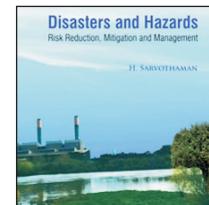


# BOOK REVIEW

## **Disasters and Hazards: Risk Reduction, Mitigation and Management**

(ISBN: 81-87680-34-2)

Author: H. Sarvothaman, Pages 380; Year 2021, *Asiatech Publishers, New Delhi* □ Price: Rs. 950/-



This book on Disasters and Hazards is a well documented reference book on the subject of grave societal importance, giving in details the meaning, causative factors, mechanism, effect or damage and possible measures to reduce the risk due to natural and manmade hazards. The book starts giving definitions of various terms which is much useful to layman. Disaster is a sudden misfortune or catastrophe or ruinous happening that causes widespread debility and distress to the humans and the environment. Hazard is a situation that poses threat to life, health, property, livestock, wildlife and environment. Thus, disaster and hazards are situations which adversely affect the mankind by loss of property and life. The book elaborates basics of natural hazards like faults, earthquakes, volcanoes, by illustrating the scientific basis for these events, based on structure of earth's interior, plate tectonics in simple language. The mechanism and types of these natural events are described in simple way for benefit of common people. The causative factors for volcanism, types of volcanoes, eruptive mechanism, and effect of volcanism on natural environment as well as human population are explained well. Thus, the complex scientific topics are dealt with in simple way to generate public awareness with the help of relevant photographs and illustrations through drawings.

The types of earthquakes, theory of earthquake generation, propagation of earthquake waves, classification methods, instruments for recording the earthquakes and measuring the intensity are well elaborated. The section on Indian Standards for Earthquake Study and risk reduction measures is interesting. Besides the mitigation measures on earthquake, the details given in construction of earthquake resistant structures, types of grillage, reinforcement methods and types of isolators used are useful for application in earthquake prone areas. The case study includes earthquake damage controls followed in New Zealand which can be guide for minimizing the destruction caused by earthquakes.

Tsunami is a major disaster hazard near sea shore. The chapter on Tsunami gives comprehensive knowledge of causes of Tsunami generation, tectonic events responsible for Tsunami formation and propagation, science behind travel of Tsunami waves, possible damage caused by disastrous Tsunami waves. It also incorporates possibility of Tsunami warning and mitigation measures with suitable examples, as a complete guide on major hazard on sea shore. Landslides are major destructive factor in hilly terrain in India. The causative factors of landslide, geographical and hydrological conditions responsible to trigger a landslide, types of land slide and measures to be adopted to control landslides provide useful technical information. The section on exodynamic hazards is very interesting elaborating the hydrological and atmospheric water cycle, global atmospheric water movement, formation of cyclones, cyclonic hazards and various methods adopted by government for safety of people to reduce damage to property and life. A list of previous cyclones in India is very informative. Hydrometeorological hazard covers the water distribution, river bed configuration, types, and effects of flooding and various methods adopted for control and prevention of floods. The disastrous effect of floods in India is elaborated in case study giving detailed causative factors

and damage caused by floods in Uttarakhand 2013, Kerala 2018, Jammu and Kashmir 2010 *etc.* Preventive measures for avoiding recurrence of such floods are also discussed.

A very interesting section is on anthropological hazards mainly created by various activities of industrialization, and human development which covers wide areas like noise pollution, civil constructions, mishaps in tourist places, railway and highway disasters, disastrous air accidents, and mishaps of grave concern on oceanic transport *e.g.* fires on ships, ship collision and oil seepages in sea. A detailed description of epidemics and pandemics during last century adversely affecting the mankind socially and economically, including COVID-19 pandemic, is an eye opener for taking immediate rectification measures in our life style and activities to avoid such pandemics in future. Gene mutation and genetic engineering is one more important issue discussed throwing light on benefits and possible hazards of genetic modification of agricultural and the other products. The chapter on economic disasters elaborates the various factors responsible for economic development, factors responsible for failure of economic growth, due to various causes leading to financial depression in last century. The hazards in mining, wild forest fires, environmental degradation due to chemical waste, biological infections due to various bacteria/ viruses sounds an alarm bell to society for adopting sound mitigation measures to prevent mass scale destruction.

Environmental hazards, basic concepts in environmental management, preventing measures for overcoming challenging situation like drought by artificial recharge, water harvesting, and water management are very informative. The land degradation due to human activity, solid waste and e-waste problem and possible measures to control the menace of land waste due to ill planned activities emphasize the need for proper land use management. The various mitigation measures to avoid pollution and damage to ecology are mentioned in chapter on mitigation measures covering land management, water pollution control, management of industrial waste, water purification techniques, international water standards, air pollution types and desirable chemical content in air quality assessment. Acid rain, formation of ozone holes, effect of ozone depletion on human life and measures to control green house gases, are some important topics discussed in this book. The causes of global warming, various international acts enacted to control global warming, green house gas reduction, carbon foot print and carbon credits, detailed list of green house gases and air pollutants is very useful in practical purpose. The book completes with detailed discussion on measures for control of different types of hazards/ disasters and the procedures as per the disaster management act 2005. The book gives comprehensive information on causes, types and effects of various disasters and measures to control the recurrence of such events; damage control to minimize the loss of property and life, besides protecting the environment and ecology of the earth. It is a good book for collection and reference.

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