WALAILAK UNIVERSITY

SDG REPORT 2025-2026



Times Higher Education Sustainability Impact Ratings 2026

SUSTAINABLE DEVELOPMENT GOALS

17 PARTNERSHIPS FOR THE GOALS



1. CROSS-SECTORAL DIALOGUE ON HIGHER EDUCATION IN PROMOTING BLUE CARBON
2. DATA GATHERING AND BEST PRACTICE IN PROMOTING WOMEN'S PEACEBUILDING
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SDG 17 : PARTNERSHIPS FOR THE GOALS

CROSS-SECTORAL DIALOGUE ON HIGHER EDUCATION IN PROMOTING BLUE CARBON



As countries around the world confront urgent environmental challenges such as climate change, WU demonstrates its role as a key hub that brings together researchers, NGOs, non-governmental organizations, government agencies, and the private sector to collectively support the United Nations' Sustainable Development Goals (SDGs). WU recognizes that higher education institutions play a critical role in addressing these challenges–not only by generating knowledge and advancing research, but also by diagnosing environmental and societal challenges, raising public awareness, and driving policy and technological innovation. Universities are therefore not merely centers of learning; they are catalysts for meaningful societal transformation toward sustainability.



In 2025, WU hosted a cross-sectoral dialogue titled "The Role of Higher Education in Driving Sustainability and Blue Carbon Research" as part of the Walailak Research Convention 2025. The convention serves as an international platform for scholars and researchers to share cutting-edge research, innovations, and perspectives on sustainability. The dialogue featured four distinguished speakers from leading institutions across Asia and Europe:



- Prof. Ir. Dr. U. Johnson Alengaram, Department of Civil Engineering, Faculty of Engineering, University of Malaya, Malaysia
- Prof. Vikas Kumar, Deputy Vice Chancellor for Research and Innovation, University of Portsmouth, United Kingdom
- Prof. Dr. Ikuo Hirono, Tokyo University of Marine Science and Technology, Japan, and International Advisory Board Member of BIOTEC
- Assoc. Prof. Dr. Mullica Jaroensutasinee, Vice President and Dean of the School of Science, Walailak University, and Chair of the GLOBE Science Working Group

During the dialogue, Prof. Vikas Kumar highlighted major challenges related to blue carbon and environmental sustainability, including the degradation of blue carbon ecosystems, limited public awareness, difficulties in restoration and conservation, policy gaps, socioeconomic implications, and the need for stronger international coordination.



Prof. Dr. Ikuo Hirono addressed the projected global population growth to nine billion by 2050 and its implications for global food security. He emphasized the crucial role of sustainable aquaculture in mitigating food shortages while reducing environmental impacts.

Prof. Ir. Dr. U. Johnson Alengaram presented research on sustainable construction materials, such as oil palm shells, iron industry byproducts, and residues from coal-fired power plants. These materials offer environmentally friendly alternatives to conventional cement, contributing to reduced carbon emissions while improving thermal comfort in housing construction.

Finally, Assoc. Prof. Dr. Mullica Jaroensutasinee showcased WU's ongoing research initiatives, including the deployment of marine sensors at Racha Island to monitor biodiversity. Her findings revealed that certain fish species declined during the COVID-19 pandemic due to the absence of tourist feeding, while coral reefs showed signs of recovery. She also highlighted projects on blue swimming crab restoration, the influence of government policies on land use and land cover change, and the application of drone mapping technologies for mangrove ecosystem monitoring.

The Walailak Research Convention 2025 not only functions as a forum for cross-sectoral knowledge exchange, but also strengthens international collaboration in addressing global sustainability challenges. Through continued commitment to impactful research and partnerships, WU reaffirms the essential role of higher education in advancing sustainability and shaping a more resilient future.

DATA GATHERING AND BEST PRACTICE IN PROMOTING WOMEN'S PEACEBUILDING

The Southern Thailand insurgency remains an ongoing conflict affecting the three southern border provinces of Pattani, Yala, and Narathiwat, as well as certain districts of Songkhla. The prolonged violence has significantly disrupted social structures, community trust, and everyday life. Among those most deeply affected are women, who remain one of the most vulnerable groups in the conflict-affected areas. Beyond physical insecurity, many women experience psychological distress, social marginalization, and a persistent feeling that their voices and perspectives are neither heard nor valued in peace processes. Diagnosing these challenges and understanding the specific needs and experiences of women in conflict-affected communities are essential for developing inclusive, evidence-based approaches to peacebuilding and social recovery.

Recognizing these challenges, in 2025 WU established international partnerships with Global Affairs Canada (GAC), the Embassy of Canada to Thailand, as well as independent scholars and social activists, to implement the project titled “Truth-telling: Empowering Women's Voice for Building Peace in 3 Southern Provinces of Thailand.”





The initiative aimed to create a safe and inclusive platform for women directly affected by the insurgency to share their lived experiences, reflect on the impacts of violence, and articulate their needs and aspirations for peace. Through structured dialogue sessions, participatory workshops, and community-based reflection activities, the project gathered qualitative data to better understand the realities faced by women, including rights violations, unrecognized voices, gender inequality, and invisible forms of violence.

Multiple sessions were facilitated by community leaders, and social activists. Participants were encouraged to express emotions and experiences that had long remained unspoken due to fear, trauma, or social constraints. The program emphasized safe spaces for dialogue, nonviolent communication, and confidence-building strategies to strengthen women’s courage in speaking truthfully and constructively. Some of the participants were members of NGOs, such as Pattani Muslimah Association.







Importantly, the project integrated the principles of United Nations Security Council Resolution 1325 on Women, Peace and Security, reinforcing the critical role of women in conflict prevention, peacebuilding, and post-conflict recovery. Participants collaboratively developed community-based best practices aimed at reducing violence, strengthening social cohesion, and promoting dignity and equality for women in their communities.

As part of experiential learning, participants visited the Ban Laem community, a locality known for peaceful coexistence among people of diverse religious backgrounds. This visit provided practical insights into intercultural harmony, mutual respect, and grassroots peacebuilding, allowing participants to exchange ideas and reflect on adaptable models for their own communities.

Upon completion of the program, participants were expected to serve as catalysts within their provinces, fostering dialogue, promoting nonviolence, and strengthening women's networks for peace. The collected data were submitted to WU as part of an ongoing research collaboration with international partners to analyze impact, monitor progress, and contribute evidence-based recommendations for sustainable peace and women's empowerment in Southern Thailand.

The project resulted in greater recognition of women's voices and experiences in conflict-affected communities and strengthened their confidence to participate in peacebuilding processes. Through dialogue, reflection, and community-based learning, participants gained a deeper understanding of women's rights, nonviolent communication, and the importance of inclusive approaches to peace and social cohesion. The data and insights generated through the project also provided valuable evidence for WU and its international partners to identify challenges, develop community-based best practices, and formulate recommendations for strengthening women's participation in peacebuilding. By connecting women from affected communities with researchers, civil society actors, and international partners, the initiative helped strengthen networks for dialogue and created a foundation for continued collaboration toward more inclusive, peaceful, and resilient communities in Southern Thailand.

INTERNATIONAL COLLABORATION IN DATA GATHERING THROUGH THE GLOBE PROGRAM



Environmental degradation and climate change are increasingly affecting ecosystems and biodiversity around the world. Understanding these complex environmental challenges requires reliable, systematic, and geographically diverse data to diagnose environmental conditions, monitor changes in ecosystems, and identify emerging environmental risks. WU therefore recognizes the importance of contributing to collaborative environmental monitoring and scientific data collection for the SDGs.

In 2025, WU conducted the project "Promoting STEM Education in Environmental Education and Climate Change". The project was implemented through international and national collaboration involving WU, NASA, UNICEF, GLOBE Thailand, the Institute for the Promotion of Teaching Science and Technology (IPST), and the GLOBE Program - Asia Pacific.

The project brought together educational institutions and international partners to promote STEM education, environmental education, climate change learning, scientific research, environmental observation, data gathering, and SDG-related education. Pathummanukul School was among the schools participating in the project.



Through this collaboration, students were provided with opportunities and workshops to develop scientific knowledge and practical skills while contributing to environmental research and sustainable development. The workshop and practical training were designed around four major activities:

1. Training students in scientific research and environmental measurement, including the GLOBE protocols for environmental observations and data gathering.

2. Supporting environmental data entry, enabling locally gathered observations and measurements to be submitted to the relevant data systems.

3. Encouraging student participation in the GLOBE Student Research Competition (GLOBE SRC), providing opportunities for students to present and share their environmental research.

The University subsequently mobilized and supported students in participating in the GLOBE SRC 2025. Importantly, environmental data gathered through the project were submitted to the GLOBE Program. One of the student research projects supported through this initiative was entitled “Water Quality and Bioluminescent Plankton Abundance at Golden Bay.” The study focused on the marine ecosystem of the Gulf of Thailand in Tha Sala District.

The student researchers investigated water quality and phytoplankton abundance during periods associated with changes in seawater colour and plankton blooms. The research compared two study areas, Tha Sung Bon Beach and Ban Nai Thung Beach, with three observation points at each location.





Using GLOBE environmental research and measurement protocols, the students collected and analyzed data on key water-quality indicators, including water temperature, salinity, pH, and water transparency. They also investigated the density and abundance of phytoplankton. These observations enabled the students to conduct a local diagnostic assessment of environmental conditions and investigate factors associated with plankton blooms and changes in coastal ecosystems.

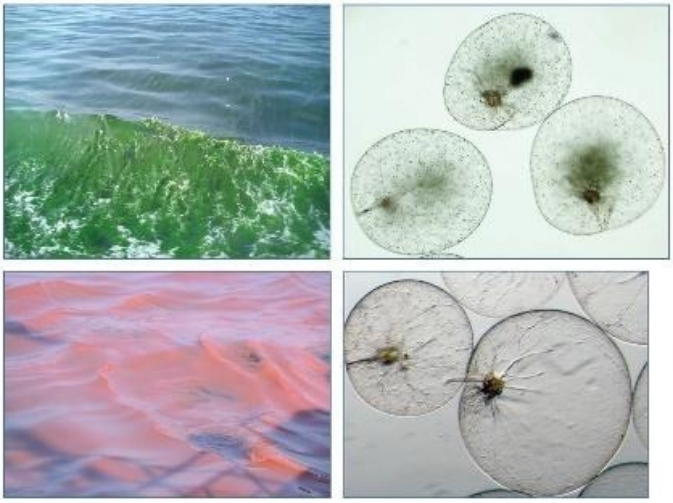


Fig.1 Two forms of *Noctiluca scintillans*: the green form (upper) with the endosymbiont *Pedinomonas noctilucae* and the heterotrophic red form (lower)

Environmental observation data collected through GLOBE activities were submitted to the GLOBE data and information system, where they can contribute to a worldwide resource for scientific research and inquiry. The system enables locally gathered data and measurements to be connected with environmental observations from participating communities around the world. Some GLOBE observations also contribute to the validation and understanding of NASA satellite data products.





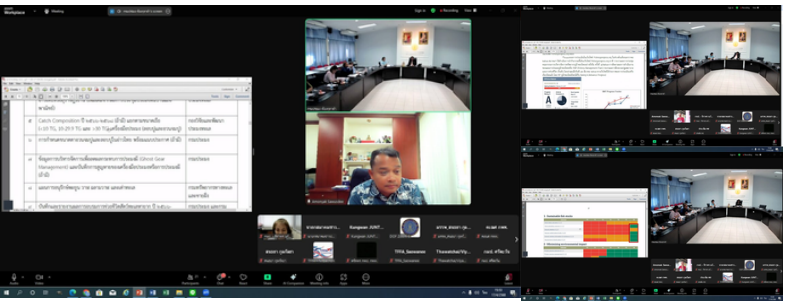


Through the Promoting STEM in Environmental Education Integrated with Climate Change project, WU demonstrated its commitment to collaboration in SDG-related data gathering and measurement. The initiative connected local schools, university researchers, national organizations, and international partners while strengthening environmental monitoring, scientific research, STEM education, climate change education, and sustainable development.

As a result, the project enabled students to develop practical skills in environmental research, data gathering, data entry, observation, and measurement while contributing locally collected information to the international GLOBE Program. The successful participation of the student research team in GLOBE SRC 2025, where the project received the Second Runner-Up Award, demonstrated the positive outcomes of international collaboration in environmental education and scientific inquiry.

ADVANCING BEST PRACTICE IN FISHERY RESTORATION THROUGH INTERNATIONAL COLLABORATION

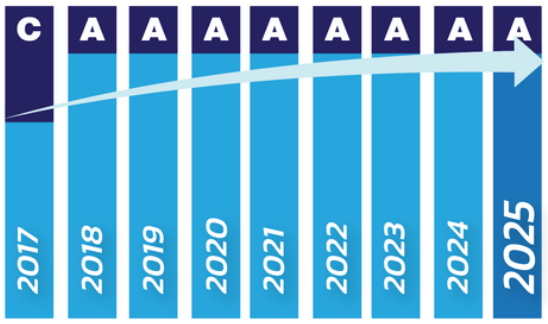
The blue swimming crab fishery in the Gulf of Thailand faces significant sustainability challenges, including declining crab populations, overexploitation in heavily fished inshore areas, and the harvesting of undersized and gravid female crabs. These challenges threaten marine biodiversity, sustainable fisheries, food security, and the livelihoods of fishing communities. To diagnose these ecological and fisheries-management challenges and support evidence-based solutions, WU contributes research and scientific expertise to the Thailand Blue Swimming Crab Fishery Improvement Project (Thailand BSC FIP).



The Thailand BSC FIP focuses on improving the sustainability of the blue swimming crab fishery in the Gulf of Thailand. The fishery is an important Thai export industry, making sustainable resource management essential for both marine ecosystems and coastal communities. The project brings together partners, including the World Wide Fund for Nature (WWF), Marine Resources Assessment Group (MREG), NFI Crab Council of the United States, WU, and other FIP participants.

WU participated in meetings of the committee responsible for the sustainable management of Thailand's blue swimming crab resources, where research findings were presented and discussed with government and fisheries stakeholders. The research included assessment of blue swimming crab resources in Surat Thani and Nakhon Si Thammarat using Length-Based Spawning Potential Ratio (LB-SPR) analysis. These scientific assessments provide evidence for understanding stock status, fishing

pressure, reproductive capacity, and the sustainability of current fishing practices.



Research collaboration also supported the assessment of potential interactions with Endangered, Threatened and Protected (ETP) species associated with blue swimming crab fishing. Under the FIP workplan, WU lecturers and fisheries stakeholders collaborated to collect updated field data, conduct research, and organize stakeholder workshops. The work included investigating ETP species interactions associated with crab gillnets and collapsible crab traps in Ban Don Bay, Surat Thani. The resulting evidence supports the evaluation of fisheries impacts and the improvement of management practices in accordance with international fisheries sustainability frameworks. By combining field research, stakeholder participation, and international fisheries-management principles, the project contributes to the development and refinement of best practices for reducing ecological impacts from fishing activities.

Another important component of the collaboration is the development and monitoring of Harvest Control Rules (HCRs) for the blue swimming crab fishery. The FIP action plan establishes a process for collecting monthly fisheries data from crab gillnets and crab traps in Surat Thani, including fishing grounds, fishing effort, catch, species composition, and crab size. These data are analyzed to estimate natural mortality, fishing mortality, exploitation rates, size composition, and Spawning Potential Ratio (SPR). The results are compared with established HCR criteria, allowing management responses to be proposed when sustainability thresholds are triggered. This process supports a best-practice approach to adaptive fisheries management, in which scientific monitoring and stock-status information are used to guide appropriate management responses.



In 2025, WU received national recognition for its Blue Swimming Crab Bank Initiative, demonstrating the practical application of sustainable marine resource management and community-driven development. The initiative received the 2025 National Research Awards from the National Research Council of Thailand (NRCT) in the categories of Research and Innovation for Utilization and the Government Excellence Award, presented at the NRCT Forum 2025.

The initiative has conserved at least 60,000 brood crabs annually and supported the release of more than 3.8 billion juvenile blue swimming crabs into Thailand's marine ecosystem. The conservation activities have also been associated with an increase in crab catches, from approximately 5 kilograms to 10-15 kilograms per boat per day, helping strengthen local fishing livelihoods while supporting the long-term sustainability of marine resources. These outcomes demonstrate how scientific knowledge, community participation, government support, private-sector engagement, and civil-society collaboration can be translated into practical best practices for fisheries conservation and community development.