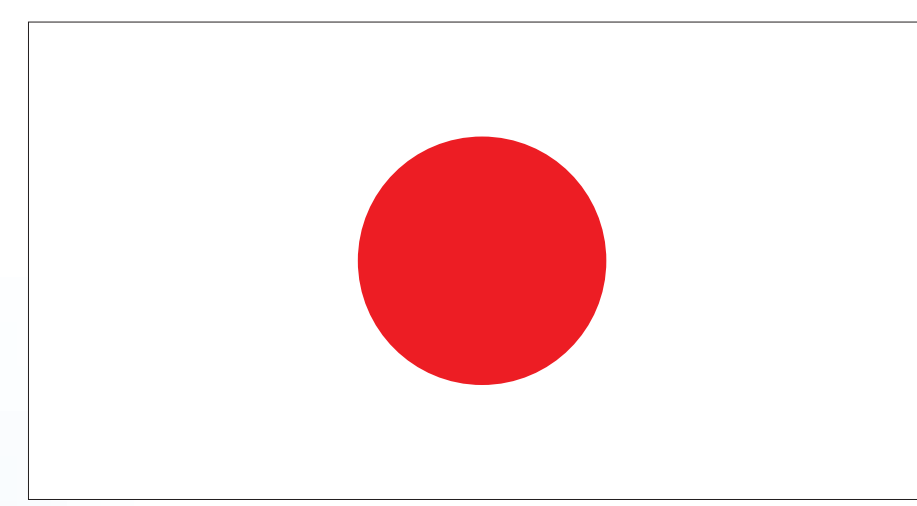




2023 EBC-J

Improving Medical Services using Telemedicine in the Federated States of Micronesia

Project objectives

a) Overall Goal

Through Telemedicine, contributing to stable development of the socio-economic environment by improving the medical health care services to quality, safety, secure, and prompt one for residents in the Federated States of Micronesia

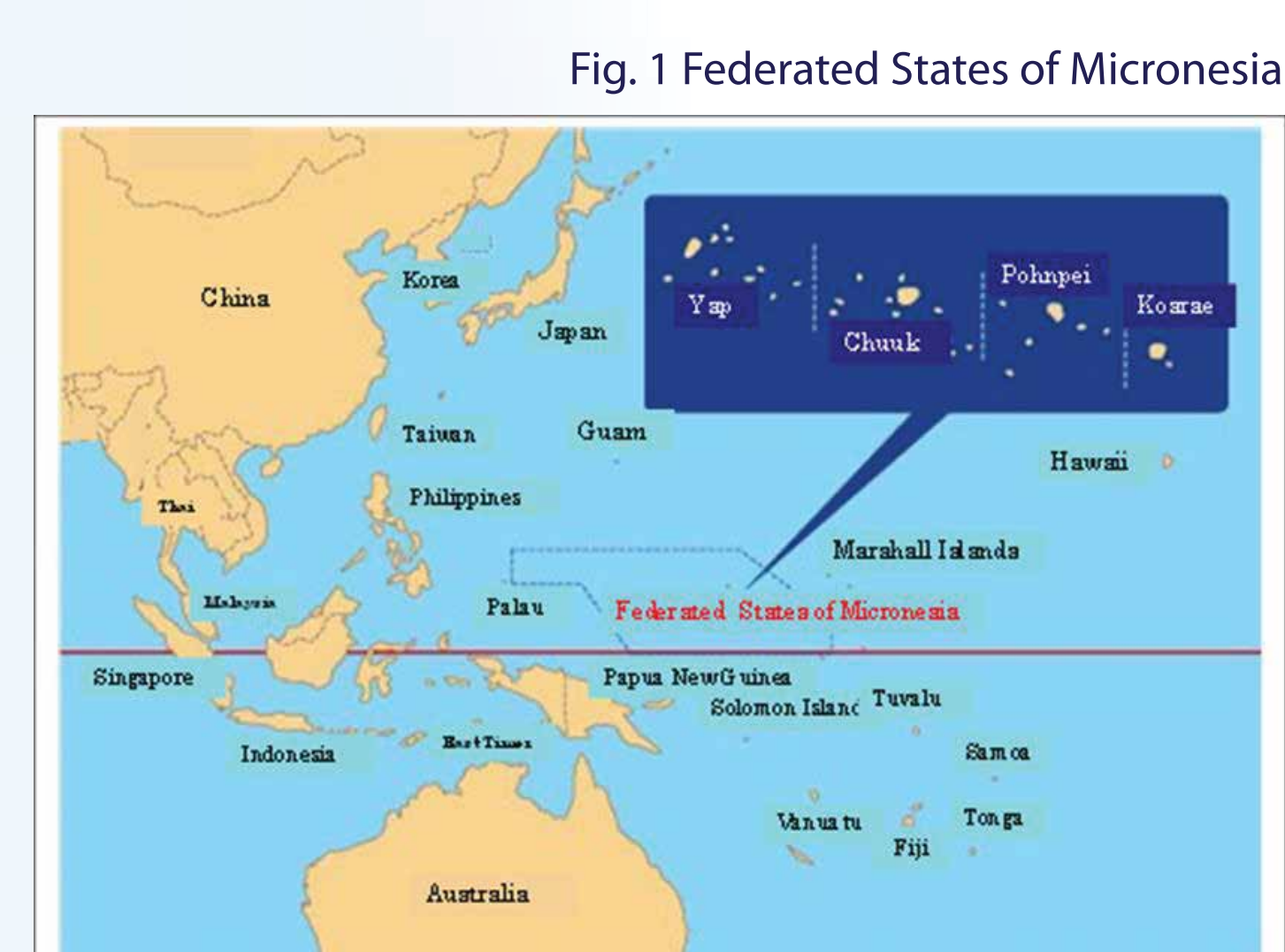


Fig. 1 Federated States of Micronesia

b) Purpose of the Project

To Enhance Maternal and Child Healthcare for the Residents of Rural Areas in the Federated States of Micronesia through Telemedicine

To Align SDGs, especially United Nations' Target 3.1 Maternal Mortality Ratio and Target 3.2 Neonatal Mortality Ratio of SDGs Goal 3

Chart 1 Health Comparison

Health comparison between Japan and Major South Pacific Countries					
	Japan	Samoa	FS of Micronesia	Papua New Guinea	Marshall Islands
1. Life expectancy	84.3 years	70.5 years	63.0 years	65.3 years	66.9 years
2. Maternal mortality rate (deaths per 100,000 live births)	4.9 deaths	51 deaths	129 deaths	215 deaths	155 deaths
3. Infant mortality rate (deaths per thousand live births)	<1 deaths	7 deaths	13 deaths	21 deaths	13 deaths

Project timeline, including key milestones



a) June: Study Tour in Japan (FSM Experts visited in Japan)

- To study the latest perinatal medicine and Telemedicine at Kagawa University
- To study iCTG and its operation at Melody International
- Field study tour at hospitals, clinics where tele-perinatal medicine using iCTG in operation
- To discuss arrangement/delivery of iCTGs installation in Pohnpei State

b) July: System Installation and Training in FSM (Japan Experts visited FSM)

- To install iCTGs at dispensaries and community health center in Pohnpei State
- 10 sets of iCTG have been exported to Pohnpei State Primary Healthcare beforehand
- Installation schedule, plan and training to medical professionals have discussed with Pohnpei State Department of Health and Social Services (PSDHSS)
- To visit dispensaries and community healthcare center to install iCTGs and operation training



Fig. 2 Study Tour in Japan

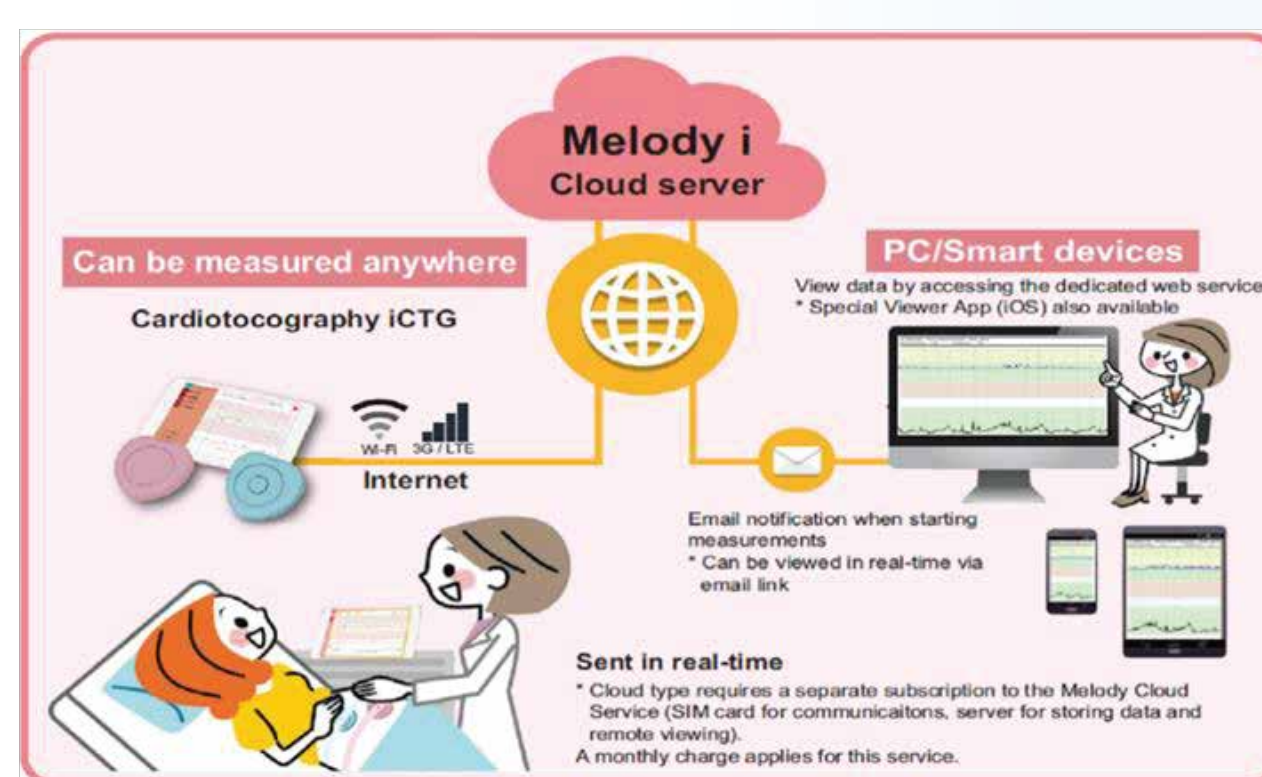


Fig.3 iCTG function

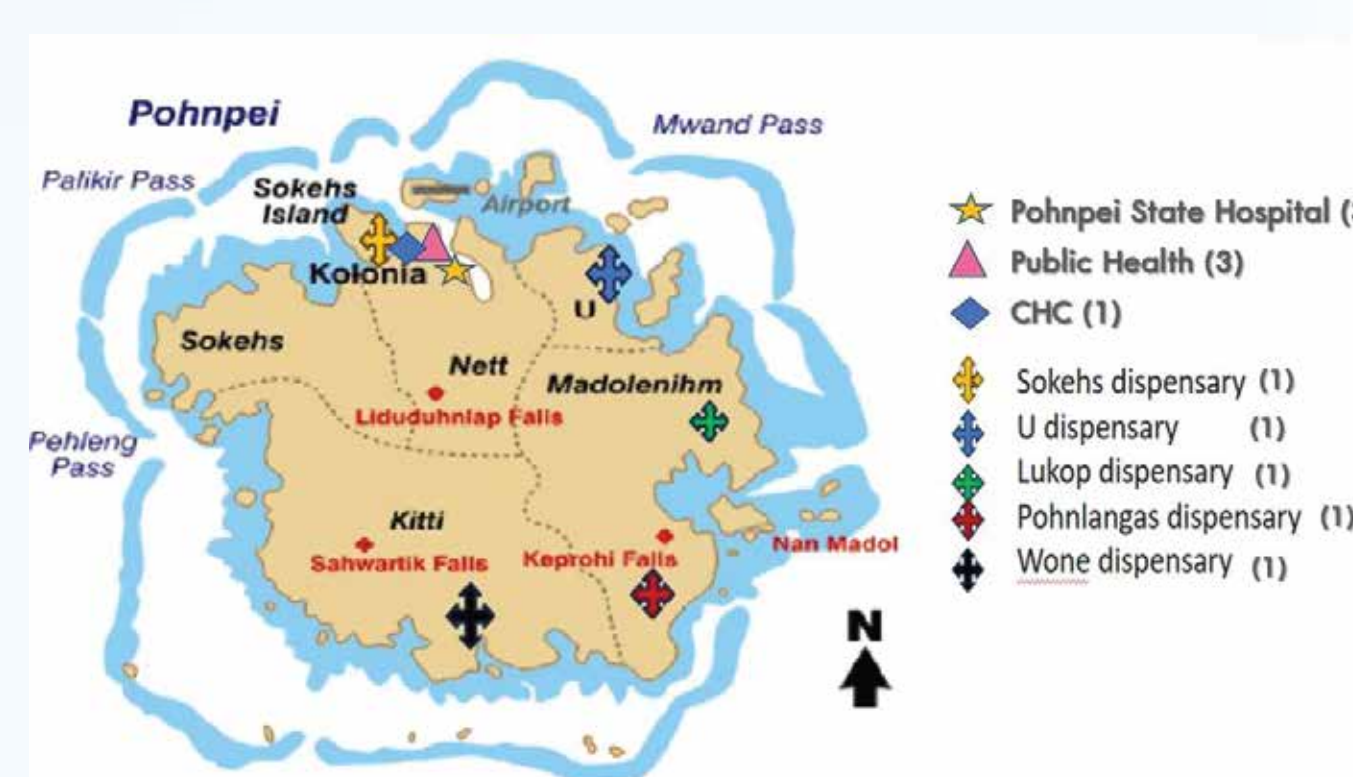


Fig. 4 Pohnpei State Project Sites

c) December: Evaluation and Closing/Handover (Japan Experts visited FSM)

- Evaluation and review of the pilot project with all stake holders
- Handing over the iCTGs to PSDHSS
- Wrap-up the project

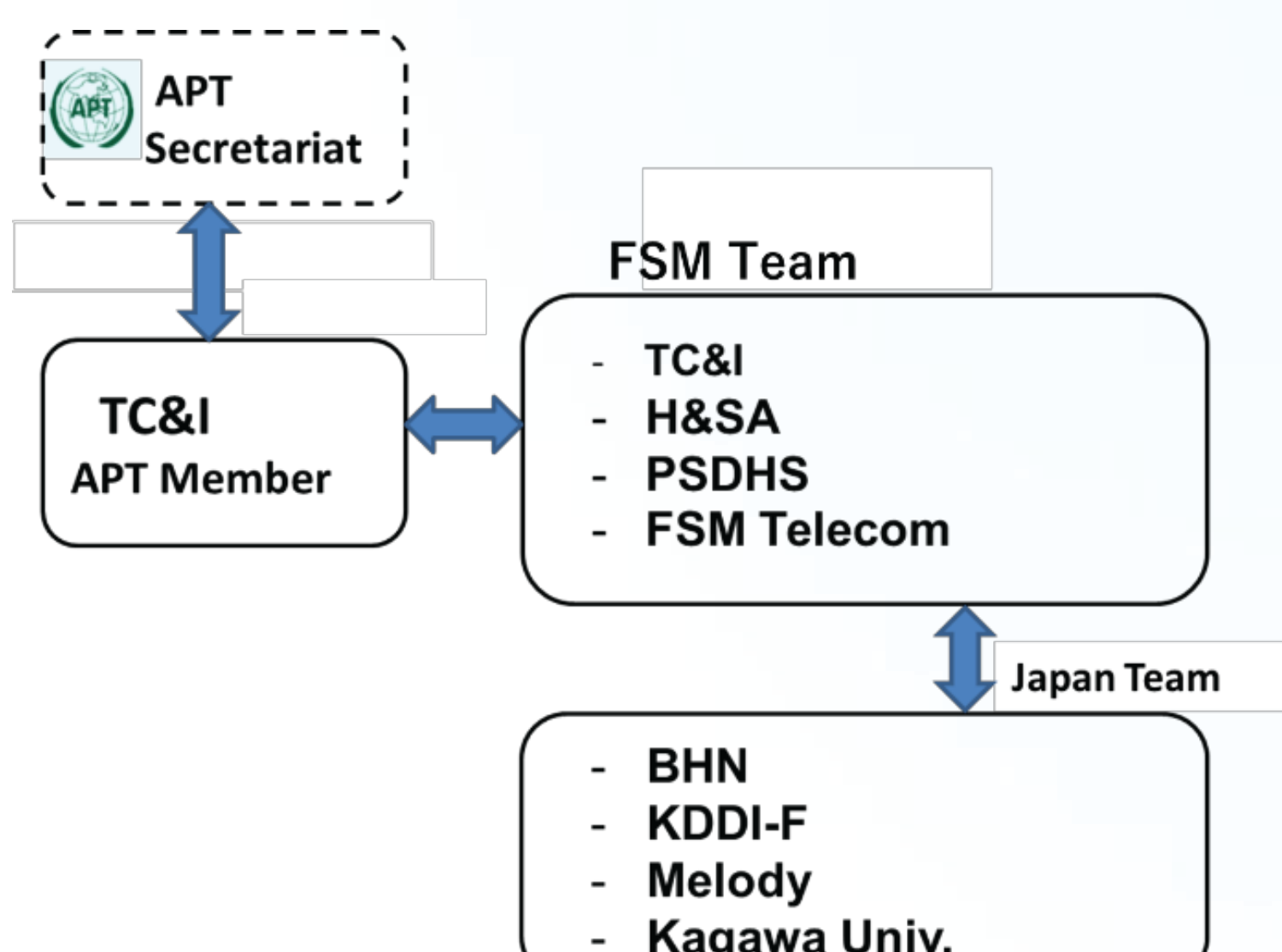
To effective usage and rotation of iCTGs, assignment of iCTG monitoring person is mandatory

Doctor's immediate feedback to pregnant woman will increase effectiveness and value of iCTG

Project Evaluation and Findings

- Quality of prenatal checkup and safer and secure delivery are drastically improved
- Telemedicine is one of the strong tools to cover shortage of medical professionals
- Quality of prenatal medicine in rural area will be extremely improved by getting OBGYN doctors' examination at State Hospital
- The pregnant women can get feedback of the examination from OBGYN doctor smoothly through network

Relevant stakeholders



Future Plan

- 1) Promote the effective use and introduction of iCTG in areas beyond the main island of Pohnpei State in FSM, including Chuuk, Kosrae, Yap and other islands.
- 2) Expand iCTG to neighboring countries, the South Pacific countries, leveraging the achievements and know-how accumulated through iCTG utilization in FSM.



NIA
NATIONAL
INFORMATION SOCIETY
AGENCY

EBC-K Project 2024

FEASIBILITY STUDY ON THE DEVELOPMENT OF LAO PDR'S OGD PORTAL

Why the Feasibility Study Was Needed

Fragmented and siloed data management

- Ministries and agencies in Lao PDR collect and maintain valuable datasets (statistics, health, education, infrastructure, etc.), but these are stored in isolated systems, often in inconsistent formats.
- Lack of coordination leads to duplication, inefficiency, and limited data sharing across government

Limited public access to government data

- Citizens, researchers, CSOs, and businesses face major barriers in accessing official information.
- Most data is only published in periodic reports or PDFs, not as machine-readable datasets.
- No formal, centralized portal exists to proactively release government data.

Weak legal and policy framework for open data, cultural challenges

- While Lao PDR has a Statistics Law (2017) and a Decree on Data and Information (2022), there is no clear Access-to-Information law or default open-data licensing policy.
- Ambiguities around data ownership, privacy, and licensing discourage agencies from sharing data
- Many agencies lack staff with technical skills in data management, metadata, and publishing

OVERVIEW OF THE PROJECT Title of the project: Feasibility Study on the Development of Lao PDR's Open Data Portal

Duration of Research

January 2025 ~ September 2025 (9 months).

Implementing Organization

DGC in collaboration with Korean experts under the overall supervision of NIA and APT

Budget

The project is supported by the Extra Budgetary Contribution from the government of the Republic of Korea (EBC-K).

Scope of Project

- identifying stakeholder needs and requirements
- Conducting a feasibility study
- Developing a prototype for open data portal
- Open data study visit to Korea
- conducting workshop with stakeholders

Project Timeline

Milestone: Significant phase of the project

JAN, 2025



Requirements gathering and analysis
Project kick-off meeting
stakeholder analysis
identification of potential open government datasets

MAR, 2025



Feasibility Analysis
• Technical feasibility assessment
• economic, operational, legal and regulatory feasibility assessment
• preparations and finalization of feasibility report

MAY, 2025



Development of prototype for the portal
• Prototyping user interface
• prototyping core features for the portal

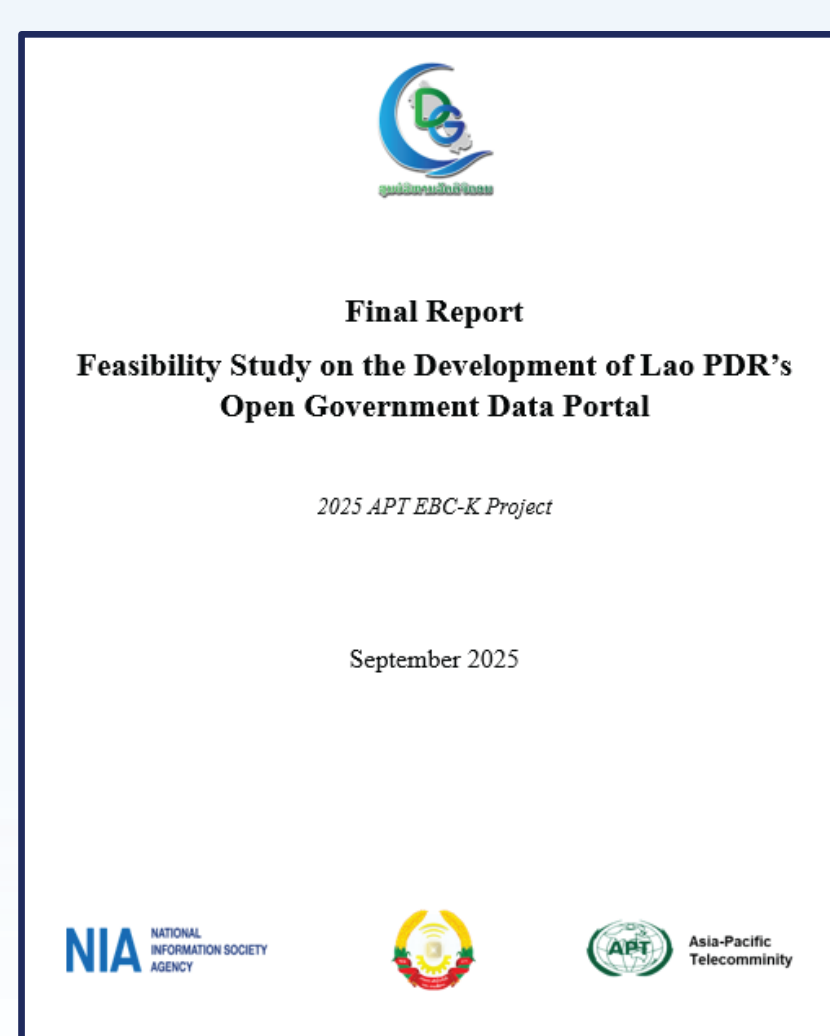
SEP, 2025



Open data study visit to Korea
• planning an open data study visit
• conducting an open data study
• Conducting workshop with relevant stakeholders

The outputs

4.1 Feasibility Study (completed) — baseline assessment of technical, policy, and institutional readiness



1.FS Assessment

- Conduct stakeholder analysis of key stakeholders, including Lao government ministries, citizens, businesses, and NGOs.
- Identify Lao PDR's potential open government data sets to be uploaded to the portal

2.FS OGD Final Report

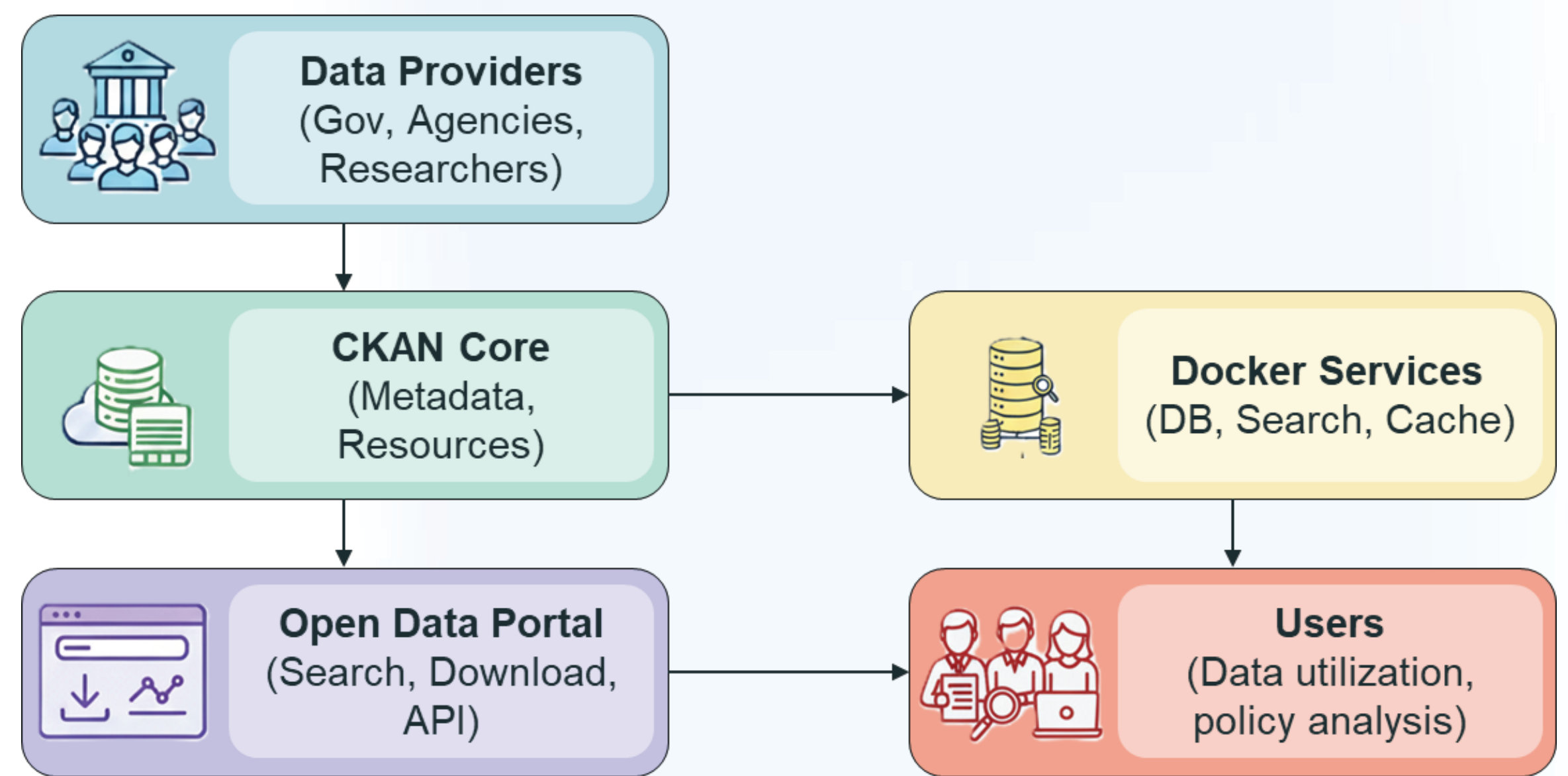
- Conducting a feasibility study
- Technical, economic, operational, legal and regulatory FS
- Finalization of feasibility report

The outputs - 4.2 Developed a prototype of the national open government data portal

- Prototype the UX/UI of the OGD portal
- Prototype core features of OGD portal to validate and design of the system



Open Data Portal Flow



CKAN-based Implementation and Localization in Lao PDR

The outputs

4.3 Capacity building program



The outcomes

Transparency and Accountability

Citizens, CSOs, and media gain easier access to reliable government data, strengthening trust and oversight

Data-Driven Governance and Innovation

Ministries use shared datasets for better decision-making, while businesses and researchers create new services and solutions from open data

Improved International Standing and Sustainable Development

Lao PDR enhances its UN EGD/OGDI rankings, aligns with ASEAN and SDG commitments, and promotes inclusive socio-economic growth

Future Plans

2026 – Foundations

- Enact Access to Information Act and revise data regulations
- Establish Open Data Governance Committee
- Build core CKAN-based portal
- Start basic training and national awareness campaign

2028 – Integration & Impact

- Integrate data with government services
- Promote data-driven policy making
- Launch data innovation challenges
- Establish data impact assessment framework

2027 – Expansion

- Enhance portal features with advanced search and visualization
- Develop sector-specific data initiatives
- Conduct advanced data management training
- Expand national awareness to specific communities

Conclusion and way forward

Conclusion

It addresses critical challenges of fragmented data management, limited accessibility, and weak legal frameworks, while aligning with the country's digital transformation strategy and international commitments. The initiative is expected to deliver greater transparency, stronger data-driven governance, and socio-economic innovation, positioning Lao PDR as an active participant in regional and global digital development.

Way forward

1. Policy and Governance

Formalize an inter-agency OGD Steering Group and designate data focal points.

2. Pilot Implementation

Launch a CKAN-based pilot portal with 3 high-value datasets (e.g., statistics, infrastructure, health, agriculture).

3. Capacity Building and Engagement

Conduct hands-on training for government data publishers and users.

4. Scaling and Sustainability

- Expand datasets and features (APIs, automation, dashboards).
- Ensure sustainable funding and technical support for long-term operation.



EBC-K Project 2024

The Development of Learning Platform (Online and Offline) for PERMATA Remaja Programme

Project Leader: Dr. Nasrudin Subhi



OBJECTIVES

- To develop a hybrid learning support platform for offline and online integrated classes for PERMATA Remaja Programme.
- To increase learning efficiency of participants by providing a platform that can be accessed at any time.

PROJECT TIMELINE & ACTIVITIES



KEY OUTCOMES

Planning > Model Selection > Design > Development > Testing & Improvement > Completion

FUTURE PLANS

Monitoring & Evaluation Research
(Output: Impact Evaluation Report)

Research & Development for Innovation
(Output: Prototype for New Features)

Objectives

- 1

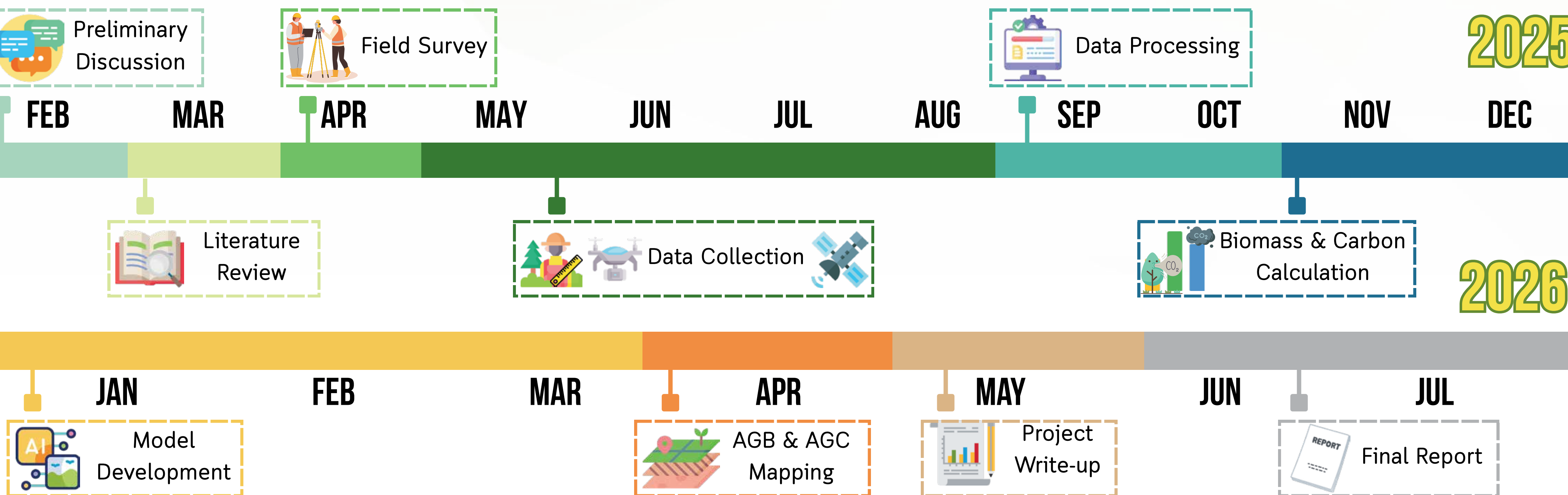
Analyze changes in tropical forest cover using remote sensing.
- 2

Estimate above-ground biomass in various tropical forest types with remote sensing and machine learning.
- 3

Identify the best combination of remote sensing data and machine learning model for accurate biomass and carbon balance prediction.
- 4

Create national maps of above-ground biomass and carbon balance for tropical forests in Thailand.

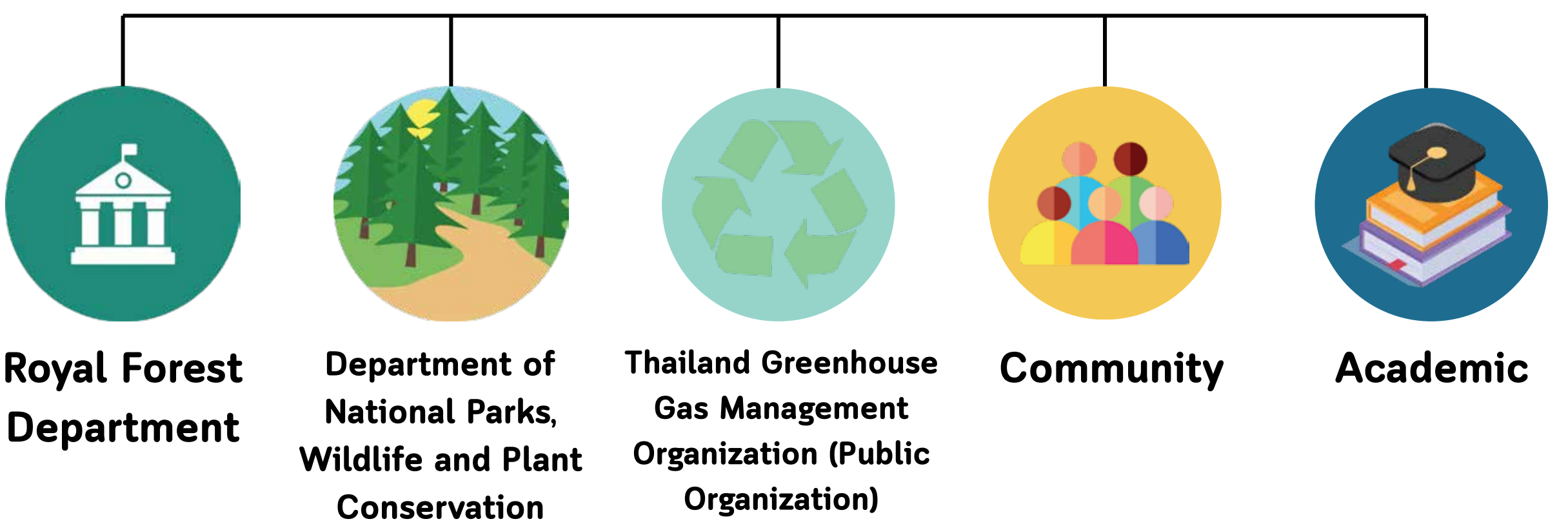
Timeline Project



2025

2026

Relevant Stakeholder



In-Progress / Future Plan

- 1



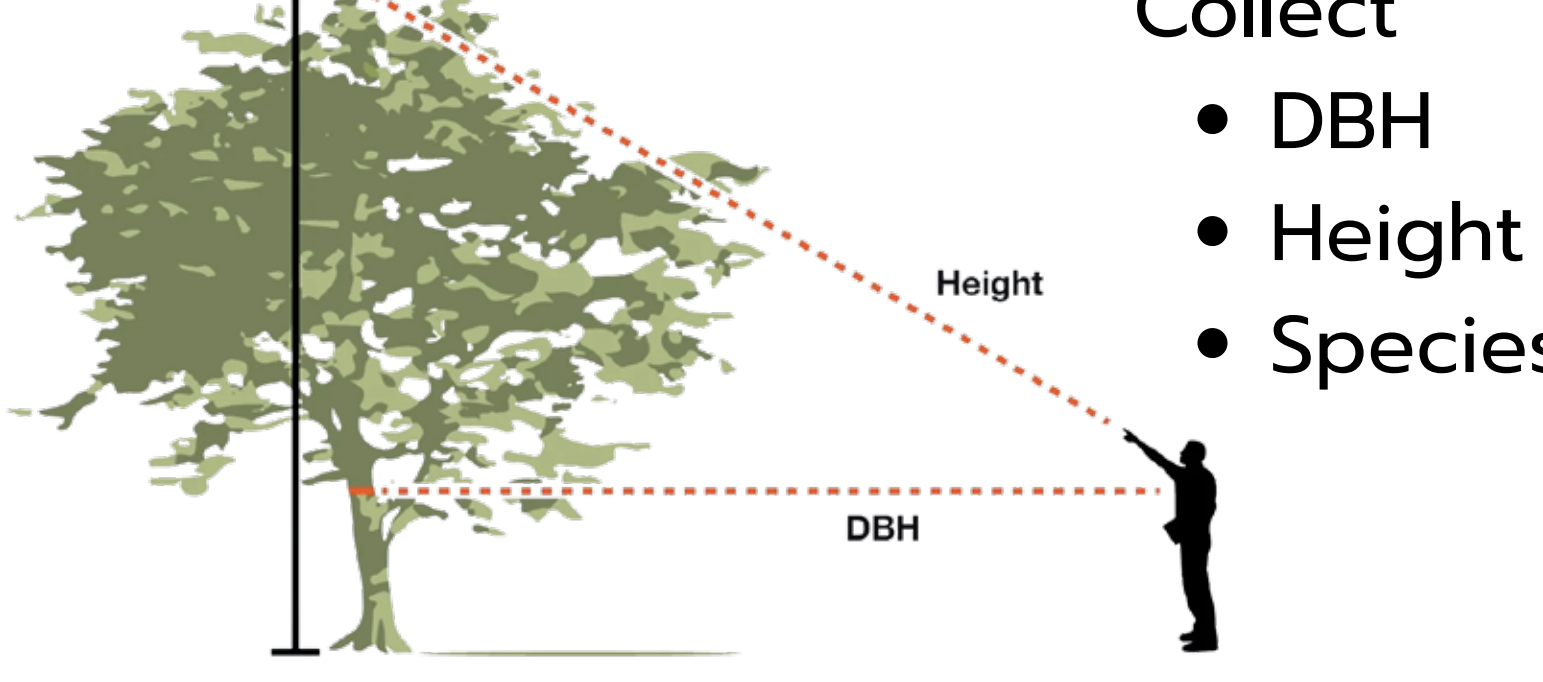
Analyze forest cover change

 - Use satellite imagery & remote sensing
 - Compare past vs present forest cover
 - Identify deforestation & regrowth trends
- 2



Field Measurement

from a sample plot (100 x 100 m2)



Collect
 - DBH
 - Height
 - Species


- 3



Calculation of forest AGB

 - Apply species-specific allometric equations
 - Compute above-ground biomass (AGB)
 - Convert to carbon stock (AGC) using IPCC factor 0.47

Table 1 Allometric Equations for Above-Ground Biomass Estimation

Forest types	Allometric equations	Reference
Dry dipterocarp forest	$Ws = 0.0396 (D2H)^{0.9326}$ $Wb = 0.003487 (D2H)^{1.027}$ $Wl = (28.0/Wtc + 0.025) \cdot -1$ $Wtc = Ws + Wb$	Ogawa et al. (1965)
Dry evergreen forest	$Ws = 0.0509 (D2H)^{0.919}$ $Wb = 0.00893 (D2H)^{0.977}$ $Wl = 0.0140 (D2H)^{0.669}$	Tsutsumi et al. (1983)

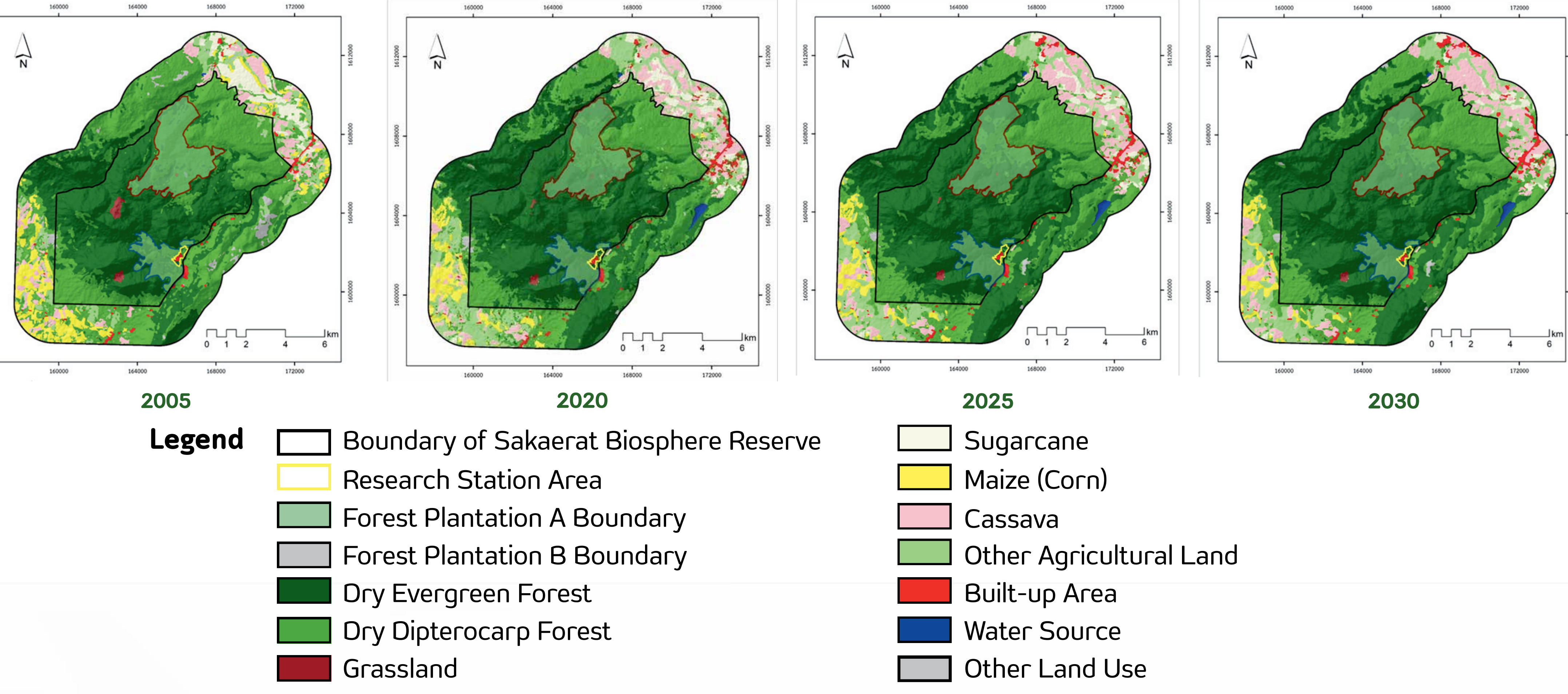
Table 2 Project Activities and Current Status

Status	Activity
On going	Data collection (Ground data and Satellite images)
Next step	1. Data processing and analysis 2. AGB and AGC mapping

collecting forest sample plots in DDF and DEF forest
measuring biomass using UAV-LiDAR

Result

Historical and Projected Land Use Change Map



Above-Ground Biomass of Dry Dipterocarp Forest

Above ground biomass (kg/ha)			
Stem (Ws)	Branch (Wb)	Leaf (Wl)	Sum
67,489.90	13,055.07	1,838.96	82,383.93

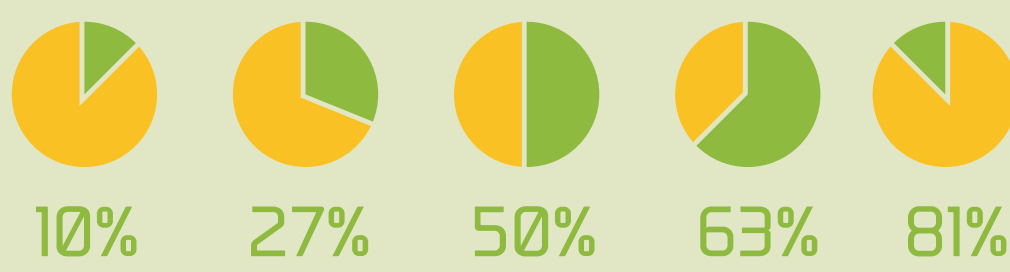
Carbon stock of Dry Dipterocarp Forest

Carbon Sequestration (kg C/ha)			
Stem (Ws)	Branch (Wb)	Leaf (Wl)	Sum
31,720.25	6,135.88	864.31	38,720.45

Carbon stock of Dry Dipterocarp Forest is 38.72 t C/ha



Executive Summary



The *Real-Time Air Pollution Detection and Dissemination through ICT Platform* is a pioneering initiative in Lao PDR aimed at addressing the growing challenges of air pollution, protecting public health, and promoting sustainable development. Over the past decades, Laos has experienced rapid economic growth, but this progress has also brought environmental challenges, particularly air pollution in urban centers like Vientiane. Contributing factors include vehicular emissions, industrial activities, agricultural burning, and transboundary haze from neighboring countries. Exposure to pollutants such as PM2.5, PM10, CO, and CO₂ poses significant health risks, including respiratory and cardiovascular diseases.

Project Objectives and Partners

The project, supported by the Asia-Pacific Telecommunity (APT) with funding from the Government of China (EBC-C Project), aims to:

1. Automatically collect pollution data.
2. Visualize the air pollution level in real-time using the Geographic Information System (GIS).
3. AI based air quality analysis and early warning.
4. Promote open data for public awareness and informed decision-making.
5. Provide technical support for environmental management.
6. Strengthening collaboration among environmental authorities, telecom operators, academia, and development partners.

Key partners include the Applied Research Institute of Smart Technology (MTC), Department of Methodology (MoNRE), Chongqing Electronic Engineering College (China), ETL, National University of Laos, and provincial authorities.

System Overview

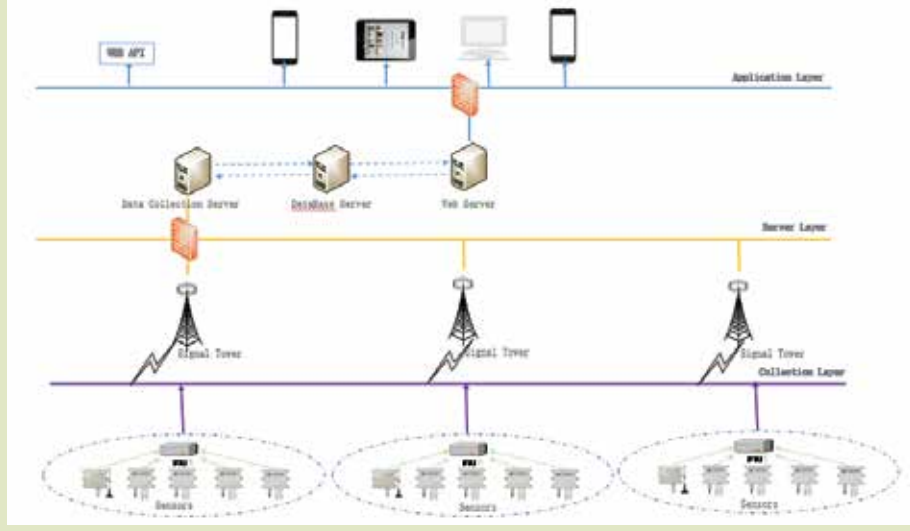


Figure 1 System network Architecture

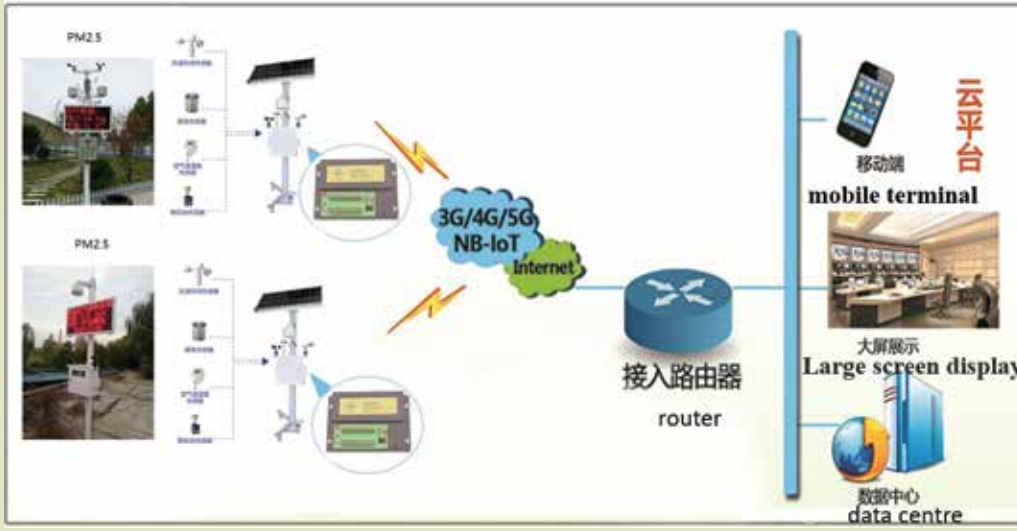


Figure 2 System Architecture



Figure 3 hourly AQI data



Figure 4 Daily AQI data

The project employs an IoT-based monitoring network with sensors and towers deployed across Vientiane and selected provinces. Data on PM2.5, PM10, CO, CO₂, temperature, and humidity are automatically transmitted to a cloud server at hourly intervals, visualized via web portals, mobile applications, and LED displays. AI algorithms analyze pollution trends and generate real-time alerts for citizens and decision-makers. Data classification follows WHO/WMO standards, supporting evidence-based interventions.

Key Achievements and Activities

- Consultation and Planning: Three rounds of stakeholder meetings established monitoring requirements, public dissemination strategies, and a national collaboration framework.
- Equipment Procurement and Installation: Customized sensors and platforms were procured and deployed at strategic sites, with robust connectivity and data redundancy systems.
- Training and Capacity Building: National staff received training in system maintenance, AI analysis, and data dissemination.
- Workshops and Seminars: Engaged policymakers, technical staff, and local communities to promote understanding and use of the system.
- Project Outputs: The system provides real-time monitoring, AI-based pollution trends analysis, a user-friendly dissemination platform, guidelines for national implementation, and training materials for sustainability.

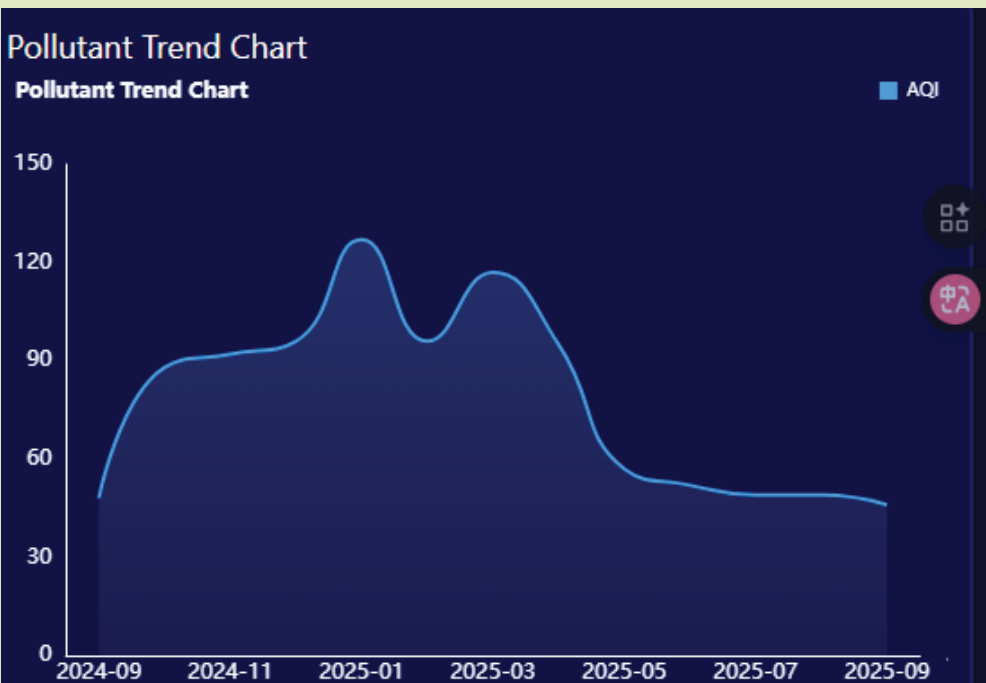


Figure 5 AI-based pollution trends

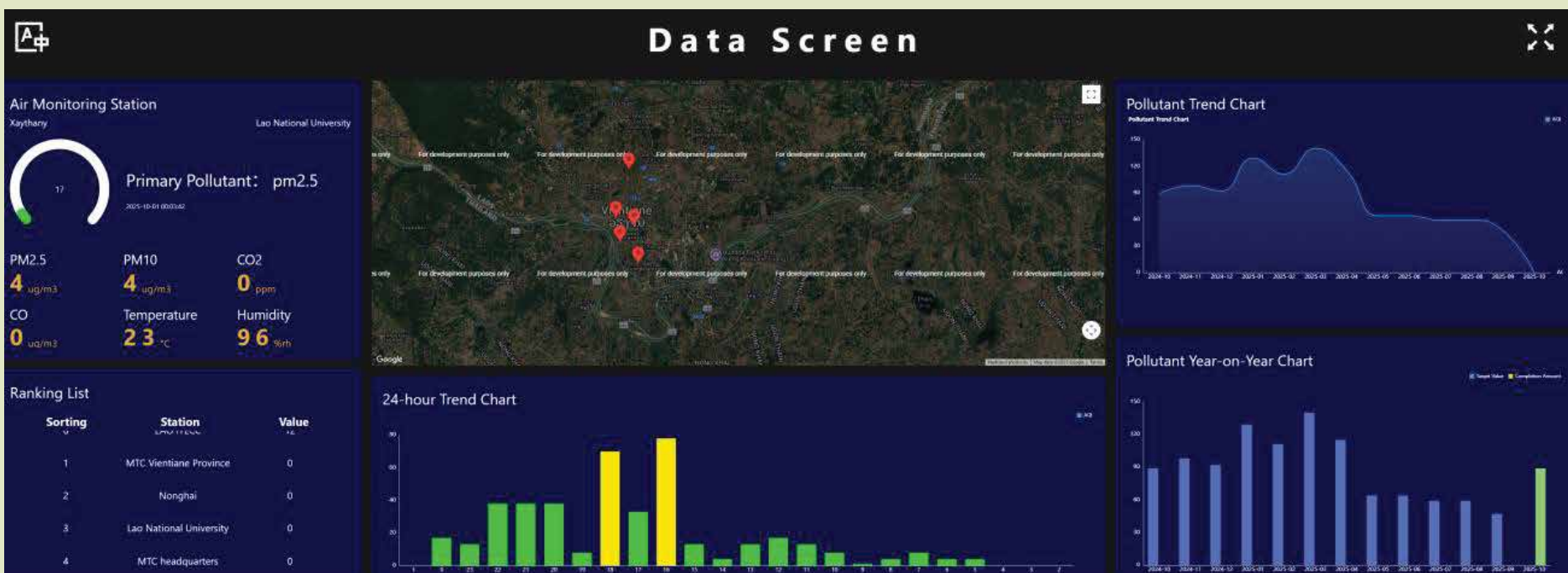


Figure 6 Air Quality Monitoring Screen

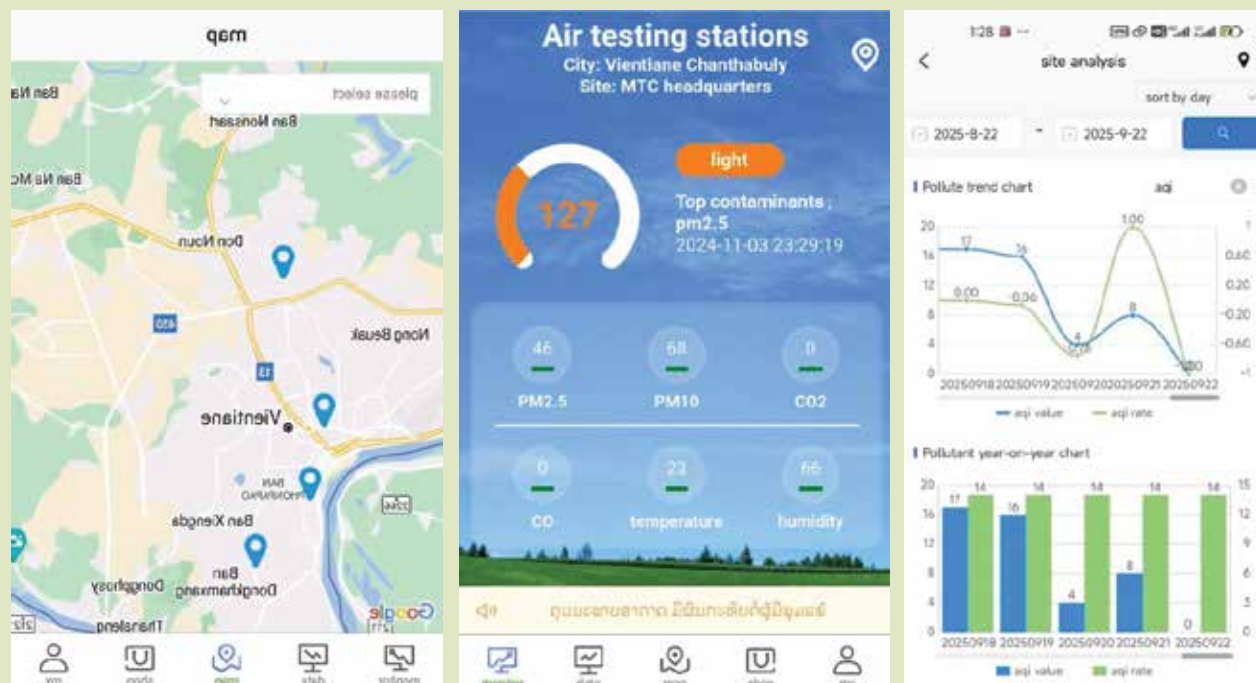


Figure 7 Mobile Application platform

Project Contributions and Impact

1. Public Health Protection: Real-time alerts reduce exposure risks, particularly for vulnerable groups.
2. Policy and Decision Support: Centralized, standardized data strengthens governance, urban planning, and regulatory enforcement.
3. Regional and International Cooperation: Facilitates transboundary air quality collaboration with ASEAN and global networks.
4. Digital Transformation and Innovation: Enhances capacity in ICT, AI, GIS, and data-driven governance.
5. Public Awareness and Engagement: Empowers citizens through transparent, accessible information.
6. Economic and Development Benefits: Reduces health-related costs, improves productivity, and attracts sustainable investments.

Challenges and Barriers

The project faced financial constraints, technical limitations, limited human capacity, and partial coverage of pollutants. Ensuring interoperability between ministries and scaling the system nationwide also presented challenges.

Conclusion

The project demonstrates a successful integration of technology, innovation, and multi-stakeholder collaboration in environmental governance. By providing real-time, evidence-based monitoring, it strengthens Laos' ability to protect public health, inform policy, and contribute to regional air quality initiatives. The future plan ensures the system evolves into a nationally integrated and internationally recognized platform, supporting sustainable development, digital transformation, and long-term environmental resilience in Laos.

Air Quality Station at ARIST office, Vientiane.



Air Quality Station at Primary School, Vientiane.



Air Quality Station at Luangprabang province

