Preface

Climate change and tectonic activity are known globally to be serious causes of sediment disasters. Damage from sediment disasters is widely reported in the Asian-Pacific region. The high intensity rainfall from typhoons and cyclones increases the probability of localized landslides and debris flows. Large scale sediment disasters that have been recently reported are also associated with earthquake and volcanic activity.

Scientists and land managers need to tackle sediment disasters under the influence of a changing climate and variable tectonic activities. Some of the geomorphic and hydrologic processes and the magnitude of disasters can unexpectedly overwhelm our scientific knowledge, predictive capability, and erosion control or countermeasure techniques. New scientific approaches and mitigation technologies, including land use planning and disaster prevention, should be developed for finding effective solutions to potential disasters. Incorporation of the latest sciences and technologies from local, regional, and global perspectives in geomorphology and hydrology are required to improve prediction of sediment disasters and develop warning systems under changing environments.

For predicting and mitigating sediment and flood disasters, we held “International symposium on sediment disasters under the influence of climate change and tectonic activity (3rd)” from 26th to 27th September, 2013 in Kyoto, Japan. The scientists, land managers, and technicians from Asian-Pacific countries including China, Indonesia, Korea, Taiwan, Vietnam, New Zealand and Japan, Germany, Arab Republic of Egypt joined the symposium and discussed about the emerging issues of sediment disasters, mitigations, and perditions. From the symposium, we have 12 contributions to the special issues for International Journal of Erosion Control Engineering. The special issue consists with three invited commentaries, nine original articles and one technical note. Original article addressed new insights for understanding processes, modeling, and emergency responses sediment movement. Technical notes address new technological development for estimation, prevention, and mitigation of sediment disasters. These manuscripts had been peer reviewed by the members of editorial boards for this special issue. These excellent contributions will provide us newly comprehending process understanding of sediment movements and developing strategies of prevention and mitigation of sediment disasters.

Takashi Yamada

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