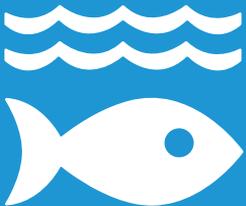




SDG REPORT 2024-2025

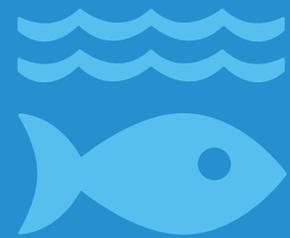
SUSTAINABLE DEVELOPMENT GOALS



SDG 14 LIFE BELOW WATER



Artificial Fish Habitat



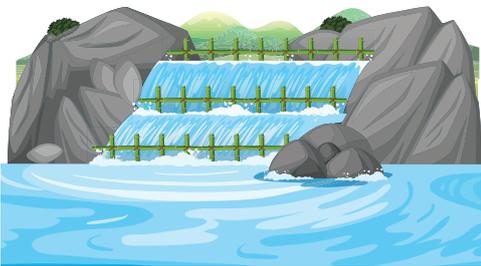
- 1** FREE EDUCATIONAL PROGRAM ON WEIR CONSTRUCTION
- 2** EDUCATIONAL PROGRAM ON GOLDEN SNAPPER FISH'S AQUACULTURE
- 3** LOW-CARBON TOURISM ROUTE DEVELOPMENT
- 4** RESEARCH COLLABORATION ON BLUE CRAB RESOURCES UNDER FISHERY IMPROVEMENT PROJECT (FIP)



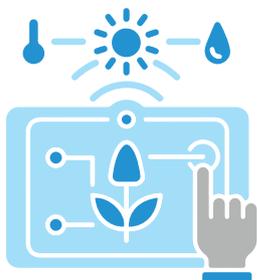
CONSERVE AND SUSTAINABLY USE THE OCEANS, SEA AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

PROTECTING MARINE ECOSYSTEMS AND BIODIVERSITY

MAINTAINING FRESHWATER ECOSYSTEM AND BIODIVERSITY



LIVING WEIR SUSTAINABLE FRESH WATER RESOURCE MANAGEMENT



IRRIGATION EDUCATION THE REMS-TOOLKIT PROGRAM

THE CATCH RATE INCREASED FROM 8 KG TO 15 KG.



COASTAL AREA RESOURCES CONSERVATION



LOW-CARBON IDENTITY TOURISM

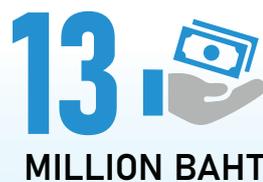


ARTIFICIAL FISH HABITAT



BLUE SWIMMING CRAB BANK

INCOME IMPROVEMENT FOR LOCAL FISHERMEN

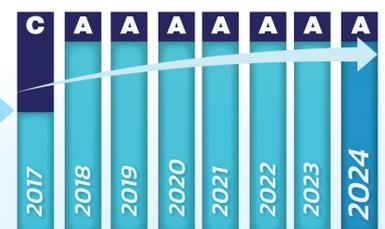


MARINE RESOURCES PROTECTION



RUBBISH COLLECTION RISK REDUCTION TO MARINE POLLUTION

FISHERY IMPROVE PROJECT (FIP) SCORE ON BLUE SWIMMING CRAB





FREE EDUCATIONAL PROGRAM ON WEIR CONSTRUCTION

Walailak University (WU) organized an educational program focused on freshwater ecosystems, providing local communities, local and regional government organizations in Na Mai Phai Subdistrict, Thung Song District, Nakhon Si Thammarat Province, and national government organizations with knowledge and insights on constructing a weir. The initiative successfully contributed to restoring and preserving local water resources, improving agricultural irrigation, and enhancing biodiversity, benefiting local communities, agriculturists, and other stakeholders.



In 2024, the weir sustained damage due to insufficient maintenance and a lack of restoration knowledge among local communities. WU discovered that these communities lacked both the expertise and access to technology necessary for effective weir restoration.

In response, WU launched an educational program aimed at teaching proper restoration techniques to ensure the continued improvement of the area's freshwater ecosystems. This program was implemented in collaboration with local communities and local and regional government organizations. The event provided training on weir restoration, conservation practices, and sustainable water management strategies.



Following the restoration, WU monitored the weir's condition by assessing the local aquatic life. The findings showed a gradual increase in populations of tiny freshwater shrimp, minnows, and freshwater snails, indicating a significant recovery and the abundance of freshwater organisms in the ecosystem.

LOW-CARBON TOURISM ROUTE DEVELOPMENT

Recognizing the potential of Nakhon Si Thammarat's coastal areas as local tourism destinations, WU is spearheading efforts to promote sustainable, low-carbon tourism. These initiatives align with broader climate change mitigation strategies while enhancing local livelihoods and fostering environmental awareness. WU researchers have identified that these coastal regions possess significant potential for eco-tourism, attracting both domestic and international visitors while bolstering the local economy through community-driven tourism.



In 2024, WU conducted extensive assessments and identified four coastal communities capable of being transformed into model low-carbon tourism destinations: Pak Phaya, Pak Phun, Ban Leam Homestay, and Ban Nai Thung. These communities have been strategically developed as demonstration sites for sustainable tourism, emphasizing environmentally friendly travel, carbon footprint reduction, and cultural preservation.

Developing Sustainable Low-Carbon Tourism Models

In collaboration with local communities, WU has implemented comprehensive educational programs aimed at shaping these locations into a one-day low-carbon tourism model. These programs integrate hands-on activities that promote the sustainable management of fisheries, responsible aquaculture practices, and greenhouse gas (GHG) emission reduction. Key activities include:



- **Culinary experiences** – Tourists sample traditional local food made from sustainably sourced seafood, highlighting the region's culinary heritage.

- **Marine conservation** – Participants release juvenile blue swimming crabs to help replenish marine populations.

- **Mangrove restoration** – Visitors plant mangrove trees, enhancing coastal resilience against erosion and providing habitats for marine life.

- **Eco-friendly transportation** – Cycling tours through the communities and solar-powered boat rides offer sustainable travel options while reducing carbon emissions.

- **Waste management and clean-ups** – Tourists and locals work together to collect waste from coastal areas, raising awareness of marine pollution and its impact.

- **Educational trails and workshops** – Guided eco-tours educate visitors on local biodiversity, sustainable fishing methods, and the importance of mangrove forests in carbon sequestration.

- **Traditional aquaculture learning** – Guests explore local aquaculture practices that integrate indigenous knowledge with modern sustainability principles.

- **Fishermen's lifestyle immersion** – Visitors engage with local fishermen, learning about their traditional ways of life and how they are adapting to sustainable fisheries management.



These initiatives are designed to offer tourists an immersive experience that deepens their appreciation of marine conservation and sustainable tourism. By actively participating in hands-on activities, visitors gain firsthand knowledge of environmental stewardship and the importance of preserving fragile coastal ecosystems.

Economic and Environmental Impact

WU's low-carbon tourism model not only promotes eco-conscious travel but also drives economic growth in coastal communities. By attracting sustainability-minded tourists, local

businesses, homestays, and community-led enterprises experience increased income opportunities. Furthermore, the initiatives empower residents by providing training in sustainable resource management, eco-tourism entrepreneurship, and climate-resilient livelihoods.

By pioneering this initiative, WU demonstrates how academia, local communities, and tourism stakeholders can work together to create a replicable model of low-carbon tourism that supports environmental conservation while enhancing economic resilience.

EDUCATIONAL PROGRAM ON GOLDEN SNAPPER FISH'S AQUACULTURE

The monsoon season can impact the nutritional quality of golden snapper fish due to seasonal changes, such as fluctuations in water temperature, salinity, and food availability. These environmental shifts during the monsoon can cause variations in essential nutrient levels, including proteins, lipids, and fatty acids in golden snapper fish.



Ban Khao Thong Aquaculturist Local Enterprise Group, a local business farming golden snapper fish in cages in Krabi Province, faced these environmental challenges, leading to reduced fish productivity. Additionally, there were concerns that the group's fishing practices could harm marine and coastal resources during the monsoon season.



To address these issues, the Science and Technology Park at WU organized an educational outreach program on sustainable golden snapper fish management for the local enterprise group. WU provided valuable insights on appropriate feeding practices, including food formulas and correct portion sizes, to minimize uneaten feed accumulation beneath the cages. This helped prevent nutrient build-up and eutrophication, which can harm marine life and degrade water quality. Furthermore, WU offered guidelines on cage installation to minimize habitat damage for marine animals.

By participating in this local educational program, the enterprise group was able to implement sustainable fishing practices that significantly preserved coastal resources. The adoption of improved feeding techniques and precise cage installation not only mitigated environmental impacts but also enhanced the overall health and yield of the golden snapper fish.

RESEARCH COLLABORATION ON BLUE CRAB RESOURCES UNDER FISHERY IMPROVEMENT PROJECT (FIP)



The university continued establishing research collaboration with the Thai Frozen Foods Association, the World Wide Fund for Nature (WWF), the Marine Resources Assessment Group (MREG), the NFI Crab Council (United States), the Department of Fisheries, and partners to work directly on maintaining and extending blue swimming crab populations and related biodiversity in Ban Don Bay, Surat Thani. This research collaboration is implemented under the Fishery Improvement Project (FIP), which has been active for more than five years as the bay has been facing significant ecological challenges.

In 2024, several issues were discussed and initiatives were launched as part of the research to maintain and extend the blue swimming crab populations and related ecosystems under threat. The LB-SPR (Length-Based Spawning Potential Ratio) in Ban Don Bay in 2023 was recorded at 0.47, which showed a slight decrease compared to previous years. This decline might have been caused by the monsoon season with heavy rainfall, resulting in a significant amount of freshwater flowing into the sea.



Additionally, a blue swimming crab bank was established by Viya Crab Products Co., Ltd., serving as a blue swimming crab spawning and learning center in Surat Thani. All partners agreed to conduct more research on marine protected areas to study vulnerable marine animals living within those areas and related issues. Furthermore, all partners deemed it appropriate to request CPUE (Catch Per Unit Effort) values from the Department of Fisheries for the period from 2020 to 2024 to assess the blue swimming crab stock restoration.



All the operations in 2024 could significantly enhance the research project's success by responding to key indicators aimed at improving the crab population in the bay. These collaborative efforts ensure that both immediate and long-term goals are addressed, fostering a comprehensive approach to ecosystem management. The continuous monitoring and adaptive strategies based on scientific data will contribute to the resilience of blue crab populations and their habitats.

