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**Regeneration Traits of *Celtis sinensis* Pers. and *Aphananthe aspera* (Thunb.) Planch. in a Created Urban Tree Plantation approximately 20 years after construction** 1

Keizo TABATA and Yukihiro MORIMOTO

The groundbreaking example of creation of a tree plantation in an urban area is the “Inochi-No-Mori” project. The main goal of vegetation creation in Inochi-No-Mori is a deciduous broad-leaved forest dominated by *Celtis sinensis* and *Aphananthe aspera*. *C. sinensis* and *A. aspera* forests are thought to be the native vegetation of the Kyoto basin. For creation of *C. sinensis* and *A. aspera* plantations in urban areas, the promotion of natural regeneration of these two woody species is a necessity. To achieve this goal, an understanding of the growth characteristics of seedlings of these two species is required. To clarify the growth characteristics, recruitment, mortality and relative height growth rates of seedlings of *C. sinensis* and *A. aspera* in Inochi-No-Mori, we set up 163 quadrats (163 m<sup>2</sup>) on the forest floor of this tree plantation. As a result, there were no significance differences in mortality rates between two species. Recruitment rates of *A. aspera* seedlings, were relatively low. But low mortality and high growth rates were observed in this species. Although there were high recruitment rates in the *C. sinensis* seedlings, mortality rates were high and growth rates were relatively low. In a created urban tree plantation, the regeneration processes of the closely related species *C. sinensis* and *A. aspera* differed.

**Insight into Pro-Environmental Behaviors and People’s Perceptions in Bangkok, Thailand** 9

Sarunnoud PHUPHISITH, Kiyo KURISU and Keisuke HANAKI

Fostering pro-environmental behaviors (PEBs) is a critical step towards achieving sustainable societies, and has become a great challenge for both developed and developing nations. However, understanding of PEBs from the perspective of developing countries is scant. Considering this limitation, the present study aimed to provide some insights into PEBs and reveal how they are perceived and performed by citizens in a developing society. A survey was conducted in Bangkok and its vicinity in Thailand. Our findings indicate that the majority of respondents engaged to some extent in PEBs. Higher degree of perception, older generation and female were key predictors for most of the environmental attitudes. In addition, an in-depth comparison to the literature highlighted similarities and dissimilarities in PEB domains performed by citizens of different societies. The importance impacts of specific features of PEB domains and external factors were pointed out and discussed.

**Transitions in Seed Sovereignty in Western Bhutan** 21

Mai KOBAYASHI, Rekha CHHETRI, Katsue FUKAMACHI and Shozo SHIBATA

This paper attempts to examine Bhutan’s transitioning agricultural sector through shedding light on the history of the government initiated seed production and distribution programs, and its influence on farming households in western Bhutan. A framework for seed system development is used, based on the recognition that there are two district seed procurement systems: formal (outsourced commercial seed production) and informal (non-commercial household, or community-based). The analysis is based on a household questionnaire survey and interviews conducted in western Bhutan and Japan in 2014 and 2015. Emphasis is placed on Japan’s influence on the formal seed system, notably through the introduction of improved vegetable seed varieties in the mid-1960s, and hybrid vegetable seeds since 2006. The household survey revealed varied but sustained coexistence between the two seed systems, with a high rate of seed saving as a common thread in all communities. Variation between districts reflected degree and maturity of market integration, and the increasing popularity of hybrid seeds.

## &lt;RESEARCH REPORT&gt;

**Business Sector Efforts and Challenges to Achieve the Sustainable Development Goals: A Case Study from Japan** 31

Yuka HAYAKAWA

To achieve the new global agenda - the Sustainable Development Goals (SDGs) - UN member states and all stakeholders in civil society have their own respective roles to play. The SDGs are to be implemented in

the spirit of global partnership. The business sector is expected to contribute in various ways, such as by promoting sustainable consumption and production, decent work for all, and so on. This paper sheds light on two international initiatives aim to promote business engagement in implementation of the SDGs: the Business Call to Action (BCtA) and the United Nations Global Compact (UNGC). This paper asks how they can enhance contributions from the business sector to achieve the SDGs by 2030, and asks what kinds of additional functions are necessary. To answer these questions, this paper compares the current services of the BCtA and the UNGC with actual needs as revealed by a survey by the UNGC Network Japan (GCNJ) and interviews with Japanese companies. The paper concludes with key factors needed for the BCtA and the UNGC to help the business sector be effectively involved in implementation of the SDGs.

#### <RESEARCH REPORT>

#### **Effectiveness of a Sanitation Training Program through Developing Hygiene and Health Education Materials, Targeting Waste Pickers in Khulna City, Bangladesh** 37

Hideki SATO

Visual hygienic educational materials on two types of “posters” and a set of “flip cards” targeting waste pickers in Khulna city, Bangladesh was developed. The sanitation training program, lasting six days in total and for 40 waste pickers’ families, was implemented using the developed learning tools and mainly focused on how to help them improve their daily hygiene and health process regarding with valuable waste collection. During the training period, quantitative and qualitative feedback was collected from waste pickers and the effectiveness of the training in terms of developing hygiene educational materials was reported. This meant it was better able to enhance their learning effectiveness using visual educational materials of waste pickers actually having worked in Khulna city, which were very familiar to their daily lives and by introducing participatory and interactive approaches in presentations, discussions and demonstrations, collectively building a platform to communicate positively with them.

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