

DISASTER MANAGEMENT: IMPACT ON ARMED FORCES

A Dissertation submitted to the Panjab University, Chandigarh for the award of Master of Philosophy in Social Sciences, in Partial Fulfilment of the requirement for the Advanced Professional Programme in Public Administration (APPPA)

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CERTIFICATE

I have the pleasure to certify that Air Cmde Rohit Mahajan, VM, IAF has pursued his research work and prepared the present dissertation titled “**Disaster Management: Impact on Armed Forces**” under my guidance and supervision. The dissertation is the result of his own research and to the best of my knowledge, no part of it has earlier comprised any other monograph, dissertation or book. This is being submitted to the Panjab University, Chandigarh, for the purpose of Master of Philosophy in Social Sciences in Partial fulfilment of the requirement for the Advanced Professional Programme in Public Administration of Indian Institute of Public Administration (IIPA), New Delhi

I recommended that the dissertation of Air Cmde Rohit Mahajan is worthy of consideration for the award of M.Phil degree of Panjab University, Chandigarh.

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I hope this research will be of use to policy makers in the Service Headquarters who are dealing with the subject of Disaster Management.

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LIST OF ABBREVIATIONS

ACIDS	Assistant Chief of Integrated Staff
ADGMO	Additional Director General Military Operations
ADPC	Asia Disaster Preparedness Centre
AESA	Active electronically scanned array
AFSPA	Armed Forces Special Protection Act
CBRN	Chemical, biological, radiological and nuclear
CISC	Chief of the Integrated Defence Staff and the Chairman, Chiefs of Staff Committee
CMG	Crisis Management Group
COSC	Chief of Staff Committee
CSSR	Collapsed Structure Search & Rescue
DDMA	District Disaster Management Authority
DGMO	Director General Military Operations
DNO	Director Naval Operations
DRR	Disaster Risk Reduction
EOC	Emergency Operational Centre
ESF	Emergency Support Functions
ETF	Engineer Task Force
HADR	Human assistance to Disaster Relief
HAM	Ham Radio
HPC	High Powered Committee
IDNDR	International Decade for Natural Disaster Reduction
IDS	Integrated Defence Staff
INCP	Interim National Command Post
INDU	Indian National Defence University

INSARAG	International Search and Rescue Group
MCE	Mass casualty events
MEA	Ministry of External Affairs
MHA	Ministry of Home Affairs
NBC	Nuclear Biological Chemical
NBCW	Nuclear, biological and chemical warfare
NCCM	National Centre for Calamity Management
NCDM	National Centre for Disaster Management
NCCM	National Crisis Management Committee
NDMA	National Disaster Management Authority
NDMP	National Disaster Management Plan
NDRF	National Disaster Response Force
NEC	National Executive Committee
NGO	Non-governmental organization
NIDM	National Institute of Disaster Management
NSET	National Society for Earthquake Technology
NSG	National Security Guard
PEER	Program for Enhancement of Emergency Response
PRI	Panchayati Raj Institution
QRMT	Quick Reaction Medical Team
SAR	Search and Rescue
SDMA	State Disaster Management Authority
SDRF	State Disaster Response Force
SEC	State Executive Committee
SEC	State Executive Committee
SITREPS	Situation Information Reports
USAID	United States Agency for International Aid

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“We cannot stop natural disasters but we can arm ourselves with knowledge; so many lives wouldn't have to be lost if there was enough disaster preparedness.”

- Petra Nemcova

Chapter 1

INTRODUCTION

Background

1.1 India is one of the most disaster-prone countries of the world. It has had some of the world's most severe droughts, famines, cyclones, earthquakes, chemical disasters, rail accidents, and road accidents. India was, until recently, reactive and only responded to disasters and provided relief from calamity. It was a relief craven disaster management system. India also has world's oldest famine relief codes. There has been a paradigm shift in recent times, and India has become more proactive with emphasis on disaster prevention, mitigation and preparedness.

1.2 In the past, our response has always been reactive which focused on post disaster relief and rehabilitation and very little attention was paid to prevention, mitigation and preparedness. Adequate pre-disaster preparations and actions are needed to be undertaken by various agencies involved in provisioning and execution of aid. There is a need to ensure integration of various Government agencies to ensure timely and efficient rendering of aid. One needs to identify actions to be initiated by various organisations and aid items required to be provisioned for various types of Disasters, well before their occurrence. Government of India have brought about a paradigm shift in the approach to disaster management over the past few years. The new approach proceeds from the conviction that development cannot be sustainable unless disaster mitigation is built into the development process. Another cornerstone of the approach is that mitigation has to be multi-disciplinary spanning across all

sectors of development. The new policy is of the belief that investments in mitigation are much more cost effective than expenditure on relief and rehabilitation.

1.3 It is also important that relief provided to the affected areas is suitable, timely and of good quality as also gets wide media publicity. To ensure efficient rendering of aid, there is a need to ensure integration of various Government agencies involved in provisioning and execution and also to identify their roles and modus operandi. The Disaster Management Act¹ 2005 was passed in December 2005 where-in the nodal agency mandated for response to all types of disasters is the National Disaster Management Authority. The act explicitly spells out the organisations, functions and responsibilities at the National, State and District levels for management of all types of disasters. The act also authorises the raising of battalions of National Disaster Response Force (NDRF), for responding to disaster situations, under the control of the NDMA. Few of these NDRF battalions are to be trained and equipped to deal with Chemical Biological radiation nuclear (CBRN) related disasters / acts of terrorism. In addition, specific units and quick reaction teams of the Indian Army are also prepared to assist in case of a nuclear related disaster situation.

1.4 The steps being taken by the Government emanate from the approach outlined above. The approach has been translated into a National Disaster framework covering institutional mechanisms, disaster prevention strategy, early warning systems, disaster mitigation, preparedness and response and human resource development. In the roadmap the expected inputs, areas of intervention and agencies to be involved at the National, State and district levels have also been identified. The same has been shared with all the State Governments and Union Territory Administrations. Ministries and Departments of Government of India,

1 Disaster Management Act 2005, No. 53 of 2005, *The Gazette of India*, Regd.no.DL-(N)04/0007/2003-05.

and the State Governments/UT administrations have been advised to develop their respective roadmaps taking the national roadmap as a broad guideline. One of the major characteristics of an efficient disaster response lies in institutionalisation of government response mechanisms with a focus on socio-economic needs of the community affected and the capability of these mechanisms to address vulnerabilities in order to build a resilient community. There is, therefore, now a common strategy underpinning the actions being taken by all the participating organizations / stakeholders. However, the involvement of Armed Forces by disaster management authorities at all three levels of the government for all disaster response missions is growing over the years. Rather than focussing on improving strategies of socio-economic inclusion through participatory approach in governing of disasters and creating resilient communities, growing involvement of Armed Forces in disaster response, their high presence in disaster response mechanisms and institutions presented challenges of dependency with biggest setbacks on community preparedness, planning and capabilities.

1.5 The Armed Forces, is synonymous with inner strength, motivation, discipline and operational preparedness. They have always risen to the occasion during major disasters, and earned the admiration of the environment for their singular contribution to disaster response. From times immemorial, the Indian Armed Forces have always done a commendable job, when called to aid civil authorities, especially, in the wake of natural calamities or man-made disasters. Although, the Armed Forces are supposed to be called upon to intervene and take on specific tasks only when the situation is beyond the capability of civil administration, in practice, they are the “core of the government response capacity” and tend to be the first responders of the Government of India in a major disaster. The Armed Forces are well organised and managed to provide support to a full range of public relief services during major disasters and all structures are intended to respond rapidly in a fully mobile and self-

contained manner, to reach out to the remotest areas of the country. While the arrival of the Armed Forces instills confidence in the local populace and gives a boost to the administration, their omnipotence and omnipresence should not engender a sense of fulfilment in the psyche of the State Governments. Both the government and the public repose tremendous faith in the Armed Forces and believe that all emergencies and crises can be handled by the Armed Forces effectively. Over the years, the Armed Forces involvement in aid to civil authority has been steadily increasing and the administration too has steadily increased its dependence on our resources. That notwithstanding, there appears to be a growing concern in some quarters, within the 'defence fraternity', that, of late, the Armed Forces are over involved to aid civil authority. There are two divergent views on this: one recommends dampening our response and discourages over-enthusiasm; the other recommends a larger, proactive and more participative role. Fortunately, the Government, of late, has arrested this trend, and has reviewed its policy on disaster management, which now envisages the development of a more self-reliant administrative structure, through a proactive strategy. These reforms notwithstanding, the Armed Forces continue to maintain themselves in a high state of preparedness, so as to save that crucial day for the Nation. In view of an increasing tendency on the part of the civil administration to requisition them for incidents of a routine nature, there is an urgent need to carry out reappraisal of the role of the Armed Forces in aid to civil authority, especially in contingencies relating to disaster management and assess whether over utilisation of Armed Forces is hampering our Operational Preparedness.

Disasters and Armed Forces

1.6 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, cyclones 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 casualties².

1.7 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; , the September 2011 Sikkim earthquake and more recently the Uttarakhand floods in 2014, Srinagar floods in 2015 and Kerala floods in 2018 have seen the Armed Forces as first responders 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. 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.

1.8 In addition, the Indian Armed Forces have also rendered disaster aid to a number of countries in the past, adding yet another dimension to the international disaster response. A number of neighbouring countries look up to India on many a front, especially when struck by a major calamity. India's contribution during Hurricane Katrina in the United States

2 S. Sriramachari, *The Bhopal Gas Tragedy: An Environmental Disaster*, *Current Science*, Vol. 86, no. 7, 10 April 2004, p. 905.

(2005), Fukushima disaster in Japan (2011), Op Maitri in Nepal earthquake (2015) has been widely acknowledged. India because of its Armed Forces strategic reach has also been playing a major role in its neighbourhood to combat local disasters. India's approach to Human Assistance and Disaster Response(HADR) is driven by a set of principles derived from the core values of its foreign policy. One of these is the emphasis on the centrality of territorial sovereignty and principle of non-intervention in the internal affairs of states. India insists that HADR assistance must be provided only with the consent of the country affected and in principle on the basis of a formal request from the state authorities. It is wary of non-governmental organisations gaining access to the affected zones and provide assistance directly to the governments. India underlines the importance of the principle that HADR assistance must be “demand driven”. The western governments argue that the international community must respond to the “demands” of the people in the affected zone. India has often viewed with some concern that the Western approaches are often dictated by strategic considerations, for example during Cyclone Nargis in Myanmar during 2008. India is also extremely cautious about injecting itself into conflict zones with its humanitarian assistance.³With growing regional and global cooperation in disaster reduction and response, the Indian Armed Forces play a vital role befitting India’s emerging status of a regional power.

1.9 A Disaster is event triggered by natural or man-made causes that lead to sudden disruption of normalcy within society, causing widespread damage to life and property. Disruptions in India caused by frequent disaster due to earthquakes, landslides, droughts, floods and cyclones, and occasional man-made tragedies like the gas leak at Bhopal have stirred the nation’s imagination.

3 For a discussion of the divergence between Indian and Western views, see Sarabjeet Singh Parmar, “Humanitarian Assistance and Disaster Relief (HADR) in India’s National Strategy”, *Journal of Defence Studies*, Vol. 6, No. 1, January 2012, pp. 95-99.

Disaster Terminology

Hazard

1.10 Potentially damaging physical event, phenomenon or human activity that may cause loss of life or injury, property damage, social and economic disruption or environmental degradation.

1.11 Hazards are classified on the basis of the origin i.e. Natural (geological, hydro meteorological and biological), human induced process (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity, frequency and probability.

Disaster

1.12 A catastrophe, mishap, calamity in any area, arising from natural or man made causes, which results in substantial loss of life or human suffering, damage destruction of, property, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area. Impacts of Disasters are:

- (a) Loss of lives
- (b) Loss to property and infrastructure
- (c) Damage to livelihood
- (d) Economic Losses
- (e) Environmental Damage-Flora & Fauna
- (f) Sociological & Psychological after effects
- (g) Civil Strife

Risk

1.13 Probability of harmful consequences or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interaction between natural or human-induced hazards and vulnerable conditions Risk – Hazard X Vulnerability

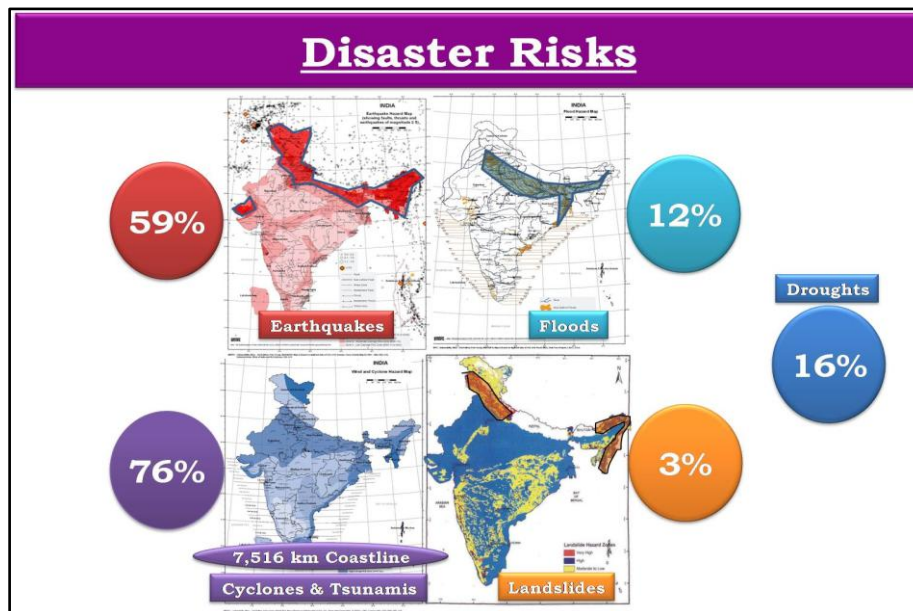


Figure 1: Natural Hazard Map of India

Vulnerability

1.14 The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

Vulnerability can be due to the following factors

- (a) Geographic and Environmental
- (b) Physical
- (c) Social
- (d) Economic
- (e) System

Disaster Management

1.15 Disaster Management⁴ is a continuous and integrated process of planning, organising coordinating, and implementing measures which are necessary for Prevention of danger or

⁴ <http://www.wcpt.org/disaster-management/what-is-disaster-management>

threat of any disaster Mitigation or reduction of risk, capacity Building, Preparedness Prompt Response, Severity or Magnitude assessment, Evacuation, Rescue, Relief, Rehabilitation & Reconstruction.

Prevention

1.16 Prevention means activities to avoid the adverse impact of hazards and means to check from turning into disasters. Examples: avoiding construction in seismically active areas, landslide prone areas and flood plains.

Mitigation

1.17 Mitigation means various structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

Preparedness

1.18 Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

Response

1.19 Specific actions taken immediately after a disaster to provide support to those affected these activities are immediately initiated by the community itself and then by the district, state, national or up to international levels. These are actions and functions undertaken to face the disaster when it occurs. These include warning to vulnerable population, evacuation to avoid further damages, search and rescue, restoration of key infrastructure etc. A quick and effective response requires adequate planning and preparedness.

Relief

1.20 An act of helping or alleviating the conditions of persons who are suffering from the effects of disaster/calamity. A relief plan provides provisions of assistance or intervention during/immediately after a disaster to meet the basic needs of affected people.

Reconstruction

1.21 These include long term measures e.g. houses, livelihoods, infrastructures etc. Capital intensive and needs careful planning and community participation also provides good opportunity to plan developmental activities which are more robust and disaster resilient.

Overview of Disasters

1.22 In the 70s and 80s, droughts and famines were the biggest Killers in India. The situation stands somewhat altered today, wherein it is probably a combination of factors like increased irrigation development, improved reservoir management and food security measures that have greatly reduced deaths caused by droughts and famines. Floods, cyclones, Tsunami and earthquakes dominate (98%) the reported injuries, with ever increasing frequency in the last ten years. The period from 1973 to 2018 has been associated with a large number of earthquakes in Asia⁵, that have a relatively high injury-to-death ratio. Floods, droughts, cyclones, earthquakes, landslides, and avalanches are some of the major natural disasters that repeatedly and increasingly affect India. The fast pace of growth and expansion without comprehensive understanding or preparedness has brought forth a range of issues that seek urgent attention at all levels. In the absence of such measures, the growing numbers in our population are at a risk of prospective hazards such as air accidents, rail accidents, road accidents, boat capsizing, building collapse, electric fires, festival related

5 HPC Report. Department of Agriculture & Co-operation, Govt of India, Oct 2001. Executive Summary.

disasters, forest fires, mine flooding, oil spills, serial bomb blasts, and fires. The safeguards within existing systems are limited and the risks involved high.

Vulnerability Profile of India

1.23 Vulnerability is defined as “the extent to which a community, structure, service, or geographic area is likely to be damaged or disrupted by the impact of particular hazard, on account of their nature, construction and proximity to hazardous terrain or a disaster-prone area”. The concept of vulnerability therefore leads to calculation of risk. Risk management would therefore mean the level of social and economic ability to cope with the resulting event in order to resist major disruption or loss. This susceptibility and vulnerability to each type of threat will depend on its respective differing characteristics. With such an understanding, vulnerability can be examined by the physical as well as social-economic parameters.

1.24 Vulnerability is the susceptibility of being harmed. Scholars have debated on the concepts of hazards and vulnerability. A disaster occurs when hazard interacts with vulnerability. For example, if an earthquake (hazard) occurs, a structurally safe building will withstand the shock (resistant), but a hutment (vulnerable) may collapse; creating a disaster for the hutment dwellers. Vulnerability could be due to the human related factors or natural features. The human related factors that increase vulnerability of India could be intended or unintended, and include apathy, poverty, corruption, illiteracy, land use pattern, technological misuse, and terrorism. Poor land use planning and inconsistent emergency management systems leads to vulnerability to floods, drought, cyclones, earthquake, heat and cold waves, and landslides

1.25 As mentioned, India has a highly diversified range of natural features. Its unique geo-climatic conditions make the country among the most vulnerable to natural disasters in the world. Disasters occur with very high frequency in India and while the society at large has

adapted itself to these regular occurrences, the economic and social costs continue to mount year after year. It is highly vulnerable to floods, drought, cyclones, earthquakes, landslides etc. Almost all parts of India experience one or more these events.

1.26 Many regions in India are highly vulnerable to natural and other disasters on account of geological conditions. About 59%⁶ of the total area of the country is vulnerable to seismic damage of buildings in varying degrees. The most vulnerable areas, according to the present seismic zone map of India, are located in the Himalayan and sub-Himalayan regions. Kutch and the Andaman and Nicobar Islands, which are particularly earthquake hazards prone. Over 8% Indian area of 40 Million hectares is prone to floods, and the average area affected by floods annually is about 8 million hectares. Of the nearly 7,500 kilometres long coastline, approximately 5,700 kilometres is prone to cyclones, 68% area is susceptible to drought, Disasters are no longer limited to natural catastrophes. Manmade emergencies also cause disasters in terms of fatalities and economic losses.

1.27 Disasters have been categorized into 35 types by the Government of India, in the 2001, later added tsunami after 2004 experience and urban flooding. Vulnerability Atlas of India 1997 shows that there are 169 Districts prone to Multi hazards considering only Floods, Earthquake and Cyclone. As per the revised atlas 2006 there are 241 districts covering 20 states are prone to multiple hazards. Major Disasters from 1980 to 2018 is given below. However, details of major disasters in known history of India⁷ is attached as Annexure1.

6 Lt Gen NC Marwah, National Perspective on Disaster Management, USI, Journal Vol-CXLVI No.605, Jul – Sep 2016.

7 https://en.wikipedia.org/wiki/Template:Disasters_in_India_in_2018

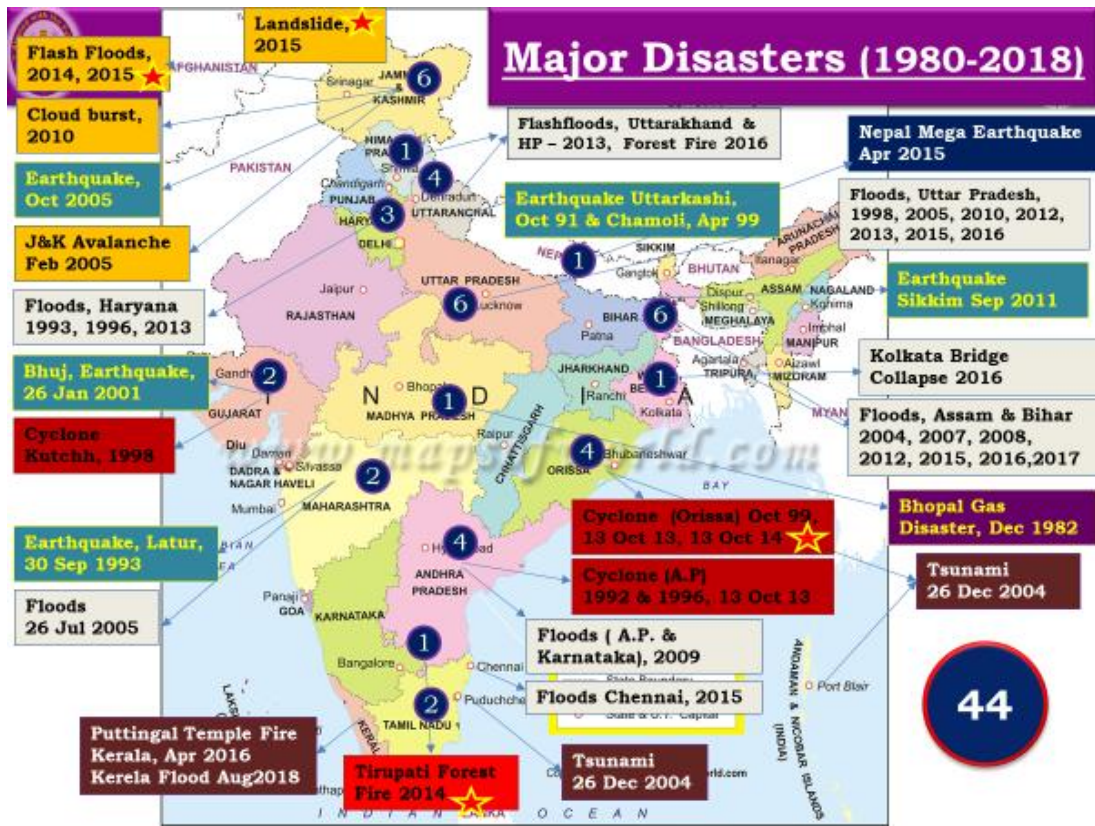


Figure 2: Disaster Map of India (1980-2018)

Chapter 2

METHODOLOGY

Statement of the Problem

2.1 Managing disasters in remote and inaccessible areas where the Armed Forces are either deployed in the vicinity or due to their intrinsic capacity to reach such areas in an early time-frame would necessitate an active role of the Armed Forces, however when called upon in the easily accessible areas, it results in eroding faith of citizens on the civilian government to deliver in times of crisis. As a result, both the government and the public have started reposing tremendous faith in the Armed Forces and started believing that all emergencies and crisis can be handled by the Armed Forces effectively.

2.2 Besides the role of Armed Forces within the country, India's active participation in disaster relief operations across the world has also increased. India's Armed Forces currently play an important role in providing humanitarian assistance abroad. India is careful not to deploy combat troops and focuses on sending doctors, engineers who can contribute to relief activities. Indian naval and air assets are of course used for sea and air lift. India's growing and active role in disaster relief operations in the Indian Ocean Region (IOR) highlights the possibility of India projecting its image as a responsible power in the region. Response to major disasters abroad will involve study and interaction with regional and international civilian & military Human Assistance and Disaster Relief (HADR) organisations. Therefore, Armed Forces must be conversant with the procedures followed by such organisations to ensure seamless interoperability in terms of equipment and practices in handling various types of Disasters.

2.3 If Armed Forces are being viewed as panacea for all woes then does it come at the cost of reduced combat capability which is their primary role. Does the over involvement, a cause for concern considering that the equipment and training of Armed Forces caters for war fighting functions characteristically? Does it impact the operational preparedness of the Armed Forces?

Objectives

2.4 Armed Forces over the years have rendered yeoman service to the Nation in the field of disaster assistance and management, mostly being the first to respond and bring succour to the effected people in remote areas. The decision by the civil authority, whether to requisition, and when to requisition the Armed Forces' aid is therefore crucial, and must be made judiciously, to ensure that the Armed Forces are called out only as a last resort. Also, when employed, it must be ensured that they are utilised to their full potential, with minimum loss of time and greater synergy with civil authorities. With this as the backdrop the main objectives of the research are:

- (a) To study the existing disaster response mechanism post Disaster Management Act 2005 and find out existing gaps in joint civil military coordination.
- (b) To study reasons necessitating increased deployment of Armed Forces in Disaster Management despite institutionalisation of National Disaster Response Force and State Disaster Response Forces.
- (c) To analyse the impact on Operational preparedness in view of growing involvement of Armed Forces apparatus and equipment.
- (d) To recommend amendments that need to be done in the already existing institutionalised mechanism, for Armed Forces to be better prepared for future.

Research Design

2.5 The utilisation of potent machinery like Armed Forces in disaster management can be extremely effective and responsive considering its outreach in all parts of the country provided that gaps in joint civil military coordination are overcome along with the necessary changes in the already existing institutionalised mechanisms. Can the over involvement in such operations compliment the combat capability of Armed Forces? Therefore, in order to find solutions, the research design adopted will be Exploratory and Descriptive.

Rationale/Justification

2.6 The role of Armed Forces in disaster management is very important thus making Disaster management synonymous with Armed Forces. The Disaster Management Act 2005 is a vital instrument which explains the role and functions of various agencies. It is also a tool to bring in a sense of accountability and responsibility among the various stakeholders. However, of late, the Armed Forces are seemed to be over-involved in aid to civil authority. For the military planners, rising trend of involvement of Armed Forces in Aid to Civil Authority would mean increasing utilisation of resources and platforms and in turn affecting Operational preparedness. Is there a genuine requirement for the Armed Forces to be called out for such duties now that NDMA is fully raised and operational? There appears to be a growing concern in some quarters, within the 'defence fraternity' regarding Armed Forces utilisation under Aid to civil authority clause and therefore the need to investigate into greater details.

Research Questions

2.7 The pertinent research questions that arise are as under: -

- (a) What has been the extent of participation of Armed Forces for Disaster Relief within and outside the country?

- (b) What are the challenges for Armed Forces in Disaster Relief?
- (c) Does the increasing role in disaster response affect Operational preparedness of the Armed Forces?
- (d) Does the growing involvement of Armed Forces in disaster management impose greater responsibility on them and absolve other players of their responsibilities as first responders?

Limitations

2.8 Considering the sensitivity of the topic especially while dealing with aspects of operational preparedness and availability of time the study has the limitation with regard to access to documentation and statistics of Armed Forces. Army, Navy and Air force as part of Disaster Management have undertaken a number of operations in the past which have their effects on individual Service but these are restricted documents and were difficult to obtain. Suffice to say that the impact on operational preparedness has been brought out in terms of aspects which are generic in nature. Effects of participation in disaster management among the three Services is more tangible in Air Force because use of platforms along with their cost of reimbursement is easily quantifiable. Therefore, statistics of operations have been restricted to Air Force and the effects on the operational readiness in terms of training, availability of platforms, fatigue and morale are more specific to Air Force. The details of flying carried out towards HADR is classified and thus only sample years have been reflected to demonstrate the complexity and gravity of the issue.

Methodology

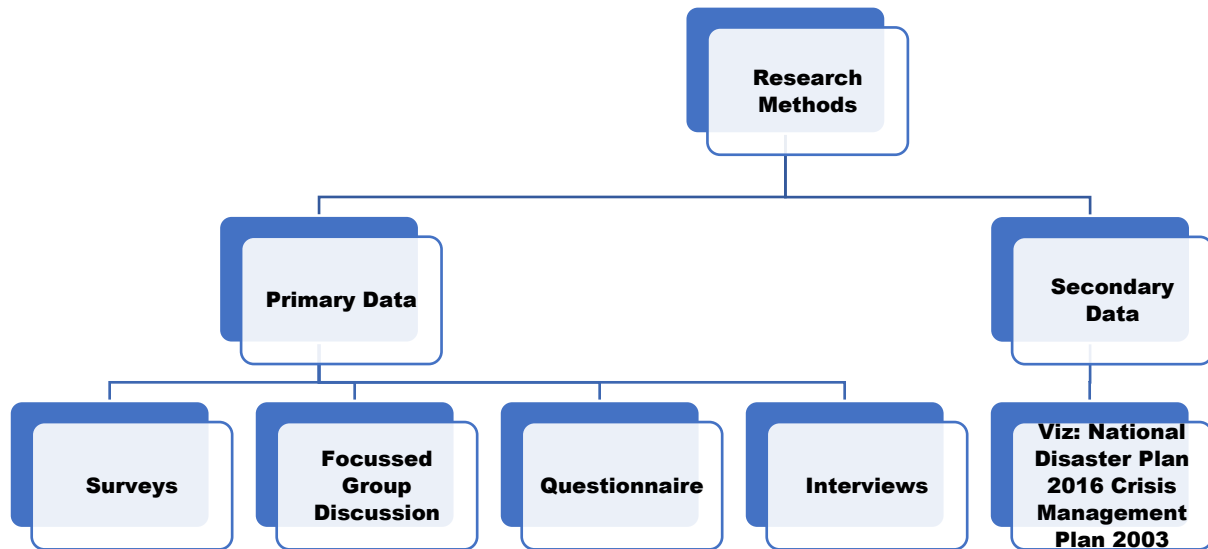


Figure –3: Methodology

2.9 The methodology of research is based on analysis of Primary Data through interviews, surveys, Focussed Group Discussions and questionnaire. Interview with key personnel of Headquarters Integrated Defence and Air Force was undertaken to study the impact of increasing involvement on operational preparedness. The Secondary data for the period from 1999 to 2018 has been used to do the quantitative research. A google questionnaire was prepared to obtain views from various serving defence personnel with various length of service with regard to employment of Armed Forces towards Disaster Relief. Questions were asked regarding joint civil military coordination and issues. In addition, some questions were set to seek views of serving personnel regarding growing trend of utilisation of Armed Forces towards both HADR and Aid to Civil Authority and their impact on Operational preparedness. The Google questionnaire was administered to 60 personnel. A total of 60 questionnaires were sent and 50 responded.

2.10 Face to face discussion with help of questionnaire with domain experts both from civil and Armed Forces was undertaken for primary data collection. In addition, the selected sources for secondary data are given below: -

- (a) National Disaster Management Guidelines
- (b) National Disaster Management Act 2005
- (c) National Disaster Management Plan 2016
- (d) Crisis Management plan 2003 by Cabinet Secretariat, Govt. of India
- (e) Govt. Instructions on Aid to the Civil Authorities by the Armed Forces, 1970
- (f) Analysis of documents held with Service HQs

Research Design and Methods

2.11 The utilisation of potent machinery like Armed Forces in disaster management can be extremely effective and responsive considering its outreach in all parts of the country provided that gaps in joint civil military coordination are overcome along with the necessary changes in the already existing institutionalised mechanisms. Can the over involvement in such operations compliment the combat capability of Armed Forces? Therefore, in order to find solutions, the research design adopted is Exploratory and Descriptive.

Review Of Literature

2.12 Disasters strike with virtual regularity, almost every year resulting in heavy casualties as compared to wars/ conflicts. Considering that each time Armed Forces have to play a role of first responders though not mandated as per Disaster Management (DM) Act,(2005), its impact on the operational preparedness of the Armed Forces would need to be studied. The pressure to perform with distinction always and at a short notice has its own challenges for Armed Forces. A lot of articles and research pieces throw light at this facet. A few of them have been elaborated as under.

Role reappraisal for Armed Forces in Disaster response has been emphasised in a research article in a Journal of Centre for Land warfare studies (CLAWS). Though first responder and involved in functional role, Armed Forces are not formally recognised as part of planning process of Disaster Management either at centre or state. The Armed Forces should be deployed as a last resort but not always as the last. An assessment of the situation and need for assistance of the Armed Forces must be anticipated / ascertained by the civil administration. There is a need that involvement and its role in disaster management Act and various guidelines need suitable institutionalisation. (Raj, 2008)

2.13 Singh and etal. (2015) quote in their research article titled Armed Forces in disaster management: challenges in Indian perspective talks about the role of Armed Forces and the challenges faced by them. Further it says that Armed Forces, which are frontline defence of any nation, are expected to carry out all directives that are assigned to them. And they are playing a very big role in disaster management in our country. Their dedication and training are proving a valuable asset for disaster planners. But there is still some areas like coordination with other agencies which needs to be improve for better disaster management (Sanjeev Singh, 2015.)

2.14 A book on “Strategic Disaster Risk Management” documents the issue of critical analyses of the role of civil authorities and Armed Forces in Disaster Risk Management. However, it lacked focus on impact on Operational Preparedness for the armed Force (Ramanand Garge, 2015)

2.15 C Raja Mohan in a research article at Institute of South Asian Studies has comprehensively described, Indian Military Diplomacy while undertaking Humanitarian assistance and Disaster Relief (HADR). It is brought out that collaborative HADR operations beyond own territories can be used as an effective tool for international diplomacy, soft power projection and modernisation of individual capacities of Armed Forces. However, the

article does not bring out the necessity for institutional training and equipping the Armed Forces during joint operations on foreign territories. (Mohan, 2014)

2.16 Government report tabled in Lok Sabha on 12 Aug 2016 brings out the quantum of effort put in by the Armed Forces during the disaster relief. Though the relief was prompt and effective, the issues of coordination and responsibilities while conducting joint civil military operations have not been projected. Challenges and ways to overcome these coordination issues are paramount for handling such situations in future.(Govt, 2016)

2.17 Article in Army Times US by Kyle Rempfer explains about Armed Forces preparedness in tackling Hurricane Florence on eastern seaboard in addition to their national guards. It brings out the Armed Forces preparation in terms of number of troops and specialised equipment and thereby cancellation of basic combat training and graduation ceremonies. This reiterates the fact that undertaking disaster relief does impact the training schedule and the routine exercises which are meant for enhancing combat capability. Hence there is a need to understand the impact of undertaking these operations holistically. (Rempfer, 2018)

2.18 While reporting for India Today, Jeemon Jacob in his article brought out that central forces play a pivotal role in the rescue and relief operations in flood-hit Kerala in Aug 2018. Further, the Chief Minister while applauding efforts of Armed Forces also reiterated that the calamity would have been greater if the forces didn't work hand in hand with the state government. Hence this case brings out that effective coordination between civil and military can bring relief to the needy at the earliest which in turn can reduce the number of casualties in a disaster. The mechanism adopted by the Government of Kerala can provide some lessons and measures which can reduce the gap in civil military coordination.(Jacob, 2018)

Chapterisation

2.19 The broad Chapterisation scheme for this research report is brought out in the following manner: -

- (a) **Chapter 1: Introduction:** The introductory chapter covers brief background of the topic along with the role played by the Armed Forces nationally and internationally.
- (b) **Chapter 2: Methodology:** The chapter covers the Statement of the problem, objectives, justification, research questions, literature review, methodology and limitations of the study.
- (b) **Chapter 3: An overview of Disaster Management in India:** The chapter brings out all the dimensions of Disaster Management pre and post Disaster Management Act 2005. Issues of joint civil military coordination while undertaking operations are covered.
- (c) **Chapter 4: Role of Armed Forces:** This chapter critically examines the role of Armed Forces in disaster management. The reasons necessitating increased deployment and the various challenges for them are also highlighted.
- (d) **Chapter 5: Impact on Operational Preparedness:** This chapter critically examines the impact of increasing trend of involvement of Armed Forces in disaster management. It also discusses the way ahead for Armed Forces.
- (e) **Chapter 6: Conclusion and Recommendations:** The chapter summarises and suggests a few recommendations and reflections emerging from the study.

Chapter 3

DISASTER INFRASTRUCTURE AND ORGANISATION IN INDIA

3.1 Till a few years ago, managing disasters was considered as a set of activities confined to only providing relief and engaging in rehabilitation and the onus of response was entirely attributed to the government; relief funds were already earmarked and further generated / augmented through support from other agencies – regional as well as global and the population remained generally unaware of the impending hazards and hardly contributed towards managing disasters. It would therefore not be entirely incorrect to assume that cost efficiencies involved in saving lives and public property from disasters before their occurrence were never considered. It may be deduced that the institutional mechanism for managing disasters was primitive and archaic in the form of relief commissioners providing initial relief followed by a painfully slow process of rehabilitation.

3.2 Management of disasters to include prevention, mitigation, preparedness, response, relief and rehabilitation requires a responsive and efficient institutional framework. It is much more relevant, especially in the contemporary context highlighted by the conceptual changes that are now in the process of transition. Prevention, mitigation and rehabilitation require many long-term interventions in diverse fields, by a large number of agencies. Immediate response and relief would require a more elaborate institutional mechanism that is trained, prepared and geared for emergency / crisis situations. Dealing with disasters after occurrence should be considered akin to defending against an aggressor with the devastating capacity to cause loss of life, damage to property and developmental breakdown in the social, economic and psychological spheres. The nation as a defender ought to be well organized to prevent disasters, mitigate the adverse effects and be prepared for an effective and efficient response that needs to be executed on a war footing, to contain the serious consequences and stabilize

the environment, followed by long-term recovery and rehabilitation activities. Lots of similarities can be drawn between immediate response consequent to occurrence of a disaster and fighting a war. Combat in future and especially the role of Armed Forces is most likely to be also linked with disasters in the context of humanitarian relief operations/assistance and humanitarian relief operations conducted by the Armed Forces in the aftermath of tsunami in 2004, the Kashmir earthquake in 2005 and the massive earthquake in Sikkim in 2011 are justifiable pre-cursors to such a development. National security is essentially for people and for the development of the nation. Similarly, the prevention and mitigation of disasters contribute towards national development and the need for an institutional framework for preparedness to deal with disasters, their prevention and mitigation cannot be over emphasized.

Need for Revival of Institutional Framework

3.3 Viewed in an academic sense, it is beyond doubt that the conceptual context, strategies and approaches as discussed in the earlier chapters are extremely well founded, pragmatic and sound. It is however also true that conceiving and enunciating a new concept leading to fresh strategies, approaches and policy directives is in fact the beginning, a first step, in the arduous journey to translate these concepts, strategies and approaches into actionable plans and then implement the same to achieve the desired objectives. An effective institutional framework along with a sound organizational set up is required to be established as a vehicle to implement these strategies and approaches. It may not be possible to realize the concept and approaches mentioned earlier without an effective organizational set up. Until and unless the organizational setup planned to be established to implement the new strategies to cope with disasters is effective and efficient, achievement of objectives may forever remain elusive, as these have been in the past.

3.4 Policies and operational programmes must be supported by appropriate organizational structures, systems and attitudes. Every organization differs in these respects, and hence the nature of an individual institution influences the way in which it approaches disaster reduction. Institutional development is therefore a vital part of the risk reduction process and reviving/revitalizing the existing as well as new setups that are coming up would be a challenging task. Institutional framework as such would need to be energized to cope with the challenges while dealing with disasters. The need for well-established systems and unwaveringly strong character of the institutions in terms of organizations, practices, customs, procedures and mechanisms would be vital and very much in demand.

3.5 Disaster management is an important issue that cannot be addressed by one agency, technology or institution alone. It calls for convergence of technologies and institutions with the goal of fulfilling various dimensions of timelines, accuracy, scope and coverage, to match the user needs and finally, assimilation of information for decision-making. An effective institutional framework along with a sound organization was required to be established as a vehicle to implement these strategies and approaches as it may not be possible to realize the concept and approaches mentioned earlier without an effective organizational set up. Towards this end a holistic approach encompassing a suitable mix of policy reforms, institutional changes and technology options are necessary where-in establishment of the National Disaster Management Authority is a step in the right direction.

Fundamentals of Response Mechanism

3.6 Although, disaster risk management must be the responsibility of governments, its success also depends on widespread decision-making and the participation of many others including the Armed Forces and Central Para military forces. It therefore in a way, amounts to collective responsibility, involving many stakeholders. Policy direction and legal foundations may assure legitimacy but it is the professional human resource on the ground

that would be directly involved with managing disasters. The institutional framework should cater to implement disaster prevention and mitigation plans as part of routine developmental activities or as part of on-going long-term recovery and rehabilitation projects consequent to a major disaster in the past. Both, prevention and mitigation measures to include long-term projects and preparedness for immediate response would also require a well-coordinated, rehearsed and orchestrated set of planned activities catering for innumerable contingencies to be employed in an extremely ingenious manner.

3.7 Preparedness and quick response can save lives protect property and lessen disruptions caused by disasters. This calls for a total and effective response, which must subsume the coordinated response of the entire governmental system as also civil society. The response should not only incorporate traditional coping mechanisms, which have evolved over the centuries but also involve meticulous planning and coordination. Cumulative experience over the years points to an urgent need for putting in place a holistic and effective response mechanism which is professional, result-oriented, innovative and people-centric. Such a response is possible only if the organizational behavior is well evolved and institutionalized over a period of time. The response, especially immediately after the disaster, will require a professional approach initiated by many organizations with a well-rehearsed sense of simultaneity and synergy.

Disaster Management Cycle

3.8 The complete disaster management cycle⁸ includes the shaping of public policies and plans that either modify the causes of disasters or mitigate their effects on people, property, and infrastructure. It is only in recent decades that there is a perceptible shift in focus from disaster relief to disaster preparedness and prevention. The shift in approach has brought a

⁸<http://mjcetenvsci.blogspot.in/2013/11/diasater-management-cycle.html>

significant positive change even though the multitude and frequency of disasters in the country has increased. The focus is on disaster resilient India with Build back better concept and have more focus on disaster⁹ risk reduction by mitigation¹⁰, capacity building and institutionalised mechanism.



Figure – 4: Disaster Management Cycle

Overview of Institutional Mechanism – Prior to 2002

3.9 *Organizational Structure at National Level:* An administrative set up had existed in the country at National, State and District levels for a long time and functioned more or less in a stand-alone mode. This was primarily established to facilitate relief and rehabilitation i.e. the approach that was in vogue for managing disasters prior to 2002¹¹. Besides the important role played by the Union Cabinet itself, Cabinet Committee on Management of Natural Disasters, Cabinet Committee on Security, Inter-Ministerial Committee and a High-Level

⁹Disaster-Management-Cycle disastermgmt.bih.nis.in

¹⁰Anjuli Mishra and Awadesh Kumar Singh, “New Dimensions of Disaster Management in India, Perspectives, Approaches and Strategies”, Serials Publications, New Delhi, 2013 pp 427-428

¹¹ *Encyclopaedia of Disaster Management*, Dr SL Goel, Deep & Deep Publications Pvt Ltd, New Delhi, 2006

Committee for recommendations of allocation of funds, the Ministry of Agriculture was earmarked as the nodal ministry for disaster management. Also, Cabinet Committee on management of Natural Disasters was the highest decision-making body for aspects related to natural disasters. The two most important organizations at the National level were as follows:-

- a) ***National Crisis Management Committee (NCMC):*** At the National level, Cabinet Secretary, the highest executive officer, headed the National Crisis Management Committee (NCMC) and the Secretaries of all the concerned Ministries / Departments/Organizations associated with disaster management were the members of the Committee. The NCMC could give directions to any Ministry / Department / Organization for specific actions needed for meeting the crisis situation.
- b) ***Crisis Management Group (CMG):*** The Central Relief Commissioner in the Ministry was the Chairman of the CMG while senior officers designated as nodal officers by the other ministries and departments deputed as members of the group. In the event of a natural disaster, the CMG would meet frequently to review the relief operations and extend all possible assistance required by the affected states.
- c) ***Organizational Structure at State Level:*** The Chief Secretary of the State was in overall charge of the relief operations in the State and also headed a state level committee while relief commissioners were in charge of all relief and rehabilitation measures in the wake of natural disasters in their States.
- d) ***Organizational Structures at District and Local Level:*** The hub for disaster management and relief activities was the district where the District Collector / Deputy Commissioner coordinated the whole mechanism into effect in the capacity of chief administrator. He was also the focal point in the preparation of district plans and in directing, supervising and monitoring relief operations.

Institutional Mechanism in Transition – Post 2002

3.10 International Decade for Natural Disaster Reduction (IDNDR) and its associated programs have indeed provided the desired impetus to focus on the need to evolve the

existing basic and rudimentary concepts, approaches and strategies to deal with disasters. There has been a worldwide shift in policy emphasis from post-disaster relief and rehabilitation to a more proactive approach of disaster preparedness and mitigation. Thus, began a new era in disaster and risk reduction concepts, with an important role assigned to National planning and legislation. Many countries prepared National action plans for disaster risk management and presented them at the World Conference on Natural Disaster Reduction held in Yokohama, Japan, in 1994¹². India too had taken off by commissioning a High-Powered Committee on Disaster Management. Yokohama Strategy and ‘Plan for Action for a Safer World’, 1994 states that "The world is increasingly interdependent where-in all countries shall act in a new spirit of partnership to build a safer world based on common interests and shared responsibility to save human lives, since natural disasters do not respect borders."¹³

3.11 *High Powered Committee (HPC)*:HPC constituted in August 1999, under the Chairmanship of Mr. JC Pant, former Secretary to the Government of India, reviewed Disaster Management in India. It was the first attempt in India towards evolving a systematic, comprehensive and holistic approach towards all disasters. Initially, the scope was confined to preparation of management plans for natural disasters only while subsequently expanded to include man made and NBC disasters. HPC in its vision for a system of disaster management in India had come forth with a clear set of recommendations outlining the work that needs to be done as also the roles and responsibilities for activities that need to be undertaken on an immediate, medium- and long-term basis for specific tasks. The major recommendations are enumerated below:

¹² *Living with Risks: A Global Review of Disaster Reduction Initiatives, 2004 version Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR)*

¹³ *Extracted from; Statement of William O. Jenkins, Jr., Director Homeland Security and Justice Issues. Testimony before the Committee on Homeland Security, U.S. House of Representatives; May 9, 2006*

- a. ***Vision:*** To create disaster free India through confluence of cultures of preparedness, quick response, strategic thinking and prevention.
- b. ***Constitutional Framework:*** Appropriate mention of the subject of disaster management to be included in any one of the lists in seventh schedule.
- c. ***Disaster Management Acts:*** It was recommended that a suitable legislation to provide appropriate legal framework at the National and State levels be introduced as also a national act for calamity management and state disaster management act to be enacted.
- d. ***Regulations:*** Certain regulations, codes and laws relating to various aspects of disaster management exist e.g. coastal regulations, building codes, chemical accidents and fire safety. However, the implementation and enforcement of these still remain weak in the country. For making the laws stringent and to act as a deterrent, it was felt that suitable mechanisms be evolved for stringent enforcement.
- e. ***Cabinet Committee on Disaster Management:*** At the highest level, the all-party National Committee under the Prime Minister and the Working Group set up under the Vice Chairman were recommended to be institutionalized as permanent standing bodies, as the former will help generate the necessary political will, consensus and support while the latter that is the Working Group being a body of experts will evolve the appropriate strategies for implementation of broad policy guidelines of the Cabinet Committee on disaster management as well as the National Committee.
- f. ***Ministry of Disaster Management:*** HPC recommended a separate ministry of disaster management at the national level and a department of disaster management at the state level.

- g. **National Centre for Calamity Management (NCCM):** The NCCM was recommended to be set up at New Delhi. Many State Governments have Disaster Mitigation and Management Centres such as the Centre for Disaster Mitigation and Management at Chennai and Disaster Management Institute at Bhopal. Few states are in the process of establishing such centers. The National Centre for calamity management was recommended to be the nodal agency for all calamities and provide advice to State Governments and local bodies and provide adequate technical and financial support for programs required to be implemented.
- h. **Re-designation of State Relief Commissioners:** To be called Commissioner / Secretary in charge Disaster Management. The resident commissioners of States posted at Delhi to be re-designated as ex-officio Special Commissioner for Disaster Management. Similarly, the District Relief Committee to be rechristened as the District Disaster Management Committee.
- i. **Disaster Management Institutes:** A National Institute for Disaster Management to be established as a center for excellence for creation of knowledge. An Emergency Operations Centre (EOC) to be established at the Institute which would serve as alternate / backup of national EOC, during times of disasters and act as a training institute during normal times.

3.12 The HPC Report was submitted in November 2001 and was accepted in principle by the Government of India. During this period, two disasters struck viz. the Orissa Super Cyclone in October 1999 and Gujarat earthquake in January 2001. Lessons from these were also incorporated in terms of improving the proposed strategy to cope with disasters. The HPC presently stands converted into a Working Group.

Present Institutional Mechanism

3.13 Based on the recommendations of HPC and after the Gujarat earthquake in 2001, the nodal responsibility for managing disasters was shifted from the Department of Agriculture and Cooperation to the Ministry of Home Affairs (MHA) while Ministry of Agriculture continued as the nodal ministry for droughts. The Disaster Management Division has since been functional in MHA since July 2002 however, in view of the highly technical and specific nature of certain disaster events such as air accidents, rail accidents, chemical and biological disasters and nuclear accidents, the ministries dealing with the particular subject have the nodal responsibility to handle such disasters. National Disaster Management Authority (NDMA) was established in Sep 2005, and finally Disaster Management Act was passed on 26 Dec 2005.

National Disaster Management Act 2005

3.14 This legislation has put in place very specific and exclusive mechanism at all levels – National, State and District to engage in a holistic, integrated and continuous manner with the process of Disaster Management. This mechanism is extremely useful in developing capacities to cope with disasters, prepare plans for disaster prevention and management and keeping all systems in readiness for a rapid and quick response.

DM Act 2005

Institutional Mechanism	<u>NDMA Guidelines (19)</u>
<ul style="list-style-type: none">• NDMA, SDMA, DDMA• NEC, SEC• NDRF, SDRF	<ul style="list-style-type: none">• Vulnerability Assessment• Dissemination of Warning• Emergency Response Activities• Coordination• Rapid Damage Assessment• Maintenance of Essential Services• Stocking of Essential Commodities• Medicines• Drinking Water• Shelter/Camps• Community Participation• Evacuation Plan• Activating EOCs• Search & Rescue Teams• Communication• Identification of Nodal Officer• Status of SDRF• Preparedness Drill• Retrofitting in Existing infra
Financial Arrangements	
<ul style="list-style-type: none">• NDR / SDR / DDR Fund• National/State/Dist Disaster Mitigation Fund• Capacity building grants	
Capacity Development	
<ul style="list-style-type: none">• NIDM	
Other Institutions	
<ul style="list-style-type: none">• Civil Defence• Fire services• Home Guards	

Figure – 5: Disaster Management Act 2005

National Structure for DM

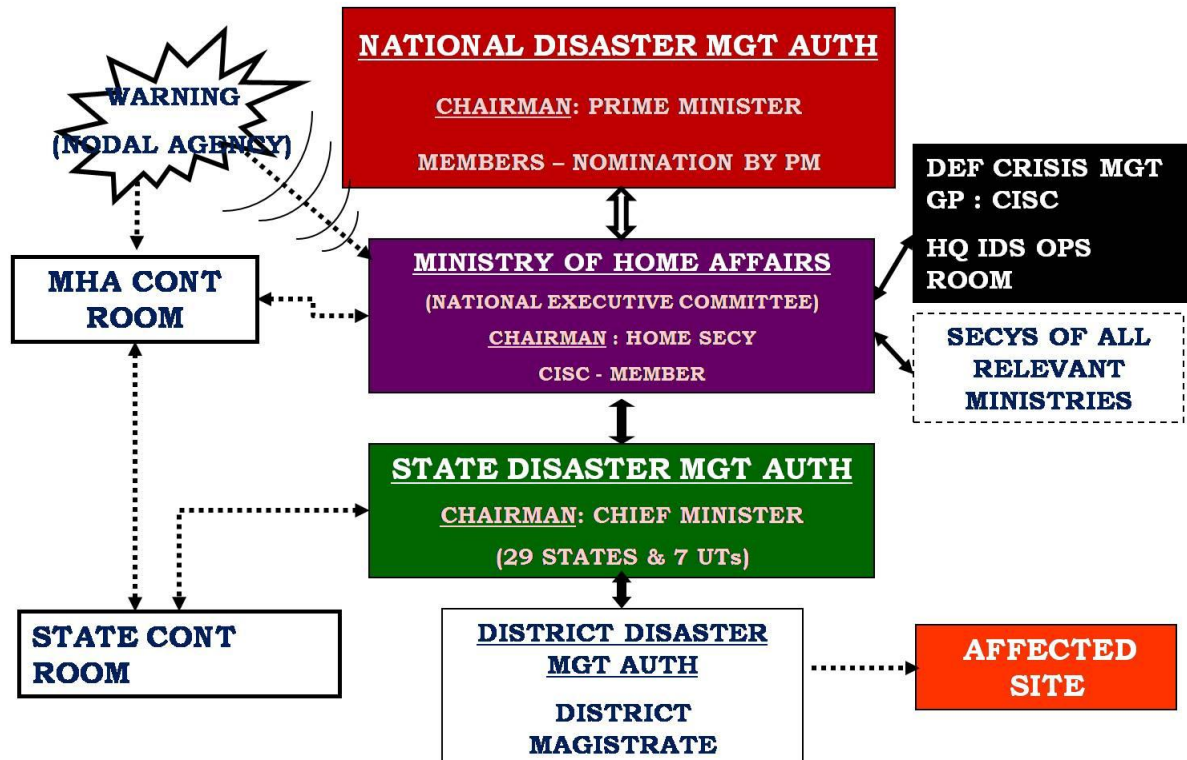


Figure – 6: National Structure for Disaster Management

3.15 The national authority constitutes advisory committee consisting of experts in the field of Disaster Management and having practical experience of disaster management in national state or District level to make recommendations on different aspect of Disaster Management. The National Disaster Management Authority (NDMA) was established after the DM Act of 2005, as the apex body of disaster governance in India. Although it is under the purview of the ministry of Home affairs, the NDMA enjoys the privilege of independent decision making related to budget allocations, planning of post-disaster response and recovery, policy recommendations, maintenance of a national information data base and overall coordination across the country for better governance of disasters(Goel, 2006,). In 2006, The NDMA kicked off with 9 members, of which 8 were heads or chiefs of different sections and the 9th Member was the chairman of the NDMA. The President of India holds

the supreme command of the NDMA and the Prime minister is the ex-officio Chairman of NDMA. These members are nominated by the Chairman. At present, NDMA has 4 members. It shall meet at such time and place as a chairperson of national authority think fit. The national authority will :-

- (a) Lay down policy on Disaster Management
- (b) Approve national plan



Figure – 7: National Disaster Management Authority

- (c) Approve plans prepared by the Ministries or Departments of the Government of India in accordance with the National Plan
- (d) Lay down guidelines to be followed by the State Authorities in drawing up the State Plan
- (e) Lay down guidelines to be followed by the different Ministries or Departments of the Government of India for the purpose of integrating the measures for

prevention of Disaster or the mitigation of its effects in their development plans and projects

- (f) Coordinate the enforcement and implementation of the policy and plan for disaster management
- (g) Recommend provision of funds for the purpose of mitigation
- (h) Provide such support to other countries affected by major disasters as may be determined by the Central Government
- (i) Provide such support to other countries affected by major disasters as may be determined by the Central Government
- (j) Lay down broad policy and guidelines of the functioning of the National Institute of Disaster Management

National Executive Committee (NEC)

3.16 A National Executive Committee of Secretaries of the Central Ministries / Departments assists the Authority and will prepare a National Disaster Management Plan in consonance with the National Policy as laid down, in consultation with the State Governments and expert bodies and organizations. The Home Secretary of Government of India will have administrative control of disaster Management, who shall be chairperson, ex officio. The Chairperson of NEC may invite of the Central Government or State Government for taking part of any committee of NEC and shall exercise shall power and perform such function as maybe prescribed the central Govt in consultation in the National authority. The NEC shall assist the National Authority in the discharge of its function have the responsibility for implementing the policies and plans of the National Authority and ensure the compliance of directions issued by the Central Government for the purpose of disaster management in the country. The National Executive Committee may:-

- (a) Act as the coordinating and monitoring body for disaster management.

- (b) Prepare the National plan to be approved by the National Authority.
- (c) Coordinate and monitor the implementation of the National Policy.
- (d) Lay down guidelines for preparing disaster management plans by different ministries of Departments of the Government of India and the State Authorities.
- (e) Provide necessary technical assistance to the State Governments and the State Authorities for preparing their disaster management plans in accordance with the guidelines laid down by the National Authority.
- (f) Monitor the implementation of the National plan and the plans prepared by the Ministries or Department of the National Authority.
- (g) Monitor the implementation of the guidelines laid down by the National Authority for integrating of measures for prevention of disasters and mitigation by the Ministries or Departments in their development plans and projects.
- (h) Monitor, coordinate and give directions regarding the mitigation and preparedness measures to be taken by different Ministries or Departments and agencies of the Government.
- (i) Evaluate the preparedness at all governmental levels for the purpose of responding to any threatening disaster situation or disaster and give directions, where necessary, for enhancing such preparedness.
- (j) Plan and coordinate specialised training programme for disaster management for different levels of officers, employees and voluntary rescue workers.
- (k) Coordinate response in the event of any threatening disaster situation or disaster.

Empowered Group of Ministers on Disaster Management

3.17 Headed by the Minister of Home Affairs, it comprises 14 additional members – ministers from the Ministry of Rural Development, Railways, Coal and Mines, Power, Textiles, Consumer Affairs, Food and Public Distribution, External Affairs, Defence, Agriculture, Finance, Information and Broadcasting, Health and Family Welfare and the Deputy Chairman of Planning Commission.

National Crisis Management Committee

3.18 A National Crisis Management Committee (NCMC) has been in existence under the Chairmanship of Cabinet Secretary, as mentioned above. The other members are secretaries MHA, MEA, MoD, IB, Railways, Power, Petroleum and Natural Gas, Civil Aviation, Planning Commission, Secretaries of Department of Animal Husbandry and Dairying, Drinking Water and Supply Expenditure, Food and Public Distribution, Health, Road Transport and Highways and Rural Development and CISC, HQ IDS. When a situation is to be handled, it will give such directions to the Crisis Management Group of the Ministry as deemed necessary.

Crisis Management Group (CMG)

3.19 This Group has also been functioning in the past where-in a Relief Commissioner is appointed at the Centre, preferably a Special Secretary from MHA, to deal with matters relating to relief in the wake of major natural calamities. The CMG consists of representatives of the level of joint secretaries in the ministries and departments of Finance, Defence, Food, Civil Supplies, Railways, Power, Urban and Rural Development, Health, Petroleum, Planning Commission, Tribal Affairs, Women and Child Development, ACIDS (Joint Operations), Animal Husbandry, Directors General of India Meteorological Department and Civil Defence, and Communication and Surface Transport.

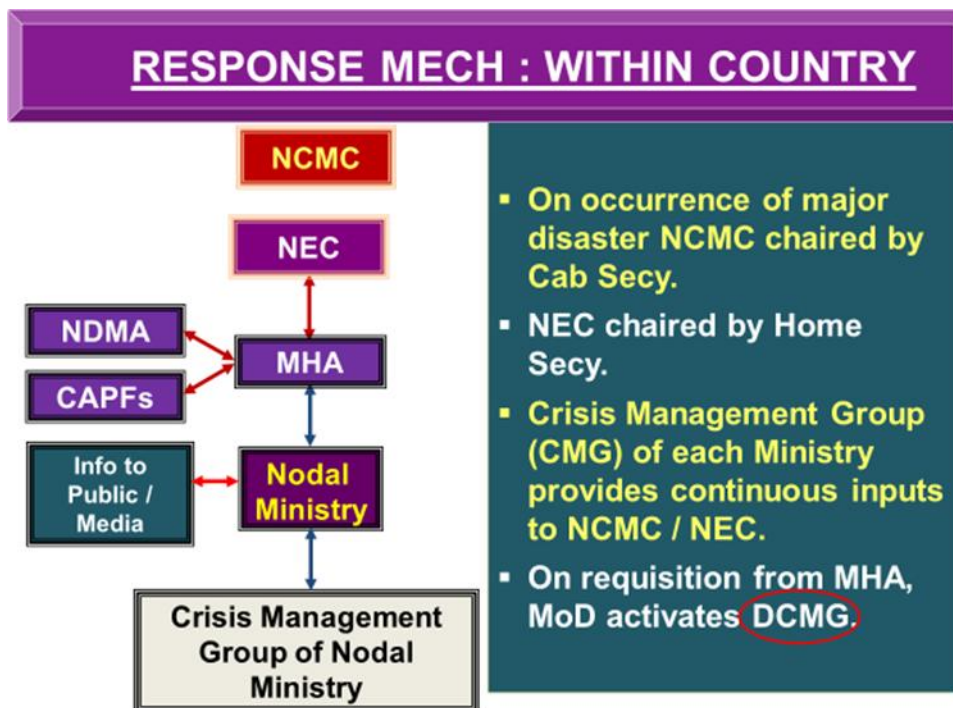


Figure 8: Response Mechanism within India

Organizational Structures at State Level

3.20 At the State level, the SDMA, headed by the Chief Minister, lays down policies and plans for DM in the State. It approves the State Plan in accordance with the guidelines laid down by the NDMA, coordinates the implementation of the State Plan. The Chief Minister being chairperson has ministers of relevant Departments viz. Water Resources, Agriculture, Drinking Water Supply, Environment & Forests, Urban Development, Home and Rural Development as members. Departments of Relief & Rehabilitation that already exist have been restructured into Departments of Disaster Management to cater for aspects related with mitigation and preparedness besides relief and rehabilitation that were earlier being handled. Each State Government is required to constitute a State Executive Committee (SEC) to assist the SDMA, which will be headed by the Chief Secretary to the State.

Organizational Structure at the District Level

3.21 Every state government has a District Disaster Management Authority in each district. Collector, District Magistrate or Deputy Commissioner, as the case may be shall be the Chairperson, along with elected representative of the local authority as the co-chairperson. The other members will include the chief executive officer of the district authority, superintendent of police, chief medical officer and two more district level officers appointed by the state. The Chief Executive Officer will be appointed by the state government and will not be of the rank below Additional Collector, Additional District Magistrate or Additional Deputy Commissioner. Besides directing, supervising and monitoring relief operations, the District Authority will be responsible for coordinating all activities to include prevention, mitigation and preparedness. The erstwhile 'District Coordination and Relief Committee' is being restructured accordingly with a view to ensure that mitigation and prevention is mainstreamed in the short- and long-term development plans of the district. The details regarding constitution of advisory committees and other committees at district level and the functions as well as powers of the District Authority and its chairperson are outlined in the Disaster Management Act. Local Authorities which include Panchayati Raj Institutions (PRIs), Urban Local Bodies, Municipalities, District and Cantonment Boards, and Town Planning Authorities are required ensure capacity building of their officers and employees for managing disasters, and are responsible for carrying out relief, rehabilitation and reconstruction activities in the affected areas.



Figure 9: Major Participants in Disaster Management

National Disaster Response Force

3.22 NDRF is a force of 12 battalions, organised on para-military lines, and manned by persons on deputation from the para-military forces of India: three Border Security Force (BSF), three Central Reserve Police Force (CRPF), two Central Industrial Security Force (CISF), two Indo Tibetan Border Police (ITBP) and two *Sashastra Seema Bal*. The total strength of each battalion is approximately 1,149. Each battalion is capable of providing 18 self-contained specialist search and rescue teams of 45 personnel each including engineers, technicians, electricians, dog squads and medical/paramedics. Government has recently cleared induction of four more battalions totalling about 4,000 personnel for better reaction and effective reach during calamities. NDRF has been constituted for the purpose of specialist response to a threatening disaster situation or disaster. Subject to the provisions of this Act, the Force has been constituted in such manner and, the conditions of service of the members of the Force, including disciplinary provisions therefore, be such as may be prescribed. The general superintendence, direction and control of the Force shall be vested

and exercised by the National Authority and the command and the supervision of the Force shall vest in an officer to be appointed by the Central Government as the Director Central of the National Disaster Response Force. These NDRF battalions are located at twelve different locations in the country based on the vulnerability profile to cut down the response time for their deployment.

3.23 During the preparedness period or in a threatening disaster situation, proactive deployment of these forces will be carried out by the NDMA in consultation with state authorities. NDRF is specialized force for response during disasters. It assists in community training & preparedness for response to disasters. It imparts basic and operation level training to States, Disaster response forces (Police, Civil Defence and Home Guards). It will be proactively deployed during impending disaster situations. During non-disaster situations, it maintains liaison with the States and conducts reconnaissance, rehearsals and mock drills. Besides internal training, NDRF teams get specialized training in various fields like training for INSARAG (International Search and Rescue Group) external classification (IEC). This would enable Indian Search & Rescue teams to deploy abroad under INSARAG. Training has also been conducted by NSET Nepal (National Society for Earthquake Technology), ADPC (Asia Disaster Preparedness Centre, Bangladesh), PEER (Program for Enhancement of Emergency Response) by USAID (United States Agency for International Aid), and CBRN (Mass Casualty Response Teams) for Hazmat Vehicle course at Singapore.

Capabilities and Resources of NDRF

3.24 NDRF is being trained, re-trained and equipped as a specialist force for level three disasters and has the following capabilities

- (a) CSSR (Collapsed Structure Search & Rescue) operations.
- (b) Flood and mountain rescue operations.
- (c) MFR (Medical First Responder).

- (d) Trained & equipped to deal with CBRN emergency
- (e) Deep Diving Search & Rescue
- (f) Canine and Technical Search and Animal disaster response

3.25 Each unit has 48 deep divers, Canine squad with 36 dogs, 9 Doctors, 36 Nurses & 18 Technical, 36 Engineers, 18 Electrical and other specialized pers. It has highly specialized equipment with 24 x 7 Control room in all Battalions and HQ NDRF (New Delhi). The total resources authorised as on date is given below:

Sl. No	Items	Qty Authorised
1.	Inflatable Motor Rescue Boats	72
2.	Fibre Reinforced Plastic (FRP) Boat	06
3.	Life Jacket	1080
4.	Inflatable Lighting Tower	18
5.	Floating Pump	06
6.	Diving Kits for Deep Divers	12
7.	Lifebuoy	1080
8.	Tarpaulin	288
9.	Safety Vest Fluorescent	72
10.	Rope (100m Roll)	36
11.	Megaphone	72
12.	Torch	78
13.	Portable Generator (2.5 KVA)	78
14.	Portable Generator (10.5 KVA)	06
15.	Portable Shelter	72

Table – 1: Details of Equipment Authorised to NDRF Battalion

Other Institutional Stakeholders

3.26 Other than the administrative set ups at National, State, District and local levels; there are various institutional stakeholders who are involved in disaster management at various levels in the country. These include the police and Para-military forces, civil defence and home-guards, fire services, ex-servicemen, non-governmental organizations (NGOs), public and private sector enterprises, media and HAM operators, all of whom have important roles to play.

National Institute of Disaster Management

3.27 The National Institute of Disaster Management (NIDM) was constituted under an Act of Parliament with a vision to play the role of a premier institute for capacity development in India and the region. The efforts in this direction that began with the formation of the National Centre for Disaster Management (NCDM) in 1995 gained impetus with its re-designation as the National Institute of Disaster Management (NIDM) for training and capacity development. Under the Disaster Management Act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management.

3.28 Both as a national Centre and then as the national Institute, NIDM has performed a crucial role in bringing disaster risk reduction to the forefront of the national agenda. The Institute believes that disaster risk reduction is possible only through promotion of a "Culture of Prevention" involving all stakeholders. The Institute works through strategic partnerships with various ministries and departments of the central, state and local governments, academic, research and technical organizations in India and abroad and other bi-lateral and multi-lateral international agencies.

3.29 NIDM has a multi-disciplinary core team of professionals working in various aspects of disaster management. In its endeavour to facilitate training and capacity development, the Institute has state-of-the-art facilities like class rooms, seminar hall and video-conferencing facilities etc. The Institute has a well-stocked library exclusively on the theme of disaster management and mitigation. The Institute provides training in face-to-face, on-line and self-learning mode as well as satellite-based training. In-house and off-campus face-to-face training to the officials of the state governments is provided free of charge including modest boarding and lodging facilities.

3.30 NIDM provides Capacity Building support to various National and State level agencies in the field of Disaster Management & Disaster Risk Reduction. The Institute's vision is to create a Disaster Resilient India by building the capacity at all levels for disaster prevention and preparedness

The National Plan

3.31 The national plan will encompass measures to be taken for the prevention of disaster, or mitigation of their effects. It will include measures to be taken for the integration of mitigation measures in the development plans and measures for preparedness and capacity building to effectively respond to any threatening Disaster situations or Disaster. The National Plan shall be reviewed and updated annually.

National Disaster Management Plan May 2016

3.32 The National Disaster Management Plan (NDMP) provides a framework and direction to the government agencies for all phases of disaster management cycle. The NDMP is a “dynamic document” in the sense that it will be periodically improved keeping up with the emerging global best practices and knowledge base in disaster management. It is in accordance with the provisions of the Disaster Management Act, 2005, the guidance given in the National Policy on Disaster Management 2009 (NPDM), and the established national practices.

3.33 The NDMP recognizes the need to minimize, if not eliminate, any ambiguity in the responsibility framework. It, therefore, specifies who is responsible for what at different stages of managing disasters. The NDMP is envisaged as ready for activation at all times in response to an emergency in any part of the country. It is designed in such a way that it can be implemented as needed on a flexible and scalable manner in all phases of disaster management:

- (a) Mitigation (prevention and risk reduction),
- (b) Preparedness,
- (c) Response and
- (d) Recovery (immediate restoration to build-back better).

3.34 The NDMP is consistent with the approaches promoted globally by the United Nations, in particular the Sendai Framework(2015) for Disaster risk Reduction 2015-2030. It is a non-binding agreement, which the signatory nations will attempt to comply with on a voluntary basis. India will make all efforts to contribute to the realization of the global targets by improving the entire disaster management cycle in India by following the recommendations in the Sendai Framework and by adopting globally accepted best practices.

The four priorities for action under the Sendai Framework are:

- (a) Understanding disaster risk
- (b) Strengthening disaster risk governance to manage disaster risk.
- (c) Investing in disaster risk reduction for resilience
- (d) Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.¹⁴

3.35 The NDMP incorporates substantively the approach enunciated in the Sendai Framework and will help the country to meet the goals set in the framework. By 2030, the Sendai Framework aims to achieve substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries. The NDMP has been aligned broadly with the goals and priorities set out in the Sendai Framework for Disaster Risk Reduction (DRR). While the four cross-cutting Sendai priorities will be present explicitly or implicitly in every aspect of this plan, certain chapters will have specific priorities as the dominant theme. The plan includes measures that will be implemented over the short,

14 Executive summary National Disaster Management Plan – May 2016.

medium, and long-term more or less over the time horizon the exhaustive. Based on global practices and national experiences, the plan will incorporate changes during the periodic reviews and updates. The Vision is:

“Make India disaster resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihoods, and assets - economic, physical, social, cultural, and environmental - by maximizing the ability to cope with disasters at all levels of administration as well as among communities”.

Armed Forces in Disaster Management

3.36 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. 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 more than often to assist and manage the situation.

Armed Forces Organisational Set Up to Handle Disaster

Coordination at the National Level

3.37 At the national level, the Chief of the Integrated Defence Staff and the Chairman, Chiefs of Staff Committee(CISC) of HQ IDS is already part of the National Executive Committee (NEC) of the NDMA. Activation of Defence Crisis Management Group (DCMG) is notified by the Ministry of Defence. DCMG is the apex committee for co-ordination of Armed Forces response to disasters within as well as outside the country and was

promulgated vide MoD ID No. 14(4)/2003/D (GS-1) dated 03rd May, 2005. Subsequently , in accordance with the *Raksha Mantris* Operational Directive of 2009 issued vide MoD ID No 4/JS(PIC)/2007 dated July 2009, Joint Directive of Chief of Staff Committee(COSC) on Disaster Management has nominated HQ Integrated Defence Staff (operations Branch-Operational Logistics Directorate) as the nodal agency, on behalf of Service HQs and COSC , for interacting with National Disaster Management Authority and assigned Nodal ministries for each disaster , as to specific role envisaged for the Armed Forces. It is chaired by CISC and members are DCIDS (Ops), DG DIA, ACIDS (Joint Ops) from HQ IDS and DGMO and equivalent in Navy and AF, JS (G), DGAFMS. DACIDS (OP Logistics) is the member secretary. Joint Inter Services Control Room' is set up at Interim National Command Post (INCP) in South Block. Establishment of communication link with agencies involved in Disaster Management is done. Nomination of lead Service for coordinating the operations and Geographical Command to execute plans is finalized. Joint task force is placed under command of the Geographical Command responsible for executing the operations. Flow of information is important and the same is given below:

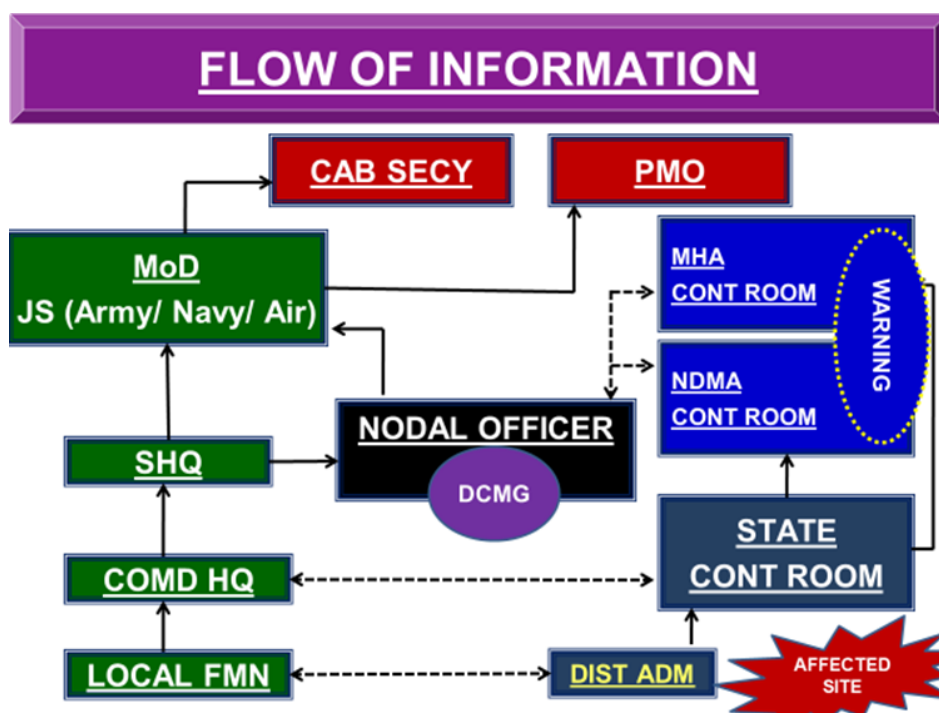


Figure 10: Flow of Information

Coordination at Field Level

3.38 The operations in a particular area are co-ordinated by an Operations Headquarters (Geographical Command so nominated) usually set up in the affected area. Services Headquarters - The Director General Military Operations (DGMO), ADGMO (A), Director Military operations 6 in Army Headquarters; DCNS, ACNS (Information warfare & Operations), Director Naval Operations in Naval Headquarters and Vice Chief of Air Staff (VCAS), ACAS (Operations), Director Operations (Transport & Helicopter) in Air Force Headquarters are charged with co-ordinating the Emergency Response measures for disaster management. Command Headquarters - The respective Services Commanders, through their staff officers, maintain constant liaison with the respective State Governments. The respective Service Command Headquarters thus prepare comprehensive contingency plans and detailed checklists in consultation with the State Governments. The Command Headquarters carry out the following functions:

- (a) Co-ordination / Control / Deployment of various agencies involved – be it relief columns, engineers, technical equipment, ships, aircraft, helicopters, boats, logistic supplies, repair effort, medical assistance etc during Disaster Relief. The Centre of all activity is the Operations Room / Centre, which is manned round the clock throughout the year and in such contingencies, additional staff is provided.
- (b) Close liaison with State Government and other Services authorities / Civil agencies during early warning stage and during conduct of disaster relief operations.
- (c) Keeping respective Services Headquarters informed of the actions initiated, the situation on ground by passing regular Situation information reports (SITREPS) and conveying any requirement from other agencies at the centre, logistic support from the Commands / Services. Initial Control - Disasters in the recent years have shown that in the after-math of major calamities, there is no likelihood of any communications, infrastructure and civil set-up remaining intact. Therefore, in the initial stages, suitable key personnel, both civil and

military and infrastructure / communications equipment will have to be moved by the fastest means to the affected areas. Transport aircraft/helicopters would have to be earmarked and kept ready to move such elements, at short notice.

Role of Defence Crisis Management Group (DCMG) in Disaster Management

3.39 The DCMG would meet as soon as a disaster is reported / anticipated to formulate broad guidelines to deal with the crisis. The initial action is to ensure early establishment of communication link and creation of a tri-Service organization on ground at the disaster site to co-ordinate the efforts of all three Services. The DCMG will be activated on specific direction from JS (Army) on approval of Defence Secretary or by Chief of the Integrated Defence Staff and the Chairman, Chiefs of Staff Committee (CISC) in consultation with Chairman Chief of Staff Committee (COSC). DCMG has functioned effectively and successfully coordinated Armed Forces response during disasters within and outside the country and ensured timely provision of humanitarian assistance. The DCMG at HQ IDS will be the single point contact to handle all the crisis, whether manmade or natural, within or outside the country, wherein Armed Forces assistance is sought. The DCMG set up at HQ IDS is the core Group which shall be activated on as required basis for coordinating the Armed Forces response dealing with any type of crisis involving Armed Forces. DCMG at HQ IDS will act as a nodal agency to coordinate the emergency response of the Armed Forces within and outside the country. The DCMG will be responsible for taking stock of the overall situation, analyse and formulate the military plan for dealing with crisis and coordinate actions at various levels.

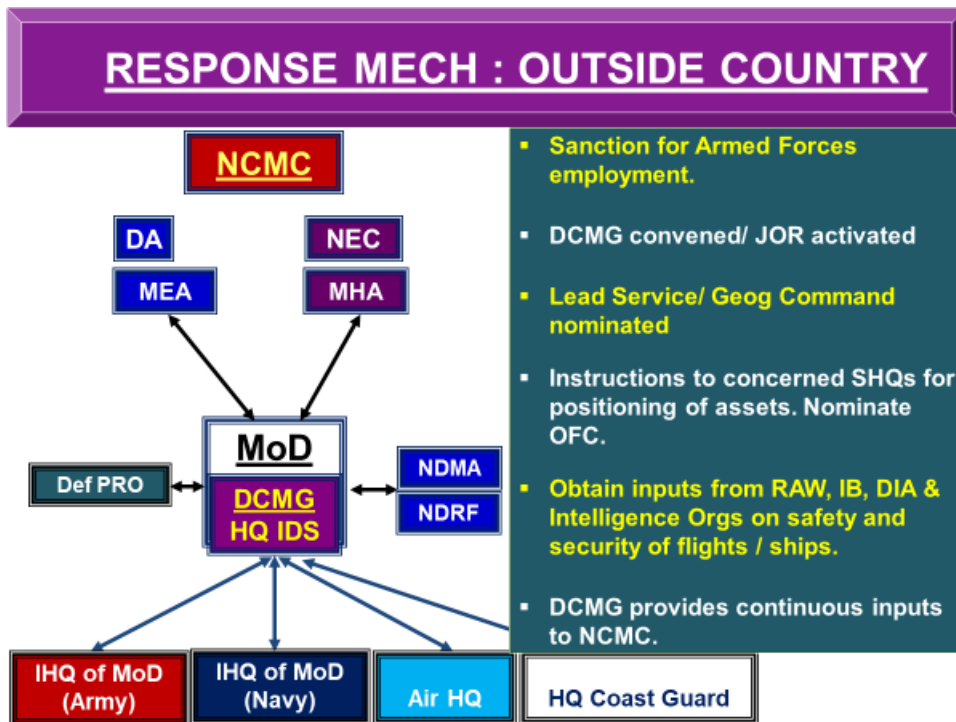


Figure 11: Response Mechanism for Overseas Operations

Employment of Air Assets during Disaster Management

3.40 The following procedure for requisitioning the air assets for HADR operations is specified:-

- The indenting agency (State Govt.) should project all airlift requirements to the DCMG/HQ, directly or through the Resident Commissioner.
- These airlift requirements should be deliberated by the DCMG and suitably informed to IAF (preferably in writing).
- The type of aircraft/ timing of airlift would be decided by IAF. Rep of State Govt/Resident commissioner should be available at the time of loading / off loading of aircraft and would be required to sign all requisite documents (Indent form, Flight Acceptance Certificates etc.).

Assistance to State Govts by Service HQs

3.41 The National Disaster Management Policy approved by the Union Cabinet on 22 October, 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. 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.

3.42 On occurrence of natural calamity/ disaster, immediate Armed Forces response¹⁵ will be planned and orchestrated at the local level through interaction between local Govt. authority and Armed Forces formations/units. Assistance by Armed Forces will be guided by the pamphlet: Aid to Civil Authority -1970 (till revised edition is published). HQ IDS will be kept informed about the nature and duration of assistance provided by the respective Service HQs.

Aid to Civil Authority

3.43 The primary role of the Armed Forces relating to the defence of the country against external and internal threats is unambiguous and needs no deliberation. The secondary role of the Armed Forces in aid to civil authority is a constitutional obligation, although as an instrument of last resort. MoD Pamphlet of 1970 vintage governs employment of Armed Forces in aid to civil authorities, This Pamphlet is under revision. The Armed Forces can be called out to aid the civil authorities to meet various contingencies, as follows:

- (a) To maintain law and order.
- (b) To maintain essential services.
- (c) To assist in natural calamities.
- (d) To assist in execution of developmental projects.
- (e) Other type of assistance which may be sought by civil authority.

15 *Dagur, OS, An institutional framework for managing disasters in India, Centre for Land Warfare studies, New Delhi, 2006*

3.44 However, based on interactions held with a number of Service officers from across the country, it can be stated that there have been a large number of army columns and engineer task forces (ETFs) deployed every year, especially in the last six to seven years, all on account of the secondary role of the army. Clearly, there seems to be a consistently rising trend in involvement of the army in “Aid to Civil Authority.” However, of this, the army columns /engineer task forces (ETFs) have been involved in disaster management contingencies only a few times. On most occasions, army columns are called out to assist the local administration in roles other than emergencies / disaster management.

3.45 Aid to civil authority in cases of disasters has to be viewed as a special emergency and tackled with full enthusiasm and the synergistic efforts of both the civil administration and the Armed Forces. While the slow onset of disasters like droughts and to some extent, floods, may be managed without the aid of the military, sudden disasters like earthquakes / tsunamis would require an emergency response where military resources may need to be deployed.

3.46 The Indian Armed Forces are supposed to be called-in to intervene and take on specific tasks, only when the situation is beyond the capability of the civil administration. In practice, the Armed Forces are the core of the government’s response capacity and tend to be the first responders of the Government of India in all major disasters. Due to their ability to organize action in adverse ground circumstances, speed of operational response and the resources and capabilities at their disposal, the Armed Forces have historically played a major role in emergency support functions such as communications, search and rescue operations, health and medical facilities, transportation, power, food and civil supplies, public works and engineering, especially in the immediate aftermath of a disaster. 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. They are also located in most remote areas where natural calamities are frequent.

Proposed Changes in DM Act / Pamphlet

3.47 Armed Forces are employed in the aid to civil administration under the clause of “Aid to Civil Authority” which is documented in the government Pamphlet which is of 1970 vintage. Because of its vintage, the document is under revision for last so many years. Certain changes have been forwarded by HQ IDS. These mainly deal with accounting and Legal processes when Armed Forces are called upon for Disaster response. Armed Forces are now called upon more than often to disperse the unlawful assembly of people. In situations where civil machinery is absent and Armed Forces personnel undertake operations to disperse the gatherings, suggestions have been forwarded for protection against acts done during such situations for its personnel.

3.48 Government has also initiated case for amendment to DM Act. HQ IDS has also proposed certain changes. Armed Forces by virtue of their presence in all parts of the country and ability to mount speedy response are virtually ‘first responders’ or a close ‘second responders’ to a disaster situation. Hence it is imperative that their involvement in Disaster Management be suitably institutionalised. To avoid over utilisation of Armed Forces under clause of Aid to Civil Authority it has been proposed that assistance of Armed Forces be sought in coordinating effective response to a Disaster situation, once all resources available to the District administration have been utilised or it is perceived that integral response capability of the District administration is likely to be overwhelmed by the anticipated magnitude of the Disaster.

Chapter 4

ROLE OF ARMED FORCES IN DISASTER MANAGEMENT

“The organizational strength of the Indian Armed Forces, their high sense of discipline, the enormous manpower at their disposal and their excellent resources and management skills makes them an extremely useful tool in providing disaster relief”

- Report of US Government Study on Disaster Response in India

4.1 The primary role of the Armed Forces relating to the defence of the country against external and internal threats is unambiguous and needs no deliberation. The secondary role of the Armed Forces in aid to civil authority is a constitutional obligation, although as an instrument of last resort. Armies, the world over play an important role in the mitigation of disasters of various kinds. The Indian Armed Forces are supposed to be called upon to intervene and take on specific tasks only when the situation is beyond the capability of civil administration. In practice, the Armed Forces are the core of the government’s response capacity and tend to be the first responders of the Government of India in a major disaster. Due to their ability to organize action in adverse ground circumstances, speed of operational response and the resources and capabilities at their disposal, the Armed Forces have historically played a major role in emergency support functions such as communications, search and rescue operations, health and medical facilities, transportation, power, food and civil supplies, public works and engineering, especially in the immediate aftermath of disaster. Disaster management plans should incorporate the role expected of them so that the procedure for deploying them is smooth and quick.

4.2 Although secondary roles of the Armed Forces are clearly defined it is the, aid to civil authority wherein the Armed Forces are more than often employed especially during disasters whether manmade or natural. However, an important issue is the interpretation of the term

‘disaster’ in the issue of aid to civil authorities. Disaster by definition is *an event of natural or man-made causes that leads to sudden disruption of normalcy within society, causing damage to life and property to such an extent*, that normal social and economic mechanisms available are inadequate to restore normalcy. Therefore, technically, the Armed Forces need to be requisitioned by the civil administration only if the situation is clearly beyond the control and capacity of the local administration. However, sequential deployment of rescue and relief resources, or a graduated response by various entities to emergencies is fraught with the dangers of delay, and the situation going beyond control. Ideally, a quick and comprehensive assessment of the required response to a disaster or impending disaster is needed. This will facilitate deployment of the necessary resources, including the Armed Forces elements, without loss of time, to limit the damage and losses to a minimum.

Types of Assistance

4.3 With inherent capabilities and strengths, Armed Forces have some typical capabilities in responding to disasters which are given below:

Army

- (a) Survey, reconnaissance and damage assessment.
- (b) Provision of infrastructure for command, control and communications.
- (c) Provision of composite task forces to assist in search, rescue, evacuation and provision of immediate relief services, to include medical aid, trauma management, water, food and establishment of relief camps.
- (d) Transportation and supply of relief material.
- (e) Maintenance of essential services, especially in the initial stages.
- (f) Restoration work on bridges, roads and helipads.
- (g) Public Health, sanitation and prevention of epidemic outbreak.
- (h) Restoration of basic utilities, especially water supply and electricity in coordination with local authorities.

- (i) Stage Management of international relief, when so requested.
- (j) Explosive ordnance detection, disposal or deactivation.
- (k) Assistance in maintenance of law and order.
- (l) Nuclear, biological and chemical disaster response.

Navy

- (a) Setting up infrastructure for control and coordination.
- (b) Undertaking initial and subsequent surveillance of the affected areas.
- (c) Deploying relief teams to provide initial succor in areas inaccessible from the land route.
- (d) Providing medical teams, hospital ships ensuring prevention of epidemics.
- (e) Transporting relief material, food or water within the country and overseas.
- (f) Establishing relief camps and relief ships.
- (g) Maintaining essential services and supplies.
- (h) Evacuating survivors to safer areas including medical evacuation
- (i) Providing diving assistance for underwater tasks.
- (j) Undertaking damage control in the form of firefighting, demolition of obstacles, clearance of debris, provisioning of emergency lighting etc.

Air Force

- (a) Reconnaissance of disaster areas.
- (b) Air transportation of personnel, medical teams, materials, supplies and disaster equipment.
- (c) Airdropping of food, water and medicines etc.
- (d) Air evacuation of casualties/marooned people.

Employment of the Armed Forces in Disaster Management

4.4 The Ministry of Defence is the 'Primary Agency' for the Search and Rescue (SAR) function, and a 'Support Agency' for provision of communications, transportation, rehabilitation, engineering, power and medical services. However, over the years, the Armed

Forces role has gradually expanded from the SAR function, to also include major responsibilities in the supportive functions and is also expected to provide sizeable quantities of disaster relief material, for both National and International contingencies.

4.5 Of late, the Central Government has taken corrective action and accordingly shifted focus from an active policy of calamity relief to a proactive policy on disaster management, which includes all essential aspects of prevention, mitigation, preparedness, response and relief. Further, disaster management has been mainstreamed with the planning and development process, which would ensure adequate funding and up-gradation of infrastructure. It is however reasonable to assume that these far-reaching changes will take some time to be absorbed by the Government, and even longer for the structures and institutions to be placed in an executive mode. In the interim and in the foreseeable future the administration will continue to be overly dependent on military service assets for immediate disaster response, notwithstanding the formation and operationalization of the NDMA. It is hoped that with the Disaster Management Bill 2005 enacted and its policies fully implemented and effective on ground, the role of the Army in disaster management would gradually reduce¹⁶ in the future.

When to call Armed Forces?

4.6 The disaster management cycle consists of six stages: Prevention, Mitigation, Preparedness, Response (Rescue and Relief), Rehabilitation and Reconstruction. However, the Armed Forces are traditionally called to assist in the response stage of the disaster management cycle for search, rescue and relief. This is also the stage where losses can be minimised and lives saved by rescuers acting swiftly and in a professional manner. Time, at this stage, is always at a premium. Hence, this is the most crucial stage of the “Disaster

¹⁶ Daya Chand, *Armed Forces Response Plan to Disaster Management*, Centre for Land Warfare studies, New Delhi, working paper, 2010.

Management Cycle” and timely and effective employment of the Armed Forces in search, rescue and relief operations can pay rich dividends in terms of limiting damage and saving lives. However, can the Armed Forces be called only at the rescue and relief stage? What if a major disaster is forecast and heavy losses appear imminent? Can it be assumed that the impending situation is within the means of the local administration or otherwise? There is no clear-cut answer to this question. However, there can be a few scenarios, where deployment of the Armed Forces, just before occurrence of a disaster may result in saving lives and property.

4.7 Consider the scenario of an early warning of a tsunami of the magnitude of the tsunami of 2004, that caused havoc in India and the South Asian countries. In case of an early warning, immediate assessment of such a disaster would warrant large scale actions entailing early warning to the masses, evacuation from vulnerable areas, and adequate reaction time to launch rescue and relief operations adopting a proactive approach. Review of the situation may also highlight that the magnitude of the impending disaster is so high that the efforts of the civil administration would be woefully inadequate, necessitating assistance from the Armed Forces. Though the Armed Forces are always alert and stay abreast with the news and weather forecasts, it would be prudent for the civil administration to keep the Armed Forces formations / units in the picture of the developing crisis and / or even warn in advance to avoid any loss of time in deployment. While mechanisms of this kind exist in a number of states, they need to function with the requisite seriousness. Hence, sometimes, the civil administration may have to requisition aid from the Armed Forces in anticipation, even before the occurrence of a major disaster. However, such requisitioning should be resorted to only in critical circumstances and only once the civil administration has done its homework (detailed analysis of emergency, available resources to respond and anticipated shortages and

infirmities) and is confident its own response will not measure up to the enormity of the emergency.

4.8 The decision by the civil authority, whether to requisition, and when to requisition, the Armed Forces' aid is a crucial one, and must be made very judiciously, to ensure that the Armed Forces are called out only as a last resort. Also, when employed, that they are utilised to their full potential, with minimum loss of time.

Rationale of Requisitioning by the Civil Administration

4.9 The fine judgement to requisition the Armed Forces' aid, in case of a disaster, has to be made by the civil authority itself. This decision-making will be facilitated if the civil administration (district/state) is geared up with all the inputs relating to the emergencies in their state, more importantly, the following:

- (a) Multi-hazard mapping of the areas prone to disasters should have been carried out.
- (b) Based on a Vulnerability Index , details of stake holders to be worked out.
- (c) Based on magnitudes of various disasters/ emergencies, assessment of likely losses to be worked out.
- (d) Existing disaster management apparatus at district / state levels and their capacities to deal with the disasters.
- (e) Requirement and availability of the Armed Forces units and formations in the region or in the vicinity.
- (f) Response time needed for the Armed Forces units / formations to fetch up at the site of disaster.

4.10 Once all of the above or most of the inputs are available with the civil administration, they will be able to make a comprehensive, yet quick assessment of whether can they manage the disaster rescue and relief on their own or would need the assistance of the Armed Forces

to deal with the emergency. With the growing emphasis on disaster risk reduction initiatives in India, a lot of effort has been made in the country to carry out hazard mapping and vulnerability evaluation, yet a lot more needs to be done in all the states in this regard.

4.11 The growing tendency of over-insuring, and not having faith in own civil set-up to deal with emergencies, has led to unjustified deployment of the Armed Forces sometimes, which is detrimental to the latter's primary role. There is, therefore, a need to sensitise civil administration officials at the district/state level that disaster management is the function of governance and the Armed Forces should be requisitioned keeping the following principles of employment in mind.

Principles of Employment of Armed Forces

4.12 Operations of the Armed Forces, whenever called upon to assist the civil authorities in rendering relief are governed by certain guiding principles. These are enumerated below:

- (a) ***Judicious use of Armed Forces.*** The assistance by Armed Forces should be requisitioned only when it becomes absolutely necessary and when the situation cannot be handled by civil administration from within its resources.
- (b) ***Immediate Response.*** When natural and other calamities occur, the speed for rendering aid is of paramount importance. It is clear that under such circumstances prior sanction for assistance may not always be possible. In such cases the Armed Forces when approached for assistance should provide the same without delay. No separate Government sanction for aid rendered in connection with assistance during natural disaster and other calamities is necessary.
- (c) ***Command of Troops.*** The Armed Forces units whilst operating for disaster relief continue to be under the command of their own commanders and aid rendered is based on task basis.

- (d) ***No Menial Tasks.*** While assigning tasks to the troops it must be remembered that troops are not employed for menial tasks. Troops should not be employed for disposal of dead bodies.
- (e) ***Requisition of Aid on Tasks Basis.*** The requisition of Armed Forces should not be in terms of number of columns, engineers, diving teams, medical teams, helicopters, boats etc. Civil administration should spell out the task and leave it to the Armed Forces authorities to decide the force levels, equipment and methodology to tackle the situation.
- (f) ***Regular Liaison and Co-ordination.*** In order to ensure that optimum benefit is derived, regular liaison and co-ordination need to be done at all levels and contingency plans made and disseminated to the lowest level of civil administration.
- (g) ***Advance Planning and Training.*** The Army Formations, Naval units and Air Force stations located in areas prone to disasters must have detailed plans worked out to cater for all possible contingencies. The troops should be well briefed and kept ready to handle any contingency.
- (h) ***Integration of all Available Resources.*** All available resources, equipment, accommodation and medical resources with civil administration, civil firms, NGO etc need to be taken into account while evolving disaster relief plans. All the resources should be integrated to achieve optimum results. Assistance from outside agencies could be super-imposed on the available resources. Similarly, all assets of the Armed Forces must be integrated to obviate duplication or an overdose.

- (i) ***Early De-requisitioning.*** Armed Forces should be de-requisitioned as soon as the situation in disaster affected area has been brought under control of the civil administration.

Obligation of Armed Forces

4.13 There appears to be ambiguity in the understanding on the part of a few commanders and staff on whether every requisition for aid to civil authority has to be complied with. Once again, discretion, about whether to respond or not or whether clarification is required from higher headquarters (HQ), has to be exercised by the commander on the ground. Normally, requisition by the civil administration for assistance in case of a disaster is almost always complied with. There being little or no reaction time, such requisitions for rescue and relief will have to be acted upon without loss of time. However, requisitions such as evacuation of a civilian trapped in a hole, recovery of a dead body from waters and such requests, which do not fall within the ambit of “disaster rescue and relief” may be declined or executed only after due clearance from the higher HQ. When approached for aid to civil authority and in cases of ambiguity, unit / formation commanders may advise the local administration to route their request through the Ministry of Home Affairs (MHA) channels. In view of availability of state-of-the-art communication facilities, it is now possible to seek clearance from higher HQ without any loss of time.

4.14 What is, however, more important is the need to impress upon the civil administration to de-requisition the Armed Forces as soon as the rescue and relief operations are over. Deployment beyond 10 days necessitates Ministry of Defence (MoD) sanction. The methodology of employment of the Armed Forces columns remains the professional discretion of the commanders in the chain. The Armed Forces units deployed for disaster rescue and relief have to guard against being used as a well organised labour task force for unauthorised tasks/menial jobs. A good mutual understanding between the civil set-up and

local Armed Forces units / formation HQ will go a long way in ensuring just and optimum utilisation of the Armed Forces' capacities in disaster management.

Factors Necessitating Increased Deployment

4.15 Developing countries like India and other neighbouring countries in South Asia are highly vulnerable to climate change and with the ongoing rapid developmental activities, we may witness worse disasters in the times to come. Hence, it will not be inappropriate to assume that in spite of the raising of the National Disaster Response Force (NDRF) and State Disaster Response Forces (SDRF), the Armed Forces will continue to get embroiled in rescue and relief operations due to the triggering of disasters of unprecedented magnitude as a result of climate change and haphazard development. Ten NDRF units are presently deployed in nine locations across the country. Hence, in a number of cases, the Armed Forces may have to respond to a disaster even before the NDRF units, on account of their being located closer to the site of disaster than the NDRF units. Crisis management and managing disasters in remote and inaccessible areas where the Armed Forces are either deployed in the vicinity or due to their intrinsic capacity to reach such areas in an early time-frame would necessitate an active role of the Armed Forces, a case in point being the Kashmir earthquake (2005).

4.16 The next important aspect is the public faith in troops and resultant pressure on the administration to call the Armed Forces to provide succour to affected disaster victims. The reason why the Armed Forces are called upon to aid civil administration in the very first instance is the public outcry, growing political sensitivities and ever-increasing media glare. No government or political establishment is willing to take a chance; hence, deployment of the Armed Forces in such scenarios becomes a play-safe option. Therefore, there is a need for a mechanism to carry out an audit, post-disaster, to examine whether deployment of the Armed Forces in aid to civil authority was done as a last resort or otherwise. This will help

put a check on unwarranted deployment of troops when other governmental entities could undertake relief operations.

4.17 Another major reason necessitating deployment of the Armed Forces in disaster response could be in case of mass casualty events (MCE). The threat of nuclear, biological and chemical warfare (NBCW)/terrorist strikes of the types of 9 / 11 is more pronounced today wherein casualties if there, would surmount local capacities and necessitate deployment of the Armed Forces in disaster response.

SUITABILITY OF ARMED FORCES FOR HADR

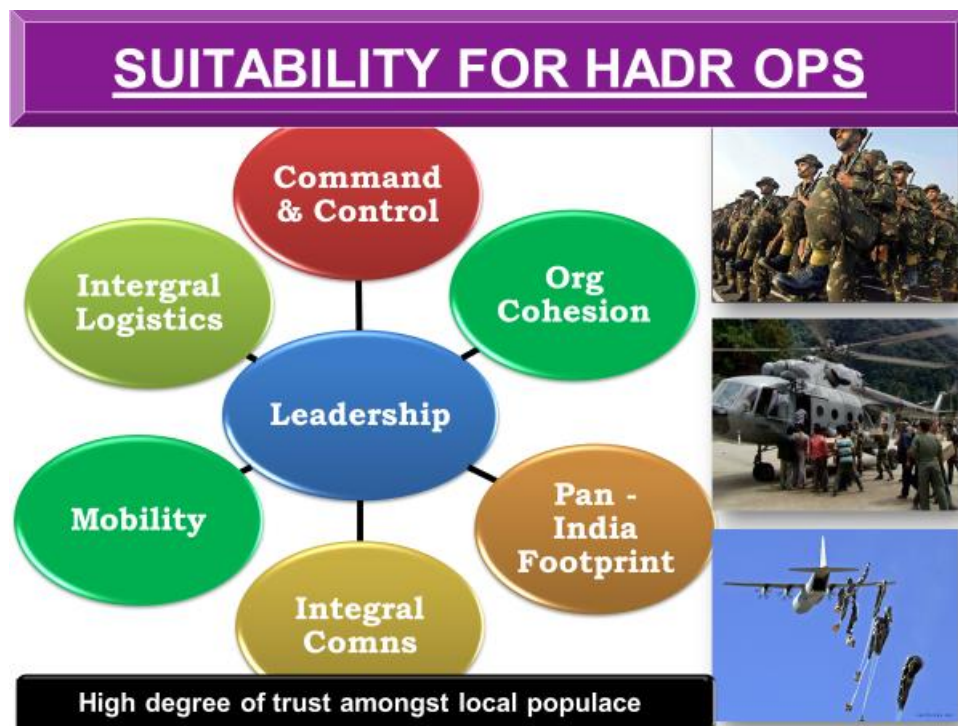


Figure 12: Suitability of Armed Forces for HADR

4.18 The Armed Forces are so structured that they are capable of a rapid response((Retd.), Jan 2012) and despatch self-contained mobile and composite task forces to any part of the country, or even overseas. The Services are well organized to meet most of the needs, ranging from immediate life supporting assistance to short term rehabilitation requirements. An

analysis of the Armed Forces capacity for Disaster Response brings to the fore certain strengths. These are enunciated below:

4.19 **Leadership:** Effective disaster management can only be affected with the “will to act on information” and “dynamic leadership”. Army’s exemplary record of disaster relief operations, is replete with examples of leadership and sacrifice, worthy of emulation.

4.20 **Decision Making:** By virtue of its organizational strength, the Army’s hierarchical structure is endowed with quick decision-making capabilities and speedy dissemination of information and orders.

4.21 **Command Control & Organization Cohesion:** The organisational structure of the Armed Forces is built on a layered system of units and sub units that enables a force of any size to function and adapt to any situation. These are specialist teams who are trained to assist local governments and departments in co-ordination with outside agencies. The operations in a particular area are co-ordinated by an Operations Headquarters (Geographical Command so nominated) usually set up in the affected area.

4.22 **Planning:** Planning is carried out by the Armed Forces at the national, state and field level, wherein the Ministry of Defence including HQ IDS and the Service Headquarters are involved at the highest level. At the State Government level, the Command/Area Headquarters of the Services interact through periodic civil-military conferences with the local administration, police and other organisations. Once contingency plans for disaster management have been prepared, regular rehearsals need to be carried out and the contingency plans periodically updated. These detailed contingency plans are also graded at different levels to cater for different types and intensity of a disaster necessitating different approaches.

4.23 **Mobility:** The versatile capabilities of the Army to respond to any form of disaster situation can best be exemplified by the assistance provided during the Tsunami Disaster in

South India as well as relief operations conducted in the aftermath of the Kashmir Earthquake, floods in Uttarakhand, Srinagar, Chennai and more recently in Kerala. These are excellent examples of the Armed Forces capabilities to reach out immediately to the affected population in the remotest parts of the country and the manner in which relief is delivered often has a profound effect on a community's ability to recover from the disaster.

4.24 ***Logistics & Integral Communications:*** Armed Forces have an integrated mechanism of providing logistics pan India which helps to deliver the assistance at the earliest. Also because of robust communication network which can withstand disasters, flow of information is easy and quick for an effective decision making.

4.25 ***Human Factor:*** Herein, perhaps lies the Armed Forces greatest strength. The methodology and spirit behind delivering aid has a profound effect on a community's ability to recover from the disaster - the Armed Forces are perceived by the general population as humane, impartial, neutral and honest in providing aid.

Challenges for the Armed Forces

4.26 In India the Armed Forces have played important role in disaster management as a force of the nation. If any disaster may be natural or manmade breaks out the Government called them to help and rescue the people. But when they are helping the people, they are also facing many challenges. The challenges facing the Armed Forces are two-fold. Firstly, it is preparedness for disaster response and relief operations, and secondly it is the increasingly uneven frequency of disasters. 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.

Preparedness for Disaster Relief

4.27 Major challenges faced by Armed Forces in the preparedness phase is given below:

- (a) Preparedness for disaster response as most of the disaster comes without any intimation especially manmade disasters. Availability of latest Technology for early warning and disaster Prediction is not available at requisite decision-making apparatus within Armed Forces therefore it is always acting in response to the information made available by civil machinery which puts on added pressure on them to respond in the shortest time. Personnel of Armed Forces need to be imparted specialised training and equipment for conduct of HADR operations.
- (b) Conducting relief operations is a huge challenge in case of disaster with grave magnitudes. Too many agencies and no centralised control over use of assets more than often delays the immediate response.
- (c) Always being the first respondent in any disaster is the main challenge for the Armed Forces as they have to face the unknown situation. More than often the civil setup is missing in the early hours of disaster being stuck which puts pressure on the immediate responders to not only control the situation but provide immediate assistance.
- (d) Resource constraint is also huge challenge for Armed Forces and in situation of disaster they have to use their limited resources which even cause them mental distress. State of the Art equipment for search and rescue is not available with all Armed Forces units which does challenge them to perform and give desired results. Armed Forces request for provisioning of geographically dispersed tailor-made Disaster Relief Bricks at suitable locations will go a long way towards immediate response by Armed Forces.
- (e) Interoperability with Regional and International Relief Agencies Response to major disasters does involve regional and international civilian and military

HADR organisations. Equipment and procedures interoperability both of our military and civil agencies does pose a challenge to ensure seamless interoperability.

Joint Civil Military Coordination Issues

4.28 Armed Forces in India have been very frequently called upon by Civil Administration to provide assistance in rescue and relief work during natural calamities. However, it has been noticed, time and again, that the performance of the Armed Forces could have been much better had there been closer and more intimate coordination between the civil administration and the Armed Forces. For Armed Forces to effectively conduct relief and rescue operations during a disaster, needs decisive modus operandi and operational coordination with the civil administration. A case in point being the Sikkim earthquake (2011), Uttarakhand floods (2013), J&K floods (2014), floods in Chennai (Dec 2015) and more recent floods in Kerala in Aug 2018. Very intimate and effective coordination between civil administration and the Armed Forces is essential for optimum utilisation of the large resources of the Armed Forces during disasters. Aid to civil authority in cases of disasters has to be viewed as a special emergency and tackled with full enthusiasm and the synergistic efforts of both the civil administration and the Armed Forces. It is essential that both, the civil administration and the Armed Forces be aware of each other's capabilities and limitations and work with the highest degree of coordination.

Important Observations

Uttarakhand Floods (2014)

4.29 As per the report prepared by NIDM(Roy) on Uttarakhand floods with regard to weaknesses in the state system issue of coordination and administration has been brought out. The necessity of proper functioning and coordination of SDMA / DDMA and other agencies

involved in disaster response and relief clearly emerged as an important aspect. One of the lessons suggested is to take advice of Army, IAF and also of geologists by State Government to identify locations and develop all weather helipads.

J&K Floods (2014)

4.30 Without going into details of the disaster itself following observations were brought out in a report (Damle, Jul 2017) with regard to disaster response.

- (a) There was a total absence of the civil administration for the first 96 hours. The Chief Minister of J&K, Shri Omar Abdullah, had stated that he was helpless as none of his State Ministers were available to take control of the situation, as they themselves were badly affected and even needed to be rescued.
- (b) Even though the Army Cantonment (Badami Bagh), and its surrounding areas was also badly affected by the rising flood waters, the local Army Commander, became, defacto, in charge of the entire initial rescue and relief operations, working in close coordination directly with the State Governor and Chief Minister.
- (c) All the Committees that had been planned to function in such a situation were actually non-existent. The civil administration was caught totally unaware and unprepared, even though there were adequate inputs and warnings of the rising levels of water in the Jhelum River.
- (d) As the gravity of the situation became known to the outside world, relief material, of all sorts, started arriving in mammoth proportions at the Srinagar Airport. There being no civil administration to manage this large quantity of

relief material, most of it rotted in the rains and became useless, especially food items. Army units had to be deployed to take control of this task also.

- (e) Coordination of rescue and relief operations in areas affected by insurgency requires very intimate interaction with the civil administration. There were instances, especially in Down Town Srinagar, where the Army does not operate, the local population, though badly in need of rescue and relief assistance, but due to pressures from insurgent groups, obstructed the Army vehicles and boats carrying relief material for them. Stones were pelted on these Army columns. There was no protection given to these Army columns from the civil police.
- (f) People who were rescued by the Armed Forces and brought to a safe area, had no means of transport to go to other places, nor was there any central places where the civil administration had arranged for temporary or tented accommodation, with medical facilities.

Chennai Floods (Dec 2015)

4.31 Besides the reasoning of urban flooding in the city of Chennai following observations were brought out in the report(Damle, Jul 2017) regarding civil military coordination.

- (a) The Armed Forces, which had rescued thousands of marooned residents, faced critical coordination problems with the local administration at the ground level, resulting in delayed action in some places. The unpreparedness of the local agencies, including Chennai Corporation, in giving appropriate directions to the Army came to light when media persons accompanied the rescue teams in several places.
- (b) For instance, despite waters fast receding at T. Nagar, an Army column was called in for rescue there. An Army officer supervising the rescue operations stated, “When we

reached the area, many parts had only ankle-deep water. The inputs we got were that several other areas had severe flooding where our boats and men could be of immense help. We waited for five hours without any major work at T. Nagar.”

- (c) In Velachery, a Corporation official said on that he came to know of the Army’s arrival just half an hour before they reached the locality. Since multiple operations drained batteries on their search lights, the forces asked for the equipment, which was not organised.
- (d) The troops were in a spot as the rescued residents began questioning the complete lack of transport facilities when they were brought out of the flooded areas at 11 p.m. The Army men then requested cars plying in the area to drop the residents. A few Good Samaritans obliged, going out of their way to take pregnant women and the elderly to faraway places.
- (e) At the State level, the photos of 100 soldiers from Hyderabad, waiting for over 10 hours for instructions from the Tamil Nadu government as Chennai sank, showed the civil administration in very poor light. It indicated that bureaucrats did not have the freedom to act. Even during natural disasters, they had to be given instructions because they are used to that pattern of governance now. They expect ‘clearance’ for everything and a lot of time is wasted as officers look up to the CM for every small decision.
- (f) Local politicians were playing dirty because the State administration was missing in action. The political executive washed its hands of the matter the minute the forces landed. It became the Army’s job to ensure that relief and rescue operations went smoothly. However, the State government did not want to lose political mileage.

4.32 Government report tabled in Lok Sabha on 12 Aug 2016(report, 2016) brings out the quantum of effort put in by the Armed Forces during the disaster relief. Though the relief was

prompt and effective, the issues of coordination and responsibilities while conducting joint civil military operations have not been projected. However, in its recommendation the Committee observes that there are multiple agencies involved in the disaster management process and feels that despite the best efforts all these take lot of time and consequently the administration fails to reach out to the victims. The Committee recommends that there should not be so many layers and NDMA has to revamp the process in co-ordination with the Centre and the State.

Kerala floods (2018)

4.33 As per the report in Hindu Paper dated 20 Aug 18(2018) flood-ravaged Kerala seems to have been able to find its moorings after five days of a stupendous rescue and relief operations which were well-coordinated among various stakeholders. While the daredevilry of the Army, Navy and the Air Force, the Coast Guard and the National Disaster Response Force is part of folklore, they have in turn lauded the civil administration's role in the efforts. Yesterday, Chief Minister Pinarayi Vijayan had, on behalf of the State's population, extended thanks to the forces and other stakeholders for their fulsome contribution to the massive exercise. An Army officer at the forefront of rescue and relief operations at Kochi went out of the way to commend the participation of the civil administration in the relief and rescue efforts. He was able to find 'striking differences' in this mission from similar operations carried out at the disaster front in Srinagar, Chennai, Uttaranchal and Mumbai. Firstly, to the credit of the civil administration, it has also been right in the front and has been operating along with the public effectively. Unlike other places where these officials would hide themselves and were unwilling to show themselves to the public, here they were shoulder to shoulder with all affected people in Kerala.

4.34 Why is Kerala's proactive response to the floods so sharply different from the passive victimhood that mostly characterises the flood-affected in the rest of India? The answer lies not in the state's superior level of literacy, but in the political empowerment of the people over generations(2018).

Way Forward to Address Joint Civil Military Concerns

4.35 There has been a perceptible improvement in coordination between the Armed Forces units / formations and local civil administration in the last few years. This was highly visible during the recent Floods rescue in Kerala as mentioned above. But much remains to be done to plug loopholes and achieve the desired synergy between the local civil and military set-ups, to optimise the outcome of the effort in case of a disaster. Some important points are as given below which will go a long way in strengthening joint civil military relations while engaged in disaster response.

4.36 *Self-Appraisal of Capabilities*: The civil administration needs to carry out a self-reappraisal of capabilities to be able to identify contingencies necessitating assistance from the Armed Forces in disaster relief. Though quoted for military conflicts, Sun Zu's famous reference on "knowing the enemy and knowing yourself" to win each battle is equally applicable to combating disasters. District / state civil administrations must know their own capabilities and infirmities pertaining to disasters and their ability to deal with them. To that extent, a SWOT (strength, weakness, opportunity and threat) analysis at district / state / regional level will not only highlight the grey areas and weak links in the disaster management apparatus, but will help a great deal in generating strategies to deal with threats.

4.37 *Scenario Building*: There is a need to carry out an exercise of 'scenario building'. This will help visualise various scenarios which may emerge in the region to enable listing out emergencies and contingencies. The civil administration needs to carry out a self-reappraisal

of capabilities to be able to identify contingencies necessitating assistance from the Armed Forces in disaster relief.

4.38 **Joint Meetings:** Regular joint meetings at the highest levels need to be held. In normal times these could be on a quarterly basis. As the weather turns bad, as in the case of onset of monsoons, these joint meetings should be held more frequently, may be once every 3 - 4 weeks. These meetings should be shared at the highest levels in the State capitals, either by the Chief Minister him/herself, or the Dy. Chief Minister, and should include the Chief Secretary, the local Army/Navy/Air Force Commander, the DG Police, the Chief Engineers, DG Fire Services and Home Guards, Communication Secretary, Chief health officer and such senior members who may be necessary. Similar high-level joint meetings should be held at the District levels.

4.39 **Contact Details:** Updated contact details of all personnel should be available to all members, both at the policy formulation levels and at the operational levels. Two levels of such Coordination Committees should be set up, like a Team A and a Team B, to ensure redundancy in decision making also. A senior officer should be earmarked as the Liaison Officer, from both sides. In the first few hours of the disaster happening the civil machinery should be available on ground to assist the Armed Forces to deliver the relief at the earliest.

4.40 **Early Information of Developing Situation:** The Armed Forces are usually involved in the training and operational preparedness for their primary role. Therefore, the civil administration should ensure that the local Armed Forces units and formations are kept in the picture of a developing disaster situation and all disaster management related information is shared with them.

4.41 **Chain of Communication:** Issue of protocol to be followed by Army for interaction with civil administration as well as the affected community. It is recommended that while Army can assist the local administration, police authorities etc, these civil authorities' must

directly work with the community. In many instances there appears to be a breakdown of the local administration and affected community tends to look towards the Army columns for every nature of relief. It would be of benefit in such instances to strengthen the local administrative functionaries than take over their function.

4.42 **Formulation of Check list:** Development of checklist of the possible information that armed forces would require during their operations must be readily made available. The information is available with the administration but is usually scattered which results in precious time being lost. So this check list would help them and Armed Forces to conduct their operations in a more streamlined manner.

4.43 **Scope of Assistance to be provided by the Armed Forces:** The local Armed Forces Commander should be spelt out the broad nature of the assistance required, including where, when and to what extent. The quantum of the effort required should be left to the Commander. Whatever assistance may be required by the Armed Forces from the civil administration in terms of temporary accommodation, local guides, any special communication/technical equipment, etc, should be provided. Specific demarcation of Areas of Responsibility between civil administration and the Armed Forces should be done.

4.44 **Identification of Suitable Areas:** Suitable open and vacant areas need to be identified, and data maintained where rescued persons can be guided to, for necessary medical and relief aid. These areas can be developed in a manner so as to build critical helipads in consultation with Armed Forces which can be used subsequently for any disaster response. Adequate means of transporting people to these areas needs to be catered for.

4.45 **Joint Training:** Joint training and mock exercises between the civil disaster management apparatus and local troops should be carried out from time to time to review operational preparedness and identify infirmities in the joint response to a disaster. These exercises will help review the procedures, communications, and develop mutual faith and

rapport. Apart from the joint training programmes training civil administration staff and local communities on their roles and responsibilities during an Army operation in the area should also be undertaken which will help in earmarking specific roles for Armed Forces and Civil machinery and thus avoiding any blame game after operations.

4.46 **Management of Incoming Relief:** This aspect assumes great importance as very large quantities of relief material starts to pour into the affected area. This needs to be strictly controlled and distributed in the priority of degree of seriousness of affected persons. Wastage of relief should be guarded against. A better coordination between Civil and Military will help to identify which relief material is more suitable to be delivered/ air dropped by aircraft and which by other means.

4.47 **Post Disaster Audit:** There is a need for a mechanism to carry out an audit, post-disaster, to examine whether deployment of the Armed Forces in aid to civil authority was done as a last resort or otherwise.

Chapter 5

IMPACT ON OPERATIONAL PREPAREDNESS

5.1 Armed Forces are institutions established by the state for the purpose of national defence against external threats and internal conflicts, besides projecting/ protecting national interests beyond the geographic boundaries of the state. This implies that Armed Forces must have professional skills, equipment, training and management capacity to fulfil their mandate. Besides this, there must exist constitutional and legal framework defining their relationship with political hierarchy. The highest written directive to Armed Forces comes from *Raksha Mantri*. The *Raksha Mantri* Operational Directive 2009 is currently under revision. The National Military Aim as articulated at various forums can be summarised as under:

- (a) Deter war and should politico-diplomatic initiatives not be successful, be prepared to apply military power to achieve political aim or in other words be the last 100 yds of India's foreign policy.
- (b) Assist in creating conducive internal and external environment for socio-economic development.

5.2 The Military preparedness is also an outcome of government policies on the subject. The above military aim can be translated to following military objectives:

- (a) Secure national frontiers both in war and in peace.
- (b) Create offensive capabilities to deter war.
- (c) Exercise influence over identified areas of interest.
- (d) Contribute effectively towards regional stability.
- (e) Assist civil administration in disaster relief, rehabilitation and other situations.
- (f) Facilitate diplomacy by integrating military diplomacy as adjunct to national power.
- (g) Enable nation to maintain strategic autonomy.

5.3 The military objectives enunciated require the development of military capabilities and defence preparedness. However frequent utilisation of military resources for disaster response, has its own negative consequence both in capability and preparedness.

Statistics of Effort of Armed Forces

5.4 As explained early, the magnitude of disaster relief operations undertaken by Armed Forces is very large and there are large numbers of operations where single Service has taken part. Air force being the provider of platforms is invariably involved in all operations requiring movement of relief material, personnel and equipment. The details of HADR operations undertaken by Air Force in last few years are attached as Annexure2. In addition, details of operations undertaken by Helicopter Fleet are attached as Annexure3. Details of HADR undertaken internationally are attached as Annexure 4.

Air Force

5.5 *IAF Assets for HADR Operations:* IAF operates a large variety of platforms ranging from air dominance fighters, Remotely Piloted Aircraft (RPAs) to transport aircraft and helicopters. These assets have different capabilities and can be used for different tasks. These are mentioned below:

- (a) **Su-30:** Its active electronically scanned array (AESA) radars and Electro Optical/Infra red payload can be used for search and location of objectives in bad weather.
- (b) **Jaguar:** Its RECCELITE pod can be used for reconnaissance to assess extent of damage of disaster affected areas.
- (c) **C-17:** This strategic lift transport aircraft can be used for positioning relief material and induction of disaster response personnel at nodal airfields for further dispatch to affected areas. It can also be used for large scale evacuation of affected personnel.

- (d) **IL-76:** This heavy lift transport aircraft can also be used for positioning relief material and disaster response personnel at nodal airfields for further dispatch to affected areas. It can also be used for large scale evacuation of personnel.
- (e) **IL-78:** In the transport role it can convey men and material and in the tanker role can be used for positioning aviation fuel for use by other platforms, if required. It can also be used for large scale evacuation of personnel from affected areas.
- (f) **C-130J:** These tactical airlift aircraft can be utilized for reconnaissance, radio relay, weather updates and fuel augmentation besides transporting relief personnel, material and evacuating personnel.
- (g) **AN-32/Do-228:** These transport aircraft can be utilized for inducting relief personnel, material, and evacuation besides communication purpose.
- (h) **RPAs:** Remotely piloted aircraft can be used for reconnaissance, aerial relay and imagery for assessing disaster areas in addition to communication.
- (i) **Mi-26:** Heavy lift helicopter can be utilized for positioning relief material, rehabilitation machinery, fuel and relief personnel directly into the affected areas while evacuating stricken population from these areas.
- (j) **Chetak/Cheetah:** These light helicopters can be primarily used for reconnaissance, communication and search and rescue purpose.
- (k) **Mi-8/17/V5/ALH:** These medium lift helicopters are utilised for transporting relief personnel, material and evacuation of affected population from the disaster affected areas. They can be used for survey, reconnaissance and search and rescue purpose. Besides, the Mi-17 V5 helicopter can also be utilised for fire fighting.

Effective Utilisation of IAF Assets

5.6 While disaster situations demand immediate response and utilisation of all relevant assets at the disposal of the state, only prior deliberate planning can lead to effective

utilization of these assets. Some examples where planning can lead to effective utilization of IAF assets are mentioned below:

(a) ***Utilisation of Fighter Aircraft:*** Modern fighter aircraft of the IAF can be primarily used for survey and reconnaissance of disaster affected areas. The knowledge of area that can be covered by a modern fighter aircraft, the time taken to launch and the delay in receiving processed output are some of the information that could be conveyed to civil disaster management officials. Of course, this should be within limits of the extent to which such information could be conveyed without compromising security. In certain circumstances utilisation of RPA,s may be better. The key lies in utilization of the right asset for survey and reconnaissance within the shortest time frame.

(b) ***Utilisation of Transport Aircraft:*** The essence of utilization of transport aircraft is to utilize the maximum available cargo compartment space and reduce the turnaround time. Availability of information regarding runway length requirement, refuelling requirement, cargo compartment dimensions of various transport aircraft with max all up weight, loading ramp dimensions, parking space dimensions, starting aggregates requirement, etc would definitely speed up the operations and utilization of transport aircraft assets of the IAF during HADR operations.

(c) ***Utilisation of Helicopters:*** Helicopters are amongst the most versatile assets in the IAF inventory capable of undertaking a variety of roles. The capabilities and roles undertaken by different helicopters must be conveyed to civil authorities. In addition, requirement of helipad size would assist them in identifying helipad operating areas with GPS coordinates in advance which would greatly help IAF helicopter crew in saving time and effort to locate such areas during relief operations. Similarly, all up weight limitations, requirement of fuel and starting aggregates, parking space, etc would immensely improve turnaround times leading to effective utilization of these assets during Response phase of HADR operations.

5.7 IAF assets have been bought for a particular operational task like any other war fighting equipment and therefore its indiscriminate usage for other purposes including HADR will definitely affect its availability for actual operations. IAF assets are used even prior to the Disaster for positioning of relief material and men in certain cases and continue to be utilised even when not required for convenience and showmanship. IAF assets gets involved even singularly when other two Services are not involved resulting in over exploitation of its assets in the name of Aid to Civil authority. This being the only agency in the country to have platforms with this capability it is well understood that during time of crisis these assets are national property but it's over utilisation is what needs to be sensitised to civilian bureaucracy and politicians of our country and the same needs to be avoided. To give an example in the recent Kerala floods, IAF strategic aircraft C-17 was utilised to transport relief all the way from Punjab. Though C-17 can carry 60 tonnes but because of loosely packed relief material and sheer volume of equivalent only 30 tonnes could be carried. Each shuttle from Punjab to Kerala and back was for 8 hours. Therefore, to transport relief material of 150 tones about 40 hours were utilised. Each hour of C-17 costs an exchequer of about 25 lakhs therefore this mission costed our country Rs 40 crores. The relief material transported was *lungis* and slippers. So, the question is whether the aircraft should have been utilised or alternatively this relief material could have been transported by road transport or could have been managed from a nearby State. These 40 hours could have been utilised for other strategic operational tasks which during Peace time are meant for winter stocking of forward posts. Winter stocking definitely gets affected during such contingencies. Besides the major disasters, Armed Forces on regular basis are being tasked to undertake missions in support of civil government under the clause of Aid to civil Authority. The magnitude of these operations may not be huge but they also consume enough resources. Moreover, these

operations go un noticed The field commanders have a difficult time to replenish them. The details are given in Annexure 5

Effects on Defence Preparedness

5.8 It must be appreciated that the defence preparedness will largely depend primarily upon two factors i.e. fitness and training of its personnel and the equipment held by the Armed Forces. Also, the equipment when purchased for war fighting is bought for a particular mandate and therefore its utilisation for other tasks and prolonged deployment of this equipment and its logistics in Disaster relief 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 it's replacement takes time. The long-term engagement of Armed Forces in disaster management also hampers its war fighting capability. Some of the factors which get affected are given in succeeding paragraphs.

Training

5.9 Reduction in hours for routine and operational training. During disaster relief, a large amount of effort in terms of Air lift from Air Force is provided. This not only involves the aircraft but other equipment associated with search and rescue. In addition, these assets are pooled in from different parts of the country. To give an example within 24 hours of Kerala floods IAF positioned a total of 31 helicopters which operated from air bases at Thiruvanthapuram, Kochi and Sullur. A large number of flying hours were consumed in positioning these aircraft which otherwise were available routinely for training and other operational tasks. In any flying squadron of helicopters and transport aircraft there are a certain number of flying hours planned for combat training of pilots depending on serviceability and other maintenance related issues. During disaster relief when platforms are utilised to provide relief then these flying hours are not available for routine combat training

which the pilots would have undergone. Though flying is being undertaken but it is not in those specialised combat roles which in turn results in delay of operational status of young pilots. Reduction in pure training will have serious repercussions on both the operational status of helicopter and transport pilots whilst also affecting the quality of training of aircrew. Similarly, would be the case in Army and Navy.

5.10 Lack of specialised Training: Some of the disaster situations require specialised training to handle such situations. Armed Forces neither have the specialised equipment nor the training to handle such situations however by sheer experience they contribute with full zeal which at times does result in unwarranted injuries. For example when the bridge in Calcutta collapsed though Army columns were immediately asked for but they had to wait for specialised equipment to remove the rubble. In such situations they were seen as mere spectators which is not good for their morale. Also such instances do affect the confidence¹⁷ of personnel of Armed Forces as they are considered as an instrument of last resort of government. Such instances do convey a negative image of Armed Forces to the public. With NDRF being specially trained and equipped for the same, preference should be given to them.

5.11 Combat Training. Occurrence of disasters and more than that frequent use of Armed Forces in these disasters does affect the scheduled planned military exercises calendar. More recently during Combined Commanders Conference of 2015, as per directions of Hon'ble Prime Minister, Armed Forces are to undertake disaster relief training with all stake holders at regular intervals. This definitely consumes not only a lot of time but it's resources too which otherwise could have been utilised for combat training and exercises.

¹⁷Dagur, OS; *Armed Forces in Disaster Management, Manekshaw paper No 4, 2008.*

Equipment

5.12 ***Serviceability***: During such operations equipment and personnel are often exploited to the operational limits. As a result equipment is kept serviceable even at the cost of getting spares from different zones. Every equipment is expected to be utilised in a particular pattern but when this pattern gets disrupted, it results in maintenance issues. More than often after the equipment is de-inducted from the disaster relief, there are issues of its serviceability. Spares which are made available during disaster relief are hard to get from other commands resulting in enhanced un-serviceability. If operational requirement arises during this time then such equipment may have to be utilised on concessions which might not be a very healthy for its personnel.

5.13 ***Consumption of Operational Equipment***: More than often during disaster relief, Armed Forces operational equipment gets consumed which takes a lot of time to replenish due to long lead time, prohibitive costing and processes of purchase. To give an example, engineering asset of Army like Bridges, dozers, JCB's etc. are often used for any flood relief or disaster operations. These bridges are meant against our western adversary wherein these are used to cross over into enemy territories in western and Rajasthan sector and their life is limited to number of passes over it with certain load. The network of artificial and natural canals network in these sectors need such bridges which at times are bought from foreign vendors. Over utilisation of this equipment will often leave these units with deficiencies or equipment with reduced life if de- inducted post relief operations. The same takes a lot of time to get replenished. In the meantime, this equipment at times is made available from Theatre reserves which again is degrading our operational capability. Deployment of Army's Pontoon bridges during Shri Shri Ravi Shankar's programme in Yamuna flood plains is yet another example of gross misutilisation of war fighting equipment in the name of aid to Civil authority. . Though large earth moving equipment do have a dual use and can be operated to

support major relief operations but it needs to be remembered that such equipment does come with a particular engine life. Therefore, its over utilisation will result in reduced life and lower reliability for operational task and will impact its spare management.

5.14 Similarly, in recent Okhi Cyclone and Kerala floods, Navy supported the district administration with Gemeni boats. These boats are an integral operational equipment of Ships. However, this equipment including life jackets have not been returned to Navy post. Sure, this equipment will take a long time and correspondence with Ministry of Defence to replenish.

5.15 ***Equipment Turn Over:*** Every equipment is inducted and rated for certain hours and years of Service. It also includes the likely upgrade of the equipment which is planned at certain period. Frequent use of military equipment consumes hours in a quick span of time. Such equipment therefore gets due for upgrade/ maintenance much earlier than scheduled. The whole process of procuring spares gets disturbed resulting in some equipment to be utilised with concessions. This in turn would limit the usage of war fighting equipment with limitations. This over a period of time would result in vintage of equipment and coupled with government's meagre resources in revenue budget for Armed Forces will result in Armed Forces fighting the battle with obsolete and operationally degraded weapon platforms. To give an example if a strategic asset like C-17 has an overhaul life of 20 years for engine and its Airframe then its spares as part of contract are also procured based on average usage pattern. Accelerated usage over a period of time would result in more maintenance and utilisation of additional spares which have not been catered for during initial contract. Similarly, even number of landings is also stipulated therefore any frequent use of aircraft will result in reducing the overhaul life of the undercarriage which subsequently would have to be changed much earlier than scheduled. Both these cases would result in either enhancement of budgetary requirements to buy spares off the shelf which is rare or keep

stretching this aircraft with limited flying till it reaches its original overhaul period. In both cases it has an indirect and direct effect on operational preparedness.

5.16 *Disaster Relief Bricks:* To obviate use of actual war fighting equipment, Armed Forces had proposed procurement of geographically dispersed tailor-made disaster relief bricks which can be used during disaster contingencies. These include some specialised equipment which when placed at central location would not only reduce response time but will also lead to conservation of war like equipment and better quality of response. Advantage is that being centrally located, multiple formations/ units can use this equipment and recoupling of stores is possible within extant procedures. However, Government's reluctance to spend on these bricks has further resulted in exploitation of war fighting equipment of Armed Forces.

5.17 *Utilisation of Ration and fuel of armed Force:* Armed Forces when called upon to handle contingencies which should have been the mandate of Civil machinery often results in utilisation of its ration and fuel which the operating units don't even project for reimbursement. A recent example of Armed Forces helping stranded tourists in Sikkim on 30 December 2018. The Indian Army rescued around 2,500 tourists who were stuck near the India-China border in Sikkim's Nathu La Pass due to heavy snowfall. The tourists, including women and children, who were stranded between the 17 Mile area and Nathu La in Sikkim were provided food, shelter and warm clothes by the Army, as per a Defence Ministry official.. The Indian Army has also provided two sets of JCBs and Dozers of full form BRO for snow clearance and restoration of road connectivity. Arrangements were also made to transfer the tourists to the state capital(2018).After such operation it was reported in one of the newspapers that "Had it not been for the Army, many of us may not be alive. The soldiers gave up their barracks and shared food with us," said a tourist (2018).

Catering for such huge sect of people with energy and resources definitely is the task of Armed Forces especially when areas are inhospitable but it does consume resources which more than often doesn't get compensated as then these are considered as national resources.

Fatigue and Morale

5.18 It is a known fact that Armed Forces are always engaged in enhancing their war fighting capabilities which results in soldiers working beyond the call of duty. Armed Forces personnel are therefore posted to peace stations for rest, recoupment and training for operational tasks. With addition workload of disaster relief and regular training camps it has further added to their curriculum leaving no time for themselves. Soldier will never say that he is tired because of his training but it is definitely stretching today's Armed Forces personnel both physically and mentally.

5.19 Armed Forces personnel are not specially trained for disaster response like NDRF personnel. Further with lack of specialised equipment and need to perform with perfection always and every time does have a toll on individuals mental health.

5.20 Deployment of Armed Forces during initial period of disaster is well understood however when Armed Forces are also required to do rehabilitation process which otherwise is the responsibility of district administration it results in Armed Forces doing menial jobs which affects the morale of its personnel. Motivation to fight the enemy is definitely different from motivation to do post disaster work which definitely affects the Psyche of an individual who needs to have aggression as his attitude than compassion which he exhibits during disaster relief.

Fear of getting involved in Legal issues

5.21 Armed Forces are not legally backed up like Armed Forces Special Protection Act (AFSPA) while undertaking such missions. Armed Forces when called upon in situations of

deteriorating Law and order often results in making the commander on spot and its personnel confused. The methods used by Army and Police are at variance which results in situations out of control. Later the Armed Forces personnel are to answer to their superiors about their role and the way they acted. At times they are legal cases against these personnel which they have to fight on their own. This does impact the morale of personnel and how they would respond in future contingencies. Recent examples of *Jat* agitation and Baba Rahim arrest does point a finger of inadequacies within the system(2016). A bench headed by Chief Justice of India, TS Thakur said that Army was capable enough to deal with any situation and as and when the situation arises things will be taken care of.

5.22 Deployed in Haryana(2016) at the request of a panicked state government who had abdicated their responsibilities at the peak of the *Jat* agitation, there were sufficient Army troops to ward off a “small-scale attack” by an “invading army”, but they proved ineffective as they were “not properly utilised” and, at least in one instance, even “misled into inaction”. This is one of the findings of the Prakash Singh committee appointed by the Haryana government to probe the administrative and police failures during the *Jat* quota violence in February that claimed 30 lives and led to the destruction of public and private property on a massive scale.

5.23 Prior to sentencing of Baba Ram Rahim four columns of Army(2017) along with vehicles and equipment were deployed to cordon off Dera’s headquarters amidst fears of riots and violence. Such instances do bring out inability of our Para military forces and police to combat normal law and order situations.

5.24 Armed Forces may get involved in Centre -State disputes especially if the two are from opposite end of political spectrum when employed in Disaster Relief. To give an example the Armed Forces did a remarkable job during Kerala Floods however, the staff presently are answering a lot of queries related to their role and quantum of effort as part of

RTI's. This not only adds to the work but consumes a lot of time in unnecessary correspondence at different levels.

5.25 To prepare and fight wars, certain degree of aggression is required among Armed Forces personnel however frequent use of Armed Forces in such ops which should have been handled by other agencies does dilute the focus and spirit to fight against enemy. Over interaction with civilian population does at times land up its personnel embroiled in Law and order situations.

Role of the Armed Forces - The Debate

5.26 Role of the Armed Forces in disaster management has however been in debate for quite some time now and has become a regular feature of almost all the seminars on the subject, which are conducted often with seemingly inevitable certainty, the debate being more pronounced within the establishment. Recently growing of instances seem to indicate a kind of norm/trend being established to assist the civil administration even in minor incidents such as retrieving children from bore-wells, rail accidents, situations of law & order and fire fighting. 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.

5.27 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. Generally, over-reliance on the Armed Forces has blunted the initiative of civil authorities. As per DM Act, 2005 there is a need for identification of vulnerabilities at district level and preparation of Disaster Management plan which further need to be integrated with the state level plan. Capabilities need to be created from within their resources, including trained manpower. Another view is to keep status quo because there is a general perception among the force commanders that the present organisational structure has been dealing with disasters quite well. However, 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. Secondly a larger, proactive and more participative role in disaster management is recommended considering the immense and time-tested resources and capabilities of the Armed Forces.

Need for a Larger Role

5.28 The role of the Armed Forces is presently restricted to augmentation of rescue and relief operations as part of the immediate response after the disaster has occurred. The military has had no role in prevention and mitigation of disasters (pre-disaster) and long-term rehabilitation measures (post-disaster) in the past. Now, in the changed scenario, where prevention of disasters and mitigation of adverse effects of disasters including vulnerability and risk assessment, risk reduction and capacity building. Should the Armed Forces be given a larger role?

5.29 If we look towards United States then in their National Response Plan, functional approach is applied wherein it groups the capabilities of federal departments, agencies, and the American Red Cross into Emergency Support Functions (ESFs) to provide the planning, support, resources, programme implementation, and emergency services that are most likely to be needed during Incidents of National Significance. The Department of Defence is involved in many primary and support functions.

5.30 Seeking a larger and proactive role in any of the other spheres like prevention, mitigation and long-term rehabilitation of disaster management may not be rationally justifiable as these basically fall in the realm of the civil administration as a function of governance. The Armed Forces should continue to perform their traditional role of rescue and relief in support of the civil administration. In this era of super specialization and expertise, organisations need to focus on the core competencies and shed the obsession with learning

skills that are otherwise readily available with other establishments as their core competencies. The Armed Forces must put an end to the temptation to become a jack of all trades when the new organisations in the form of the National Disaster Response Force (NDRF) at the national level and composite task forces with armed police, fire services, engineers and medical teams being raised at state level. These organisations should be provided specialist training, as already being done.

5.31 The Armed Forces can, however, contribute towards immediate response during peak crisis period as an intrinsic part of immediate response to arrest and prevent escalation in loss of human lives and damage to property by being better trained and prepared for effective and efficient post-disaster rescue and relief operations. Joint training among all stake holders like paramilitary forces, civil defence teams, home guards and the teams from the corporate organisations and NDRF could also be undertaken at regular intervals for capability development. The Indian Armed Forces do not need legislation to offer aid, that too humanitarian in nature, during disasters. But, of course, the planning at the national level must include the scope and limitation of the assistance. Though at national level now, CISC HQ IDS has been made a member of NEC but there is no one at State / District level. Armed Forces have proposed the respective Command HQs at State level and Local Military Commander at District level as functionaries to be incorporated for better planning and coordination.

5.32 There is a need to mutually decipher, interpret and define the nature of tasks that may be required to be undertaken during various contingencies and situations pertaining to disasters / crisis situations. The idea to dampen the response / discourage over-enthusiasm especially in disaster situations (or even potentially disastrous situations) is not really convincing and the recommendation to be pro-active and more participative is not persuasive enough. Notwithstanding the aforesaid, a legitimate response has to be efficient and effective,

executed in a professional manner. Being pro-active and more participative may not be feasible as the role is limited to immediate response after the disaster has occurred and it does not involve the active participation in other stages or phases of disaster management which should primarily fall in the realm of governance. The circumstances where military assistance becomes crucial needs to be well defined to obviate any kind of ambiguity and at the same time making the assistance legitimate.

5.33 Armed Forces should be content with and not look beyond the confines of the secondary role, so as not to divert their focus from the primary role of combat and war-fighting. What is more critical are the in-house deliberations on implications of the role, in terms of a well-defined and explicit tasking along with manpower, skills and other resources required for each task. Availability of Armed Forces deployed in remote areas and their ability to reach inaccessible areas with relative ease, much earlier than even the NDMA forces, more often than not makes them the inevitable choice as the first responders to emergency situations. Provision of assistance by the military, within and outside the country, during major disasters and catastrophes, using the resources and capabilities that it is endowed with by virtue of training, preparedness and ethos to respond to such eventualities, should however continue as hither-to-fore. Such assistance to other countries moreover falls in the realm of humanitarian assistance and contributes towards enhancing foreign relations through goodwill and cooperation.

5.34 The Armed Forces should be deployed only to support immediate succor and relief efforts in case of major disasters, which are beyond the scope of State Governments / UTs. In the short and medium term, duration of such assistance should be for the minimum essential period. A coordinating officer from the operations branch of the Services should be a part of the disaster management team at the National and State level. The tri-service representation will henceforth be done through DCIDS (Ops) at HQ IDS.

5.35 The constitutional and the legal framework provide for the Armed Forces to render assistance during disasters / calamities when the situation is beyond the capability of the local civil administration. This is enunciated under the subject. “Aid to Civil Authorities by the Armed Forces” both in orders issued by the Government of India vide the Ministry of Defence Pamphlet dated 30 Nov 1970 (under revision) and also by the respective Services. This enables organized and clearly defined support from the Armed Forces as also provides necessary sanction (financial and otherwise) for deployment of defence resources. The Armed Forces may also be called upon to render such assistance to another friendly country, on a specific request to the Government of India.

5.36 The Armed Forces have so far been using their own equipment that is meant for combat operations. The commitment of such operational equipment entails serious pitfalls as it will adversely affect their operational preparedness in the long run. The Services have expressed this concern many times and have suggested that a separate cache of equipment in form of disaster relief bricks be maintained for use during rescue and relief operations. Also, the equipment in these disaster bricks needed for disaster response has to be kept in adequate quantities and should be readily accessible, in working condition, at very short notice. It should ideally be in the charge of the organisation that is going to utilise it and the same organisation should also be made accountable for the availability of the equipment and its serviceability.

5.37 The tables below analyses the issue through statistics, as it is concern of national security and the data is classified only three years data is shown for demonstration purpose. Also the tables below would substantiate the excerpts cited above.

INDIAN AIR FORCE FLYING TOWARDS HADR

Year	Helicopter			Fixed Wing		
	Flying Hrs	Tonnage (Tonnes)	Passengers	Flying Hrs	Tonnage (Tonnes)	Passengers
2016	227	395	515	785	891	966
2017	488	870	1000	282	563	2544
2018	861	360	2082	682	1283	3875
TOTAL	1576	1625	3597	1749	2737	7385

Table – 2: Details of Indian Air Force Flying towards HADR

5.38 The above table indicates the amount of flying, tonnage lifted and number of passengers evacuated during HADR undertaken by Air Force from 2016 to 2018 within the country. In case of helicopters there has been increase of flying hours which definitely reflects growing trend of utilisation of these platforms. It can happen that during disasters in 2018 requirement was to lift more people out of disaster areas rather than supplying aid. Utilisation of these platforms in what role will greatly depend upon the immediate requirements of a particular Disaster situation. Suffice to say that that these platforms are increasingly being utilised.

HELICOPTER FLYING WESTERN AIR COMMAND

Years	HADR	Aid to Civil Authority	VIP Flying	Training	Combat Operations	Total
2017	10	240	1492	9008	10203	20953
2018	81	355	513	7532	12285	20766
Total	91	595	2005	16540	22488	41719

Table – 3: Details of Helicopter Flying in Western Command of IAF

FIXED WING FLYING WESTERN AIR COMMAND

Years	HADR	Aid to Civil Authority	Total
2016	225	123	348
2017	68	150	218
2018	120	82	202
Total	413	355	566

Table – 4: Details of Fixed Flying in Western Command of IAF

5.39 The above table is the amount of flying undertaken by helicopter fleet and transport fleet in respect of Western Command for the two years. The details of flying carried out towards HADR is classified and thus only sample years have been reflected to demonstrate the complexity and gravity of the issue. It is also reiterated that these figures are approximate to indicate the growing trend of utilisation. Though available with Service HQs, the figures for previous years cannot be documented for want of restricted information.

REIMBURSEMENT OF HADR DUE TO IAF

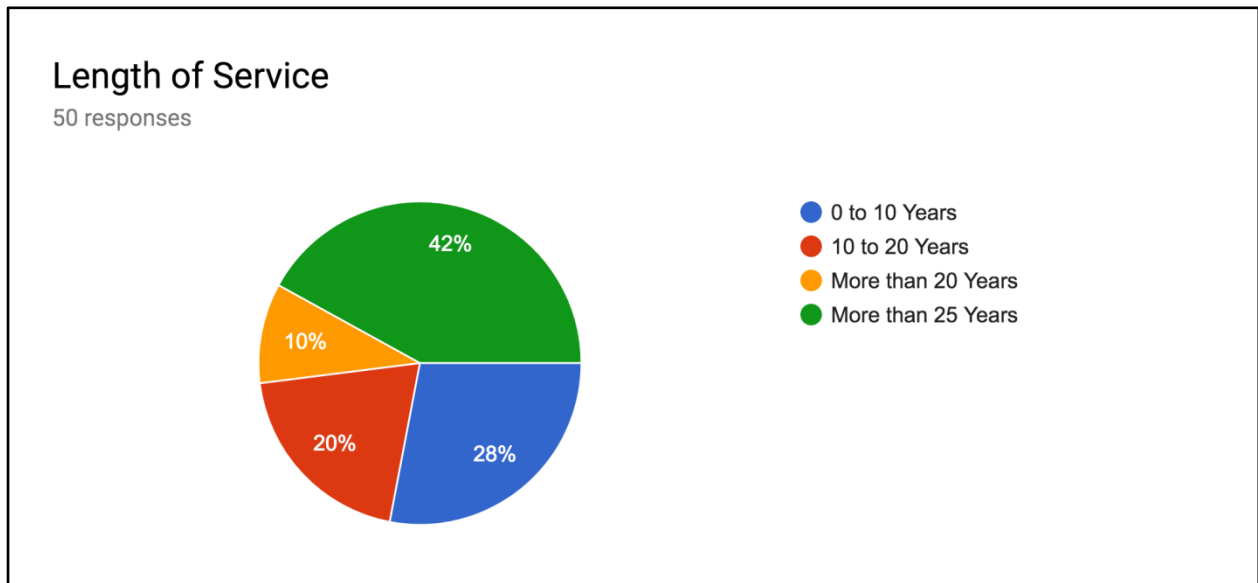
	2014-15	2015-16	2016-17	2017-18	2018-till date	Total
Cost of Air Charges (Crores)	477	148	106	128	244	1103
Total	477	148	106	128	244	1103

Table – 5: Details of Reimbursement of HADR Due to IAF

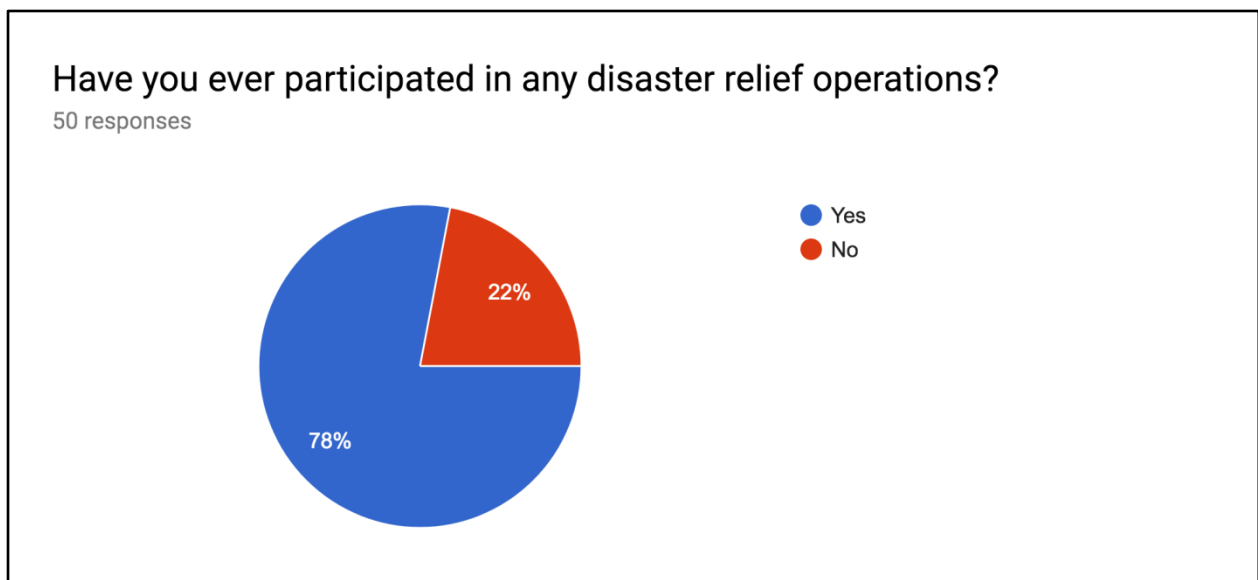
5.40 The above table indicates the amount of reimbursement sought by IAF for the Air Charges in respect of platforms utilised by various states during Aid to civil authority and HADR. These charges are approved by the government and revised every year. 2014-15 figures are high primarily because in that year a lot of effort was utilised towards Uttarakhand, J&K, Assam, Bihar and Orissa flood relief operations. Depending upon the occurrence of number of disasters this cost would vary from year to year. It is also brought out that reimbursement of cost of utilisation of the IAF equipment in most of the cases is pending with various ministries and also when reimbursed it does not come to the revenue budget of IAF but goes to consolidated fund of India. Hence this money is not available to IAF for capacity building which ideally should be the case.

ANALYSIS OF GOOGLE QUESTIONNAIRE

A Google Questionnaire was sent to 60 serving defence personnel. The aim of this questionnaire was to seek views of the personnel who have participated in actual operations and planning these operations. 50 Personnel responded. Their detailed analysis is given below:



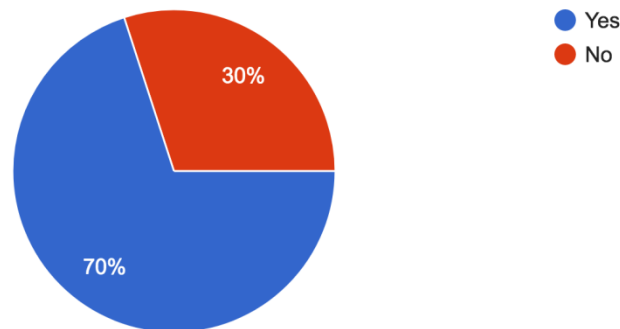
Of all the respondents, majority of them have more than 20 years of Service and therefore has good assessment of role of Armed Forces in Disaster Management.



More than 77% of respondents have participated in disaster relief operations. This helps them to answer the subsequent questions keeping their personnel experience in mind and therefore the correct assessment.

Have you been associated with planning of operations for disaster relief?

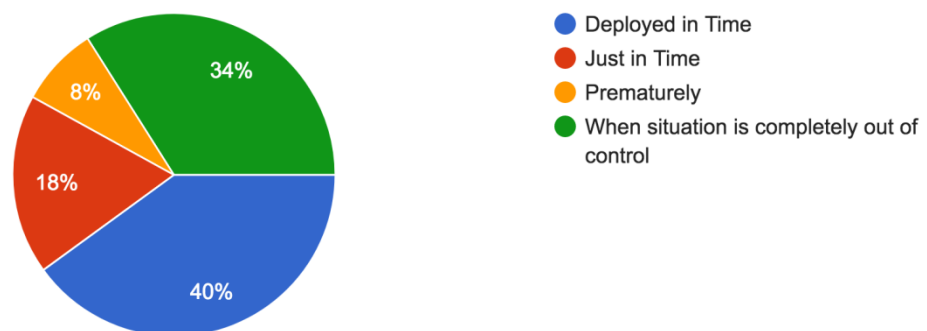
50 responses



More than 68% of respondents have undertaken planning of disaster relief operations because of their experience. Hence their views on Joint civil military operations and the challenges faced by Armed Forces should help in overcoming these issues in future operations.

How do you think that Armed Forces are employed in Disaster relief operations

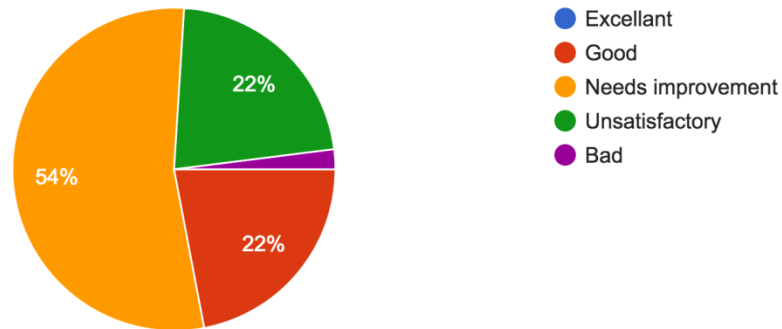
50 responses



More than 40% respondents feel that Armed Forces are deployed in time.

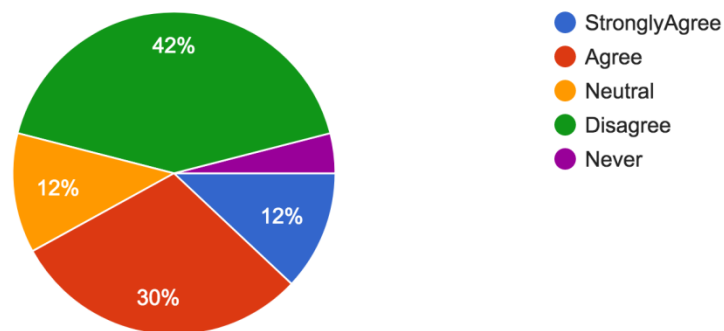
What in your view is the state of disaster management coordination between the civil administration and units/formations of the Armed Forces.

50 responses



Coordination between civil administration and Armed Forces is one of the major concerns when it comes to conduct of relief operations and the same has been echoed by 54% of respondents.

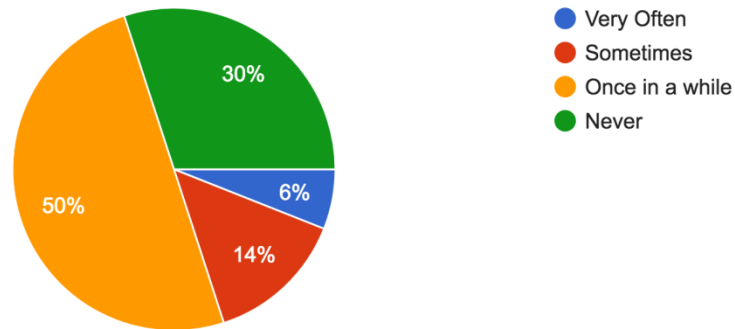
The Armed Forces are to be deployed as a last resort in aid to civil authority. However there is a view that graduated response should be avoided and Armed Forces may be deployed in anticipation of a disaster to limit losses based on the assessment of a calamity. Do you agree?



More than 42% respondents agree that Armed Forces should not be deployed in anticipation which in turn indicates that Armed Forces should not be misutilised.

How often are Joint mock exercises by the civil administration and Armed Forces done?

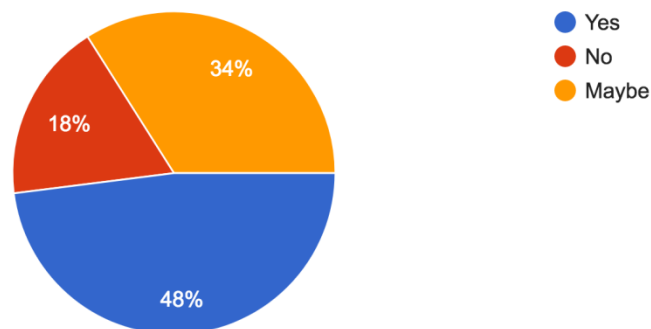
50 responses



Half of respondents are of the opinion that joint mock exercises are rarely carried out which results in coordination issues and more than often a blame game regarding promptness and coverage of disaster relief.

Do the joint exercises increase the workload for its personnel?

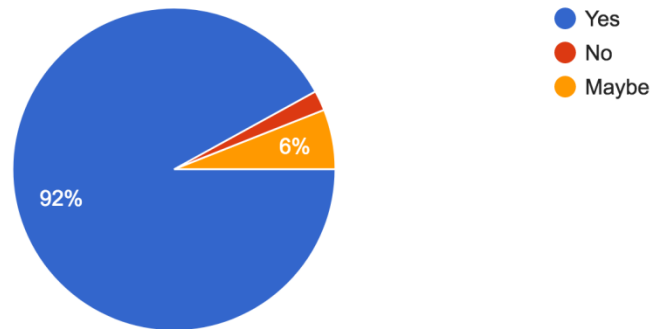
50 responses



Almost 74% of respondents feel that due to joint exercises, the overall workload has increased for its personnel.

Do you think that there is a growing trend of utilisation of Armed Forces towards disaster response?

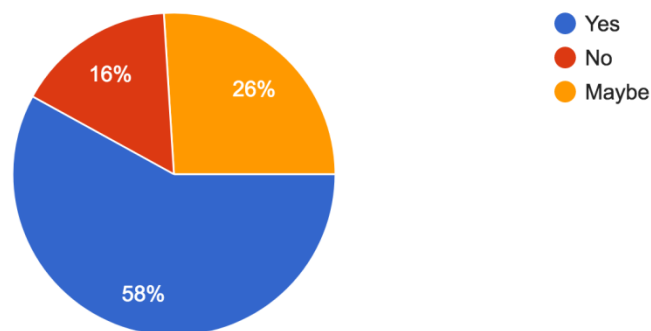
50 responses



92% of respondents feel that there is a growing trend of utilization of Armed Forces which validates the point that Armed Forces are more than often acting as first responders.

Do you think the serviceability of equipment gets affected by its use during disaster relief operations?

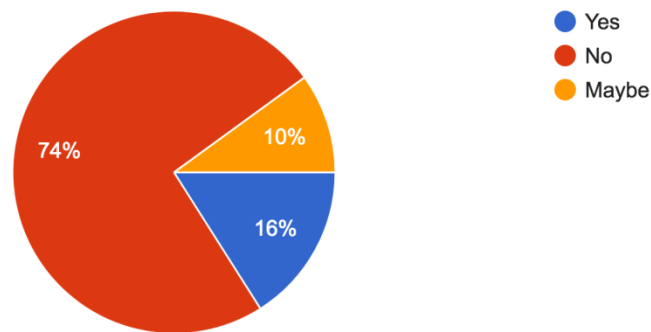
50 responses



More than 59% agree that Armed Forces equipment serviceability gets affected when used in disaster operations. Another 27% personnel feel that serviceability may be affected. This clearly shows that the war fighting equipment of Armed Forces do get affected which in turn will affect operational preparedness for the duration till the equipment is replaced or made serviceable.

Do you think that with raising of NDRF , role of Armed forces has gone down.

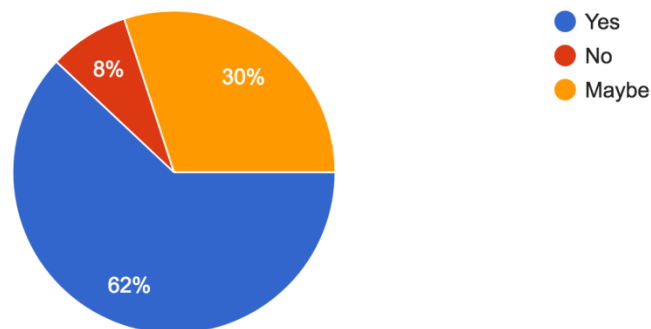
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Despite raising of NDRF, 74% respondents feel that the role of Armed Forces has not come down.

Does the indiscriminate usage of armed Forces equipment affect its availability for actual operations?

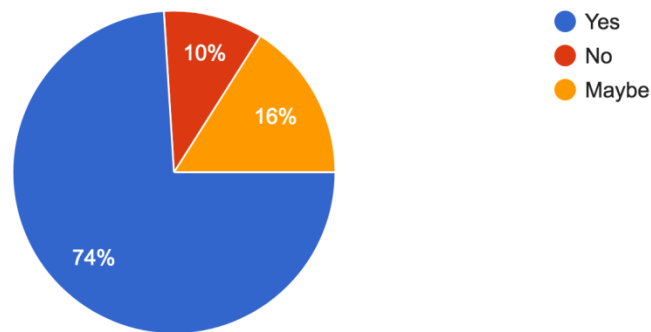
50 responses



Almost 62% respondents agree that over utilization of Armed Forces equipment does limit its availability for actual operations.

Does the occurrence of disaster and subsequent use of armed forces in these disasters affect the scheduled planned military exercises calendar?

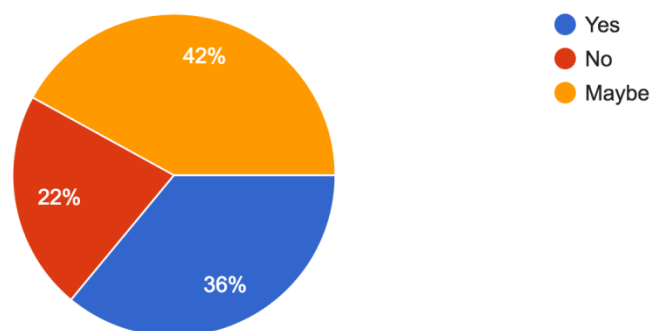
50 responses



Almost 74% personnel feel that routine training calendar gets affected because of participation of Armed Forces in relief operations. Certain exercises are planned keeping the suitability of climatic conditions, availability of equipment and personnel of other services in mind.

Do you think that there have been occasions of utilisation of operational equipment which have never been returned post the disaster response?

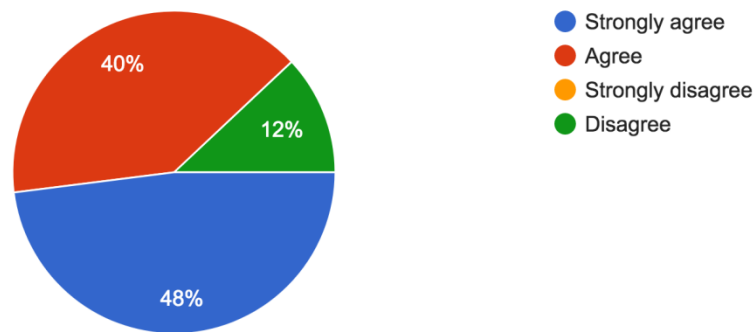
50 responses



Non-return of operational equipment is a major concern when Armed Forces are called upon to support the civil administration. Between yes and May be a total of 78% respondents feel this way. Non return of Navy's Gemini boats and rescue jackets in the recent Kerala flood relief is a glaring example.

Do you think that Armed forces must be given Disaster relief bricks to avoid utilisation of war fighting equipment?

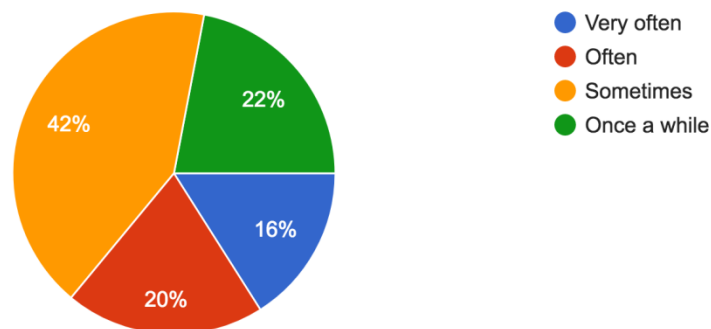
50 responses



Armed Forces have for a long time given the government this proposal of geographically dispersed disaster relief bricks. More than 87% agree that this will avoid utilization of war fighting equipment of the Armed Forces.

How many times it has happened that ration and fuel meant for armed forces is utilised towards disaster relief and the same is not reimbursed?

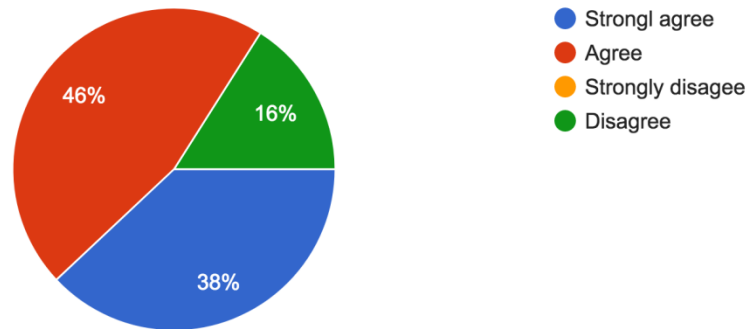
50 responses



Almost 72% of respondents agree that ration and fuel does get consumed toward support of relief operations but to varying degrees which does not get reimbursed which in turn indicates the same is not available to its personnel.

Do you think that Armed Forces are the first to reach and last to return from the disaster?

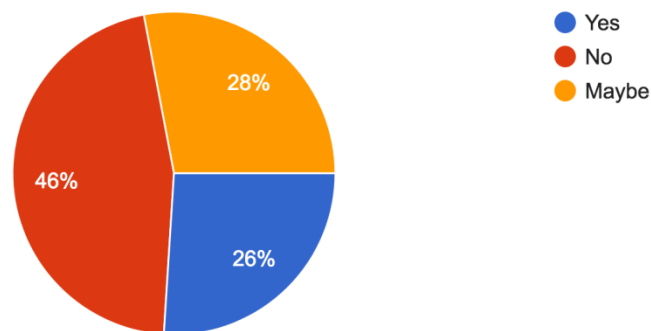
50 responses



Almost 84% respondents agree that Armed Forces act as first responders and it takes time for them to get derequisitioned on completion of job.

Do you think that involvement of Armed Forces in disaster response has affected the operational preparedness of Armed Forces?

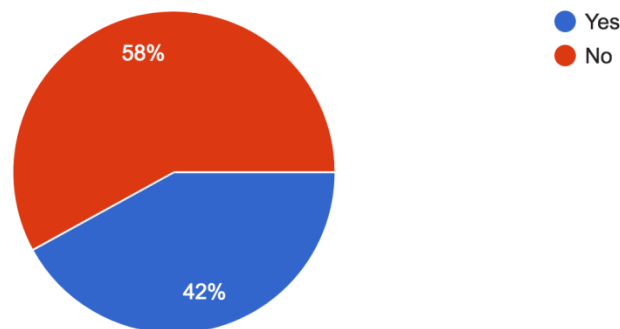
50 responses



Almost 26% feel that growing involvement of Armed Forces does impact operational preparedness. Another 28% don't want to commit because of sensitiveness of the question.

Has the growing participation in Disaster relief affected the combat training?

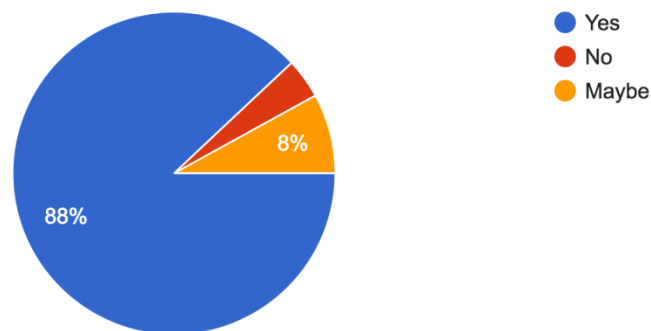
50 responses



Further to the question above, almost 58% feel that growing involvement does affect the combat capability.

Do you think that armed forces utilisation under clause of Aid to civil authority has increased?

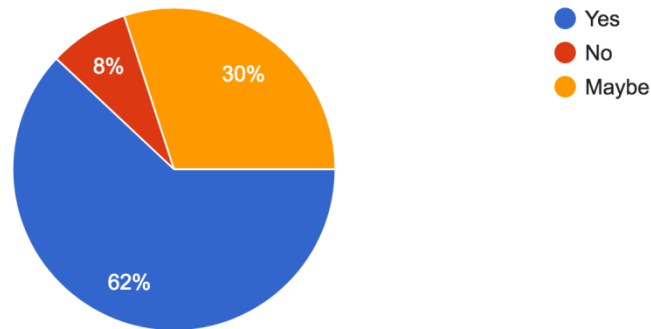
50 responses



Almost 88% respondents feel that Armed Forces are increasingly been used under clause of Aid to civil Authority. This definitely undermines the capability of civil administration to handle routine disaster situations which further erodes the faith of Indian citizens in civil administration. This has a cascading affect as far as developing capacity building and resilience among the people to fight such situations is concerned.

Do you think that armed forces utilisation under clause Aid to civil authority is much before the civil administration options and resources gets exhausted?

50 responses



Further to the question above almost 62% respondents feel that civil administration immediately seeks assistance of Armed Forces without first using their resources and expertise. This over dependence on Armed Forces is a dangerous trend because it not only adds pressure on Armed Forces but also does affect them in preparing for their primary duty which is war fighting.

Chapter 6

PROGNOSIS AND RECOMMENDATIONS

General

6.1 The whole mechanism of disaster relief is highly dependent on how the society willingly participates, sensitivity of people and many intangible factors which are manifestations of existing socio-economic conditions. The role played by all stakeholders including the one played by Armed Forces would be critical for success of any Disaster Relief. However, if the balance is not met within the stakeholders for their responsibilities then it will affect the Operational preparedness of Armed Forces. Keeping above factors in mind, study has been undertaken to analyse certain concerns relating to institutional mechanisms for managing disasters, and recommend the role to be played by the Armed Forces in the future.

6.2 Two divergent views are being voiced in various forums over the role of the Armed Forces in fighting disasters especially now when there is frequent employment of Armed Forces not only in the initial phase but during rehabilitation time. Whereas one view recommends dampening the Armed Forces response and discourages over-enthusiasm, while the other recommends a proactive and more participative role in disaster management. Traditionally, the Armed Forces have been forming the core of the government response, however the new approach to managing disasters at the National level has already made a beginning by raising the National Disaster Response Force, and Fire services, police, civil defence and home guards which are in the process of being revived, trained and equipped for a more effective role during disasters. However, it is well acknowledged that the efficacy of these organisations, in terms of training, equipment, culture, ethos, professionalism and of course, effectiveness will need substantial improvements and may involve a reasonable period of time. The Disaster Management Act 2005 is surprisingly silent on the aspect of

assigning a well-defined role and responsibilities to the Armed Forces. Although, there may have not been an explicit articulation in the Act but the military is likely to continue to form part of the “Core Group” for immediate response.

6.3 The skills and expertise required for the traditional role are already inherent in military training. Besides, the individual skills required for rescue and relief operations in various contingencies, the military is endowed with the leadership acumen, organizing abilities and sense of professionalism that are essential for performance of the role. The military culture in itself provides for the enabling environment and right kind of attitude for performance during crises and disasters. It would, however, be prudent to further hone skills in fields like search and rescue and countering terrorist acts involving weapons of mass destruction. As regards general skills, the Armed Forces can continue to train the earmarked units at unit and formation levels. It is suggested that the training should be formalised by including disaster relief and response in the curriculum of individual and collective training. The specialist training, however, may need to be institutionalized.

6.4 Establishment of a central civilian academy wherein not only the Services but personnel from NDRF, civil defence, home guards, police, volunteers and even from corporate organisations are imparted training. This second option would not only facilitate the training to be standardised but also facilitate the agency to provide certification for all trained personnel. It could function under the National Institute of Disaster Management / National Disaster Management Authority (NDMA). The Armed Forces have so far been using their own equipment that is meant for combat operations, however, the commitment of operational equipment has serious pitfalls. In the long run, it affects the operational preparedness adversely. The Services have expressed this concern many times and have proposed procurement of Disaster Relief bricks which the govt has not agreed to.

6.5 In view of the fact that the disaster management system of the civilian administration continues to depend on the Armed Forces for disaster response there are certain recommendations which will strengthen the whole system of Disaster response.

Recommendations

Integrated Planning

6.6 There is a need to have long term and comprehensive institutional arrangements to address disaster issues with a long-term vision, keeping in view these inter-related linkages. Integrated planning between disaster management, development planning and environmental management institutions is virtually absent and must be institutionalized as also disaster risk reduction and preparedness should be integrated with developmental projects. Although, some States of the Union have taken a step in this direction, there is still a need for consolidated and synergised implementation at the National level.

Institutional Framework

6.7 *Function of Good and Effective Governance:* Disaster management is an important tool towards good and effective governance which is the key to achieving sustainable human development. Disruptions caused due to disasters must be kept at the minimum especially so in a developing country as it effects socio economic systems.

6.8 *Need for Awareness and Cultural Change:* There is a need to bring in an awareness about disaster risk reduction and positive changes in the culture and mind set of the society so as to effectively work towards disaster prevention and mitigation. Risk management, in the broadest sense, should be an integral part of strategy, procedures and culture.

6.9 *NDMA as a Nodal Agency:* A strong NDMA is the central key element in the institutional mechanism and should function as the nodal agency providing the necessary framework for coordinated action. Although, some progress has been made now, there is a need to further demonstrate leadership and professional competence, and earn the confidence and support of stakeholders at all levels. As part of institutionalization all the agencies and establishments working towards managing disasters should in a way be linked with the NDMA

Legal Frameworks Supporting Disaster Management

6.10 The legislative provisions should distinctly define the responsibilities of not only the newly created organizations but also the existing agencies and departments that are dealing with managing disasters. This aspect needs to be addressed suitably by the legislative mechanism to bring all other disaster related acts and provisions on a single platform, essentially to integrate the whole process to enable better consistency.

6.11 The role of the Armed Forces during disasters, even being part of a secondary role, should also be specifically indicated considering that even a secondary role needs to be well defined and a role – be it primary or secondary, has to be performed with a sense of élan and professionalism. It is hence necessary that the role is properly translated into specific missions / objectives so that the organization can prepare for it in terms of organizations, training and resources.

Policy Formulation and Planning

6.12 The overall policy must ensure that the institutional mechanism provides for an integrated approach to deal with managing disasters. and be able to integrate disaster mitigation into development planning. Also guidelines must ensure that excessive use of

Armed Forces is avoided and should be used as the last resort. Following aspects are recommended to be included in the policy:

- (a) Ensure that disaster risk reduction is a National and local priority.
- (b) The Central Government should play a more participative role than just a supportive role with political commitment being translated into actions.
- (c) The policy should aim to synergise effort of all stakeholders in an integrated manner.
- (d) The whole process of managing disasters involving affected communities should be transparent.
- (e) Stringent action against defaulters, violation of laid down rules, regulations, bye laws and other norms with respect to safety of people, loss of property and misappropriation of funds with a view to discourage malpractice.
- (f) A participatory and contributory role involving schools, colleges and universities in generating awareness needs to be defined for pre-disaster preparedness and post-disaster response.
- (g) A participatory and contributory role involving schools, colleges and universities in generating awareness needs to be defined for pre-disaster preparedness and post-disaster response.

Disaster Risk Reduction

6.13 **Basic Strategy:** The most basic strategy would be to firstly limit the potential and intensity of probable hazards, if feasible (such as preventive actions in case of floods, droughts, fires, global warming and other man-made hazards / incidents) and secondly to reduce the vulnerability of the community through a set of measures ranging from development (preventive) to preparedness (proactive), thereby reducing the risk and exposure of people to the underlying risks.

6.14 **Vulnerability Analysis and Risk Assessment:** Hazard mapping and vulnerability assessment should be reviewed periodically as awareness of risk is necessary to engage in

disaster risk reduction. Development of a Disaster Risk Index is also mandatory while risk assessment is an essential component of strategic planning.

6.15 ***Institutional Mechanism and Community Preparedness:*** No policy can be meaningfully implemented unless the same is fully backed up by an institutional and legal mechanism. The major role of the institutions that have come up at National, State and District levels should be to firstly organize and adapt themselves to be proactive and secondly synergize their efforts to achieve disaster risk reduction through viable strategies.

6.16 ***Training of First Responders and Other Stakeholders:*** The training of first responders to include teams earmarked at the local level, NDRF, Home Guards, Civil Defence and rescue teams earmarked by the Defence Forces needs to be further streamlined and institutionalized to meet the objectives of the newly structured edifice of managing disasters.

6.17 ***Training and Knowledge:*** Training objectives for each skill-set required for emergency functions and emergency support functions should be laid down and training should be organized and conducted either by one institute, or else measures should be taken to standardize the training requirements.

6.18 ***Mock up Drills and Rehearsals.*** District Collectors must be mandated to carry out mock drills and rehearsals of all plans at least once in a year. Mock drills and rehearsals are in fact a medium to generate and develop the essence of team work and provide an objective assessment of the preparedness and readiness state of the group / team as such. The civil administration should also conduct necessary liaison and coordination meetings with representatives of the Armed Forces at regular intervals.

Strengthening of Armed Forces in Disaster Management

6.19 The role of the Armed Forces should continue to be secondary in nature, however they should train and equip suitably to be the first responders and provide immediate succour

and assistance till the NDMA and other agencies can finally takeover. Hence, a defined role for the Armed Forces in disaster management is required and the following recommendations accordingly have been included keeping in view the stated role (as part of aid to civil authorities), past experience and the likely developments in the future, especially in the context of disaster response.

- a. **Training Policy.** There is a need to lay down a policy to streamline the training needs for performance of the stipulated role of Armed Forces in disaster management. Broadly, the policy should include role and functions, training goals and measurable objectives. There is also a need to institutionalise the training curriculum and course structures to include general and specialized training, joint training, mock up drills, exercises and rehearsals, performance assessment and appraisal, qualifications and certifications. In addition rescue capabilities will need to be reviewed at regular intervals in concert with developments in terms of expertise, concepts and skills in this field.
- b. **Establishment of Centre of Excellence.** There is a need to establish a centre for excellence in disaster management for the Indian Armed Forces under the aegis of HQ, IDS, and the Indian National Defence University (INDU). It could provide the much needed training for disaster management to enable commanders to facilitate effective response. 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.

- c. **Staff Expertise.** 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.
- d. **Links with Specialized Training Facilities.** Linkages with training institutes and facilities like National Institute of Disaster Management should be established to draw from their experience including latest concepts, training and equipment perspectives.
- e. **Formulation of SOPs and Training/Operating Manuals.** Operation manuals for each type of search and rescue operation need to be formulated. Training manuals also need to be prepared and updated at regular intervals in coordination with respective State Govts and the NDMA.
- f. **Joint Training.** We need to identify aspects that require jointness and integration for an effective joint response. Joint training with organizations of the NDMA that are being raised should also be planned.
- g. **Capability Development.** The focus must be on capability development which is essentially a function of availability of trained manpower and equipment. 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.

- h Mock Up Drills and Simulation Exercises.* These should be planned with the civil administration and other organizations that would be participating in rescue and relief operations. The planning and conduct of such events must lead to better coordination with a view to facilitate interoperability develop rapport and synergise the effort of disaster response.
- j Procurement of Disaster Relief Bricks.* 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 disaster relief bricks which could be centrally located but under Armed Forces for utilisation and maintenance specifically for disaster response at the earliest. This would ensure that the military equipment meant for war is not used for secondary tasks.
- k Sensitisation of civilian bureaucracy.* The civil administration should carry out a comprehensive “SWOT analysis so as to take considered decisions before requisitioning the assistance of the Armed Forces in case of a disaster. The Armed Forces should be deployed as a last resort but not always as the last. An assessment of the situation and need for assistance of the Armed Forces must be anticipated / ascertained by the civil administration. with the Armed Forces units and formations kept in the picture about a developing disaster situation. A graduated / sequential response in disaster management should be avoided and the Armed Forces if required should be deployed well in time to be effective.
- l Avoid Politicisation of Disaster Response and recovery.* Politicisation of Disaster relief is not a unique phenomenon restricted to India however its magnitude can be clearly seen in terms of extent of budget allocation and Armed Forces deployment. States and provinces where the state govt and Central govt are in support of each other, Armed Forces are used as means of governance in the rehabilitation phase and

don't get de inducted even after initial response is over. Owing to growing politicisation this trend of over utilisation of Armed Forces must be avoided so as to prevent impact on operational preparedness of Armed Forces in the long run.

m Post Disaster Analysis and Accountability. A post-disaster analysis should be carried out to ascertain if the disaster could have been managed by the civil administration. Also role played by each stake holders must be analysed for any omission's/issues of jointness. This will help the Disaster response mechanism of the country to develop with assigned roles and responsibilities for each stake holder.

n Reimbursement of Money Spent on HADR. A significant expenditure is incurred by the Defence Services towards HADR. There are substantial shortfalls in recovering the money and when reimbursed, it cannot be utilized for Defence expenditure as it is remitted to the Consolidated Fund of India. There is a need to insulate the Defence Budget from this expenditure. This has been recommended by the 14th Finance commission also. Complete reimbursement needs to be mandatory and the amount is recommended to be remitted into the reserve fund (specially created) for the Defence Services to be utilized exclusively for capacity building of Armed Forces. Alternatively, MHA advances an amount from NDRF based on average expenditures during the preceding years to MoD. The cost incurred by Armed Forces on Disaster response is adjusted from the advance given to MoD against the expenditure made from Revenue budget in execution of disaster response. The Revenue budgets of Armed Forces would thus get compensated in the same financial year for the expenditures incurred on Disaster response. To give an example the expenditure details of each Service in the recently conducted HADR operations is attached as Annexure 6.

Conclusion

6.20 Disaster management until recently, in India was normally viewed as a post-disaster function and comprised of activities such as rescue, relief and rehabilitation after the occurrence of a disaster. Such an approach was short-sighted, extravagant, and prone to unnecessary interference by vested parties. However, in the recent past, since the raising of the NDMA, there has been a pragmatic shift in India's approach to disaster management. The new approach is multi-sectoral, multi-disciplinary, holistic and proactive where-in disaster management is now sought to be built into the development planning process itself. Also, disaster management is an important issue that cannot be addressed by one agency, technology or institution alone and calls for convergence of technologies and institutions with the goal of fulfilling various dimensions, timelines, accuracy, scope and coverage, encompassing a suitable mix of policy reforms, institutional changes and technology options to ensure minimal casualties.

6.21 At the National level, disaster management has to be integrated with the development process through a well-laid down mechanism that needs to be sustained over a long period of time to achieve visible and desired results. Vulnerability assessment, micro-zonation, disaster risk indices, risk reduction measures, preparedness, objective evaluation and assessment and a well-planned post-disaster response to include search and rescue, relief, recovery and rehabilitation are mandatory for a holistic approach for management of disasters. Also, a willing, collective, participatory, professional and collaborative approach integrating individuals, communities, organizations at local, district, state, national, regional and international levels is the only way that can lead us to relatively disaster free environs and in case disaster strikes, to suffer the least losses and casualties. In view of the above, it may not be entirely incorrect to assume that the Armed Forces, even in the absence of explicit formal

and legal support would continue to be an important stakeholder in the National endeavor to manage and fight disasters.

6.22 While wars occur once in two or three decades, disasters strike with virtual regularity, almost every year, especially in India. These disasters result in heavy casualties and losses, much more than the casualties of conventional wars. The role of the Armed Forces in aid to the civil authority, in disaster management situations is well defined and unambiguous. It must also be noted that, despite the DM Act, 2005 which does not recognise the Armed Forces as an actor in disaster response and recovery, the Indian government continues to engage the Armed Forces and legitimise this expansion of role under “other types of assistance which may be needed by the civil authorities and which Armed Forces are in a position to render”. This is of serious concern to holistic welfare of communities which in the long run can eventually make these communities even more dependent on the Armed Forces instead of developing adaptive local capacities and building resilience. Building Capacity of the communities, State and district disaster management authorities shall contribute to strengthening of Government institutions and would also minimise the intervention of Armed Forces in disaster recovery. It also does impact the operational preparedness for war in the long run.

6.23 In the given circumstances, the Armed Forces will continue to be a key player in the field of Disaster Management in our country. They can react quickly and respond rapidly in a fully self-contained, self-sufficient and highly mobile fashion. Military personnel are well trained in individual skills necessary to perform their professional and functional activities and are practical in collaboration and coordinated action under an integrated / flexible management system.

6.24 It needs to be understood that the role of the Armed Forces is secondary - in support of the civilian administration; and secondly it has no role otherwise in prevention, long term

mitigation and rehabilitation or in the developmental process linked with disaster management in a larger and more inclusive perspective. However, greater amount of interaction with the concerned civil authorities during the preparatory stage would help in reducing the reaction times at all levels, thereby ensuring better and more synergised disaster mitigation efforts. Disaster management is very much a part of the overall development process and is a function of governance cutting across many fields and disciplines and with a wide range of stakeholders. Armed Forces is one of the many but vital tool used by the government for the purpose of managing a crisis. Preparedness to respond effectively, in adverse situations, should not be relegated in importance and training and equipping hence should become a key result area and a significant part of training objectives of units and formations, as and when earmarked for the role. Apart from training, equipment and stores used for transportation, organising relief camps, medical camps and other administrative purposes, operational equipment, particularly engineering equipment like bridges, plants, boats, dozers, generators and other such equipment which comprises critical operational stores also gets utilised and committed on the ground almost every year, especially during the monsoon season. In addition, during major disasters there is over utilization of air platforms of IAF. All this has serious implications for the availability of equipment and its serviceability needed for operational readiness. There is a need to sensitise civil Machinery to use Armed Forces only when needed which will go a long way in ensuring that Operational Preparedness is not compromised while utilizing its resources and personnel for national task of Disaster management. Steps should also be taken to ensure that some specialised equipment in form of Disaster Relief bricks is procured through appropriate funds and kept with units of the three Services, especially those which are located at remote areas or in the near vicinity of disaster-prone areas. For capacity building within Armed Forces, the Government must reimburse the cost of HADR undertaken by Armed Forces to the



individual services revenue budget within the same financial year rather than consolidated fund of India which is normally the norm.

6.25 There are only 12 NDRF battalions. Each battalion has 18 teams with 45 personnel each.

Therefore, a total of 216 teams is highly insufficient for a country with the frequency of disasters like India. Hence, Armed Forces will remain relevant. It is unlikely, that the role of the Armed Forces will ever become redundant or the pressure is ever going to reduce because of other resources being now available to deal with major disasters the Armed Forces need to enhance operational capacities, gear up their disaster response further and continue to acquit themselves with distinction when called to aid the civil administration. The important issue is the optimisation of the Armed Forces potential in disaster rescue and relief by integrating them in the state apparatus and synergising all the efforts. Being a very important stakeholder, the Armed Forces should be formally recognised as part of the planning process of disaster management in the states rather than carrying out only a functional role. The civil administration should keep the principle of last resort in mind while deploying troops in disaster management, and derequisition them as soon as possible. More than often Armed Forces are called upon as first responder therefore the response should never become ineffective and inefficient. Last, but not the least, is that the Armed Forces should not lose focus and get involved in disaster management at the cost of their primary role. A balanced approach to both the roles would have to be made and accordingly both government and civilian bureaucracy sensitised.

Major Disasters in The Known History of India

Sl. No.	Name of Event	Year	Fatalities
1.	Maharashtra Earthquake	1618	2000
2.	Bengal Earthquake	1737	300,000
3.	Bengal Cyclone	1864	60,000
4.	The Great Famine of Southern India	1876-1878	5.5 million
5.	Maharashtra Cyclone	1882	100,000
6.	The Great Indian Famine	1896-1897	1.25 million to 10 million
7.	Kangra Earthquake	1905	20,000
8.	Bihar Earthquake	1934	6,000
9.	Bengal Cyclone	1970	500,000
10.	Drought	1972	200 million people affected
11.	Andhra Pradesh Cyclone	1977	10,000
12.	Drought in Haryana & Punjab	1987	300 million people affected
13.	Latur Earthquake	1993	7,928 dead and 30,000 injured
14.	Orissa Super Cyclone	1999	10,000
15.	Gujarat Earthquake	2001	25,000
16.	Indian Ocean Tsunami	2004	10,749 dead and 5,640 missing
17.	Kashmir Earthquake (in Kashmir & Pakistan)	2005	86000 dead
18.	Kosi Floods	2008	527
19.	Cyclone Nisha of Tamil Nadu	2008	204
20.	Uttarakhand Floods	June 2013	Over 15,000 dead
21.	Cyclone Phailin	Oct 2013	Over 45 Dead
22.	J & K Floods	Sep 2014	Over 300 dead
23.	Cyclone Hudhud	Oct 2014	Over 60 dead
24.	Gujrat floods	June & Jul 2015	Over 150 killed

25.	South India Floods	Nov-Dec 2015	Over 500 dead
26.	Assam Floods	Jul-Aug 2016	Over 50 Dead
27.	Cyclone Vardah	Dec 2016	Over 50 Dead
28.	North East, West Bengal & Gujrat floods	Jul 2017	Over 500 Dead
29.	Bihar Floods	Aug 2017	Over 500 Dead
30.	Kerela Floods	Aug 2018	Over 500 Dead

**DETAILS OF HADR BY INDIAN AIR FORCE: NATIONAL
2016**

Sl. No.	Period	State	Load Ton/Passengers	Hrs/Sorties
1.	04 Jan 16	Assam: Flood relief	9.1 Ton/117 Pax	09:00/09
2.	20-23 Feb 16	Haryana: JAT Agitation CRPF Pax	3188 Pax	44:15/32
3.	10 Apr 16	Kerala: Putingal temple fire	1.30 Ton/91 Pax	37:25/31
4.	09-21 Sep 16	J&K: Agitation	528 Ton/11379 pax 35,000 Litres of water	310:15/209
5.	20-23 Aug 16	Bihar: Flood Relief	27.3 Ton/539 Pax	13:15/08
6.	20 Nov 16	UP: Kanpur Train Accident	8.518 Ton/72 pax	02:00/02
7.	Nov 16-Dec 16	MHA: RBI Airlift of treasury & Airlift of CRPF on death of CM J Jayalalitha	668.5 Ton/1636 pax	228:00/41
8.	27 Dec 16	Manipur: Imphal Law & Order	13 Ton/173 CRPF pax	06:35/03

2017

Sl. No.	Period	State	Load Ton/Passengers	Hrs/Sorties
9.	22-2 Jan 17	Manipur: Imphal Law & Order	02x20 KL refueler 12x12KL refueler	26:--/03
10.	04 Feb 17	Sikkim: Fire fighting	66,500 Litres of water	13:30/23
11.	03-04 Mar 17	Tamilnadu: Bambi Bucket Parambikulam	21600 Litres of water	03:35/08

12.	01-04 Apr 17	J&K: Srinagar Bye-Election	60 Ton/856 Pax 07 Mortal remains, 18 injured and 33 other civilians	41:--/07
13.	14-20 Apr 17	Rajasthan: Fire fighting & flood relief	4,46,200 Litres of water 03.25 Ton & 09 pax	71:05/79
14.	27 Jul 17	Gujarat: Flood relief	113.94 Ton/1071 pax	221:55/229
15.	Aug 17	Bihar: Flood relief	625.34 Ton/1549 pax	214:30/281
16.	14-17 Aug 17	Assam: Flood relief	11.83 Ton/59 pax	22:05/12
17.	1-27 Dec 17	Kerala: Cyclone Ockhi	17 Ton, 61,250 Litres of water SAR: 228157 KM ² of area	159:00/75

2018

Sl. No.	Period	State	Load Ton/Passengers	Hrs/Sorties
1.	11-12 Mar 18	Tamil Nadu: Forest Fire Fighting	08 Mortal remain/15450 Litres of water	22:25/21
2.	23-27 May 18	J&K: Forest Fire	34,600 Litres of water	15:15/14
3.	26-27 May 18	Himachal: Forest Fire	19,000 Litres of water 03 Pax	10:15/07
4.	28 May 18	Punjab: Forest Fire	24,500 Litres of water	05:45/10
5.	30 May 19	Delhi: Urban Fire	8,400 Litres of water	03:50/03
6.	17 Jun 18	West Bengal: Fire fightingSunderbans	15,000 Litres of water	02:30/6
7.	14 Jun 18	Tripura: Flood relief	47.3 Ton/160 pax	47:42/02

8.	07 Jul 18	Maharashtra: Flood relief Ops – Palghar	05 Pax	02:27/02
9.	06 Jul-09 Sep 18	Uttarakhand: Flood relief (Pithoragarh)	28.45 Ton	18:05/32
10.	03-20 Aug 18	Nagaland: Flood relief	21.828 Ton/21 pax	41:47/49
11.	09-27 Aug 18	Kerala: Flood Relief	1469.80 Ton/3951 pax	1364/1019
12.	16-22 Aug 18	Karnataka: Flood Relief	5.68 Ton/37 Pax	20:50/30
13.	Jul-Sep 18	M&UP: Flood Relief	60 Pax	19:00/13
14.	15-17 Sep 18	Sikkim: Land Slide	23.157 Ton/422 pax	19:35/43
15.	27 Dec 18 – 12 Jan 19	Rescue ops in Meghalaya for standard miners	<p>28 Dec 18: 10 water pumps+21 personnel from Orissa Fire Services from Bhubaneshwar to Guwahati</p> <p>29 Dec 18: 13 Naval Divers, 4 technical staff and 2 tonnes of load from Vishakhapatnam to Guwahati.</p> <p>01 Jan 19: 3 water pumps 2 tonnes of accessories and 01 Technician from Ahmedabad to Guwahati.</p> <p>06 Jan 19: 3 ROVs with 5 Divers/Technicians from Mumbai to Guwahati.</p>	

			12 Jan 19: 500 kg ROV load, 5 passengers from Chennai and 300 kg load and 6 passengers of CSIR-NGRI from Hyderabad to Guwahati.	
16.	08 Feb 19	J&K Students	179 students (Srinagar-Jammu)	
		J&K Students	170 students (Srinagar-Jammu)	
		J&K Students	186 students (Jammu-Srinagar)	
		J&K Students, teachers and civilians	197 students, 15 teachers and 494 civilians	
			1642.5 T+13 water pumps/5957 Pax + 8 mortal remains	1543/1246

DETAILS OF HADR BY INDIAN AIR FORCE ROTARY WING**2016-17**

Sl. No.	Date	HADR Task	State Govt.	Flying Hours	Passengers/Load Airlifted
1.	10 Apr 16	Fire fighting – Temple fire	Govt. of Kerala	32:55	41/----
2.	30 Apr – 03 May 16	Bambi Bucket – forest fire	Govt. of Uttarakhand	42:00	---/1,55,000 Litres of water
3.	18 – 19 May 16	Bambi Bucket – Katra	Govt. of J&K	07:50	---/-35,000 Litres of Water
4.	06 Jul 16	Cloud Burst in Pithoragarh	Govt. of Uttarakhand	06:08	---/---
5.	Jul 16	Flood relief	Govt. of MP, Assam, Rajasthan, Bihar & Haryana	14:32	12/---
6.	Aug 16	Flood relief	Govt. of Rajasthan, Bihar & UP	69:28	159/17.220 T
7.	Aug 16	Landslide in North Sikkim	Govt. of Sikkim	10:00	07/9.5 T
8.	Dec 16	Cyclone Vardha in ANC	Andaman & Nicobar Administration	15:00	296/---
9.	04 Feb 17	Gangtok Fire fighting	Govt. of Sikkim	13:30	---/66,500 Litres of water
10.	04 Feb 17	Bambi Bucket Mukkunimala (Trivandrum)	Govt. of Kerala	07:00	---/61,250 Litres of water
11.	03&04 Mar 17	Bambi Bucket Parambikulam	Govt. of	03:35	---/21,600 Litres

		(Palghat)	Kerala		of Water
12.	28&29 Mar 17	Bambi Bucket	Govt. of Rajasthan	04:30	---/30,500 Litres of Water
			Total	226:28	515 Pax/2672 T + 3,69,850 Litres of water

2017-18

Sl. No.	Date	HADR Task	State Govt.	Flying Hours	Passengers/Load Airlifted
1.	14 – 20 Apr 17	Fire fighting at Mount Abu & Kota	Govt. of Rajasthan	38:15	---/4,25,700 Litres of water
2.	15 – 31 Jul 17	Flood relief	Govt. of Gujarat	205:10	78/86.94 T (food packets)
3.	24 Jul – 02 Aug 17	Flood relief	Govt. of Rajasthan	28:20	09/03.25 T (food packets)
4.	13 – 24 Aug 17	Flood relief	Govt. of Bihar	124:30	129/327.60 T
5.	14 – 17 Aug 17	Flood relief	Govt. of Assam	22:05	59/11.83 T
6.	Dec 17	Cyclone Ockhi	Govt. of Kerala	47:15	17/---
7.	11-12 Mar 18	Forest Fire: Theni	Govt. of Tamil Nadu	22:25	08dead body/15450 Litres of water
			Total	488	1000/429.62 T load + 4,41,150 Litres of Water

2018-19

Sl.	Date	HADR Task	State Govt.	Flying	Passengers/Load
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No.				Hours	Airlifted
1.	26&27 May 19	Forest Fire - Kasauli	Govt. of HP	10:15	---/19,000 Litres of water
2.	30 May 18	Forest Fire Malvinagar	Govt. of Delhi	03:50	---/8,400 Litres of water
3.	28 May 18	Forest Fire – Pathankot	Govt. of Punjab	05:10	---/24,500 Litres of water
4.	23m24,27&29 May 18	Forest Fire – Katra	Govt. of J&K	15:50	---/-34,500 Litres of water
5.	14 -19 18	Flood Relief	Govt. of Tripura	30:52	---/-30.5 T
6.	05 – 07 Jul 18	Amarnath Yatra 2018	Govt. of J&K	114 sorties	590/---
7.	07 Jul 18	Flood relief Ops – Palghar (Mumbai)	Govt. of Maharashtra	02:27	05/---
8.	09 -27 Aug 18	Flood relief	Govt. of Kerala	594:39	584/247.855 T
9.	03 – 20 Aug 18	Flood relief	Govt. of Nagaland	41:47	21/21.828 T
10.	06 Jul 0 09 Sep 18	HADR: Pitharogarh	Govt. of Uttarakhand	18:05	---/28.45 T
11.	16 – 22 Aug 18	Flood Relief	Govt. of Karnataka	20:50	37/5.68 T
12.	Jul to Sep 18	Food Relief	Govt. of MP & UP	19:00	60/---
13.	15 – 17 Sep 18	Landslide due heavy rain	Govt. of Sikkim	19:35	422/23.57 T
14.	23 – 29 Sep 18	Landslide due heavy rain	Govt. of HP	79:00	363/3.80 T
			Total	861:20	2082 Pax/361.255 + 86.4 KL of Water

DETAILS OF HADR BY INDIAN AIR FORCE: INTERNATIONAL

Sl. No.	Period	Type of ac	Task	Load/Pax	Hrs Sorties
1.	26 Apr 12	01 x An-32	Airlift Flt Cdt who force landed in West Bengal	01 Flt Cdt	01:30/04
2.	15 Nov 13	01 x C-130J	Philippines Typhoon (HAIYAN) Relief	13.8T of relief material	22:00/08
3.	02 Aug 14	C-130J	Delhi – Kathmandu	Specialist (02 CWC, 01 NDRF, 01 GSol and 01 E-in-C)	04:10/02
4.	05-07 Dec 14 Op-Neer	3 x C-17 3 x IL-76	Delhi-Maldives - Water Maldives - Water	284 Ton 90 Ton	32:00/12 22:45/12
5.	30 Mar – 10 Apr 15	3 x C-17	Djibouti – Mumbai & Cochin	2095 Pax	152:30/11
6.	16 Apr 15	01 x An-32	Delhi-Kathmandu (Ex-PM Mortal remains)	Mortal Remains + Pax	05:00/03
7.	22 Apr 15	01 x IL-76	Delhi-Kathmandu-Ahmedabad	(Indian tourist) 17 Mortal remains + 22 injured + 43 Indian nationals	08:00/04
8.	Op-Maitri 25 Apr – 04 Jun 15	C-17	Nepal earthquake relief	57:30/15	Indo Nepal 620.1 T/1051 Pax Out of Nepal 165.1 T/4147 Pax 165:00 Hrs 41 Sortie
9.		IL-76	Nepal earthquake relief 250 Ton + 1950 pax	53:00/08	
10.		C-130J	Nepal earthquake relief	37:00/08	
11.		An-32	Nepal earthquake relief	17:30/06	

12.	06-07 Aug 15	01 x C-17	Delhi-Guwahai	46 T	01/03:00
		01 x C-130J	Delhi – Kalay - (Guwahati-Kalay) x 03 Sortie	(10 + 46) T	08/13:20
13.	Fiji Flood relief 25 – 29 Feb 16	01 x C-17	Chennai-Singapore-Ambreley-Fiji-Singapore-Delhi	45.800 Ton Relief load	35:30/07
14.	Sri Lanka Flood relief 21-22 May 16	01 x C-17	Delhi/Chennai – Colombo	51 Ton Relief load	06:55/03
15.	South Sudan Juba 13-15 Jul 16	02 x C-17	Standard Indian Nationals (Op-Sankatmochan)	154 Pax	40:00/11
16.	Rohingya relief material to Bangladesh 14-15 Sep 17	02 x C-17	Delhi-Kolkata-Dhaka Delhi-Dhaka	107 Ton	11:30/09
17	Rohingya relief material to Myanmar 24 Nov 17	01 x C-17	Delhi-Kolkata-Myanmar	45 Ton	06:00/02
18.	01-02 Apr 18	01 x C-130J	Baghdad-Amritsar Amritsar-Kolkata	30 Mortal remains	14:00/03 06:00/02
19.	03-04 Oct 18	01 x C-17	Chennai-Balikpapan (Indonesia)	38 T (medicines, tents and gensets)	
20.	03 Oct 18	01 x C-130J	Chennai-Kuala Lamnu-Balikpapan (Indonesia)	38 pax+8.5T of field hospital	

**DETAILS OF HADR AND AID TO CIVIL AUTHORITY
BY ARMED FORCES: 2018-19**

Name of Operation	Time Period	Service
Fire at Malviya Nagar Market	Jun 18	IAF
Fire near Vaishno Devi Shrine	Jun 18	IAF
Bus accident near Udampur	Jun 18	IAF
Kerala Landslides	Jun 18	Army
Tripura floods	Jun 18	Army/IAF
Manipur floods	Jun 18	Army/IAF
Rescue of standard tourists near Rohtang	Sep 18	IAF
Kolkata Bridge Collapse	Sep 18	Army
Amritsar Train Accident	Oct 18	Army/IAF
Cyclone Titli	Oct 18	Navy
Cyclone Gaja	Nov 18	Navy
Rescue of standard tourists in N&E Sikkim, Tawang (Arunachal Pradesh)	Dec 18/Jan 19	Army
Airlift of pumps and divers to Meghalaya for rescue of coal miners	Dec 18	Navy/IAF
Bandipur Forest Fire	Feb 19	IAF

**EXPENDITURE DETAILS OF SERVICE HEADQUARTERS IN MAJOR
HADR OPS**

Services	HADR Ops				Total
	Op MeghRahat (J&K)-2014	Op Maitri (Nepal)-2015	Op Samudra Maitri (Indonesia)- 2018	Op Madad (Kerala Flood)-2018	
Army	42,44,38,627	189,86,74,435	35,82,153	Awaited	2,32,66,95,215
Navy	-	-	17,08,924	3,18,32,184	3,35,41,108
Air Force	243,96,08,681	173,55,14,999	4,10,72,250	1,02,59,87,482	5,24,21,83,412
HQ IDS (Medical)	51,28,352	45,90,909	-	-	97,19,261
Total	2,86,91,75,660	3,63,87,80,343	4,63,63,327	1,05,78,19,666	7,61,21,38,997

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