

Reassessing India's Disaster Management Preparedness and the Role of the Indian Armed Forces

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In recent years, the intensity of the occurrence of natural disasters has increased manifold. Responding to this, the Government of India has undertaken various measures to mitigate the impact of disasters. Even so, the response of the civil authorities is often found inadequate and the armed forces are called out to assist the civil administration. The armed forces never fail to respond in a prompt manner, but without proper data on various local resources, skills, essential services and equipment. Hence, there is a dire need of the armed forces to be trained in the field of disaster management to deal with disasters of various types.

Introduction

The vulnerability of mankind to disasters of various types has increased considerably all over the world. It has posed new and unconventional challenges to the nations and even compelled the policymakers to redefine the concept of security. In such an evolving environment, the concept of disaster management has gained much significance. After Japan was hit by the tsunami on March 11, 2011 followed by the nuclear disaster at the Fukushima I Nuclear Power Plant that resulted in the loss of valuable lives and destruction of infrastructure, disaster management is being discussed worldwide. The situation in India is not better since 55 per cent of India's landmass is prone to earthquakes; 68 per cent is vulnerable to drought; 12 per cent to floods; and 8 per cent to cyclones apart from the heat waves, and severe storms.¹ Nonetheless, the approach of combating disasters within a policy framework is of recent origin in India. In the past, when disaster struck, the department of relief and rehabilitation of the Union Ministry of Agriculture was given the charge of providing relief material.² Its approach had primarily remained post-disaster management centric. However, with the enactment of the Disaster Management Act of 2005, there has been a paradigm shift from response and relief to mitigation and preparedness.

This paper examines disaster preparedness in India and the related role of the armed forces. It also analyses the deployment of the armed forces in disaster management in the near future and seeks to make policy recommendations that

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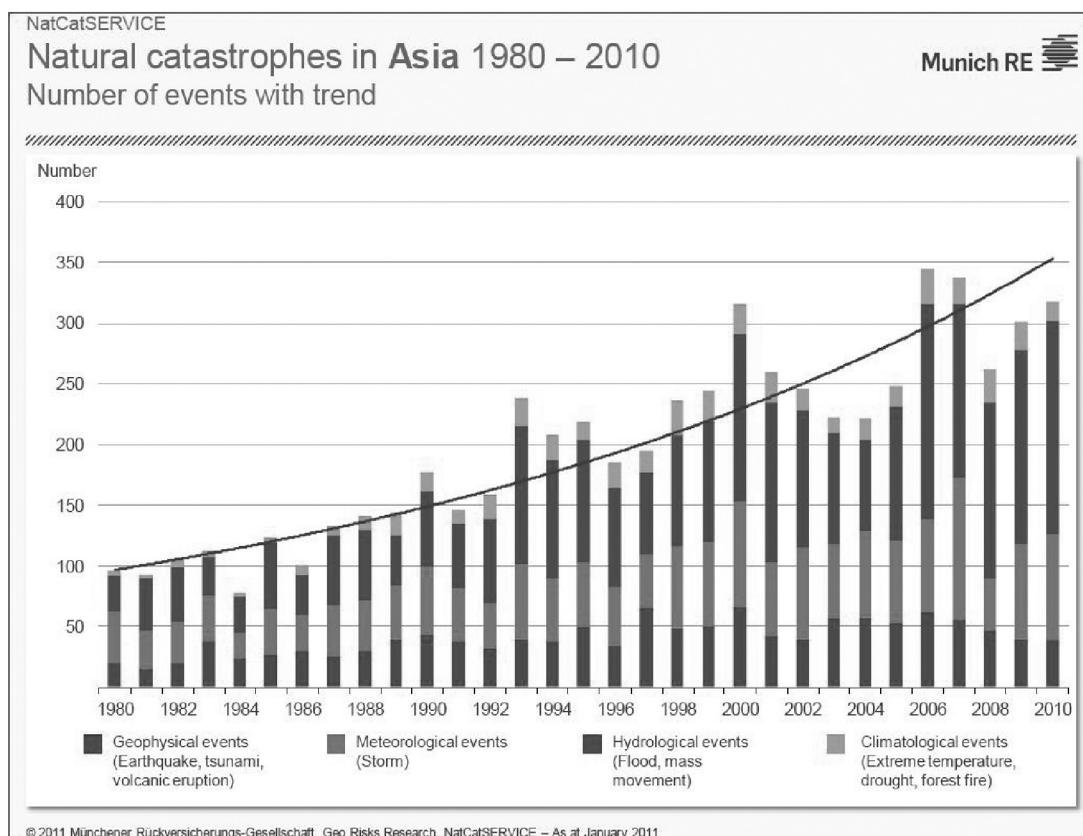
could augment the capability of the armed forces to respond to such unconventional threats.

Disasters and Armed Forces (Disasters as Threat to National Security)

The trend of occurrence of disasters—both natural and man-made—is increasing and will escalate in future. Disasters like tsunamis and earthquakes, which have been the most destructive, along with the floods and droughts that arise from extreme weather conditions, are expected to get worse due to adverse impact of climate change. India has also experienced the some of the worst industrial and infrastructure related disasters in the past, including the Bhopal gas leak disaster in December 1984 caused by the leakage of methyl isocyanate gas which resulted in numerous casualties.³

In the 21st century, the 2001 Bhuj earthquake; the 2004 tsunami; the 2005 earthquake in Kashmir; heavy rainfall in Mumbai in 2006 when nearly 1 m rain fell in a single day; the 2008 Bihar Kosi disaster; the August 2010 cloud burst in Leh; and, most recently, the September 2011 Sikkim earthquake have seen the armed forces as first responders.⁴ During the annual monsoon season, floods can be forecast like the rising sun in the Brahmaputra river basin areas, and even without prior warning the armed forces, mainly the army, gear up to respond like an annual ritual. Flood relief by army boats, helicopters, and aircraft are usually reported in the media during the monsoon or cyclone season. Further, while disasters in rural India, such as floods and drought are a part of historic memory, new challenges are also emerging with rapid growth of population leading to migration from rural to urban India, which, in turn, is exposing the unplanned urban centres' vulnerability to various hazards.⁵ Hence, as India urbanises, risks are also increasing. Disasters like earthquakes, industrial accidents, radioactive material leaks, and pandemics have become common. In sum, the future will be more marked by various disasters. The rising trend of disasters in Asia is shown in Graph Chart 1.

Graph Chart1: Natural Catastrophies in Asia 1980-2010



Disaster Preparedness in India

In India, the level of preparedness for disaster management at the centre and in the states is extremely uneven and requires considerable strengthening. The concept of handling disasters with appropriate programmes on disaster management based on the fundamental elements of prevention, mitigation, preparedness, response, relief, and recovery is of recent origin. Significantly, with frequent occurrence of disasters, there is an increasing consensus amongst the states for setting up an effective disaster management mechanism at the state level. However, although the responsibility for coordinating disaster response and relief operation is that of the Union Ministry of Home Affairs (MHA), it is the armed forces under the Ministry of Defence that are called out to assist and manage the situation. Generally, the armed forces respond to disasters as a part of their mandate to aid civil authorities during calamities. Their involvement, however, was meant to work on the principle of being the 'last to enter and the first to leave'. Conversely, in most post-disaster operations, the armed forces have been the first to enter and the last to leave.

Traditionally, since the civil administration remains ill equipped for undertaking quick response to major disasters, the armed forces have been the primary option. As one of the most dedicated, professional, and modern armed forces in the world, the Indian armed forces respond to any disastrous situation with all their might. It is due to their technical competence, trained manpower, and logistical capabilities that they are always ready to rapidly undertake any kind of disaster-related rescue and relief operations.⁶ They are also located in most remote areas where natural calamities are frequent. For instance, when the tsunami hit the Indian coast on December 26, 2004, the Indian armed forces, co-coordinated by the Integrated Defence Staff (IDS), efficiently handled relief, rescue, and evacuation work under Operation Sea Wave, including extending aid to Sri Lanka and Maldives under Operation Rainbow and Operation Castor, respectively.⁷ Whether, it was the Kashmir earthquake of 2005, the tropical cyclone in Bangladesh on November 17, 2007, the fire at Burrabazar in Kolkata on January 12, 2008, the serial blasts at Bangalore and Ahmedabad in July 2008, or the Mumbai attack of November 26, 2008, the roles played by the armed forces are numerous. In August 2010, when Leh, the capital of Ladakh region, was hit by flash floods which killed at least 103 people and left 370 injured⁸, the Indian Army's response brought the situation under control since the formation in Leh had sufficient logistic backup. Further, during the Sikkim earthquake of September 2011, the armed forces showed extraordinary dedication to the call of the hour.

The administrative responsibility for disaster preparedness and management and the task of responding to any kind of disasters has been entrusted to the states. The centre intervenes only when the magnitude of disaster escalates beyond the capability of the state authorities. In such scenarios, the standard procedure for the centre's intervention is determined by the gravity of the disaster, the required scale of relief operations, and the central assistance required for augmenting the financial resources at the disposal of the affected state government.⁹

The Union Ministry of Home Affairs is the nodal ministry for disaster management. The National Crisis Management Committee (NCMC), headed by the Cabinet Secretary and constituted under the Ministry, oversees the various disaster related activities in the country.¹⁰ It functions as a decision-making body and gives directions to the Crisis Management Group (CMG). The CMG is the vital body that actually deals with all the matters related to relief activities in the case of any major disasters.¹¹ Further, for execution of policies formulated in the ministry, the Central Relief Commissioner (CRC) is designated as the nodal officer for coordination of relief operation. The office of the CRC receives all the information related to forecasts and warnings from the Indian metrological department and issues directions for an action plan in response to the situation. Various other ministries are also assigned the responsibility for hazard identification and risk

Table 1: Responsibility of the Various Ministries in Wake of Disasters

Disasters	Nodal Ministry
• Earthquake and Tsunami	MHA/Ministry of Earth Sciences/India Metrological Department (IMD)
• Floods	MHA/Ministry of Water Resources/Central Water Commission (CWC)
• Cyclones	MHA/Ministry of Earth Sciences/IMD
• Drought	Ministry of Agriculture
• Biological Disasters	Ministry of Health and Family Welfare
• Chemical Disasters	Ministry of Environment & Forests
• Nuclear Disasters	Ministry of Atomic Energy
• Air Accidents	Ministry of Civil Aviation
• Railway Accidents	Ministry of Railways

Source: National Disaster Management Authority, Government of India, 2011.

assessment, and respond to disasters related to their field of expertise as shown in Table 1.

The Disaster Management Act enacted on December 23, 2005 empowers the setting up of an effective disaster management system that extends across the whole of India.¹² The Disaster Management Policy of India was framed in 2009 on the basis of this Act. The Government of India claimed to have established institutional and policy mechanisms for response, relief, and rehabilitation. The orientation for handling disaster situations was also changed from relief-centric to a holistic, multi-dimensional, and multi-disciplinary approach involving diverse scientific, engineering, social, and financial processes. It encompasses the entire scope of disaster management activities, i.e., prevention, mitigation, preparedness, response, relief, and rehabilitation.¹³ Further, the Disaster Management Act of 2005 provides for the constitution of the following institutions at national, state and district levels:

- i) The National Disaster Management Authority (NDMA) at the centre chaired by the Prime Minister is responsible for laying down the national policies, plans and guidelines for disaster management.
- ii) The State Disaster Management Authorities (SDMA) for formulating policies and plans for disaster management in the states.

- iii) District Disaster Management Authorities (DDMA) for planning, coordinating, and establishing systems for disaster management at the district level in accordance with the guidelines laid down by the national and state authorities.

However, except for the NDMA, even after six years of the enactment of the Disaster Management Act, SDMA's are yet to be established all over the country and made operational. In some states, the department for disaster management is the changed name of the department of relief and rehabilitation, home guards and emergency fire services with ad hoc personnel. They prepare and respond to disasters as and when the situation arises. Concurrently, the National Institute of Disaster Management (NIDM) at New Delhi was established after the upgradation of the National Centre for Disaster Management. It focuses on human resource development, capacity building, training, research, documentation, and policy advocacy in the field of disaster management. Besides, this, 10 battalions of National Disaster Response Force (NDRF) comprising 144 specialised teams have been trained for various types of natural and man-made disasters. Four battalions have been specially set up for handling radiological, nuclear, biological, and chemical disasters. But, considering the extent of India's hazardous environment and the escalating uneven trend in the occurrence of disasters, the present capability of the civil administration for combating disasters remain inadequate. As a result, the civil authorities rely on the armed forces for major emergency responses. It was observed in the Sikkim earthquake of September 2011 that the state and the central authorities along with the NDRF had fallen short in terms of personnel and logistic backup, and the armed forces—primarily the army—was called out for response and relief operations.

Role of the Armed Forces in Disaster Management

The National Disaster Management Policy approved by the Union Cabinet on October 22, 2009 acknowledges the role of the armed forces in disaster management and states that the armed forces are called only when the coping capability of the civil administration is exhausted. It, however, admits that in practice (as has been in the past) the armed forces are deployed immediately and they have responded promptly.¹⁴ The armed forces have shown their capabilities in communication, search and rescue, health and medical facilities, and transportation by air, and have even been mobilised for assisting neighbouring countries. They also train instructors and disaster management coordinators especially on chemical, biological, radiological, and nuclear (CBRN) aspects, heli-insertion, high altitude rescue, waterman-ship, and training of paramedics. At the national level, the Chief of the Integrated Defence Staff and the Chairman, Chiefs of Staff Committee are already part of the National Executive Committee (NEC) of the NDMA.¹⁵ The policy also envisages the potential of youth organisations such as the National Cadet

Corps (NCC) to support all community-based initiatives and has suggested that they be trained in disaster management.

Since 2006, the Government of India has issued number of guidelines related to disaster management, but those that concern the armed forces (which are not historic tasks, such as flood relief) are the guidelines on medical preparedness, mass casualty management, biological disasters, nuclear and radiological emergencies and chemical disasters (either industrial accidents or terrorism).¹⁶ For nuclear and radiological emergencies, the guidelines spell out that the services need to take over critical operations related to response, rescue and relief, rehabilitation (evacuation and sheltering), and immediate restoration of essential infrastructure like communication, electric power, and transportation.¹⁷ An analysis of the guidelines reveals that trained personnel for such activities are expected to be sourced from the existing military resources and they will respond promptly at short notice.¹⁸ This clearly signifies the high expectation of the NDMA. While a nuclear, biological and chemical (NBC) disaster training centre has been established at the world-class College of Military Engineering (CME), Pune under the aegis of the Corps of Engineers, the field formations are unlikely to have the required trained manpower and equipments to operate in a hazardous NBC environment. Although armoured personnel carriers and tanks may be NBC capable, to presume that the teams would be ready for such operations would be inaccurate.

But, the utilisation of military resources for training the personnel for NBC disasters, including the deployment of equipment for disaster response, has its own negative consequence. Prolonged deployment of military logistics may wear out the equipment meant for the primary task of fighting wars. Since the military equipment has a specific lifespan, maintenance is necessary and replacement takes time. The long-term engagement of armed forces in disaster management also hampers its war fighting capability. There are two views on this, which are discussed in detail below.

Two Views on the Role of Armed Forces in Disaster Management

One view is that the armed forces need to focus on their core competence of war fighting, since training for both as an individual and a collective is a time consuming process. Engagement of the armed forces in disaster management will lead to a shift of focus that may even dilute the effectiveness of the armed forces for war. The other view supports the status quo. Generally, over-reliance on the armed forces has blunted the initiative of civil authorities. When areas vulnerable to natural disaster are well known, the civil administration at local, tehsil, district, and state levels must establish integrated disaster plans. Capabilities need to be created from within their resources, including trained manpower. It is important

to debate on this point as the future engagement of armed forces for secondary tasks like disaster management may lead to an increase in the cost of the overall military training.

Further, there is a general perception among the force commanders that the present organisational structure has been dealing with disasters quite well. Nevertheless, for effective rapid response at short notice, the response teams need strengthening in sub-areas and areas where they are generally located.¹⁹ In this regard, the raising of Territorial Army (TA) battalions for disaster management should be undertaken. There is a need for further training of armed forces personnel in disaster management considering the wide range of skills needed for handling disasters of various types. Training for rescue operations, co-ordination disaster management action through workshops and seminars is essential.

Challenges for the Armed Forces

The challenges facing the armed forces are two-fold. The first is the challenge related to preparedness for disaster response and relief operations, and the second is the increasingly uneven frequency of disasters (see Appendix A). According to ecological intelligence in the public domain, the latter is well-known while the former needs further study in bringing out the role of armed forces in combating disasters.

The involvement of the armed forces in disaster response and relief operation is an important issue in civil-military relations. In cross-border disasters, the armed forces are the primary tool of assistance, as observed during the 2004 tsunami. The guidelines on the use of foreign military and civil defence assets in disaster relief, known as the Oslo Guidelines²⁰, state that the involvement of domestic military forces during disasters is often a first resort due to lack of capacity elsewhere and that the use of foreign military assets should be the last resort. These Guidelines also clearly confirm the involvement of military and civil defence assets in complementing (as an addition to) the existing relief mechanisms. Notably, the final authority for the use of foreign military assets clearly lies with the affected state. For instance, the Indonesian government accepted a good deal of foreign military support following the 2004 tsunami, but limited the deployment to 90 days. The principles of Good Humanitarian Donorship²¹ also mention the primary role played by civilian organisations in humanitarian activities and states that the assistance of foreign military should be in accordance with international humanitarian law and principles. The Red Cross and Red Crescent movements also have their own guidelines on the involvement of the military. The key principles are as follows:

- While maintaining a dialogue with armed forces at all levels, other components of the movement preserve their independence of decision-making and action.

- All components of the movement ensure that they act and are perceived as acting in accordance with the fundamental principles, in particular, independence, neutrality and impartiality.
- Each component draws a clear distinction between the respective roles of military bodies and humanitarian actors paying particular attention to local perceptions and the wider public.
- The use of military assets by a component of the movement—in particular, in countries affected by armed conflict and/or internal strife/disturbance—is a last resort solution, which can only be justified by serious and urgent humanitarian needs as well as by the lack of alternative means.
- The movement does not use armed protection. The nature of the dialogue and interaction with the military, depending on the context, form the nature of engagement between military and humanitarian actors that varies from keeping a safe distance to much closer levels of collaboration, sometimes with recourse to military assets.²²

In the Indian context, the involvement of the armed forces in disasters is primarily in response to the immediate requirement of human resources and technical equipment for rescue and relief operations by the civil authorities of the affected area. They are also expected to act rapidly and effectively.

The introduction of NBC weapons has created a new environment in which the armed forces will have to operate. At the same time, the same force is also expected to secure the civilian population. At present, the CME at Pune is conducting structured courses for NBC environment and it is expected that with slight modifications it would be able to handle chemical, biological, radiation, and nuclear (CBRN) disasters. But, whether the armed forces will be able to handle such a scenario without extensive capacity building is in doubt. Capacity building for CBRN disasters is much needed with the field formations deployed in the rear and border areas.

Recommendations

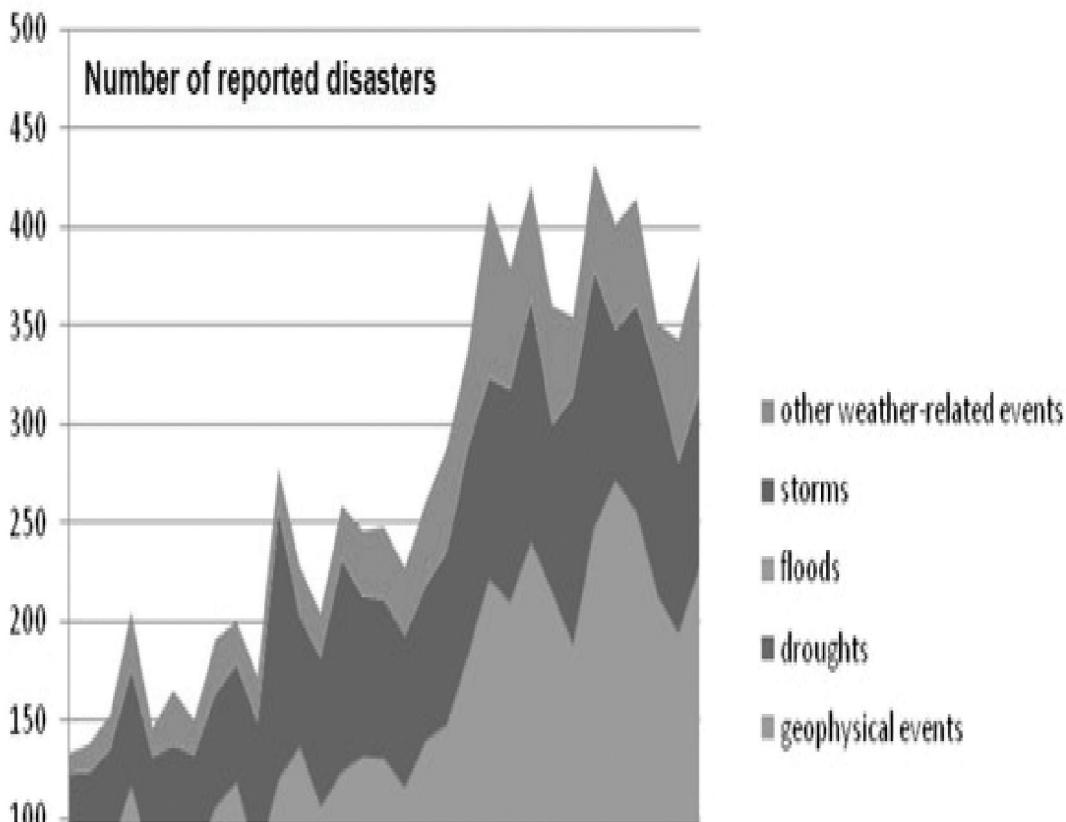
In view of the fact that the disaster management system of the civilian administration is yet to become operational, the civil authorities will continue to depend on the armed forces for disaster response. Hence, a defined role for the armed forces in disaster management is required and the following recommendations may be considered:

- The Indian armed forces handle disasters without any database of the resources, skills, and services essential for effective response at short notice. Emergency preparedness, drills, and forecasting of possible disasters that can be anticipated over time and space are absent. The forces do not have any training establishment except the CME, which is meant for CBRN only. There is a need to establish a centre for excellence in disaster management for the Indian armed forces. It could provide the much needed training for disaster management to enable commanders to facilitate effective response. It also needs to be noted that it is unlikely that the learning from previous major disasters have been recorded or consolidated.
- There is a requirement for necessary staff expertise in disaster response and relief operations. The experiences of response and the relief work during various calamities undertaken by the Headquarters (HQ) and Integrated Defence Staff (IDS) needs to be recorded and analysed for further up-gradation for capacity building.
- A centre of excellence in disaster management for the three services must be set up under the aegis of HQ, IDS, and the Indian National Defence University (INDU). The former chief of the Army staff, General S. Padmanabhan in his book, *General Speaks*, commented on the Bhuj earthquake of the January 2001 and said that the army was inadequately equipped. He was rather impressed by the Turkish team who had structured their unit on the basis of past experience. The US team also was impressive. The study he ordered on disaster relief was never used and is gathering dust.
- Since, the field formations are unlikely to be equipped with the state-of-the-art equipment to deal with disasters, the field formations in the disaster-prone areas need to be given brick formations (logistics) specifically for disaster response at the earliest. This would ensure that the military equipment meant for war is not used for secondary tasks.
- Efforts should be made for using the expertise of the armed forces for bolstering the capacity of the civil authorities, including the disaster response forces. It would enable the latter to achieve self-reliance and thus reduce their dependence on the armed forces. Enhancing capability for risk reduction in urban as well as rural areas and having suitable legislative and regulatory mechanisms to promote safe buildings should be encouraged as part of the civil-military relations programme. Specialised workshops and seminars also need to be conducted at the various command levels.

- A separate budgetary allotment should be made to enable the services to procure equipment for 'disaster bricks' and disaster management related expenditure.



Nature and Frequency of Disasters



Notes:

1. Public Policy Towards Natural Disasters in India, Centre for Budget and Government Accountability, available at http://www.cbgaindia.org/files/working_papers/Public%20Policy%20towards%20Natural%20Disasters%20in%20India.pdf, accessed on June 20, 2011.
2. Government of India (GOI), Ministry of Home Affairs (MHA), National Disaster Management Division, *Disaster Management in India-A Status Report- August 2004*, available at <http://www.ndmindia.nic.in/GolUNDP/ReportPub/DM-Statu-%20Report.pdf>, accessed on October, 17 2011.
3. S. Sriramachari, *The Bhopal Gas Tragedy: An Environmental Disaster*, *Current Science*, Vol. 86, no. 7, 10 April 2004, p. 905.
4. *The Times of India*, 'Archives', available at <http://timesofindia.indiatimes.com/archive.cms>, accessed on November 12, 2011.

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5. GOI, MHA, National Disaster Management Division, *Hazards, Disasters and Your Community*, Version 1.0, available at <http://www.ndmindia.nic.in/GoIUNDP/ReportPub/DRM-Parlt.pdf>, accessed on November 12, 2011.
6. H. Shivananda, Disasters and the role of Indian Armed Forces, August 13, 2008, available at www.merinews.com, accessed on June 21, 2011.
7. Indian Air Force, "Aid to Civil Power", available at http://indianairforce.nic.in/show_page.php?pg_id=115, accessed on June 26, 2011.
8. "Flash floods in Leh Leave 103 dead, 370 Injured", *Times of India*, 6 August 2010.
9. *Report on Disaster Management in India*, Ministry of Home Affairs, GOI, available at <http://www.unisdr.org/eng/country-inform/reports/India-report.pdf>, accessed on June 12, 2011.
10. National Disaster Management Authority (NDMA), *National Disaster Management Guidelines—Incident Response System*, Government of India, July 2010, p.7.
11. National Disaster Management Authority, "National Policy on Disaster Management 2009", Approved by the Union Cabinet on 22nd October 2009, GOI, Ministry of Home Affairs, p.12.
12. Disaster Management Act 2005, No. 53 of 2005, *The Gazette of India*, Regd.no.DL-(N)04/0007/2003-05.
13. Government of India, Ministry of Home Affairs, *State Level Programmes for Strengthening Disaster Management in India*, available at <http://ndmindia.nic.in/DM-Booklet-080211.pdf>, accessed on November 17, 2011.
14. See NDMA, n. 11.
15. *Ibid*, pp. 13-14.
16. Guidelines are on civil defence, earthquakes, chemical (industrial) disasters, medical preparedness and mass casualty management, floods, cyclones, biological disasters, nuclear and radiological emergencies, landslides and snow avalanches, and chemical(Terrorism) disasters.
17. NDMA, *National Disaster Management Guidelines, Management of Nuclear and Radiological Emergencies*, New Delhi, February 2009, p.30.
18. *Ibid*.
19. Debate on continuance of traditional role of the army in disaster management vis-à-vis restructuring of army to deal with disasters, abstract from two-day seminar on "Role of Army in Disaster Management", organized at IDSA by CLAWS on 13 and 14 September 2007.
20. Guidelines On The Use of Military and Civil Defence Assets In Disaster Relief (Oslo Guidelines), UN office for the coordination of Humanitarian Affairs, available at <http://reliefweb.int/node/22924>, accessed on June 20, 2011.
21. The Good Humanitarian Donorship (GHD) initiative is an informal donor forum and network which facilitates collective advancement of GHD principles and good practices. Details are available at <http://www.goodhumanitariandonorship.org/gns/home.aspx>, accessed on December 21, 2011.
22. Charles-Antoine Hofmann and Laura Hudson, "Military Responses to Natural Disasters: Last Resort or Inevitable Trend?", British Red Cross, available at <http://www.odihpn.org/report.asp?id=3030>, accessed on June 20, 2011.