

# Telecommunications SAVE LIVES

**The Role of Information and  
Communication Technologies in  
Disaster Prevention, Preparedness,  
Response and Relief**



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# Telecommunications Save Lives



Earthquake in Mexico  
Source: *Actualités Suisse*.



Gas escaping from a broken pipe burns as water from a ruptured main floods a Los Angeles street after an earthquake  
Source: L. Ignelzi.



Forest fire in South Africa  
Source: *Actualités Suisse*.

Disasters kill at least one million people each decade and leave millions more homeless.

When disaster strikes, communication links are often disrupted; yet for disaster relief workers, these links are essential in order to answer critical questions as to how many people have been injured or died, where the injured are located and the extent of the medical help needed. To put it simply, in disaster and emergency situations, telecommunications can save lives.

The International Telecommunication Union (ITU) has put the subjects of disaster prevention, preparedness and relief high on its agenda in an effort to *promote and offer technical assistance to developing countries in the field of telecommunications, and also to promote the mobilization of the material, human and financial resources needed for its implementation, as well as access to information.*<sup>1</sup>

For nearly 140 years, ITU has been helping the world communicate, a guiding mission that becomes even more important when disaster strikes. As noted by the United Nations Secretary-General, Kofi Annan:

*“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.”*

<sup>1</sup> Article 1 (1b), of the Constitution of the International Telecommunication Union, Collection of the basic texts of the International Telecommunication Union adopted by the Plenipotentiary Conference, 2003 edition.

# ITU Communication Development and Disaster

The ITU Telecommunication Development Bureau is committed to helping countries prevent, prepare and effectively respond to disasters. This is done by:

- Ensuring disaster reduction strategies are incorporated into telecom network development plans;
- Integrating ICTs into existing and new early warning systems;
- Helping developing countries with emergency telecommunications as part of the response effort following disasters;
- Developing disaster-sensitive legal and regulatory frameworks;
- Working with developing countries and the private sector to rebuild or develop communication systems that will bring the benefits of the information society to all.



Aftermath of the South East Asia tsunami disaster of Sunday 26 December 2004  
*Source: ITU/Cosmas Zavazava.*

# The Tampere Convention – A Life-Saving Treaty

Victims of disasters will now be able to benefit from faster and more effective rescue operations, thanks to the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations that came into force on 8 January 2005, following ratification by 31 countries.

Until now, the trans-border use of telecommunication equipment by humanitarian organizations has often been impeded by regulatory barriers that made it extremely difficult to import and rapidly deploy telecommunication equipment for emergency without prior consent of the local authorities. The treaty simplifies the use of life-saving telecommunication equipment.

The Tampere Convention calls on States to facilitate the provision of prompt telecommunication assistance to mitigate the impact of a disaster, and covers both the installation and operation of reliable, flexible telecommunication services. Regulatory barriers that impede the use of telecommunication resources for disasters are waived. These barriers include the licensing requirements to use allocated frequencies, restrictions on the import of telecommunication equipment, as well as limitations on the movement of humanitarian teams.

The Convention describes the procedures for request and provision of telecommunication assistance, recognizing the right of a State to direct, control and coordinate assistance provided under the Convention within its territory.

[www.itu.int/itu-d/emergencytelecoms/tampere](http://www.itu.int/itu-d/emergencytelecoms/tampere)



The “Tampere Hall” in Tampere, Finland, where the treaty on Telecommunication for Disaster Mitigation and Relief was signed on 18 June 1998

Source: ITU/P. Kuivanen.

# Universal Access Contributes to Disaster Mitigation

The role of ICTs in mitigating the impact of disasters has already been highlighted. However, access to telecommunications in most communities in the developing world, especially in least developed countries, remains pie in the sky.

ITU has used various strategies to respond to this need. In many respects, multipurpose community telecentres (MCTs) have been established for the benefit of women, refugees, and other special groups viewed as marginalized.

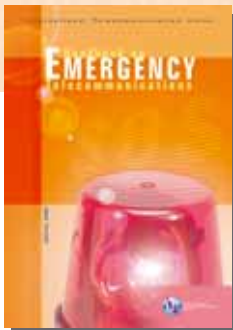


The refugees, including women, have been trained to run the centres themselves  
*Source: UNHCR.*

As these multipurpose telecentres can be used for many purposes, efforts have been directed towards preparing the communities meant to benefit from these MCTs to access vital information on disaster management through these centres.

The ongoing MCT project for the Pacific Islands is a case in point. Samoa and the Solomon Islands are currently under our spotlight as we implement 20 MCTs, with the possibility of extending the number as the implementation progresses. Kiribati is joining the initiative in 2006 and beyond.

Another topical similar project is the MCT established in and around refugee camps along the north-western border of Tanzania. This project, which is a collective effort between ITU, the United Nations High Commission for Refugees (UNHCR) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), has fulfilled the health, education, information and communication needs of the refugee community and of international aid agencies and non-governmental organizations involved in relief work.



## Handbook on Emergency Telecommunications

This handbook 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.

# Creating Quality Standards for Communications during Disasters

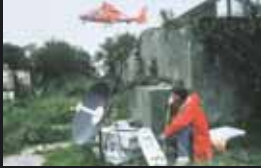
Through its work on standardization, ITU develops technical standards (known as Recommendations) that facilitate the use of public telecommunication services and systems for communications during emergency, disaster relief and mitigation operations. This capability, referred to as the emergency telecommunication service, enables authorized users to organize and coordinate disaster relief operations as well as have preferential treatment for their communications via public telecommunication networks. This preferential treatment is essential as public telecommunication networks often sustain infrastructure damage which, coupled with high traffic demands, tends to result in severe congestion or overload to the system. In such circumstances, technical features need to be in place to ensure that users who must communicate at a time of disaster have the communication channels they need, with appropriate security and with the best possible quality of service.



As well as ITU's work in creating a protocol for the prioritization of calls, its existing standards have played an essential role in helping out in disaster zones worldwide.

Two people connected by cellular communication  
*Source: Eyewire.*

# Keeping Signals Clear – Essential in Disaster Situations



New types of satellite-based equipment are being used by aid agencies to establish a communications base during a disaster

*Source:* ITU/INMARSAT.



HF and VHF radio equipment is one of the mainstays of international relief efforts. They are portable, reliable and disaster resistant.

*Source:* ITU/International Committee of the Red Cross/Lukas Fellman.



Relief workers communicate through satellite-based mobile handsets anywhere in the world

*Source:* Globalstar.

Through its work in radiocommunications, ITU is responsible for efficient spectrum management, which allows for the use of a variety communication services of such as the amateur radio service, radio and television broadcasting and mobile and portable satellite terminals.

As we go forward, efforts should centre on the identification of globally/regionally-harmonized bands, to the extent practicable, for the implementation of future advanced solutions to meet the needs of public protection agencies, including those dealing with emergency situations and disaster relief, and to make regulatory provisions, as necessary.



# The Information Society and Disaster Reduction

The World Summit on the Information Society (WSIS) has provided a unique opportunity for all stakeholders. Its main theme is to establish a knowledge-based society where there is easy access to ICTs by the majority of the people. This initiative contributes to ongoing efforts to bring telecoms to the doorsteps of rural families. In so doing, access to information on impending disasters will be possible. Online training will also be a viable option for most people.

The fact that all stakeholders are part of WSIS gives a ray of hope that new and smart technologies and ways to use them will be developed over time in the interest of disaster reduction.

“We seek to establish monitoring systems, using ICTs, to forecast and monitor the impact of natural and man-made disasters, particularly in developing countries, LDCs and small economies.”  
WSIS Plan of Action (C7:20(c))

Heads of State at WSIS, 9 December 2003  
Source: ITU/Jean-Marc Ferré.



# Partnering for Disaster Reduction

The role of telecommunications in disaster reduction is critical in order to improve the timely flow of crucial information needed for appropriate assistance to be delivered before, during and after the disaster. For this reason, ITU has been vigorously forging partnerships with the private sector to finance activities related to disaster mitigation. As noted by ITU Secretary-General, Yoshio Utsumi: "Working with our UN and industry partners, ITU will continue to help strengthen local, national and global telecommunication systems in order that they can respond quickly and consistently in emergency situations."

ITU works with the International Amateur Radio Union (IARU), a worldwide federation of radio amateurs that successfully interacts with the agencies responsible for regulating and allocating radio frequencies for the use of radio spectrum for disaster communications. The IARU is a Sector Member of ITU.

In line with this, a co-financing partnership agreement was concluded between ITU and INMARSAT Limited. Thanks to this agreement, Member States can now request, from ITU, satellite terminals that can be deployed in their countries to facilitate communications when disasters strike. ITU pays for the airtime, i.e. for the usage of these terminals.

ITU is also part of the Working Group on Emergency Telecommunications (WGET), convened by the United Nations Office for Humanitarian Affairs (OCHA), which seeks to facilitate the use of telecommunications in the service of humanitarian assistance and to increase the effectiveness of its participants in relation to regulatory, operational and technical aspects of telecommunications for disaster relief. WGET not only encourages measures applying the ITU Resolutions and Recommendations relative to telecommunications for disaster relief, but is also an active facilitator of the promotion and implementation of the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations.

Following its financial contribution to the work and publication of the Handbook on Emergency Telecommunications, Rohde & Schwarz has contributed financially towards ITU's ongoing work on reconstruction, rehabilitation and establishment of early warning systems for the countries affected by the tsunami of 26 December 2004.



Satellite  
Source: Photos.com.



Antenna of an amateur radio station  
on the ITU building roof in Geneva  
Source: CERN.

The Government of Australia has made a voluntary contribution of CHF 500,000 for the preparation of telecommunication infrastructure rehabilitation plans and general telecommunication plans for an early warning system for the countries affected by the tsunami. This financial contribution will go a long way towards assisting the affected countries in preparing and dealing with future disasters, and will give a significant boost to ITU's seed money of USD 250 000 allocated for the same purpose following the December 2004 earthquake and the subsequent tsunami generated by it.

It is partnerships such as these that can make a difference in the lives of those who are vulnerable to disasters, especially those in the least developed and small island developing countries.

## Telecommunications for an Effective Response

Lessons learnt from the deployment of satellite terminals in some of the countries affected by the December 2004 tsunami, as well as in Pakistan following the 2005 South Asia earthquake that killed tens of thousands of people, have once again highlighted the critical role of emergency telecommunications in disaster response and relief.

# Call for Partners

To be part of our ongoing effort to integrate ICTs into disaster reduction efforts (early warning, preparedness, prevention, response and relief), send an e-mail to:

[cosmas.zavazava@itu.int](mailto:cosmas.zavazava@itu.int)

[melissa.arditto@itu.int](mailto:melissa.arditto@itu.int)

Message Heading: *ICT Projects for Disaster Mitigation*



Forging partnerships  
Source: ITU/Cosmas Zavazava.

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