

Summary Report

ITTO Project PD-A/60-369

“Strengthening Surveillance and Monitoring to Tackle the Surge in Forest Loss and Land Degradation, Induced by Intensifying Conflict in Thailand’s Border Areas”

By Mr. Sitthichai Jinamoy, March 2025



NCAPs Training at Ban Tor Pae Community Forest

Project duration

The duration of the assignment is 12 months from 1 July 2024 to 30 June 2025.

Objective

Strengthening SMART and NCAP Surveillance and Monitoring System for citizen science and community reporting illegal activities in Mae Hong Son Province, Thailand.

Background and Context

Mae Hong Son is a mountainous province in northern Thailand, bordering Myanmar. Known for its rugged terrain and rich biodiversity, the province is home to vast forests, national parks, wildlife sanctuaries, and diverse ethnic communities. Due to its remote location and challenging access, Mae Hong Son has faced persistent issues such as illegal logging, poaching, and land encroachment. Additionally, conflicts in border areas have exacerbated forest loss and land degradation, highlighting the need for stronger surveillance and monitoring efforts.

This development is part of the initiative “Strengthening Surveillance and Monitoring to Tackle the Surge in Forest Loss and Land Degradation Induced by Intensifying Conflict in Thailand’s Border Areas.” To address these environmental threats, the **SMART Patrol System** and **NCAPs** (*Nature Crime Analysis Platforms, particularly Camera Traps*) have been implemented as essential tools for surveillance and monitoring.

These technologies play a crucial role in engaging local communities and supporting law enforcement efforts to protect Mae Hong Son’s natural resources.

For more than 20 years in Thailand, this initiative has been known as the **“SMART Patrol System”**, implemented alongside a patrol database program called **“SMART”** (*Spatial Monitoring and Reporting Tool*), which utilizes technology to protect wildlife and forests. The program integrates GPS technology, systematic monitoring, and reporting to enhance conservation efforts. Its primary goals are to boost the morale of rangers and managers, improve their ability to protect designated areas, and ensure the survival of key species. Additionally, the SMART program has contributed to a decline in the number of arrests, the discovery of poaching camps and hides, and the stabilization of the tiger population.

The SMART program is being utilized in several wildlife sanctuaries under Thailand’s Department of National Parks, Wildlife and Plant Conservation (DNP), including Thungyai Naresuan East (TYE), Thungyai Naresuan West (TYW), and Huai Kha Khaeng Wildlife Sanctuary (HKK), with development support from the Wildlife Conservation Society (WCS) Thailand. Currently, the program integrates mobile applications to enhance GPS tracking, communication, and reporting capabilities. It features a user-friendly interface and real-time data sharing, including SMART Mobile, SMART Connect, and SMART Sensor—which incorporates drones for surveillance, camera traps, and GPS trackers.

Main activities

Select four target Community Forests (Comm. Forest), and one of National Reserve Forest (NRF) for SMART Patrol set up

Therefore, SMART Patrol technology can be effectively integrated not only for patrolling and security but also for citizen science initiatives and reporting illegal activities such as logging, poaching, and land encroachment. This system has been successfully applied in and around four target community forests and a national reserve forest in Mae Hong Son Province, northern Thailand.

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Overall Concept
SMART diagram
in 2024 for ITTO
project

Install cameras and NCAPS technologies for real time monitoring and reporting illegal activities (logging, poaching and encroachment) in and around the 5 target community forests, and conduct trainings and workshops on smart technology surveillance systems that integrates cutting-edge technologies to



NCAPs camera trap setup, and learning workshop (24-29 October 2024)



Collaborative Conservation Efforts

Collaboration is essential for facilitating the development of SMART and NCAP technologies to improve the management of target areas in the future. Successful conservation initiatives depend on knowledge exchange, capacity building, and technology transfer among stakeholders.

1. Case Study: SMART Mobile at Salak Phra Wildlife Sanctuary

- ❖ *The SMART Mobile system was first introduced and tested at Salak Phra Wildlife Sanctuary, marking a significant advancement in real-time patrol monitoring. The system enabled rangers to track illegal activities, record field observations, and generate instant reports using mobile applications, enhancing enforcement efficiency. Lessons learned from this pilot project serve as a foundation for expanding SMART Mobile to community forests and national reserve forests in Mae Hong Son.*

2. Best Practices in NCAPs Camera Trap Deployment by Panthera Thailand

- ❖ *The Panthera Thailand has pioneered advanced camera trap deployment techniques for wildlife monitoring and anti-poaching strategies. Their approach involves:*



This photo shows a workshop to visit and observe the use of SMART Mobile and the installation of camera traps to monitor illegal forestry activities. The picture shows a meeting with the assistant of headquarters, Salak Phra Wildlife Sanctuary, Kanchanaburi Province, and Panthera Thailand team on camera trap techniques to discuss cooperation in applying this system in Mae Hong Son Province.

Conclusion and Recommendations

The strengthening of SMART and NCAP Surveillance and Monitoring System has proven to be a valuable tool in protecting Mae Hong Son's natural resources. By integrating technology with citizen science, illegal activities have been identified and addressed more effectively. Moving forward, the following recommendations should be considered:

- ❖ Expanding the system to other regions with similar environmental challenges.
- ❖ Increasing funding and resources for technological advancements.
- ❖ Strengthening legal frameworks to support community-led environmental monitoring.
- ❖ Continuing education and capacity-building programs for local stakeholders.

Mae Hong Son Province can serve as a model for other regions facing similar environmental challenges. This initiative highlights the importance of community participation and technological innovation in conservation efforts. The strengthened SMART and NCAP system is a model for future projects to safeguard Thailand's rich biodiversity.

Sustainability

Ensuring the long-term sustainability of the SMART and NCAP Surveillance and Monitoring System requires continuous support, strategic planning, and community engagement. The key aspects of sustainability in this initiative include:

1. Institutional and Financial Sustainability
2. Community Involvement and Capacity Building
3. Technological Adaptation and Innovation
4. Policy Integration and Legal Framework

Strengthening legal enforcement mechanisms to empower local authorities in taking action against illegal activities based on SMART data



Group photo show the camera trap location in National Reverse Forest.

Through continuous innovation, policy support, and cross-sector collaboration, SMART and NCAP can become a powerful force in preserving biodiversity, safeguarding ecosystems, and ensuring a more resilient future for both people and nature.

The strengthening of the SMART and NCAP Surveillance and Monitoring System in Mae Hong Son Province represents a groundbreaking step in integrating technology, community engagement, and conservation efforts to combat illegal activities and protect natural resources. By leveraging real-time data collection, citizen science, and strategic collaborations, this initiative has enhanced enforcement capabilities, empowered local communities, and fostered a more sustainable approach to forest and wildlife conservation.

SMART and NCAP Surveillance System ITTO Project PD-A/60-369

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