
Preface

Landslides are among the global natural disasters that occur frequently and cause billions of dollars of property damage and kill thousands of people each year. Continuous efforts, in the past few decades, of scientists, engineers, and researchers from other pertinent areas have significantly increased our capacity on characterization, monitoring, analyzing and preventing landslide hazards. With the development of better technology and numerical analysis tools, our efforts in minimizing the effect of landslide hazards have substantially been enhanced in recent years. Moreover, the global platforms to frequently share the scientific knowledge of individuals and organizations working on landslide hazard mitigation have helped us learn lessons from the past to work collectively on creating safer living environment. As an example, International Consortium on Landslides (ICL) has played a significant role in bringing those scientists, individuals and organizations together to work towards a common goal of landslide hazard mitigation, through the development of global network on landslide studies, international program on landslides as well as world center of excellence; publication of the full color journal “Landslides”, landslides interactive teaching tools; development of an interactive website for the world landslide report; and organizing yearly symposiums as well the World Landslide Forum every three years.

With the global coordination efforts and development of better research methods as well as study tools, there has been a significant advancement in landslide science, specifically in the area of landslide monitoring, robust landslide hazard analysis methods, laboratory and field investigation techniques, numerical and physical modeling, accurate field recognition techniques, and landslide prediction. This volume of the proceedings of the World Landslide Forum 4 compiles results of the studies conducted all over the world pertinent to the advancement of landslide science. Specifically, papers on landslide hazard and inventory maps from dozens of countries have been included that were developed using very simple to extremely sophisticated tools. Articles in this volume also include integration of precise and state-of-the-art sensors and pertinent tools such as UAVs and laser scanners to monitor landslides and enhance the landslide database. Likewise, recent developments on geophysical surveys, field investigation techniques, monitoring devices, small to medium scale laboratory experiments, and laboratory techniques available globally, included in the volume, provide an international outlook on the recent development of investigation methods. A few dozen papers, included in this volume, also help us understand how, in the recent years, we have advanced the physical and numerical analysis techniques pertinent to landslides, specifically with the development of hydrological, mechanical, and dynamic interfaces to predict landslide and debris flow movement. Moreover, over sixty articles, presented in part two of this volume,

include sophisticated to simple methods developed in recent years for landslide hazard, risk assessment, and prediction. Landslide hazard maps and inventories, developed from all over the world and included in this volume, help to understand the extent and characteristics of the landslide problems faced globally and learn lessons from past disasters to develop resilient communities in future.

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