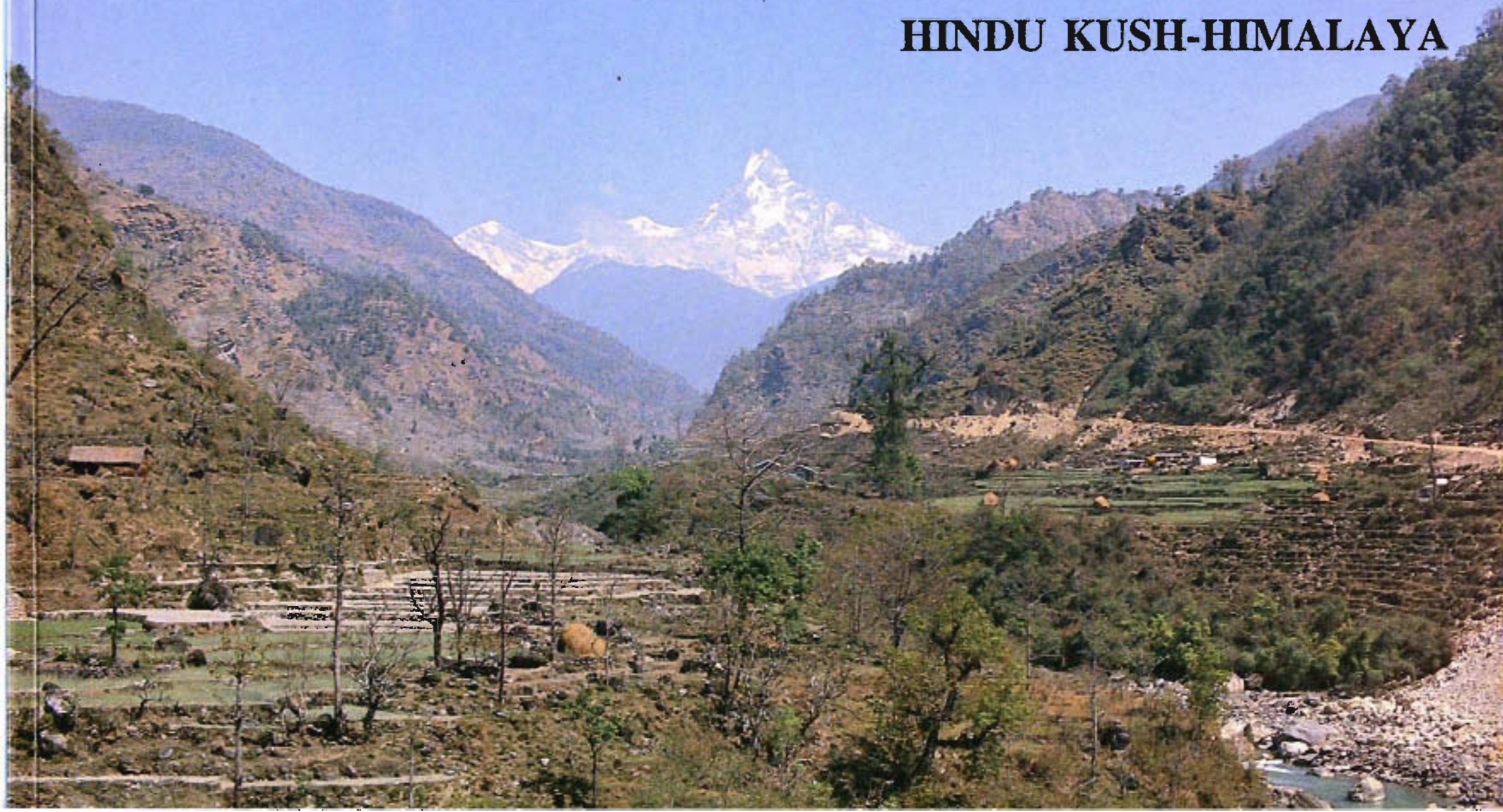




**RISK ENGINEERING
IN THE
HINDU KUSH-HIMALAYA**



RISK ENGINEERING
IN THE
HINDU KUSH - HIMALAYA

Introduction To Geological Processes,
Impacts To and From Mountain Roads,
and
Mountain Risk Engineering Approaches

INTERNATIONAL CENTRE FOR INTEGRATED MOUNTAIN DEVELOPMENT

Cover Photograph by B. B. Deoja: Pokhara-Baglung Road, March 1991

Risk Engineering in The Hindu Kush-Himalaya

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FOREWORD

Building linear infrastructures; e.g., roads and canals in the mountainous areas of the *Hindu Kush-Himalaya*, where natural processes, such as geological processes, and climatic severity, such as heavy monsoon precipitation, have resulted in serious instability problems; is not simple.

Infrastructural projects need to be planned, designed, constructed, and maintained taking into due consideration the hazards and risks both to and from the environment.

This work on mountain risk engineering is an illustrative version of the two part Mountain Risk Engineering (MRE) Handbook published by ICIMOD in June 1991. Hopefully, this will help to bring more awareness to the decision-makers and practitioners of infrastructural agencies, in mountainous regions of the *Hindu Kush-Himalaya* and other developing mountainous countries, on the criticality of the problems and the need for adapting MRE approaches and techniques.

Dr. E. F. Tacke

Director, ICIMOD

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B. B. Deoja

MRE Project Coordinator

OBJECTIVES

This document is a complementary version of the Mountain Risk Engineering Handbook published by ICIMOD in June 1991, and it is hoped that it will:

- improve the awareness of the decision-makers of infrastructural agencies / departments, concerning mountainous areas in the developing countries, in order that they may be able to plan and implement the construction of mountain infrastructures; giving due consideration to inherent slope instabilities, human activities accelerating the natural instabilities of mountain slopes , and minimization of risks to and from the roads; through adoption of mountain awareness-specific technologies, and**

- create the interest and awareness among academic and practising engineers and geologists concerned with the investigation ,design, and construction of mountain infrastructures , in order that they may adopt the detailed approaches suggested in the MRE Handbook.**

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Map of the *Hindu Kush-Himalaya*

