WALAILAK UNIVERSITY

SDG REPORT 2025-2026



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SUSTAINABLE DEVELOPMENT GOALS

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15 LIFE ON LAND

SDG 15 : LIFE ON LAND

ECOSYSTEM BIODIVERSITY ENHANCEMENT THROUGH THE CONSERVATION OF PLANT AND ANIMAL SPECIES

Walailak University is committed to conserving, restoring, and enhancing biodiversity within its university ecosystems through the coordinated efforts of the Walailak University Botanic Park and related academic units. These initiatives aim to preserve natural habitats, protect native plant and animal species, and strengthen ecosystem resilience in support of the university's sustainability mission.

Maintaining Existing Ecosystems and Biodiversity

Walailak University works directly to maintain existing ecosystems by designating conservation forests and ecologically important areas under the management of the University Botanic Park. To raise awareness among students, staff, and visitors, educational and conservation signboards have been installed at key locations, including reservoirs, conservation forests, and other environmentally sensitive areas across the university. These signboards communicate the ecological importance of these areas and encourage responsible use of natural resources.



In addition, the university has established clearly marked Wildlife Conservation Zones and Plant Conservation Zones through the installation of conservation signage. These designated areas help safeguard important habitats while promoting public awareness of biodiversity conservation of plants and animals.

Surveying and Conserving Plant Diversity



To support long-term ecosystem management, Walailak University conducts regular surveys of plant species within its protected forest areas. These surveys provide valuable information on species diversity and distribution, enabling the university to monitor changes in biodiversity and develop effective conservation strategies. The collected data also support academic research, environmental education, and long-term biodiversity management, ensuring that valuable plant genetic resources are preserved for future generations.

Maintaining and Extending Wildlife Biodiversity



Beyond protecting existing ecosystems, Walailak University actively contributes to wildlife conservation through research and rehabilitation programmes. One of the university's significant initiatives is the Sunda Pangolin Rehabilitation and Reintroduction Project, which focuses on the rescue, health assessment, rehabilitation, and eventual release of Sunda pangolins back into their natural habitats.

As the Sunda pangolin is a protected and critically threatened species, this research contributes to improving rehabilitation techniques, increasing survival rates after release, and supporting long-term conservation efforts for one of Thailand's most vulnerable mammals which is ecosystems under threat.

Conserving Plant Species Through Biotechnology



Walailak University also applies biotechnology to conserve and extend valuable plant species through plant tissue culture techniques. Current conservation efforts include tissue culture propagation of pitcher plants (*Nepenthes spp.*), an ecologically important carnivorous plant, and mangosteen (*Garcinia mangostana*). These activities increase the number of healthy plant specimens, reduce pressure on natural populations, preserve valuable genetic resources, and support long-term biodiversity conservation.

Promoting Biodiversity Conservation Through Research and Public Engagement



The university's biodiversity conservation initiatives are publicly disseminated through the university's official websites, allowing students, researchers, government agencies, and the wider public to access information on conservation activities and research outcomes.



By integrating ecosystem conservation, scientific research, environmental education, and public communication, Walailak University continues to maintain and extend existing biodiversity across its university. These efforts contribute to protecting both plant and animal species, strengthening ecosystem resilience, and ensuring the sustainable management of natural resources for future generations.

EDUCATIONAL PROGRAMMES ON ECOSYSTEMS FOR LOCAL AND NATIONAL COMMUNITIES

Free Educational Life on Land Programmes on Ecosystems for Local Communities



Walailak University offers educational life on land programmes on ecosystems, with a focus on both wild flora and fauna, through accessible learning resources and community-based activities. The Sirin Museum serves as an important learning centre where local communities and learners can explore knowledge about ecosystems, biodiversity, plants, and animals. Through exhibitions and educational programmes, the museum provides opportunities for the public to understand the relationships between living organisms, natural resources, and [illegible]ms.



At the local level, the university also works with local communities, educational institutions, and local administrative organizations through the Plant Genetic Conservation Project under the Royal Initiative (RSPG). The programmes provide special lectures on ecosystems of school botanical gardens and local resources databases. The programmes respond to local learning need by strengthening participants' knowledge and capacity to survey, document, conserve, and appropriately use local biological resources.

The approach combines diagnostics of local ecosystem and resource needs with the development of knowledge and practical capacity. It also promotes engagement among schools, communities, and local authorities, while measurement is supported through evidence of educational programmes, participating groups, and publicly available information. This demonstrates that ecosystem education is not limited to the university but is delivered as a practical learning opportunity for local communities.

Free Educational Life on Land Programmes on Ecosystems for National Communities

At the national level, the university offers educational programmes on ecosystems to extend its role as a knowledge hub by sharing expertise with communities, schools, and local administrative organizations beyond the immediate university area. The RSPG provides opportunities for participants from different areas to learn about wild flora and fauna, biodiversity, school botanical gardens, and the systematic management of local biological resources.



The special lectures on school botanical gardens and local resource databases support the development of institutional and community capacity, enabling participants to apply ecosystem knowledge within their own local contexts. The Sirin Museum further strengthens this national role by providing a public learning space where visitors can access knowledge about plants, animals, ecosystems, and biodiversity.



Through this integrated approach, the university connects diagnostics, development, engagement, and measurement throughout the educational process. Local and national stakeholders are identified as key learning partners, knowledge is developed and transferred through structured educational activities, stakeholders are actively engaged in ecosystem learning and conservation, and evidence of implementation is documented and made publicly accessible. These activities demonstrate the university's commitment to providing educational programmes on ecosystems for both local and national communities, while strengthening awareness and capacity for the sustainable conservation of natural resources.

PROMOTING CONSERVATION AND SUSTAINABLE UTILISATION OF LAND



Walailak University promotes the conservation and sustainable utilisation of land, including forest and wild land, through practical land management and learning events that balance environmental protection with appropriate land use. The university assesses the condition and characteristics of its land areas and applies suitable approaches to prevent soil degradation, reduce erosion, and maintain the ecological functions of the land.



Within the university's areas, soil quality is maintained through the events of utilisation of manure and biological products in both internal and external areas. These events support soil fertility while reducing reliance on approaches that may negatively affect the environment. In vacant areas along canals and drainage ditches, vetiver grass is planted to stabilize the soil, reduce bank erosion, and prevent soil loss. These measures demonstrate the application of nature-based approaches to sustainable land use and long-term land conservation.



The university also supports and organises the events of the sustainable utilisation of natural land at Khao Wang, where a "Suan Somrom" (mixed traditional garden) has been developed as a form of land use that integrates diverse plant species with local knowledge and ecological conditions. This approach enables the productive use of land while maintaining plant diversity and reducing unnecessary alteration of the natural environment. A nature study trail has also been established, providing opportunities for students, staff, and visitors to learn directly from the landscape about natural resources, ecosystems, conservation, and responsible land use.

These events function as learning opportunities to promote conservation and sustainable utilisation of the land. The university identifies environmental and land-management needs, develops appropriate conservation practices, engages university communities through learning from real sites, and documents implementation through evidence, e.g land-management activities, vetiver planting, the “Suan Somrom”, and the nature study trail.



Through this integrated approach, Walailak University demonstrates a continuous process of identifying land-related challenges, developing sustainable solutions, engaging stakeholders in conservation and learning, and measuring and documenting outcomes. The activities therefore directly support the events about sustainable use of land by demonstrating tangible action for the conservation and sustainable utilisation of land, including forests and wild land.

SUSTAINABLE LAND MANAGEMENT, AGRICULTURE, TOURISM AND EDUCATIONAL OUTREACH

Walailak University promotes sustainable land management by connecting academic knowledge with practical solutions for local and national communities. Through free educational outreach programmes, the university supports sustainable practices in tourism and agriculture while conserving natural resources, reducing environmental impacts, and strengthening community capacity.

Sustainable Land Management for Tourism



Walailak University promotes sustainable management of land for tourism through the development of free educational outreach programmes, namely, Carbon Neutral Tourism Promotion Programme in local coastal communities. The programme offers sustainable land management for tourism by promoting the use of land for tourism activities for local communities.

Through collaboration with local communities, the programme identifies local needs and translates knowledge into practical tourism activities and routes by supporting the development of tourism models that generate local value while conserving natural resources. The implementation is supported by evidence of activities and outcomes, including the development of tourism routes and knowledge-transfer activities.

Sustainable Land Management for Agriculture

The university offers educational outreach programmes for sustainable management of land for agriculture, namely, the Organic Fertilizer Programme C. P. Mo Din NT 009. The programme offers knowledge on how to increase the amount of nutrients and reduce the amount of fungal diseases in durian, rubber and oil palm plantations at Sichon District Local Agricultural Community.



For the local community, there is another community that offers educational outreach programmes through knowledge transfer on the use of biological agents, particularly Trichoderma, as an environmentally friendly approach to agricultural land management. The use of Trichoderma supports more sustainable land management for agricultural practices by reducing reliance on chemical inputs that may affect soil quality and surrounding ecosystems.

The New Generation Farmer Development Programme, under the course "Pest Management by Integrated Methods," is an important mechanism for promoting sustainable agriculture and land management at the community and national levels. As part of a national network, the programme aims to strengthen the capacity of new-generation farmers across the country. It provides knowledge on biological pest control and the use of organic substances as alternatives to chemical inputs, helping reduce pollution and the accumulation of toxic residues in soil and water. This contributes to maintaining soil fertility, restoring ecosystems and beneficial microorganisms in agricultural areas, and promoting environmentally friendly agriculture.

INTEGRATING LOCAL PLANT WISDOM INTO TEACHINING AND LEARNING TO ADVANCE SDG 15: LIFE ON LAND

Biodiversity conservation begins with understanding and valuing the natural resources within local communities. Education plays an important role in developing this awareness among young people by connecting learning with local ecosystems, plants, and traditional knowledge. Walailak University has applied this approach through learning activities focused on the nipa palm in the Pak Phanang River Basin, using local plant knowledge to promote biodiversity awareness, preserve local wisdom, and foster future environmental stewards in support of SDG 15: Life on Land.

Building Awareness and Knowledge of Biodiversity through Local Plants



Achieving SDG 15 requires strengthening young people's understanding and appreciation of local biodiversity. Walailak University has integrated knowledge of the nipa palm, an important plant in the Pak Phanang River Basin, into primary-level learning activities to help students understand its ecological and biodiversity value. As Target Plant No. 7 under the Plant Genetic Conservation Project under the Royal Initiative (RSPG), the nipa palm also highlights the importance of conserving and sustainably using local plant genetic resources.

Understanding the Nature of Plants and Conserving Genetic Resources



The learning process applies the Nature of Life (NOL) dimension to help students understand the nipa palm through its physical characteristics, identification, life cycle, reproduction, and uses. This approach encourages them to recognize plants as living organisms essential to ecosystems and human well-being, while strengthening their awareness of local plant species and genetic resources. Such knowledge provides a foundation for biodiversity conservation.

Connecting Plants, Ecosystems, and Community Lifestyles

Through Interconnectedness of All Things (IOAT) and place-based learning, students explore the relationships between the nipa palm, ecosystems, and communities in the Pak Phanang River Basin. They learn how nipa roots help stabilize soil and reduce erosion, while nipa ecosystems provide habitats and nursery grounds for aquatic species. This understanding highlights that conserving local plants also helps sustain healthy ecosystems and community resources, supporting SDG 15.

Preserving Local Wisdom alongside Sustainable Utilization



The Greatest Public Benefit (GPB) dimension connects biodiversity conservation with community livelihoods, economic development, and cultural heritage. The nipa palm can be processed into products such as vinegar, alcohol, molasses, and syrup, creating value and income for local communities. However, students showed limited knowledge of local wisdom and cultural heritage (LPK10), with an average score of only 1.97 out of 5.00. Integrating traditional nipa palm knowledge into learning can therefore help preserve cultural heritage while promoting sustainable resource use and community development.

From the Classroom to the Creation of Environmental Stewards



This initiative is supported by a 13-component assessment model for evaluating students' knowledge of local plants. The model was statistically validated using a sample of 173 students in the Exploratory Factor Analysis (EFA) stage and 174 students in the Confirmatory Factor Analysis (CFA) stage, with Cronbach's alpha coefficients exceeding 0.75, demonstrating the reliability of the assessment instrument. The model therefore provides a systematic tool for designing and evaluating biodiversity learning that is grounded in local contexts. It also offers potential as a scalable framework that can be adapted to other local plant species and communities across Thailand.

Conservation Begins by Helping Young People Value the Nature Around Them



Integrating knowledge of the nipa palm into primary education represents a practical approach aligned with SDG 15 because it goes beyond teaching students to memorize plant species. Instead, it develops an understanding of the nature of plants, their relationships with ecosystems, and their economic, social, and cultural values. The integration of NOL, IOAT, and GPB transforms local knowledge into a learning tool that builds environmental awareness, responsibility, and stewardship while nurturing young people as "green citizens" and future guardians of local natural resources. Beginning with the nipa palm in the Pak Phanang River Basin is therefore not simply an effort to conserve a single plant species; it represents a model for using education as a mechanism to conserve biodiversity, preserve local wisdom, and strengthen the long-term sustainability of ecosystems and communities in support of SDG 15.