Preface

International Symposium:
Challenges to Soil Degradation Towards Sustaining Life and Environment

Soil degradation is widely known and recognized as a global threat to sustainable life and environment. It appears in various forms such as soil erosion, organic matter depletion, salinization, pollution, etc. and results in the decrease in crop production in the early stages, and the abandonment of the farms and the land itself on which the livelihood of most people in the world depends, in its final stages.

There have been numerous case studies reporting on soil degradation, from mechanisms through countermeasures. However, no consistent strategy has been established for avoiding soil degradation and mitigating and/or rehabilitating degraded soils, since soil degradation is highly site-specific in terms of natural as well as socio-economic conditions. In order to establish appropriate soil management technology and land use systems to cope with soil degradation, more efforts should be made towards the detailed analysis of individual problems from a multidimensional perspective.

Tokyo Metropolitan University established in 2009 the framework for promoting the formation of an advanced research initiative (Kenkyu-kan) that challenges specific and important problems facing us and our environment. Kenkyu-kan is expected to organize an international symposium to collect and dispatch up-to-date information on current research going on in the world to those interested in as well as in need of such data. Our Kenkyu-kan, Soil Degradation Research Initiative (SDRI), was launched in 2009 with funding for 3 years, seeking the strategies for rehabilitation of degraded soils due to global environmental problems. In order to organize a series of world-wide symposia and to collect and dispatch the information to as many people/organizations as possible, we decided to jointly convene the symposia together with other national and international organizations, i.e. Japanese Society of Pedology, International Union of Soil Science Societies (IUSS), and East and Southeast Asia Federation of Soil Science Societies (ESAFS). The first symposium “Challenges to Soil Degradation towards Sustaining Life and Environment” was convened as one of the symposia within the 9th International Conference of ESAFS held in Seoul, Korea, from 27th to 30th of October 2009. SDRI financially supported the participation of some speakers in the symposium.

The objectives of the symposium were 1) to bring together scientists working on various types of soil degradation from different perspectives, 2) to analyze universal and site-specific mechanisms, causes of and solutions to soil degradation, and 3) to make clear the next research tasks to finally establish appropriate methods for controlling soil degradation towards sustaining life and environment in the 21st century in a global as well as an Asian context. For a comprehensive approach, the symposium addressed three aspects of soil degradation: heavy metal contamination, soil salinization and soil organic matter degradation due to human activities. The symposium included one keynote paper, one invited paper and one selected volunteer paper for each of the abovementioned aspects as oral presentations, as well as 31 volunteer papers as poster presentations. Among these forty, 14 papers were selected and peer-reviewed to appear here in the Special Issue (vol. 53, no.3, 2010) of Pedologist, the official journal of the Japanese Society of Pedology, under the financial assistance of SDRI, Tokyo Metropolitan University (TMU). This issue shall also be filed as “TMU Symposium Series No.2, 2009” and can be accessed via internet by those interested.

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