr. Manuel Bernard Baker	Deputy Director; Digital Transformation Department, Prime Minister Office, Nuku‘alofa	—
9	Tonga	Mr. Semisi Siupeli Niutupuivaha Taufa	Digital Transformation Department, Prime Minister Office, Nuku‘alofa	—
10	Tonga	Mr. Siosifa Palelei	Senior System Analyst; Digital Transformation Department, Prime Minister Office, Nuku‘alofa	—
11	Samoa	Mr. Siaaiafiti Teti Tolai	Director of Information, Communication and Technology; National University of Samoa, Apia	—
12	Samoa	Asi Fui	Team Leader – Networking, Communication and Technology; National University of Samoa, Apia	—

Experts

Names	Job Positions and Programme Roles
Prof. Won-Bae Na	Pukyong National University, Busan, Republic of Korea
Prof. Byung Gul Lee	Jeju National University, Jeju, Republic of Korea
Sungwhan Lee	ICT Expert, Jeju National University, Jeju, Republic of Korea
Ellisha Heppner	Portfolio Manager, Grants, APNIC Foundation

Programme Officers and Guest Speakers

Names	Job Positions and Programme Roles
Mr. Tae Hyung Kim	Chief, ICT and Development Section, ICT and Disaster Risk Reduction Division, ESCAP; opening speaker and moderator.
Mr. Siope Vakataki ‘Ofa	Economic Affairs Officer, ICT and Development Section, ICT and Disaster Risk Reduction Division, ESCAP; moderator and closing reflections.
Dr. Agung Alfiansyah	Universitas Prasetiya Mulya; PumonAI lecture on 27 October.
Dr. Dinesh Bhatia	RMIT University Vietnam; Project FIREfly 2.0 lecture on 27 October.
Gabrielle	APNIC Foundation; coordination of the CSIRO Clayton study visit.

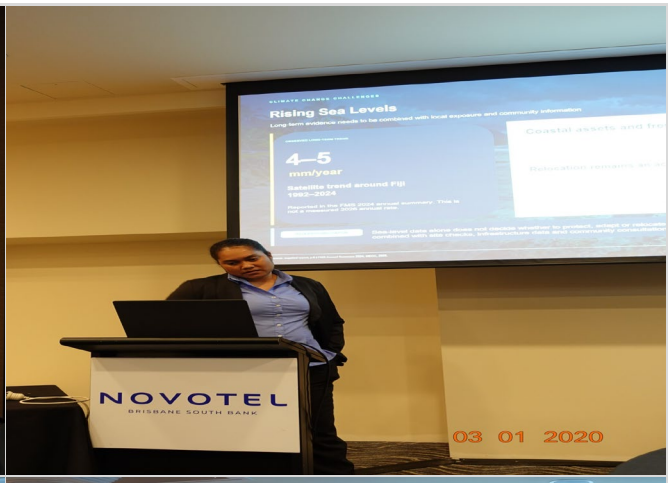
Annex B – Photos

Opening and Introductions 20 October 2026

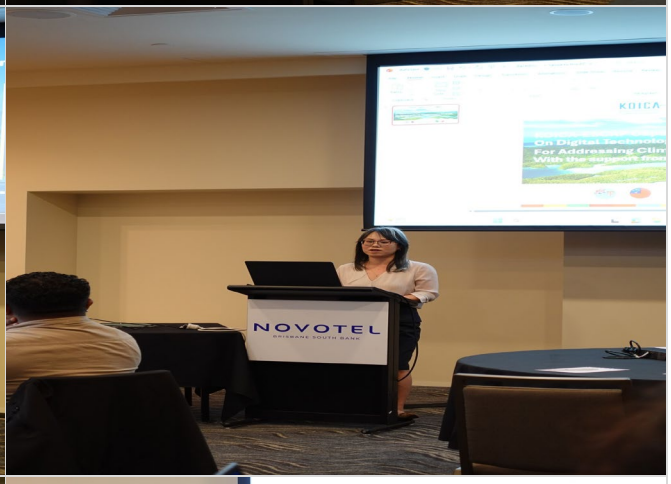


National Report Presentations 20 October 2026









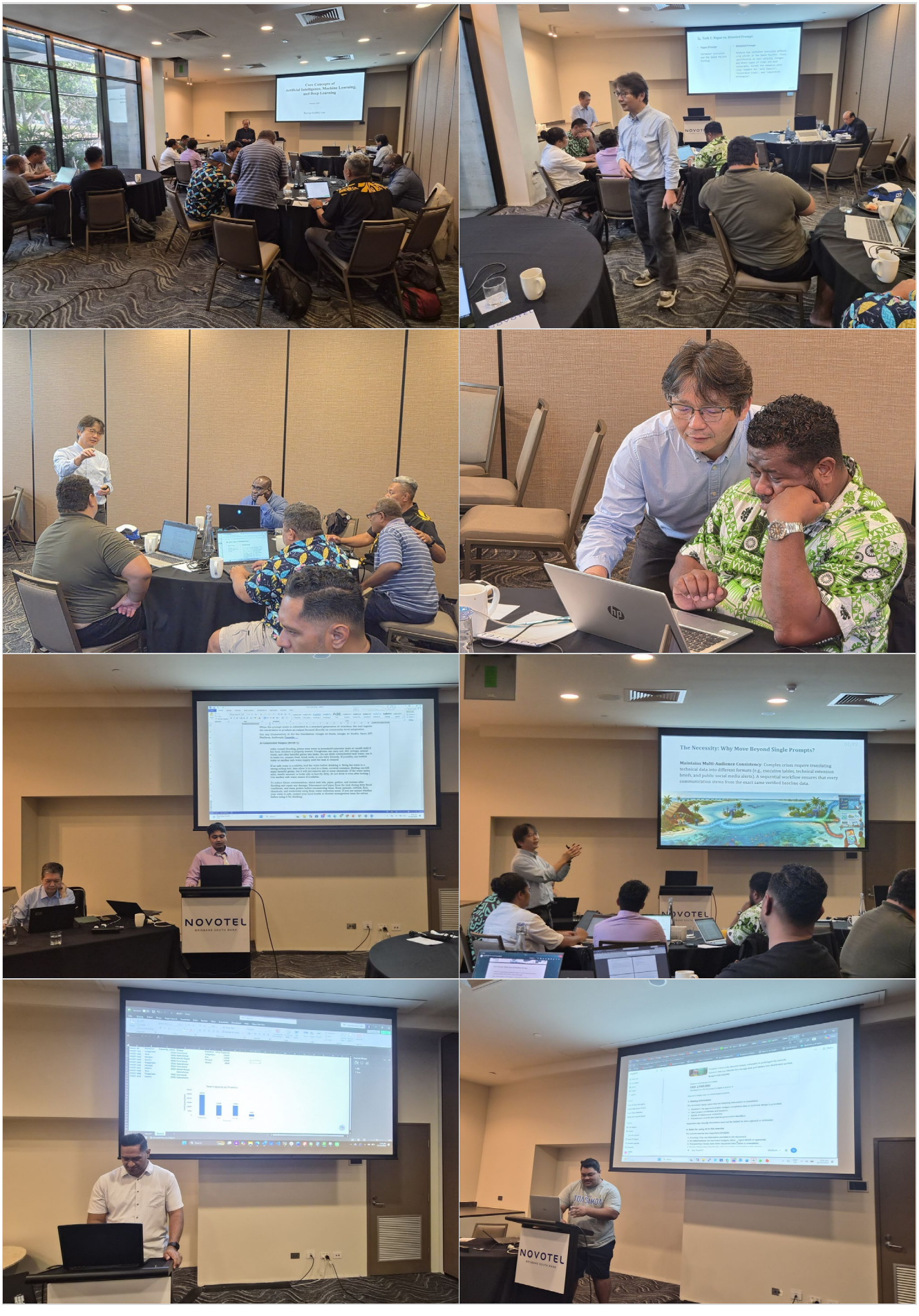




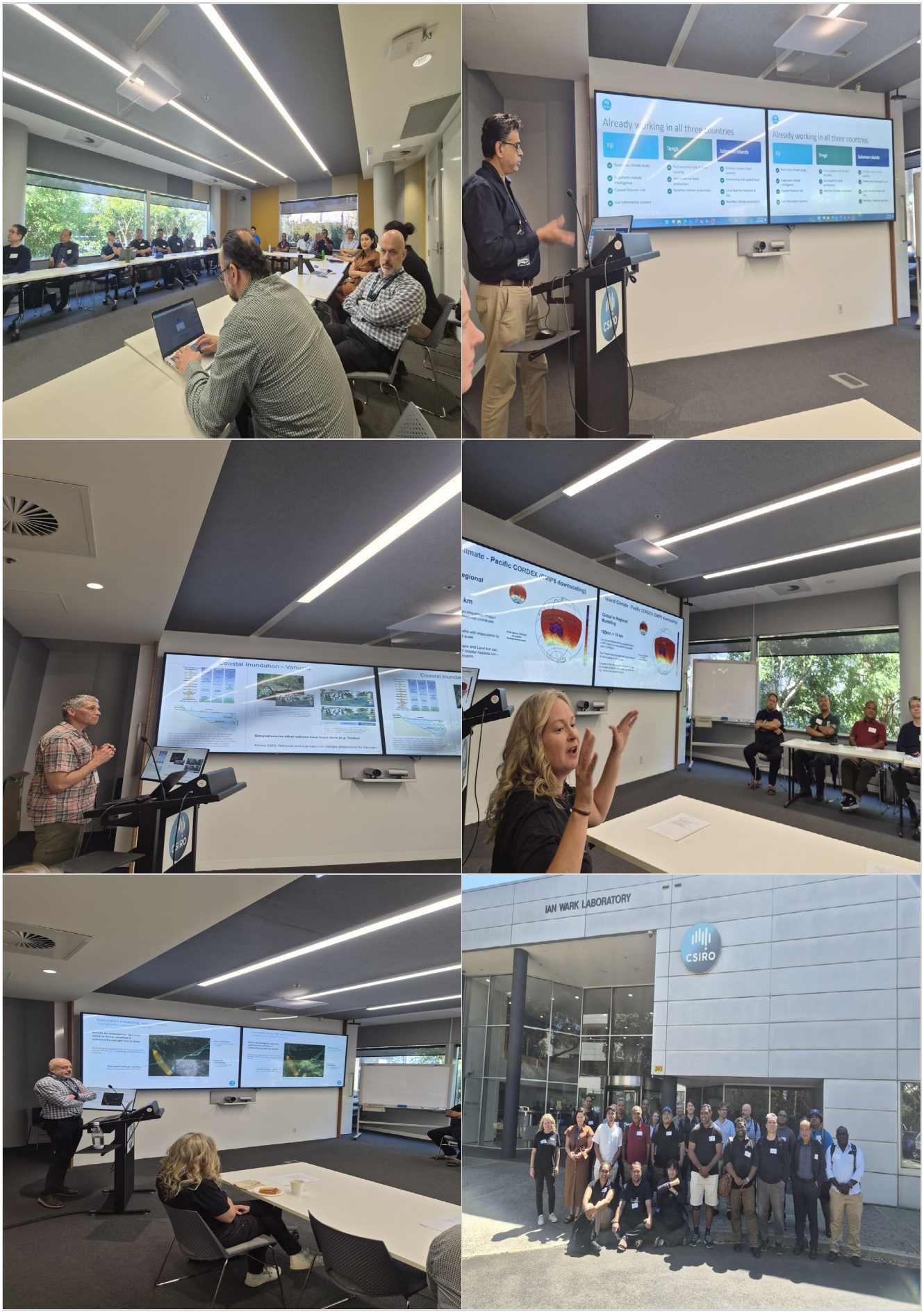




AI Lectures and Practical Sessions 21 and 22 October 2026



CSIRO Clayton Study Visit 23 October 2026



Melbourne Connect and Science Gallery 23 October 2026

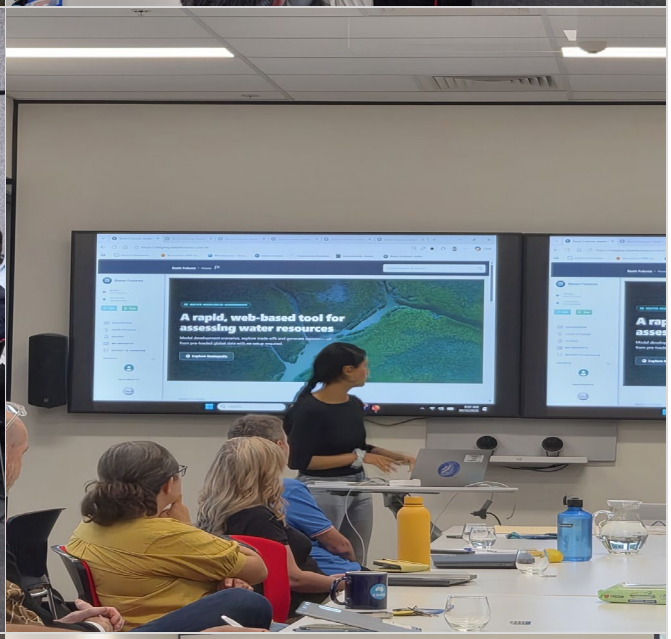


CSIRO Brisbane Introductions and Research Briefings 26 October 2026





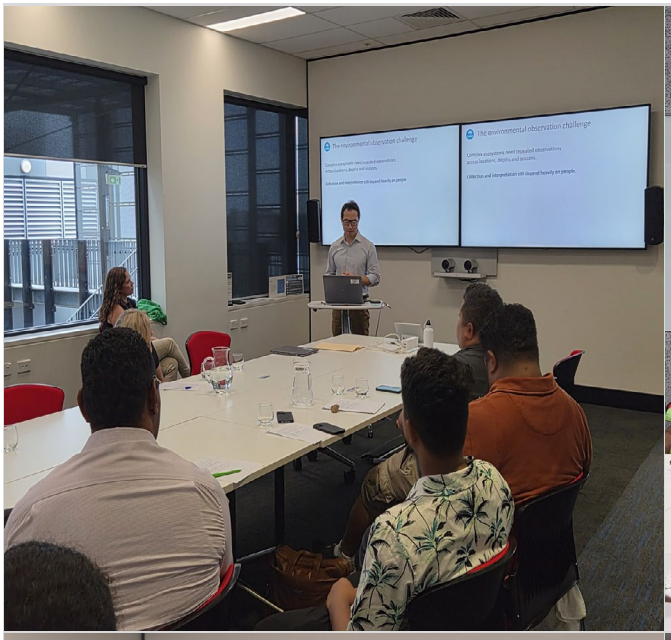




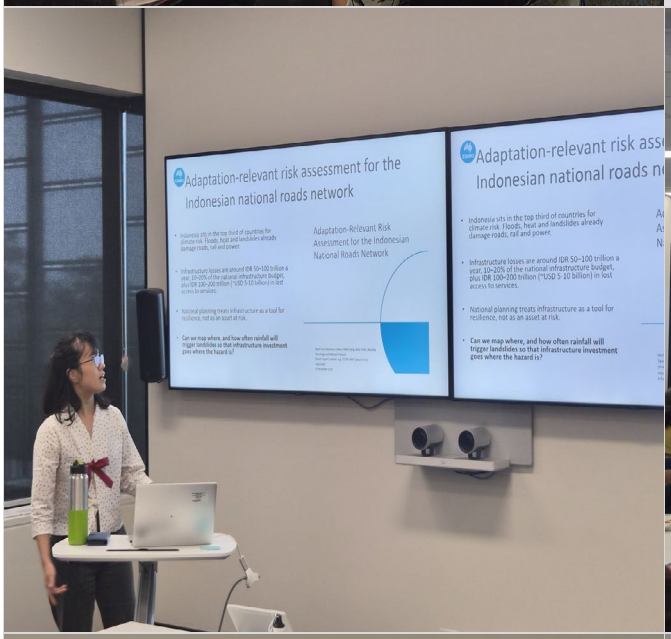




CSIRO Brisbane Climate Information and Discussion 26 October 2026





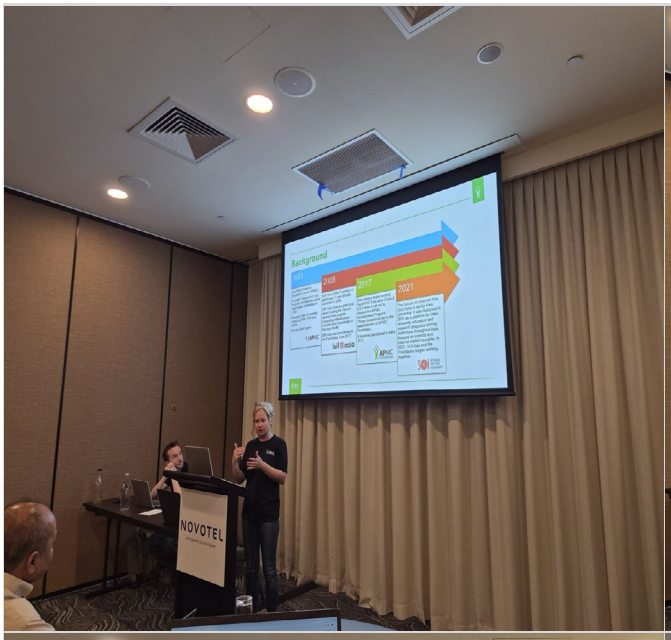








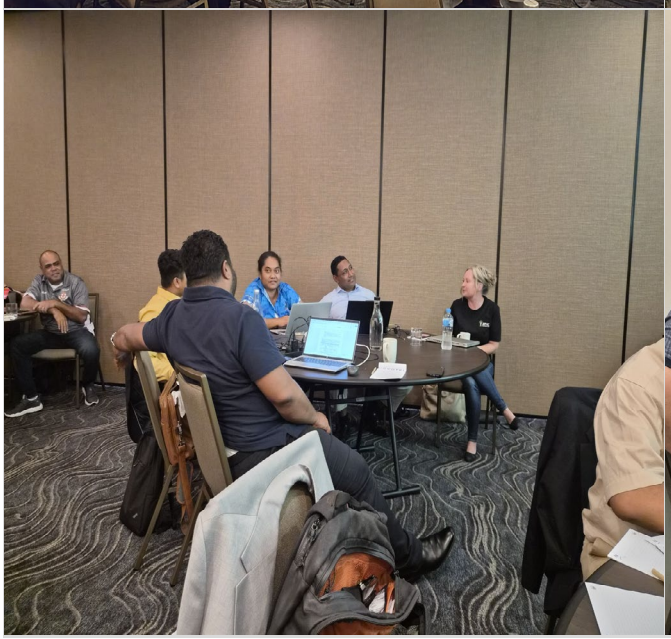
APNIC and Real World AI Applications 27 October 2026













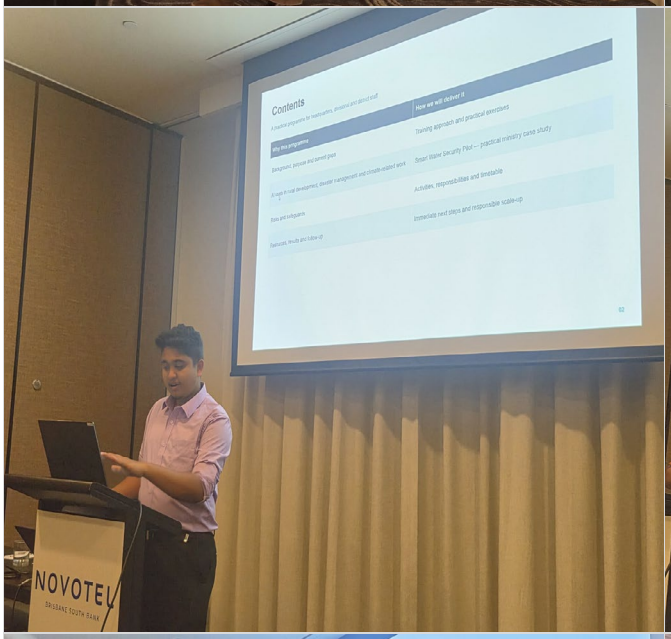
AI Mini Projects and Prototype Mentoring 28 October 2026

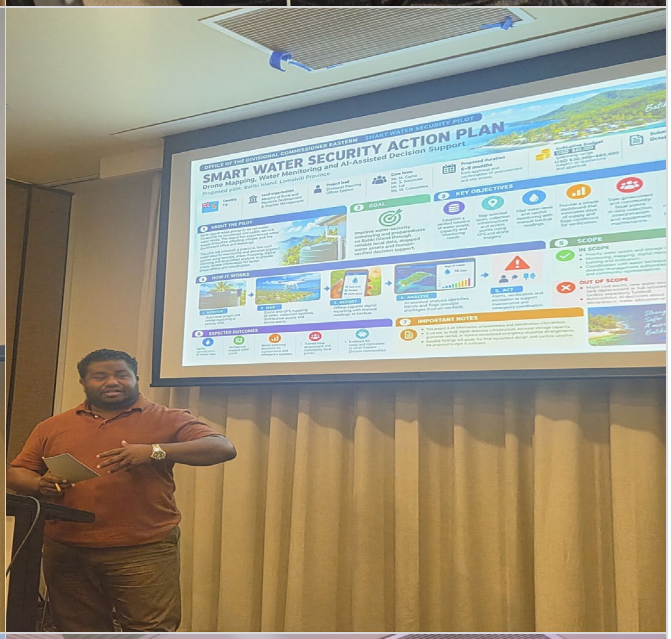


National Action Plan Presentations 29 October 2026













Country Reflections 30 October 2026



Closing Reflections Appreciation and Group Photograph 30 October 2026



Annex C – Evaluations

Evaluations of Lecturers

Name/Grades	A	B	C	D	E
Byung Gul Lee — orientation and AI lectures	0	—	—	—	—
Won-Bae Na — practical AI sessions	0	—	—	—	—
Ellisha Heppner — application-session introduction	0	—	—	—	—
Agung Alfiansyah — PumonAI	0	—	—	—	—
Dinesh Bhatia — Project FIREfly 2.0	0	—	—	—	—
Byung Gul Lee and Siope Vakataki ‘Ofa — mini-project and action plan facilitation	0	—	—	—	—

Field Trip Evaluations

Name/Grades	A	B	C	D	E
CSIRO Clayton, Melbourne — 23 October	0	—	—	—	—
Melbourne Connect and Science Gallery Melbourne — 23 October	0	—	—	—	—
CSIRO Brisbane — 26 October	0	—	—	—	—
City tour — 30 October	0	—	—	—	—

A–Strongly Favorable
B–Favorable
C–Neutral
D–Unfavorable
E–Strongly Unfavorable