

LANDSLIDES IN JAPAN

(The Fifth Revision)

The Japan Landslide Society
National Conference of Landslide Control

1 9 9 6

Preface

The Japanese archipelago is a part of the Circum Pacific Orogenic Belt and is geologically very unstable. The bedrock materials which comprise the mountain terrain have been severely fractured since its formation and have developed numerous fault fracture zones. The Japanese archipelago is often referred to as "scar-laden islands". The mountain region displays a wide variety of topography with steep terrain that often exhibits a stage of maturity. Furthermore, the islands are located within the monsoon zone and receive abundant rainfall. Coupled with early summer rainy spells and later typhoons, numerous landslides occur resulting in staggering damages.

Since 1960, Japan has experienced a high level of land utilization as part of the national policy. In particular, residential developments near and around large cities, reclamation of coastal regions, and construction of dams and highways have all severely altered the existing topography (which is one of the major contributing factors that cause landslides). Due in part to this relationship, citizens in general have a keen sense of awareness concerning landslide disasters.

Therefore, when a catastrophic disaster should occur around us, we try to understand the cause and effect relationship between the physical conditions and the type and nature of the disaster. Recent large scale disasters include: numerous debris flows in Nagasaki City and the surrounding region caused by the concentrated extremely heavy rainfall of July, 1982; the Jizuki-Yama Landslide of Nagano City of July, 1985; and the widespread disaster caused by the Hyogo Earthquake of January, 1995. All of these disasters claimed and affected many lives, and have demonstrated a close relationship between natural disasters and the lives of citizens living in the affected regions. The above incidents have also acted as a "wake-up" call for us to be aware of the urban types of disasters which have resulted in new problems.

In order to reduce the affects of natural disasters in the 21st century, the United Nations established the "International Decade of Natural Disaster Reduction" in 1990 (in which the decade is nearly one-half over). During the international conference held at Yokohama in 1994, the following objectives were adopted: 1) to increase the awareness of disaster prevention on an international level; and 2) to build up the regional mutual cooperation structure. Furthermore, it is important to realize that every effort is required in order to reduce the natural disaster, and to take a step forward to try to predict disasters.

Since establishment of the Japan Landslide Society in 1963, 34 annual meetings and numerous symposiums have been organized and over 120 issues of the journal "Landslides" have been published. Recently, the society published the annual newsletter "Landslide News" in English, and is distributed overseas and received well. The 5th revision of "Landslides in Japan" focuses on the current understanding of landslide origin, and discusses some of the problems concerning landslide investigations and research in Japan. It is our desire that this publication will be distributed not only among the professionals involved with landslide research and landslide mitigation, but also among the general public to increase public awareness and development of technology regarding disaster prevention. We sincerely hope that these efforts will contribute to the reduction of the damages.

中村三郎

Saburo Nakamura
President, The Japan Landslide Society

Edited by

Chief, NAKAMURA, Hiroyuki
FUKUOKA, Hiroshi
FUJITA, Hisao
FUNAZAKI, Masatsugu
FURUYA, Takahiko
HIGAKI, Daisuke
ISHIDA, Yuji
KAMAI, Toshitaka
KOMATA, Shinjuro

KATO, Hitoshi
KURODA, Kazuo
MANTOKU, Masaaki
MORIWAKI, Hiromu
NAKAJIMA, Akira
NAKAMURA, Saburo
OHIRA, Shozo
OYAGI, Norio

SASSA, Kyoji
TANAKA, Kohei
TAJIKA, Jun
TAKEUCHI, Mutsuo
TAKEUCHI, Yoshitsugu
TSUNAKI, Ryosuke
YAMAGISHI, Hiromitsu

Published by

The Japan Landslide Society
National Conference of Landslide Control
April, 1996