



## Lack of freshwater: A primary concern at times of disasters

*This article raises the issue of protecting freshwater infrastructure for human consumption -during 'normal' times, and in particular during extreme events such as social conflicts and disaster situations. Access to freshwater following a disaster is crucial to assist communities in having their lives return to normal.*

Claudio Osorio  
The Pan-American Center  
for Sanitary Engineering  
and Environmental  
Sciences (CEPIS/PAHO)  
desastre@cepis.ops-oms.org  
www.cepis.ops-oms.org

Freshwater is vital to ensure the health, survival and reproduction of humanity. Freshwater has also proven important to the production of food and electric power generation. In terms of daily human consumption, access to freshwater is essential in order to meet the basic needs of personal hygiene, food and drinking water - without it our quality of life and development is placed at risk.

For decades, numerous countries and cooperating bodies have been working on addressing the challenge of securing the provision of drinking water in sufficient quantities for the world population at large. Considering that water production for human consumption is based on the availability of freshwater in the environment, efforts have been mainly focused on the protection of basins and natural water sources from degradation and pollution.

The increase in desertification processes in various regions suggests that there remains much to do, particularly because this phenomenon concerns not only a lack of water, but also the destruction of the environment and its ecosystems.

Access to freshwater during 'normal' times is important for the lives, health and development of people. During extreme events such as social conflicts and disaster situations, access is all the more important, playing an integral role in the affected community's recovery and its return to normal following the catastrophe.

The impact of water-related hazards - such as floods, hurricanes and droughts - is recognized as the main cause of disasters, particularly over the last few years. This is due to on-going environmental degradation, in addition to the lack of consideration of such phenomena in the decision-making and development processes, often related to land-use planning and human settlements.



It is therefore necessary to take the opportunity in 2003 - the 'International Year of Freshwater' - to highlight the fact that securing water provision for human consumption during disaster situations represents a critical factor when addressing emergencies.

In the aftermath of a disaster the availability of water contributes to a number of tasks, including rescue work and extinguishing fires after an earthquake. In a similar manner, access to freshwater assists in ensuring that adequate community health care and services are available, as well as prompting the reactivation of different productive and commercial activities.

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However, it is often found that freshwater infrastructure is highly vulnerable to destruction following exposure to hazards such as floods, hurricanes, earthquakes or volcanic eruptions, among others. Damage to the physical infrastructure of water provision systems poses a recurring risk which in some cases has led to a lack of water provision for weeks and even months.

For example, during the crisis caused by Hurricane Mitch, 75 per cent of the population of Honduras (some 4.5 million people) was either deprived of water or, at the very least, had difficulties accessing water and sanitary services. Mitch's destruction on infrastructure set the Honduran water sector back in its water coverage services to a similar level to that of three decades earlier. Three decades of efforts were lost in one week, and it will take years to once again reach the coverage achieved prior to Hurricane Mitch.

While in theory planning for water distribution among the population for extended periods during disaster situations (for example using tankers) is certainly possible, the reality is that it poses a significant logistical challenge, requiring the utilisation of resources that Central American countries would have great difficulty in allocating. In the past, it was found that even large cities did not have the logistical resources required to plan large-scale water distribution during an emergency, and instead resorted to simply restoring existing water systems.

'Too much water, too little water...main cause of disasters' is particularly relevant when referring to the water availability during a disaster. This is because often the lack of access to freshwater may pose a threat to not only those communities directly affected (loss of lives, livelihoods, property) but also those not directly affected by a disaster. If they lack this basic service, they too will become victims of the disaster.

The most economically feasible way of securing water provision during disaster situations is to geographically plan, design and build infrastructure, taking into consideration natural hazards as conditional factors, and assessing their potential impact on surrounding communities. In a similar manner, infrastructure related to water provision must also incorporate mitigation measures for ensuring that systems will function under difficult conditions while providing those addressing emergencies with the necessary resources.

Some communities settle in known disaster-prone areas, placing themselves at increased risk when faced with a natural hazard. In such cases it is extremely difficult to foster a culture of disaster reduction due to the reality that the communities should not have settled in such areas in the first place. By providing infrastructure and services to communities in disaster-prone areas, local authorities are in fact endorsing human settlement in areas at risk. Instead, authorities should use planning methods to define and guide safe settlement, and subsequently build infrastructure to provide essential services that will encourage communities to live in safer areas.

In order that authorities work towards reducing the vulnerability of both communities and infrastructure, an integral approach to risk management is needed. By being conscious of the importance of freshwater infrastructure when addressing both emergency situations caused by a disaster and the recovery phase afterwards, local authorities can significantly reduce vulnerability to natural hazards and safely secure water provision for communities.