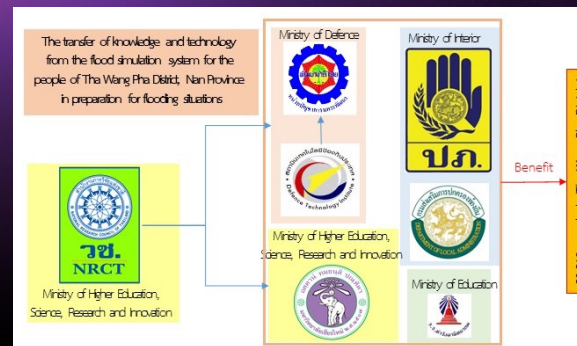




Implementation of multi-level public participation as the novel and sustainable approach for the flood simulation system to benefit communities of Tha Wang Pha District, Nan Province in preparedness to deal with flood situations



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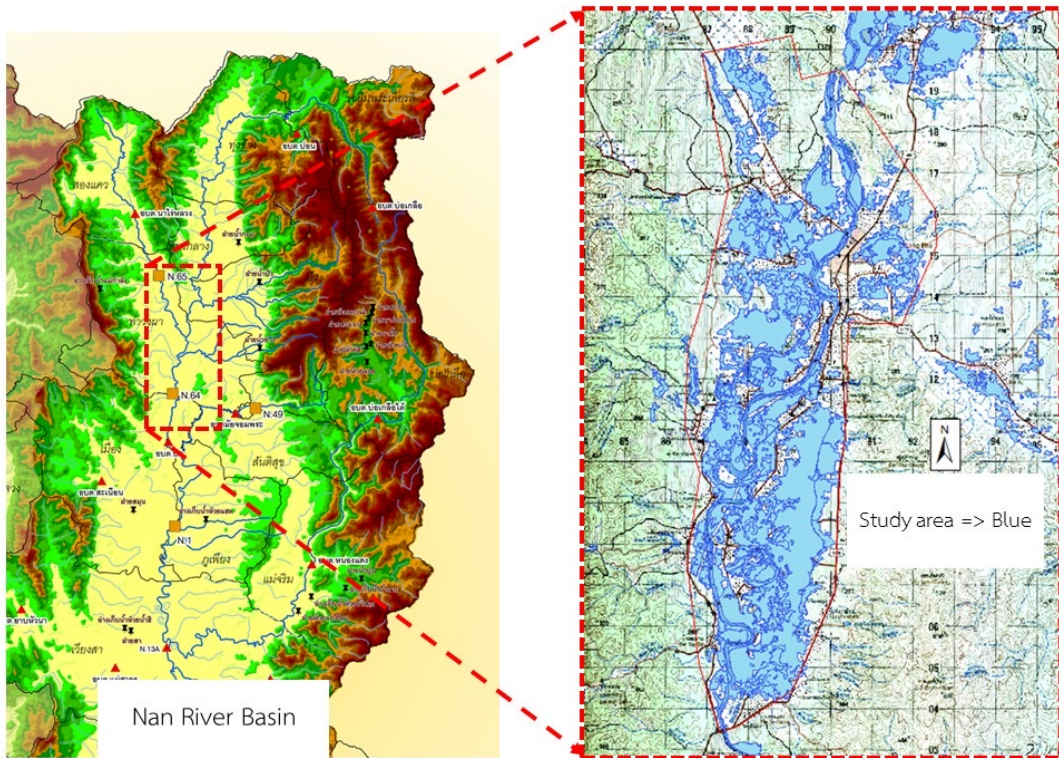
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1. Communities of Tha Wang Pha District, Nan Province effected by flood situations

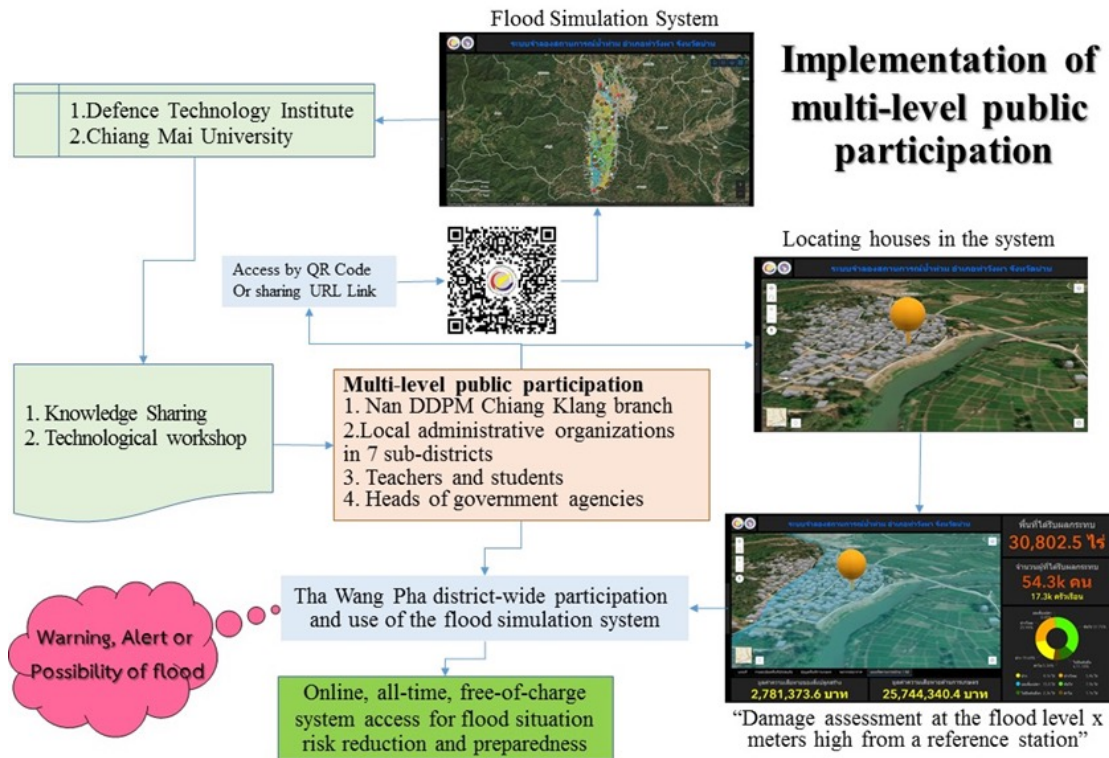


Areas facing flooding situations are **always experiencing overflows** and have had a huge impact on the people.

The recurring flooding problem in Tha Wang Pha District has both **direct and indirect impacts on 50,519 people**.

“Tha Wang Pha District of Nan Province in the North of Thailand”

2. The multi-level public participation approach for the communities of Tha Wang Pha District, Nan Province to deal with flood situations



We engaged multi-level participation with the activities for sustainable preparedness for flood situations, including:

1. **Executives** in local government organizations and government agencies in Tha Wang Pha
2. District The Nan **DDPM Office**, Chiang Klang Branch sent 2 representatives to the activities.
3. **Leaders of communities and local administrative organizations** of Tha Wang Pha District
4. **Teachers and students** of Tha Wang Pha Pittayakhom School.

“The multi-level public participation as the novel and sustainable approach”

3. How can the multi-level public participation approach be leveraged to drive social innovation and improve communities?

3.1 The multi-level public participation approach to drive social innovation



“QR code to the flood simulation system”

3.1.1 The flood simulation system was an **integral innovation where knowledge, technologies** and people were central to **the multi-level public participation approach**. To achieve the system, we applied several fields of knowledge that included field survey, UAV based terrain modelling, geo-spatial database creation, and flood damage assessment and dashboard creation.

3.1.2 The **multi-agency participation of the activities was at the heart of the project**. We targeted at the principle element of the communities through the activities with the teachers and students of Tha Wang Pha Pittayakhom School so that they could extend the shared knowledge and technology with family members.

3.1.3 The availability and accessibility of the flood simulation system reflected **an aim to drive social innovation and improve the life quality of the communities**.

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3. How can the multi-level public participation approach be leveraged to drive social innovation and improve communities?

3.2 The multi-level public participation approach to improve communities



“The Inter-agency Award”



- Government agencies were related and intertwined with public services in their own right. That was how we engaged various and relevant parties, **so successfully that we received the Inter-agency Award, from the Festival of Innovation Awards 2024.**
- The award recognizes exemplary inter-agency initiatives that have reflected a **sustained and institutionalized approach to collaboration.**

3. How can the multi-level public participation approach be leveraged to drive social innovation and improve communities?

3.2 The multi-level public participation approach to improve communities



Nan Provincial Disaster Prevention and Mitigation Office at Chiang Klang branch



Chief of Tha Wang Pha District



Representatives of 7 local administrative organizations, Teachers and students of Tha Wang Pha Pittayakhom School



RECENT FLOOD SITUATIONS IN THA WANG PHA DISTRICT DURING 8-15 AUGUST 2023



A view of flood situation on 9 August 2023



The expected governmental compensation is at 1,420,000 baht



A simulated scene



The simulated damage of 407,489.4 baht to construction and 4,851,304.5 baht to agricultural products

- Since the knowledge and technology transfer of the simulation system to help the people of Tha Wang Pha District in preparation for flooding situations.
- After the knowledge and technology transfer activities, the effected agricultural areas were reduced
 - From simulated **6,520 rai** to actual **1,827 rai**.
 - from estimated **11,500 people** to actual number of **1,488 people**.
 - from simulated **3,700 households** to actual **650 households**.
 - from the simulated damages of **407,489.4 baht** to construction and **4,851,304.5 baht** to agricultural products to actual governmental compensation at **1,420,000 baht**.

“The system that drove social innovation and improve communities”

4. What are some examples of successful social innovation projects driven by sustainable solutions, particularly in the public services sector?

4.1 The successful social innovation project driven by public sector participation

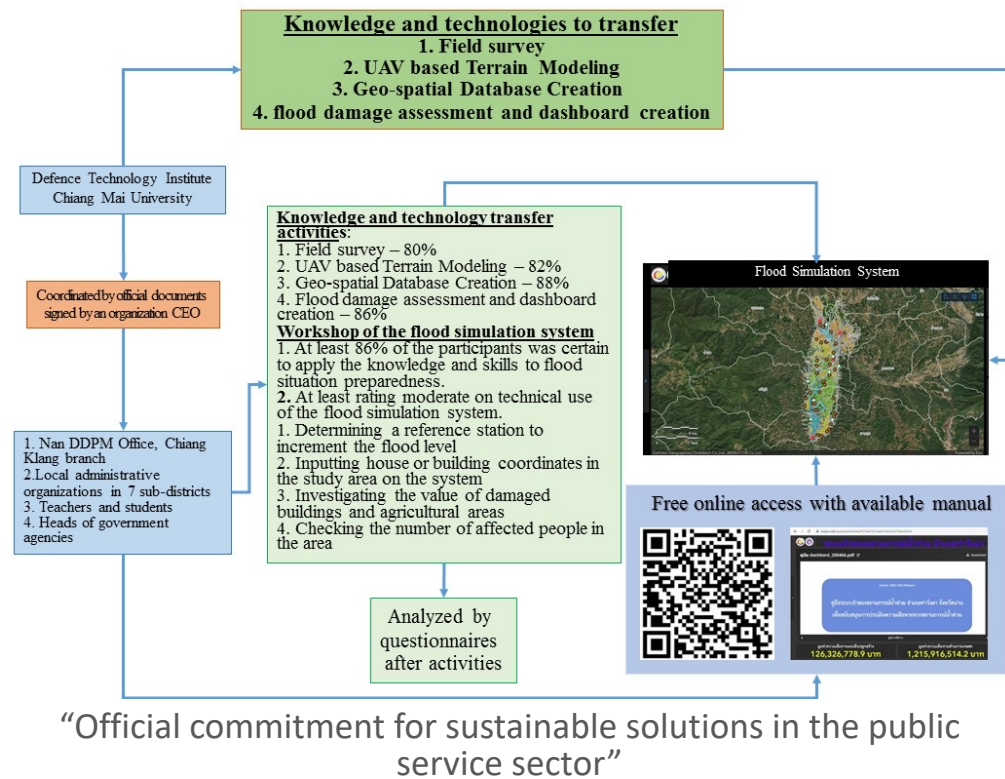


“Recurring flood situation in Tha Wang Pha District”

- Tha Wang Pha District has **both direct and indirect impacts on 50,519 people.**
- Government agencies in Tha Wang Pha District and Nan Province **pushed forward their continuous effort** to alleviate the severity of the flooding situations in Tha Wang Pha District.
- There have been **frequent workshops** before and after the situation arises.
- Government sectors and people in Tha Wang Pha District recognize the **importance of supporting citizens and localities** to take care of themselves within and across communities.

4. What are some examples of successful social innovation projects driven by sustainable solutions, particularly in the public services sector?

4.1 The successful social innovation project driven by public sector participation



In 2023, our project titled “*The transfer of knowledge and technology from the flood simulation system for the people of Tha Wang Pha District, Nan Province in preparation for flooding situations*”

We We were fully aware of **the intertwined relations forming the public in Tha Wang Pha District**

- Teachers and students of Tha Wang Pha Pittayakhom School and communities of Tha Wang Pha District were considered as **the technocrat and technical gateway** of the project to the public
- Where guidelines and policies were central to public initiatives and services, we **engaged the government heads and personnel of Tha Wang Pha District agencies** with the activities in view of technology acceptance leading to incorporating the system with forming part of the guidelines and policies.

5. What are the biggest challenges in scaling sustainable solutions for social innovation, and how can they be overcome?

5.1 The challenge to boost Thai youth interest in the knowledge underlying the innovation

To accelerate the youth's interest in space technology or unmanned aerial systems

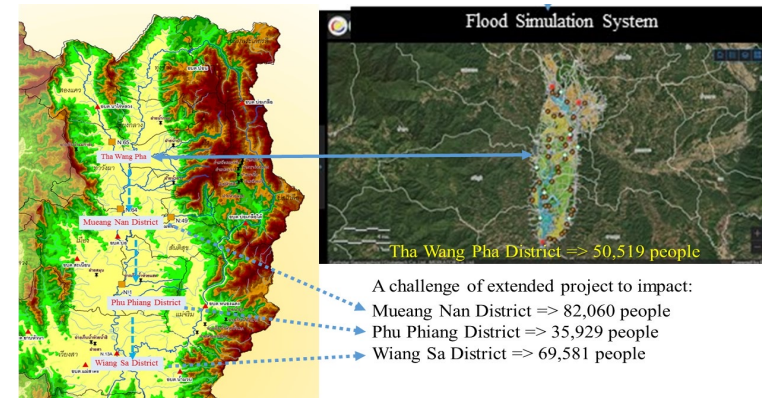
To achieve **SDG Objective 13.3b** by taking an urgent action to combat climate change and promoting a mechanism to increase planning and management capacity, **valuing women, youth and local communities**

5.2 The challenge to extend the results to next water catchment areas

We encountered **the challenge to push forward the extension of the project** to involve more **82,060** people of Mueang Nan District, **35,929** people of Phu Phiang District, and **69,581** people of Wiang Sa District or totally **187,570** people with this successful project and to scale up this sustainable solution for larger social innovation.



“The challenge to accelerate Thai youth's interest in space technology or UAV and to achieve SDG Objective 13.3b”

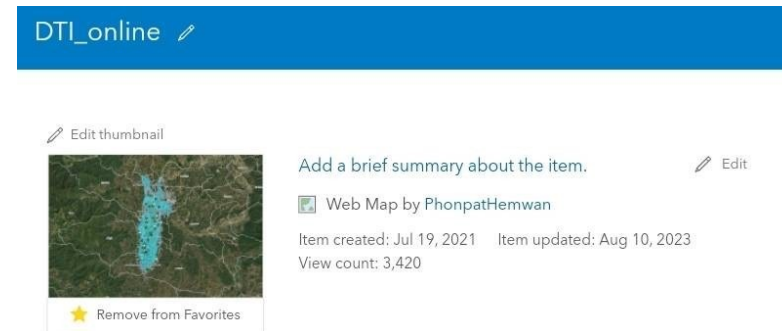


“To extend the current study area to cover larger water catchments”

5. What are the biggest challenges in scaling sustainable solutions for social innovation, and how can they be overcome?

5.3 The challenge to promote system ownership

We assumed that approximately one in ten people of Tha Wang Pha District's **directly impacted people of 36,419 people viewed** our system and approximately one in three households of 12,367 flood - affected households viewed our system.



"System view count as of 10 August 2023"

5.4 The challenge to strengthen immunity and capacity of the communities

To realize SDGs Goal 13 **at Objective 13.1 by promoting this social innovation to strengthen immunity and capacity of the communities** to adapt to climate-related natural hazards and disasters

To realize SDGs Goal **13 at Objective 13.3b by promoting a mechanism to increase planning and management capacity** of strategic management levels or enforce policies and guidelines on disaster management.



"To promote a mechanisms to increase management capacity"

6. What role does technology play in fostering social innovation through sustainable practices, and how can it be utilized effectively?

6.1 Role in fostering social innovation through sustainable practices

We adopted the military concept of **Intelligence Preparation of the Battlefield or IPB** to design and develop the system.

We issued **official documents to coordinate with relevant agencies and institutes** for top-management commitment, making the implementation an innovative and successful method.



“Role in fostering social innovation through military acceptance”

6. What role does technology play in fostering social innovation through sustainable practices, and how can it be utilized effectively?

6.2 How can the technology be utilized effectively?

6.2.1 Study user requirements before building the flood simulation system



“Effectiveness for Response Units of AFDC”

6.2.2 Engage top management with the activities



“Top management being engaged with the activities”

6.2.3 Implementation for effective utilization of the flood simulation system

Following the technological workshop, the participants planned to use the knowledge to flood **preparedness at 100% with measured skills at 100%.**



“Participation of representatives of 7 Sub-districts of Tha Wang Pha District”



“Workshop with 36 heads and representatives of government agencies”

7. How can leadership and corporate culture drive a commitment to social innovation through sustainability?

7.1 Leadership with commitment by impact on public policy



We have engaged with all levels:

As R&D institute in defence technology, we implement the flood simulation system **with functions of the AFDC response unit.**

We managed to **share and transfer knowledge and technology with Tha Wang Pah communities** through the activities.

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7. How can leadership and corporate culture drive a commitment to social innovation through sustainability?

7.1 Leadership with commitment by impact on public policy



We implemented our innovative strategies and commitment to excellence and earned the distinguished **ASEAN Risk Awards' Public Initiatives on 5 July 2024.**

We were honored to be recognized by our **exceptional contributions to the communities.**



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7. How can leadership and corporate culture drive a commitment to social innovation through sustainability?

7.2 Commitment to social innovation with sustainability for public safety

We simulated flooding situations in Ban Don Ton of Sri Phum Sub-district with the help of village's Deputy Headwoman in action.

We managed to help the community in Ban Don Ton upon August 2023 with what-if situation awareness and preparedness for flood risk reduction.



"Flood situations in Ban Don Ton and the networked reporter with permission"



**3,838,793.9 baht reduced damage and mitigated loss
Public Initiative with significant impact on Public Safety**

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Government compensation at 1,420,000 baht

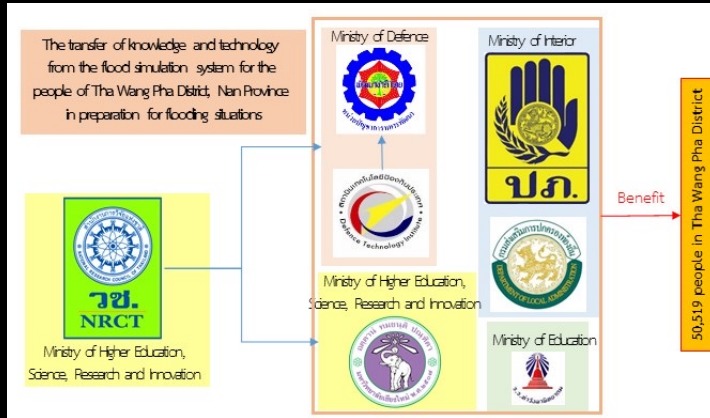


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Thank you

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