

Strengthening Collaborative Networks and Mechanisms for Water Management under the Watershed Management Framework, Driving Participatory Water Management in Coastal Watershed Areas towards Sustainable Development Goals

In the fiscal year 2024, Walailak University, led by Assoc. Prof. Dr. Pakorn Ditthakit from the School of Engineering and Technology, along with Lecturer Sutthira Thongkhaw from the School of Languages and General Education and the Academic Services Center working team, has supported and enhanced the capacity of the community in water management using a participatory watershed management framework. This initiative is taking place in Khlong Noi sub-district, Pak Phanang District, Nakhon Si Thammarat Province, which is located at the downstream end of the Pak Phanang River basin, connecting to the Gulf of Thailand coastline. Khlong Noi sub-district encompasses areas engaged in both freshwater and saltwater livelihoods. The freshwater areas in the lower Pak Phanang River basin are primarily agricultural, while the coastal area of Pak Phanang Bay to the north of the sub-district is a saltwater zone where most of the community is involved in fishing, aquaculture, and mangrove forest management within the protected forest area. Additionally, there is a drainage system that directs water to the Gulf of Pak Phanang, controlling water flow in the main canals.

Due to its connection to the coastline, the area is influenced by the rising and falling tides, often experiencing saltwater intrusion and flooding during high tides throughout the year. This affects the quality of water used in agricultural production, especially for the Pakpanang Tabtim Siam Pomelo, a Thai Geographical Indication (GI) fruit of the region. It also impacts other key economic crops like coconut and palm, which are major sources of income for the community. Furthermore, the area's location is affected by monsoon winds, and its physical characteristics—being a low-lying plain and basin—result in the Khlong Noi subdistrict suffering from prolonged flooding.

The working group of Walailak University has organized a process to strengthen the collaborative network and participatory water management mechanism for the Khlong Noi subdistrict community through the following activities:

1. Exchange of knowledge on watershed management concepts to help the community understand the area as a whole, including the spatial impacts of resource management, especially water resources.
2. Community forums and related sectors jointly reflecting on lessons learned in water management.
3. Community forums to build collaborative networks by creating awareness and understanding based on a shared data platform, involving data gathering, situational analysis, decision-making on directions, prioritization, and proposing guidelines for participatory water management in Khlong Noi subdistrict.
4. Consultative activities aimed at strengthening the collaborative network between the Khlong Noi community and related sectors.

The results of the aforementioned activities not only created a platform for discussions among the stakeholders involved in water management in Khlong Noi subdistrict but also led to the establishment of a water management collaboration network for Khlong Noi. This network includes various stakeholders such as the Khlong Noi community and neighboring areas, local leaders, including subdistrict heads and village chiefs, the Khlong Noi Subdistrict Administrative Organization, the Lower Pak Phanang Irrigation and Maintenance Project (Irrigation and Maintenance Division 1), and the Mangrove Resource Management Center of Nakhon Si Thammarat, and other agencies related to occupations and natural resources. Additionally, there is a collaboration between the local community and Walailak University to explore water resource management strategies that align with the ecosystem and promote sustainable development goals.

The Khlong Noi Water Resource Management Network has been actively driving water management under the watershed management concept. They have established guidelines and prioritized actions to implement water management practices that consider spatial impacts, as outlined below:

Water quality management:

1. Preventing saltwater intrusion into the area.
2. Treating water quality and developing methods for opening floodgates to reduce the impact of gate operations. Sediment and waste below the gates tend to spread when the gates are lifted, causing significant harm to aquatic life

downstream, leading to mass fish deaths and affecting aquaculture and fishing livelihoods.

Water drainage during the rainy season and flooding:

1. Ensuring consistent and widespread dissemination of accurate information and awareness.
2. Managing household and public waste, including marine debris.
3. Cleaning canals, removing aquatic weeds and obstructions from waterways, and dredging channels to improve water flow.