

PART I

CHAPTER 1

Telecommunications for Disaster Mitigation and Relief

1 Introduction

Highlighting the role of Telecommunications for humanitarian assistance, United Nations Secretary General, Kofi Annan said:

Humanitarian work is one of the most important, but also one of the most difficult tasks of the United Nations. Human suffering cannot be measured in figures, and its dimensions often surpass our imagination, even at a time when news about natural and other disasters reaches every corner of the globe in next to real time. An appropriate response depends upon the timely availability of accurate data from the often remote and inaccessible sites of crises. From the mobilization of assistance to the logistics chain, which will carry assistance to the intended beneficiaries, reliable telecommunication links are indispensable (ICET-98).

Telecommunications is critical at all phases of disaster management. Drawing from various sources that include Telecommunications satellites, radar and telemetry, and meteorology, remote sensing for early warning is made possible. Before disasters strike, Telecommunications can be used as a conduit for disseminating information on the impending danger thus making it possible for people to take the necessary precautions to mitigate the impact of these disasters. Most recently this was demonstrated when Jamaica raised an alarm and broadcasted messages alerting citizens of Hurricane Ivan even days before the just below 155 mph mark giant waves and winds were due to hit the Island. This warning enabled Jamaica to prepare itself for this category 5 storm, the most powerful on the Saffir-Simpson scale. Even the international community was kept well informed by the world media prompting sympathetic governments to pledge assistance in the event of destruction even before the disaster struck. Other governments in the region such as Barbados, St. Lucia and St. Vincent, also used Telecommunications and broadcasting to coordinate pre-hurricane Ivan disaster activities.

When disaster eventually strikes, coordination of relief work by national entities, as well as the international community is made possible. Recently, this was evident in Grenada where Hurricane Ivan damaged 90 per cent of homes and left over 100'000 residents without electricity, water and telephone service. Finally, Telecommunications also play a critical role in facilitating the reconstruction process and coordinating the effort of getting returnees displaced by disasters back to their original homes.

It is clear therefore that Telecommunications play a pivotal role in disaster prevention, mitigation, and management. Other telecommunication applications ranging from remote sensing and global positioning system (GPS) to the Internet and Global Mobile Personal Communications via Satellite (GMPCS), have a critical role to play in tracking approaching hazards, alerting authorities, warning affected populations, coordinating relief operations, assessing damages and mobilizing support for reconstruction.

1.1 The need for a Handbook on Emergency Telecommunications

Well-crafted handbooks provide invaluable reference materials to students, the newly qualified practitioner, the seasoned operative, the policy-maker, and any other person or organization with an interest in the field covered by that particular handbook. This handbook is no exception as it is written to serve as a close companion to those involved in the noble work of providing as well as using Telecommunications for disaster mitigation and relief. It simplifies and demystifies the complex technical issues that characterize the fast evolving field of Telecommunications especially in this era of convergence and emergence of next generation networks. For this reason, while this handbook is meant to be simple, it is comprehensive, compact and contains useful factual information that is concise and organized for easy access especially by practitioners.

Part I of the Handbook consists of three chapters including this first introduction chapter. Chapter 2 looks at the organizational framework of emergency telecommunications. It discusses disaster prevention, response, and the available means of telecommunications.

Part II has seven chapters focusing on the operational aspects of emergency telecommunications. Chapter one discusses Telecommunications as tools for the providers of emergency response while Chapter two looks at public telecommunication networks and their role in disaster relief. Chapters 3, 4, 5, 6, and 7 look at the use of the Internet, private telecommunication services and networks, the amateur radio service, broadcasting, and emerging technologies respectively.

Part III discusses the technical elements of emergency telecommunications. This segment is critical especially for field practitioners who are often confronted by technical challenges while installing and using Telecommunications equipment in the field.

1.2 Who should read this Handbook

The Emergency Telecommunications Handbook is written to be read, studied and understood by every person who has responsibilities connected with the planning, usage, evaluation, or survey of emergency Telecommunications systems or their vulnerabilities. It can be read as a stand-alone text or be used in conjunction with formal training opportunities in the field. It is a project of the Telecommunication Development Sector of the International Telecommunication Union (ITU-D) and builds on the work already done by the Study Group 2 of ITU-D while drafting the first edition. This particular edition has a new look in terms of content, and contains up to-date information that takes into account the evolving regulatory environment as well as the rapid changes in the Telecommunications sector.

This edition is written by a group of experts drawn from key partner organizations involved in humanitarian assistance, to include those from administrations, international organizations, the technical community, and the service providers. It is an aide to the wider diffusion of knowledge on the subject of emergency Telecommunications and is an attempt to contribute to the already existing knowledge on emergency telecommunications.