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Disasters, Disability and Technology

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Disasters, Disability and Technology

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Abstract

Ashok Hans and Reena Mohanty appeal for international standards to be set for disability in disaster management and response. They assess technologies available during disasters and argue that excluding the disabled out of disaster policies and plans and technology usage is a violation of their basic human rights.

Keywords:

Tsunami, vulnerability, international standards, communication technology

Introduction

In the last few decades, technology has advanced at such a rapid pace that it has been difficult to keep pace with it. We only know that many barriers have been broken, for instance in space, nuclear and medical technology, but despite this, these technologies are not available to everyone and in some areas they are not available at all. One such sector is that of disasters.

From our experiences in disasters, we have come to realize that they affect vulnerable groups most, especially women, children, elderly and the disabled. Disasters have not only affected adversely the disabled but also a large number of people who become disabled due to them. In most earthquakes, for instance, in Ukraine, Kashmir and Iran, many people sustained spinal injuries. These groups are particularly vulnerable by virtue of their lower economic, social and political status and obstructed mobility, hearing, speech, vision and intellectual level.

This paper attempts to focus on the impact of disasters on the disabled and the technology available and required by them during disasters. It also assesses the technology used and in conclusion suggests future strategies that could be adopted.

Role of technology in disasters

The first technology to be used related to the disabled is communication technology, which has been recognized as integral to disaster management. This technology is used in various phases of preparedness and mitigation as well as emergency and response. Some new technologies have emerged in recent years that have been found useful even for rural or scattered communities. These include the Internet, mobile phones, e-mail, radio and television.

In many parts of the world, the Internet provides a potentially useful tool for disaster information and mitigation communication, but the only drawback is that the Internet is not available to those who cannot see. In most rural communities, the Internet is also an unattainable commodity and the only warning technology is radio and television. Then there are ham radios and satellite phones owned usually by communities for warning purposes. Most technology as we see is linked to warning, and in other stages of disasters the technology linkage is broken and not accessible.

Disability and disasters

The magnitude of some disasters is generally so high that individuals and communities cannot cope with them alone. Complete social structures may even be destroyed, and so everyday life is disrupted. In these circumstances, it must be understood that technology plays a limited though an important role especially during emergency situations.

Although the disabled are among the most vulnerable, as we have noticed during recent disasters, disabled people's needs are not recognized, whether it is in formulating policy or implementing programmes. They are not included in any decision making or invited to participate in committees to manage disasters nor is funding earmarked for disability needs. The inequality that the disabled experience in society is exacerbated during disasters and there is no recognition of disability differences and their specific needs.

The disabled use technology more than the non-disabled in their daily life. Wheel chairs, hearing aids, remote controls, special computer aids, software and other devices are part of their lives. What is of priority to most disabled people are the technologies of daily use. They might lose these items in disasters, or they might be damaged. When they lose them during a disaster it affects them critically. If they have lost carers they might not even be able to use them. Transportation systems are usually not accessible, nor are shelters. If the disabled cannot hear, for instance, warning systems, they are of no use to them. At the same time, technology is useful to meet the challenges confronting us during disasters. By creating disaster mitigation and preparedness systems accessible to all, technology can prove an important tool. Assisting the disabled should therefore be part of any disaster preparedness and mitigation plans.

During an e-discussion 'Disabled and other Vulnerable People in Natural Disasters', organized and hosted by the World Bank, questions such as why journalists can reach disaster areas anywhere in the world and cover them by using communication technology, while those overwhelmed with disasters cannot, were debated.¹

Communication systems used during disasters

Satellite and mobile phones can also be used by officials to keep track of the disabled so that they can be assisted. However, this technology is particularly not usable for the deaf. A network of wireless towers and fixed phone line connections could be set up through which alerts on emergencies like tsunamis or tornadoes, could be sent out and could be of great importance as each minute would assist in saving lives. Wireless has been found to be the most useful technology worldwide as it is available even in rural India and most of Africa, though many communities are still left out of its loop and for them this is not a feasible solution. It has limited usage also as during disasters cellular phone towers and transmitters are destroyed. Also, during power failures phones cannot be charged and fail to operate. In disaster-prone areas, cell phones which have large capacity and stand by battery power – or better, up-graded batteries with extended time limits – are needed. The other options available are generators, which can run for about a week. There are also 'hand-crank' light-weight generators also available, but all these need to become part of disaster preparedness policies.

After Hurricane Katrina, most people were found to have lost cell phone usage in the area for between several days and up to many weeks because cell towers and their back up on-site generators were destroyed.

Early warning systems could also rely on SMS messages, as they are the fastest way of communicating with many people. To help the blind, the only communication available is by using a cell phone running the Symbion operating system, which is expensive, or secondly purchasing a special piece of software that you must run on the cell phone and requires outside funding.

HAM radios are very useful as are satellite phones during disasters. Toll-free numbers can also be used by communities before and during the emergency. HAM radios still require masts and are financially out of reach of the average person in a developing country but can be purchased through external funding sources for communities. It is important that this equipment be maintained properly and if the disabled are involved at this stage they can become part of local disaster plans.

Without electricity, computers and TVs also are useless except as early warning systems.

The most important issue highlighted from discussions and our own earlier experiences during disasters was that while technology is essential in emergencies, it is not accessible to the disabled, many of whom cannot use high technology as they may not know how to. Besides, it has also been noted that hi-tech equipment usually breaks down during disasters.

Disability and technology during disasters

If the disabled are to make use of existing technology, certain steps must be taken to make it accessible to them. Some simple things can be done:

- In preparedness programmes, networks need to be built linking emergency operation centres, emergency broadcasting systems and front-line emergency responders or communities. This network can provide information to communities about disaster preparedness and information on impending disasters to provide the warning necessary. It is necessary during the emergency phase when damage has to be assessed and relief provided.
- Before and during emergencies, announcements must be made so that they can be read/seen/heard by people with varied disabilities. Coping strategies must acknowledge the differences. If no deaf interpreters are available, simple drawings could be used. Multiple strategies need to be adopted. If hot lines are established, the disabled must be made aware of their existence and usage. HAM radios and mobiles could be made available to DPOs with funding available from external sources.
- Despite wide networks available, no attempt is made to reach out to disabled communities both in developing and developed countries. Although there is a possibility for application of communication technologies in mitigation and prevention of disasters, there are social and technical aspects to the application of this technology. Some communities such as the disabled are completely isolated from the mainstream and they are usually the very poor, and are made poorer by disasters. In this context, all types of technology are inaccessible to them, even wheel chairs, hearing aids or walking sticks for the blind. Therefore, systems in each community for disseminating warnings to the disabled of an impending disaster are needed.

Technology itself is less of an issue during disasters – what is more important is how the disabled can be helped. The importance of technology – especially high technology – is overrated. Most technology has no universal usage and most high technologies are too expensive for isolated poor communities to access. People should therefore think beyond high technology issues and come up with mainstreaming disability issues in disaster management and response as a whole.

Conclusion

In any democratic political system all citizens are equal in all aspects. In this context, therefore, we cannot exclude the disabled from national policies and programmes. One dimension relates to disasters preparedness, and it can be argued that disaster management and response must be considered within a broad development paradigm. If the women, disabled and old are excluded, then development itself suffers, while their inclusion would mean that the disaster policy is holistic and comprehensive. In any cohesive policy, technology would be accessible to all but has to be part of an overall strategy to include the disabled in disaster policies and programmes. While it is easy to envision this situation, it is difficult to achieve it. Recognizing this, a small group of experts met during the annual meeting of the Global Health Research Forum held in Mumbai in 2005. Participants concluded that if this stage has to be reached International Standards must be adopted which would²

- Ensure that warning systems are disability-friendly, that is, meet universal design principles.
- Ensure that universal design principles are met in facilities housing services for disaster relief to ensure that they are disability-friendly and accessible for the many more people becoming impaired during disasters and for disabled people already living in disaster-affected countries.
- Create a 'level playing field' by providing funding for the active participation of members of the disability community in governance, including for attendance at meetings and policy-making initiatives at all levels, to ensure that their right to participate is not violated.
- Support to medical services and to local groups, with priority given to ensuring access to supports and services for people whose health and well-being is particularly at risk during these times (disabled people, pregnant women, very young and very old people, orphans).

It is during disasters that we see the disabled lose their rights. At every stage, whether it is preparedness, relief, rehabilitation or reconstruction, the disabled are left out. No funding is provided to them. Any nation or community that isolates the disabled and excludes them from its processes violates their basic human rights. That is why we need standards to protect, standards that are at all levels – international, national and local. Standards that will bridge the North–South divide and be based on disabled voices.

Notes

¹ This Discussion started on 22 May and continued till 9 June 2006. Among all other topics, *Disaster and Technology* was one. We are grateful to Moira Horgan Jones, Ex Director DPI for coordinating the discussion with us and the large number of participants who joined it. The discussions are available at World Bank. 2006. <http://www.dgroups.org/groups/worldbank/Disaster-Disability>

² The Mumbai meeting was made possible by the keen interest taken by Mary Anne Burke of the Global Health Research Forum who not only coordinated the meeting and prepared its proceedings which are available on www.smrcorissa.org

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