

15

LIFE ON LAND

A FLOURISHING LIFE ON LAND IS THE FOUNDATION FOR OUR LIFE ON THIS PLANET

Life on land to protect, nourish, and support sustainable development of land ecology, stop the degradation, and build up biodiversity

15 LIFE ON LAND

Policy and Commitment to SDG 15: Life on land

Sakon Nakhon Rajabhat University, Fiscal Year 2025

Sakon Nakhon Rajabhat University (SNRU) lies between the Phu Phan mountain range and the Nong Han wetland, an area rich in dry dipterocarp forest, dry evergreen forest, and native plants. The university treats the conservation of land ecosystems as a mission that ties together research, teaching, and community service. Two policies support this work. The first covers sustainable land use, conservation, and restoration, including monitoring of IUCN-listed species. To reduce the impact of invasive species. Together, they require SNRU to plan land use that supports biodiversity, restore degraded areas with native trees, monitor threatened species, and prevent the spread of invasive species, with annual progress reports and a policy review every three years.

On campus, environmental science researchers have assessed carbon storage in more than 2,000 trees of 23 species to guide green-space management. The university also conserves plant and animal genetic resources through its aquaculture farm, livestock farm, and food crop plots. Off campus, SNRU supports the Plant Genetic Conservation Project under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG) through its RSPG coordination center. The center trains teachers in school botanical gardens and local government staff in local resource bases across Sakon Nakhon, Nakhon Phanom, Mukdahan, and Bueng Kan so that communities can survey, record, and conserve the biological resources of their own areas. Faculties also work with communities and forestry agencies to plant forests that protect watersheds in the Phu Phan range and share sustainable farming knowledge with farmers. The aim is a long-term balance between land use and ecosystem conservation.

Events about sustainable use of land

Main purposes of SNRU's agricultural land

The Faculty of Agricultural Technology at Sakon Nakhon Rajabhat University (SNRU) uses its farm plots, livestock units, and greenhouses on campus for five main purposes:

1. Teaching: A "living laboratory" where students in plant science, animal science, fisheries, veterinary technology, food technology, and Agribusiness learn hands-on, from production and husbandry to processing and marketing.
2. Research & Development: A site for staff and students to develop agricultural innovations suited to the Sakon Nakhon Basin, such as water-saving aquaculture and climate-controlled greenhouse production.
3. Academic Services: A demonstration and technology-transfer site for farmers, community enterprises, school students, and visitors. Research from the faculty's plots and farms is scaled up in communities, for example, through safe vegetable demonstration plots and the mobile aquatic hatchery kit.
4. Production & Income Generation: Farm outputs and products from the pilot plant, such as fish fingerlings and research-based processed foods, are sold, and the income is reinvested to maintain and develop the facilities.
5. Genetic Conservation: A site to collect and conserve economically important local plant, livestock, and fish genetic resources, linked to the university's work under the Plant Genetic Conservation Project under the Royal Initiative (RSPG).

Examples of land use on SNRU's agricultural plots

1. Crop Production

- Nursery greenhouses: Plant propagation and seedling production for teaching, research, and community tree-planting.
- Automatic climate-controlled greenhouse and specialty crop greenhouse: Demonstrate modern controlled-environment production that uses water and inputs efficiently.
- Demonstration rice field (behind the Phra Phuttha Ratchapanya Barami shrine): Grows RD6 rice. Students learn the full cycle from seedling pulling and transplanting to harvest, alongside traditional communal planting and harvesting. The harvest supports faculty activities.
- Safe vegetable production: Plant science research is scaled up as safe vegetable demonstration plots in local communities.

2. Livestock Production

- Cattle and buffalo farm: Teaching and research on livestock management, health, and conservation of livestock genetic resources.
- Poultry research house and swine production research house: Hands-on training and research in standardized animal husbandry.
- Veterinary clinic: Treatment for pets and farm animals, and disease diagnostics for farmers in the network.

3. Aquaculture

- Aquaculture farm and hatchery: Produce fingerlings of local economic fish such as climbing perch and silver barb, selected for fast growth and disease resistance.
- Three biofloc ponds: Demonstrate water-saving fish farming that minimizes water exchange and wastewater discharge.
- Aquaponics prototype greenhouse: Demonstrates combined fish and plant production, recycling fish waste as plant nutrients.

Key Activities & Projects :

4. Agro-Processing
   - Agro-industry pilot plant and product development pilot plant: Turns farm produce into high-value products such as silkworm pupa products, processed mao berries, and ready-to-drink herbal beverages, and offers equipment services to local farmers and small businesses.
5. Circular Resource Management
   - Organic composting system: Turns leaves and plant waste from campus landscaping into 1.5-3 tonnes of organic fertilizer a year, which is returned to the university's green spaces.

15 LIFE ON LAND

Key Activities & Projects :

Faculty of Agricultural Technology and Khok Phu community plant forests to protect watersheds and biodiversity, Year 3

On 21-22 July 2025, the Animal Science program of Sakon Nakhon Rajabhat University's Faculty of Agricultural Technology, led by Assoc. Prof. Dr. Ratmanee Chanabun, held the third year of its "Forest Planting for Watershed Protection and Biodiversity Conservation" project at Khok Phu Subdistrict Municipality, Phu Phan District, Sakon Nakhon. The project follows Years 1 and 2 (FY2023-2024), in which more than 7,000 trees were planted in Khok Phu Subdistrict.

More than 210 people took part:

- 98 school students
- 62 government officials from Khok Phu Subdistrict Municipality, the Royal Forest Department, the Department of National Parks, Wildlife and Plant Conservation, Phu Phan Police Station, and local subdistrict and village heads
- 40 university students
- 5 university staff
- 5 members of the public

The project had two parts. The first was a lecture on the importance of forests, water sources, and ecosystems, delivered through the Agriculture and Natural Resources course. The second was planting native trees such as yang na, padauk, teak, Siamese rosewood, and makha, along with edible fruit trees such as mango, coconut, jackfruit, longan, lime, rambutan, and phak wan. The Sakon Nakhon office of the Department of National Parks, Wildlife, and Plant Conservation donated more than 3,500 native seedlings. Some were planted on municipal land, and the rest were given to residents to plant at home and in their gardens. The planting adds green space and biodiversity, protects the watershed, increases carbon uptake and water infiltration, reduces drought risk, and provides food for the community.







Key Activities & Projects : Sustainably harvested food from aquatic ecosystems on campus

Sustainable aquatic food comes from fish and other aquatic animals obtained, whether caught or farmed, without depleting their populations or damaging aquatic ecosystems. This protects the productivity of water bodies, reduces pressure on wild stocks, and secures long-term food supplies. Sakon Nakhon Rajabhat University (SNRU) is located near Nong Han, a major source of freshwater fish for the region, and pursues this goal in two ways.

1. A campus food policy

SNRU's Policy on Food Quality, Sustainability, and Access on Campus, announced on 1 November 2024, applies to all canteens, food outlets, catering services and vending machines on campus. Its provisions on aquatic food are:

- Seafood as a high-risk product: It must come from suppliers with recognized sustainability or ethical certification, so the university does not buy from overfished, illegal, or destructive fisheries.
- Local sourcing: Food and ingredients are sourced first from local farmers and producers in the Sakon Nakhon region, including freshwater fish from local fish farmers.
- Monitoring: A Campus Food Policy Committee monitors food providers' compliance, and the policy is reviewed every three years.

Key Activities & Projects : Sustainably harvested food from aquatic ecosystems on campus

15 LIFE ON LAND

2. Sustainable aquaculture on campus

The Fisheries program of the Faculty of Agricultural Technology uses the university's farm to produce aquatic animals without relying on wild catch:

- Aquaculture farm and hatchery: Produces fingerlings of local economic fish such as climbing perch and silver barb, selected for fast growth and disease resistance, so that fish can be farmed instead of taken from the wild.
- Three biofloc ponds: Water-saving fish farming with minimal water exchange, reducing wastewater released into water bodies.
- Aquaponics system: Combines fish farming with plant growing, recycling fish waste as plant nutrients.
- Restoring fish stocks: On 8 December 2025, the university and the Sakon Nakhon Inland Fisheries Research and Development Center sorted aquatic animals from Nong Ya Sai pond on campus and released them into Nong Han, Huai Tiak Reservoir, and a pond at Wat Pa Khun Kham Wipatsana to boost wild populations.



Key Activities & Projects : Sustainable management of land for agriculture (educational outreach)

Plant Science program builds a safe vegetable network and raises farmers' incomes

On 23 April 2025, the Plant Science program of SNRU's Faculty of Agricultural Technology, led by Dr. Phijika Timsuksai, worked with farmers at Ban Bueng Daeng, Khok Kong Subdistrict, Mueang Sakon Nakhon District, sharing knowledge and building a network for safe Chinese chive production under the "One Program, One Community" project. Farmers around Bueng Daeng joined a safe-agriculture system mentored by the Phak Tho Phu Thao group of Dan Muang Kham Subdistrict, a model group developed from the program's earlier research. The group inspects plots against safe-agriculture standards and buys produce at a guaranteed 30 baht per kilogram year-round. Students applied what they learned in Sustainable Agriculture by inspecting plots and managing produce with the community. Participating farmers' incomes rose by an average of 728 baht a month (10.12%).

On 16-17 and 19 July 2025, the program extended the model to Chiang Sue Subdistrict through a project helping farmers approaching old age set up safe vegetable production under the Sufficiency Economy approach. Farmers from three communities took part, and seven demonstration plots were established. Produce now reaches community and green markets in Mueang Sakon Nakhon District, and farmers' incomes rose by 5%.



Key Activities & Projects : Local Resource Survey and Database training (nine worksheets), batch 2/2025

15
LIFE ON LAND





On 25-28 February 2025, the coordination center of the Plant Genetic Conservation Project under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG) at Sakon Nakhon Rajabhat University (SNRU) ran a hands-on school botanical garden training on surveying and building local resource databases (nine worksheets), batch 2/2025, at Chamchuri 1 Auditorium. Prof. Dr. Thotsawat Sitawan, Vice President of SNRU, opened the training, and Ms. Jiraporn Sumangkha, Deputy Director of the center, presented its background and objectives.

There were three groups of participants:

- administrators, teachers, and staff of member schools whose botanical gardens have reached the Royal Initiative sign level or above
- administrators and staff of local government organizations in the local resource base program
- lecturers from SNRU's Law and Environmental Science programs

Trainers included Ms. Pattamawan Rasri of the RSPG project; the center's advisors, Mr. Amnat Chonchanachai, Mr. Charoen Thipthong, and Mrs. Jaruwan Thipthong; and SNRU staff Asst. Prof. Jirawat Kanthalo, Ms. Kanokwan Woradong, and Ms. Netnapa Phanomkhet.

Participants learned and practiced surveying and recording local resources using nine worksheets, covering biological resources (plants, animals, and micro-organisms), physical resources, and local wisdom. They then collected data in the field, summarized their findings together, and received certificates at the end of the course.

The training supports the RSPG royal initiative, builds understanding of the project's policies, direction, and knowledge management, and equips teachers and local government staff to survey and build databases of their own communities' resources. The data gives communities a foundation for planning the conservation and sustainable use of local biodiversity. The training was funded by SNRU's academic service budget and by the RSPG project.



On the second day (26 February 2025), after a lecture, participants traveled to Maet Na Thom Subdistrict Administrative Organization, Khok Si Suphan District, Sakon Nakhon, for fieldwork. Mr. Prasert Leenalad, Chief Executive of the Subdistrict Administrative Organization, welcomed the advisors, trainers, and participants, and RSPG center trainers briefed them and assigned tasks.

Morning: Participants visited Ban Non Nam Kham (Village 8) and Ban Phrom Si That (Village 9) to collect information from villagers using three worksheets:

- Worksheet 5: local uses of plants
- Worksheet 6: local uses of animals
- Worksheet 7: local uses of other biological resources

Afternoon: At the Subdistrict Administrative Organization, participants worked through four more worksheets and then summarized their findings from Worksheets 1-7:

- Worksheet 1: basic community information
- Worksheet 2: local livelihoods
- Worksheet 3: physical features of the area
- Worksheet 4: village history and community way of life

The training equips teachers and local government staff to survey and build databases of their own communities' biological and physical resources and local wisdom. Communities can then use this information to plan the conservation and sustainable use of local biodiversity. The training was funded by SNRU's academic service budget and by the RSPG project.



Key Activities & Projects :

15
LIFE ON LAND

SNRU's Research and Development Institute published the "Nong Han Birdwatching Guide" e-book, which covers 90 species.

On 21 March 2025, the Research and Development Institute (RDI) of Sakon Nakhon Rajabhat University (SNRU) released the e-book Nong Han Birdwatching Guide, Sakon Nakhon, through its RDI-SNRU E-BOOK channel. The guide is the product of area-based collaboration between government, the private sector, and local people, and it documents 90 bird species found in the Nong Han wetland, both migratory and resident. It has five sections:

1. the context of Nong Han, Sakon Nakhon
2. a map of birdwatching routes in the Nong Han wetland
3. a code of conduct for birdwatching in nature
4. relevant law, including wildlife protection legislation
5. profiles of the birds of Nong Han





The guide was written by Mr. Sakda Saensuphan and his team and designed and produced by RDI's Research and Academic Service Knowledge Management Unit. It is free to read via QR code. It serves as a learning resource on Nong Han's biodiversity for students, communities, and visitors; promotes responsible ecotourism; and raises awareness of the need to conserve wetland birds and their habitats.

SNRU and Vietnam's University of Danang surveyed birds at Nong Han wetland, recording a flock of more than 300 Glossy Ibis for the first time in years

On 24 November 2025, Sakon Nakhon Rajabhat University's Research and Development Institute (RDI), the University of Education - The University of Danang (UED), Vietnam, and partners from government, civil society, and the Sakon Nakhon Bird Conservation Club carried out a field bird survey in the Nong Han wetland, Sakon Nakhon. The team recorded a sight rarely seen in Thailand: a flock of more than 300 Glossy Ibis at Don Hin. The species is uncommon in Thailand, and a gathering this large signals the health and richness of the Nong Han wetland ecosystem. It confirms that the lake remains an important habitat for waterbirds and other wildlife and that it deserves serious conservation alongside sustainable uses such as ecotourism, nature education, and biodiversity research. The survey marks another step in collaboration between Thai and Vietnamese universities and partners across sectors to manage natural resources sustainably and raise awareness of the value of the Nong Han wetland.

