

USING UNIVERSITY FORESTS FOR INTERNATIONAL FOREST SCIENCE EDUCATION ACTIVITIES: THE EXPERIENCES OF THE UNIVERSITY OF TOKYO FORESTS, JAPAN

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Abstract

The University of Tokyo (UTokyo) is one of the leading Asian universities. The University of Tokyo Forests (UTF) was established in 1894 as the first university forest in Asia. To date, UTF owns seven forests and has accumulated long-term data regarding forest ecosystems, conifer plantations, and selection cutting with natural regeneration, in addition to data regarding meteorology and hydrology. In terms of quantity and quality, this longitudinal dataset is among the best available in the world of forest science. A teaching staff of 26 people belongs to UTF. The advantages of studying under the supervision of UTF staff members are as follows. First, students have the opportunity to gain broad disciplinary knowledge from the 26 members of the teaching staff. Second, they can use UTF as a context for their research fieldwork, relying on good research facilities supported by a 50-strong technical staff. Third, they can utilize longitudinal data accumulated by UTF over a period of more than 100 years. Students from at least ten countries have been supervised at UTF. Students are selected, in particular, from China, Thailand, Indonesia, Myanmar, and Sri Lanka. UTF has also provided fieldwork classes for students of foreign universities, such as Universiti Malaysia Sabah and the National Taiwan University. These students gain experience in disciplines such as forest vegetation and forest management, where Japanese practice differs from that of their own countries. Students can stay at UTF lodges for a modest fee. Students from European universities are also welcome to undertake fieldwork courses at UTF. We accept interns from overseas. Recently, interns from European universities have been increasing in number. The unique culture of Japan - with its traditional features and more modern ones, like the Japanese comics manga - are fascinating to European students. UTF provides the best environment for forest education in Asia.

Keywords: The University of Tokyo, international exchange programme, university forest, research training, fieldwork, internship

Introduction

Owari *et al.* (this volume) introduced The University of Tokyo Forests (UTF) and the education in forest science that it delivers. This chapter introduces the international educational activities offered by UTF.

The Department of Forest Science, now a part of Graduate School of Agriculture and Life Sciences, The University of Tokyo (UTokyo), was established as the

Tokyo College of Forestry in 1882, while the College of Agriculture was established in 1878. Both institutions were governed by the Ministry of Agriculture and Commerce, and were combined to form the College of Agriculture and Forestry in 1886. In that same year, The Imperial University, Japan's first university, was established under the governance of the Ministry of Education. The College of Agriculture and Forestry was absorbed by The Imperial University in 1890 and changed its name to the College of Agriculture of The Imperial University, operating at that time under the governance of the Ministry of Education. It was designated the "College of Agriculture, The Tokyo Imperial University" in 1897, the "Faculty of Agriculture, The Tokyo Imperial University" in 1919, the "Faculty of Agriculture, The University of Tokyo" in 1949, and the "Graduate School of Agriculture and Life Sciences, The University of Tokyo" in 1994.

The University of Tokyo Chiba Forest (UTCBF) was established in 1894 as the first university forest in Japan. Consequently, UTokyo runs the oldest higher education institution for forestry or forest science and owns the oldest university forest in Asia.

At present UTF owns seven regional forests (The University of Tokyo Forests, 2017), each with a unique aim. UTCBF is focused on the management of conifer plantations. The University of Tokyo Hokkaido Forest (UTHF) aims to develop sustainable forest management by employing selection logging in a naturally mixed environment of conifers and broadleaf trees. The University of Tokyo Chichibu Forest (UTCF) focuses on research relating to the ecosystems of deciduous, broadleaf forests in the cool temperate zone. The University of Tokyo Tanashi Forest (UTTF) focuses on studies relating to urban forests and nurseries. The

Table 1: The number of staff affiliated to The University of Tokyo Forests in 2017.

Regional Forest	Faculty staff [P-AP-L-A]*	Technical staff	Administration	Total
Headquarters & Education and Research Center (main campus)	4 [1-1-0-2]	3	0 (+2)**	7 (+2)**
Chiba Forest (UTCBF)	3 [1-0-0-2]	9	3	15
Chichibu Forest (UTCF)	4 [1-1-0-2]	24	5 (+1)**	33 (+1)**
Hokkaido Forest (UTHF)	4 [1-0-2-1]	9	3	16
Tanashi Forest (UTTF)	3 [0-0-2-1]	2	0 (+1)**	5 (+1)**
Ecology Research Institute (ERI)	3 [0-0-1-2](+1)**	4	1	8 (+1)**
Arboricultural Research Institute (ARI)	2 [0-1-0-1]	3	0 (+1)**	5 (+1)**
Fuji Iyashinomori Woodland Study Center (FIWSC)	2 [0-0-0-2]	2	0 (+1)**	4(+1)**
Total	25 [4-3-5-13](+1)**	56	12 (+6)**	93 (+7)**

*: P, Professor; AP, Associate Professor; L, Lecturer; A, Assistant Professor.

** : Numbers in parentheses indicate the number of staff employed on particular projects.

Ecohydrology Research Institute (ERI) focuses on research in hydrology and the water cycle in relation to the rehabilitation of denuded forest lands. The Arboricultural Research Institute (ARI) focuses on the use of tropical and sub-tropical timber species and of non-wood forest products. The Fuji Iyashinomori Woodland Study Center (FIWSC) focuses on the recreational and healing functions of forests. For further details, see Owari *et al.* (this volume).

The number of faculty members belonging to UTF is 25, making it larger than any of the departments to which it is closely related (Tab. 1 and Tab. 2) (Faculty of Agriculture, The University of Tokyo, 2017). A total of 56 technical staff members support education and research at UTF (The University of Tokyo Forests, 2017).

Table 2: The numbers of faculty staff, undergraduate students, and post-graduate students in departments that are closely related to The University of Tokyo Forests.

Department	Faculty staff [P-AP-L-A]*	UG students (/Academic Year)	PG students (/Academic Year)
Forest Science	16 [6-5-1-4]	24	24
Biomaterial Sciences	16 [7-3-1-5]	24	24
Ecosystem Studies	13 [5-3-0-5]	9	24
Global Agricultural Sciences	16 [7-6-1-2] (+1)**	25	25

*: P, Professor; AP, Associate Professor; L, Lecturer; A, Assistant Professor.

** : Numbers in parentheses indicate the number of staff employed on particular projects.

International education opportunities at The University of Tokyo Forests

Opportunities for international education at UTF are shown in Table 3. UTokyo adopts a system of late specialization, in which students study liberal arts in the Junior Division for their first two years and then advance to two years of specialized studies in the Senior Division.

In the Junior Division, one seminar credit of university-wide, hands-on experience is compulsory for all students (The University of Tokyo, 2014). UTF provides a variety of programmes for gaining this university-wide, hands-on experience (Owari *et al.*, this volume).

Four departments of the Faculty of Agriculture and some of UTokyo's graduate schools use UTF for their fieldwork practice courses (Owari *et al.*, this volume).

A number of undergraduate and post-graduate students are affiliated with UTF and are supervised by its faculty members. Students from at least ten countries have been supervised at UTF. Students have been drawn, in particular, from China, Thailand, Indonesia, Myanmar, and Sri Lanka. Most of them have used UTF as the context for thesis research (Owari *et al.*, this volume). In addition to these students, many undergraduate and graduate students belonging to UTokyo and other universities, and many researchers have conducted research for their theses at UTF. Students and researchers from around the world are welcome to make use of the

forests of UTF as a context for their research. The procedure for making a proposal is available on the Internet (The University of Tokyo Forest, 2017).

Table 3: International educational opportunities provided by The University of Tokyo Forests

<p>Admission to The University of Tokyo for foreign students</p> <p><i>Undergraduate</i></p> <p>Regular courses: admission in Japanese language Programmes in English at Komaba (PEAK): Admission and programmes are delivered in English</p> <p><i>Research students: Allowed to attend course lectures, Preparing for admission</i></p> <p><i>Post-graduate</i></p> <p>Regular courses: Admission in English or Japanese International Programme in Agricultural Development Studies (IPADS): Admission and programmes are delivered in English Special Course for Sustainable Agriculture (Doctor Course): Admission and programmes are delivered in English</p> <p>Field practice courses for foreign universities including summer school</p> <p>Universiti Malaysia Sabah National Taiwan University</p> <p>Internship from foreign universities</p> <p>France UK Canada Malaysia</p> <p>Training courses</p> <p>Provided by Japan International Cooperation Agency (JICA)</p> <p>Other programmes</p> <p>Sakura Exchange Programme in Science by Japan Science and Technology Agency (JST)</p>

UTF also provides study opportunities for students from outside Japan. Both professional and research internships have been offered to people from overseas. Summer schools and fieldwork practice courses have been provided for departments of foreign universities. UTF has also provided fieldwork training courses to foreign trainees under the auspices of the Japan International Cooperation Agency (JICA)..

Cooperation with other universities and Japanese associations

A fieldwork course for the School of International Tropical Forestry, Universiti Malaysia Sabah, was carried out at UTCBF, FIWSC, UTCF, and the main campus of UTokyo from April 7 to April 13, 2013. The summer school operated jointly by the National Taiwan University (NTU) and UTokyo/Tsukuba University has been held since 2016. Japanese and Taiwanese students visit each other every other year. In 2016, four students from UTokyo spent two weeks visiting NTU's Experimental Forest.

In 2017, 10 students from NTU, five undergraduate and five post-graduate, visited UTF and the university forests of Utsunomiya University. Several of UTF's regional forests have - regularly, or from time to time - provided fieldwork training courses for JICA projects. Topics have included selective logging in UTHF's

natural mixed forestry, conifer plantation and forest management at UTCBF, and monitoring biodiversity in the forest ecosystems of UTCF. The Japan Science and Technology Agency (JST) supports a Japan-Asia youth science exchange programme known as the “Sakura Exchange Programme in Science.” UTF has been involved in a number of projects in this programme. First, the programme supported the NTU summer school in 2017. Second, UTokyo’s Asian Natural Environmental Science Center has run a project for several years in which it invites potential graduate students from other Asian countries to study in Japan for a week. UTF offers this group tours of FIWSC and UTTF. Faculty members of UTF have also invited Asian students to join this project. Third, UTHF was involved in a project with a high school in Sapporo, which operates a science exchange programme with a high school in Singapore. UTHF provided a one-day fieldwork course for the high school students from Japan and Singapore.

Internships

UTF has accepted many students from foreign universities for both research and professional internships. Periods of the internship range from three to six months depending on the requirements of the universities in which students are enrolled. Students are not paid for the work during their internship because UTokyo is a not-for-profit educational institute and because we accept internship students as a part of our educational activities..However, they can stay in UTF accommodation for a very low fee.

Suitable faculty members are assigned to each research intern students according to their preferred field of study. This faculty member will teach the student the basic skills necessary for the research undertaken.

Where professional internships are concerned, students work alongside UTF’s technical staff. Most of work undertaken in this way supports research and/or forest management.

Concluding remarks

The University of Tokyo Forests (UTF) serves as a rich international educational context for forest science. As a Japanese university forest located in Asia, UTF will strive further to strengthen its links with Asian universities. By taking advantage of its accumulated expertise and capacity, UTF is willing to act as an Asian hub to promote interregional exchange in forest science education with diverse parts of the world. We invite anyone with an idea for a future educational collaboration to contact us without hesitation. We hope that UTF will keep in close contact with the SILVA Network and exchange information on international educational activities relating to forest science.

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