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A Compendium of Current Knowledge

Volume 5

LAND USE ASPECTS



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FOREWORD

The Office of the United Nations Disaster Relief Co-ordinator (UNDRO) presents the fifth volume in the series entitled "Disaster Prevention and Mitigation". The purpose of these publications is to provide the international community with a comprehensive review of existing knowledge of the causes and characteristics of natural phenomena and the preventive measures which may be taken to reduce or eliminate their impact on disaster-prone developing countries.

These volumes are prepared in accordance with General Assembly resolution 2816 (XXVI), which calls upon the Office of the United Nations Disaster Relief Co-ordinator to promote the study, prevention, control and prediction of natural disasters, including the collection and dissemination of information on technological developments.

The aims of these studies are, first, to identify the existing knowledge and expertise which may be applied directly toward the prevention of natural disasters, particularly in developing countries and, secondly, to identify the gaps in current knowledge which require concerted action by the international community.

During the last two decades the international community has become increasingly alarmed by disasters, which have tended to be more destructive as they affect ever larger concentrations of population. While the response of the international community has been focussed primarily on relief action, it is now realized that the actual and potential consequences of disasters are becoming so serious and increasingly global in scale, that much greater emphasis will henceforth have to be given to planning and prevention. The effects of natural phenomena must be viewed not only in humanitarian and broad social terms, but also, and primarily, in economic terms. Natural disasters are a formidable obstacle to economic and social development. Moreover, in terms of percentage of gross national product, the losses caused by disasters in some disaster-prone developing countries more than cancel out any real economic growth. There has thus been a growing awareness by Governments of the need to focus more attention on disaster preparedness and prevention, and a recognition of the fact that disaster prevention and pre-disaster planning should be an integral part of national development policy.

The "International Strategy for Disaster Prevention", proposed by UNDRO and approved by the General Assembly at its twenty-ninth and thirtieth sessions, will provide the conceptual framework for national and international action in the prevention and mitigation of natural disasters. This strategy will harness the collective human and material resources of the world towards removing the scourge which natural disasters represent for many disaster-prone developing countries. The present series on "Disaster Prevention and Mitigation" provides one of the inputs for the formulation of the strategy.

Rapid urbanization and the increase of population in hazardous areas are matters of growing concern. Concentration of population and human activities contributes to heavier loss of life and mounting costs of disaster damage, particularly in low-income slum and squatter settlements in the urban areas of developing countries. Although there is no immediate shortage of undeveloped land for urban expansion in most developing countries, land is ultimately a finite resource and extremely costly to develop. In disaster-prone areas, orderly urban expansion becomes prohibitive unless investment in infrastructure, housing and other services is protected from damage at all stages of their development.

Land-use planning and control are key factors for the orderly and safe growth of human settlements and the establishment of new settlements. Land-use planning and control for disaster prevention should logically be based on knowledge of the natural hazards present and the disaster risks which may ensue. When the risks are plotted or quantified, an analysis or evaluation of the damage probability of such risks, termed vulnerability analysis, can be carried out. Through vulnerability analysis it is possible to make rational decisions on how best the effects of potentially disastrous events can be mitigated through a system of permanent controls on land development.

This publication examines the spatial aspects of disaster prevention, and, in particular, land-use planning. It describes and evaluates measures designed to steer development away from hazardous areas and demonstrates how physical planning and especially land-use control can contribute to reduce both disasters and the vulnerability of human settlements. The volume describes the aim and principles of comprehensive risk analysis, reviews land development and how it relates to the problem of disasters, and prescribes land-use policies and measures which are most relevant to disaster prevention and mitigation, including legal controls, fiscal and financial incentives, and direct government action. A chapter has also been included on specific land-use measures for the prevention and mitigation of flood and earthquake disasters.

All the publications in the series "Disaster Prevention and Mitigation" are addressed to a broad range of users, including high-level government officials, administrators, technical experts in the field and specialists in the various areas of disaster prevention. They are also designed to guide officials at the national and regional level in the formulation of policies for preventive measures against the types of natural phenomena affecting their region.

The Office of the United Nations Disaster Relief Co-ordinator invites the readers of this volume, Land Use Aspects, to provide their comments and suggestions.

This volume was prepared by the Office of the United Nations Disaster Relief Co-ordinator, with contributions from Mrs. Elisabeth Porter and Mr. Jerrold Voss, and the active support of the United Nations Environment Programme (UNEP).

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