

## BOOK REVIEWS

**Groundwater in Emergency Situations.** Jaroslav Vrba and Balthazar Th Verhagen (Eds ), IHVP VI, Series on Groundwater no 12, UNESCO 2006, 94p

Super cyclone of Orissa, Kutchh earthquake and Tsunami – occurred in succession not so long ago. Faces of hapless people in distress, dazed in bewilderment, without drinking water, food and shelter, are still fresh in our memory. Such calamities, climatic or geological, or even catastrophic man-made events wreak havoc in one or the other part of the earth every year. The first to affect the livelihood of people is the supply of water. A crippling effect on expeditious relief or rehabilitation operations due to critical shortage of water for drinking and sanitation often leads to spread of diseases and epidemics. In such situations governments, too, are slow in their response because of utter lack of technical and scientific preparedness to tackle such eventualities, which often occur on a gigantic scale. This makes a sad story, that too in this high-tech 21<sup>st</sup> century. So far, number of reports have appeared in print stipulating “dos and don’ts” in emergency situation, but mostly of a generalized nature, and fail to address the most vital aspect of water supply in emergency situations. Against this background, we heartily welcome the publication brought out by UNESCO – a notable departure from the routine, a comprehensive and well produced hand document chartering a definite course of action in such critical situations.

This framework document is the product of Groundwater for Emergency Situation (GWES) Project, implemented as part of IHP activities by experts of UNESCO, IAH, IGRAC, and representatives of various countries including India. It proposes suitable methods of investigating reliable groundwater resources for emergency situations and lays out basic rules for their exploitation.

Groundwater has a proven record of sustainability. It is pure, occurs in vast subsurface reservoirs, generally not affected by natural disasters, needs little or no treatment before use and easily exploitable.

Hence, it is a strategic resource in emergent situations. Public awareness and alertness of the authorities about this priceless resource is rather poor, which acts as a formidable bottleneck in harnessing this resource at times of necessity.

The book is subdivided into eleven chapters. The first two chapters are introductory. Chapter 3 on groundwater origin, occurrence and movement presents an excellent summary of hydrogeological models in natural settings written in a way easily understandable by one and all. Chapter 4 is devoted to event specific risk management of groundwater resources, such as floods, droughts, earthquakes, volcanic activities, landslide disasters and tsunami. The narration is supported by good photographs and figures. This is perhaps the first publication of its kind outlining approaches to deal with specific crises.

Chapter 5 presents a comprehensive account of investigations and analytical procedures involved in planning resource development, and highlights the use of modern tools like geophysics, remote sensing, isotope hydrogeology in presenting hydrogeological features. The role of mathematical modeling and GIS application in handling different disaster scenarios have not been overlooked and are dealt in a most competent manner.

The crucial input of the document is Chapter 6 detailing ways of building institutional and technical capacity at both local and national levels, as also their respective roles. The book rightly stresses the need for legal framework and regulatory status to support disaster reduction, establishment of control mechanisms by governmental authorities dealing with environment and water. Training and motivation of human resources and active public participation and the establishment of early warning and monitoring system are specially emphasized.

Keeping in view the social, health and economic impacts of catastrophic events, this document in Chapter 7 stipulates activities in specific phases of disaster prevention and mitigation – anticipatory, warning, impact relief and rehabilitation. Chapter 8 gives several interesting case

studies including Kutchh earthquake and Tsunami which are informative making the book specially relevant in the Indian context. It also provides a glossary of technical terms to assist the non-technical reader.

This framework document summarizes all aspects of risk reduction and mitigation of calamities with respect to water supply. Editors Jaroslav Vrba and Balthazar Th Verhagen assisted by the contributing authors have done a commendable job. This much awaited document will prove to be a valuable guide for disaster management operations across the globe, particularly in the developing countries.

True to the traditions of UNESCO publications, this one also is written in lucid language with plenty of illustrations and photographs, making a very difficult and complicated subject easily understandable by all. In real terms, the book charts a course for the empowerment of hapless millions in the under developed parts of the world, who chronically suffer from natural or man-made disasters year after year.

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### Online Databases and Other Internet Resources for Earth Sciences.

P Venkataramana Chandos Publishing, Oxford, 2007, 312p

This volume is a “quick print reference guide” to the volumes of information resources in Earth Sciences available through the Internet. As we all know, the internet has created fundamental changes in awareness and access levels of databases across the world, in an “online format”. Students are now able to get information in volumes and speeds hitherto unknown with the spread of the internet. Sadly, this has also brought about a culture where a majority of students display “awareness (data)” of a vast variety of subjects, but no knowledge. Again, limitations on information on where the correct knowledge is available on the internet (driven through a variety of reasons which have no bearing