

Pivoting Between Ndrf And Military In Climate Induced Disaster Management In Indian Context

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Abstract- *Disasters and environmental degradation are generally considered parts of non-traditional threat to National Security. India by virtue of its geo-climatic and socio-economic conditions is one of the five most affected countries in the world in terms of number of deaths and due to various natural disasters that make it vulnerable. However, India has also transitioned to a position of being an important 'provider of assistance in international disasters.' Since India has a progressive and forward looking development agenda of inclusive growth, which is getting impacted by disasters, disaster risk reduction has emerged as a high priority focus area in India's national policy framework. In this perspective, the paper examines the 'vulnerability' aspect of India in the larger context of disaster management in India's national security.*

INTRODUCTION

Recently natural disasters along with impact of Climate Change has led to substantial increase in the loss of lives and economic losses worldwide. In developing countries, it has also led to displacement of population inhabited in vulnerable regions, thus severely impacting their livelihood. By virtue of its geo-climatic and socioeconomic conditions , India is one of the five most affected countries in terms of number of deaths and affected population due to various natural disasters. With impact of Climate Change becoming more pronounced it is estimated that by 2030 up to 4.5 per cent of India's GDP is likely to be at risk. Unless some effective Disaster Risk Reduction and Climate Change Adaptation measures are taken, by 2050 situation is likely to be grim ^[1]. Disasters and environmental degradation are generally considered part of Non-traditional threat to National Security. Disasters impact safety of citizens and economy, impinging on sustained development, which are important tenants of National Objectives. Therefore it is important that Effective Disaster Management and Climate Change Adaptation should be a part of National Security Strategy so that in policy formulation and execution these issues remain in focus.

The Disaster Management Act 2005 defines disaster in a very comprehensive manner, as follows: "a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area."^[2]

However, the term DM as used in the DM Act 2005, National Policy on Disaster Management (NPDM) 2009,^[3] and National Disaster Management Plan (NDMP) 2019,^[3] is far more comprehensive and covers all aspects that encapsulates: prevention of danger or threat of any disaster; mitigation or reduction of risk of any disaster or its severity or consequences; capacity building; preparedness to deal with any disaster; response to a threatening disaster situation or disaster; evacuation, rescue & relief and rehabilitation and reconstruction.

The template for the national framework for DM is based on the responsibility of undertaking rescue, relief and rehabilitation measures in the event of a disaster rests with the State Government. The Central Government supplements the efforts of the State Governments by providing logistic and financial support in case of severe natural calamities. The logistic support includes deployment of aircraft, boats, special teams of Armed Forces, Central Armed Police Forces (CAPFs) and National Disaster Response Force (NDRF)^[4] arrangements for relief materials and essential commodities including medical supply, restoration of critical infrastructure including communication network and such other assistance as may be required by the affected States and UTs to meet the situation effectively.

In Dec 2005, the National Disaster Management Authority (NDMA) was established to coordinate disaster response efforts. The NDMA also created the National Disaster Response Force (NDRF), a specialized force dedicated to responding to all kinds of disasters. Since its inception, NDRF has saved over 1.55 lakh lives and evacuated over 7.88 lakh people from disaster situations. It has also played a crucial role in disaster response operations in India and abroad, including the Nepal earthquake in

2015, the Kerala floods in 2018, and the Uttarakhand floods in 2021. It is recognized globally for its professionalism and dedication to saving lives. NDRF, though well-trained and motivated, lacks certain critical capabilities that prevent it from being always effective. To fill the gap, provide rapid response or to supplement civil administration, the Armed Forces are often called for disaster relief. Since aid to civil power is a constitutional responsibility entrusted to the Armed Forces, they have always risen to the occasion. The Indian Armed Forces have a long history of providing disaster relief and they have been involved in some of the country's most devastating disasters, such as the Indian Ocean tsunami in 2004, floods in Uttarakhand in 2013 and the 2020 cyclone in Tamil Nadu. Armed Forces are capable and more than willing to participate in this noble cause and often are the first respondents being positioned all over the country. However, it has an adverse impact on their core duties.

It is possible to mitigate the impacts of disasters by adequate preparedness, prompt rescue operations and quick and effective rehabilitation and restoration. And this will be possible only if NDRF considers all the aspects of the disaster management cycle and achieves an equilibrium of prevention, mitigation, preparedness, response, recovery and disaster-related technological development.

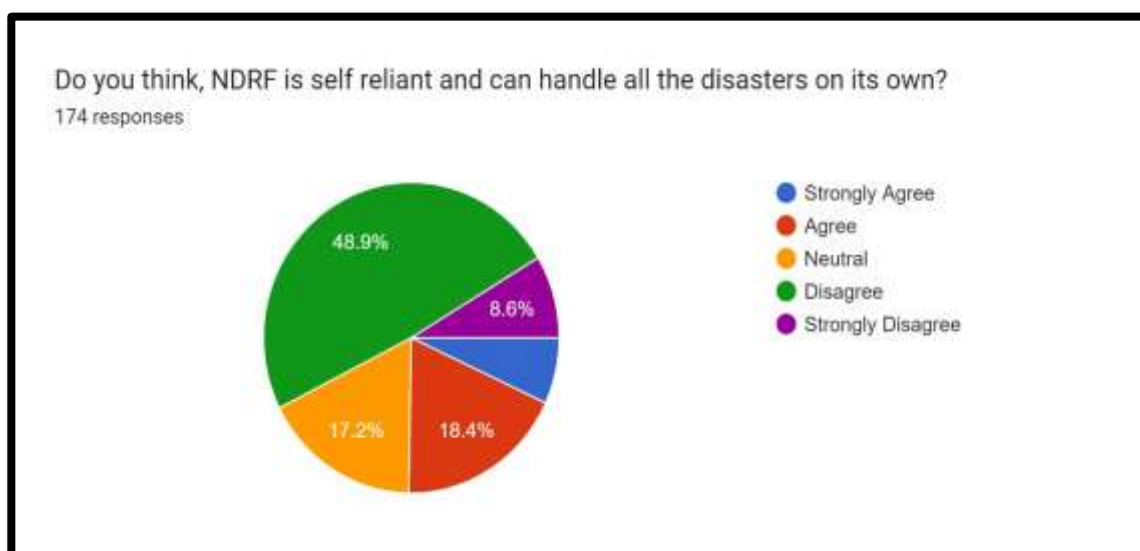
METHODOLOGY

The study was a combination of qualitative and quantitative research techniques so as to analyse the capabilities and challenges suffered by the NDRF. Collection of data was performed via interviews with subject matter experts, books, journals and articles available online as well as offline. This was followed by a questionnaire circulated amongst the focused group associated with NDRF. Analysis of results was done to determine how best it can be enhanced to address the need of the hour to become self-reliant in effective disaster management.

RESULTS

A survey of the close-ended questionnaire was conducted. The questionnaire was aimed at assessing the present apparatus of NDRF, their efficacy, the latest technologically advanced equipment and coordination with Armed forces. The questionnaire was prepared on a Likert scale, initial two questions were about their employment and association with any relief ops. The next fourteen questions were to assess the NDRF capabilities, technological resources, role of armed forces, mutual training and implications on their core duties. Subsequently delving into demarcation and synergy in the area of influence, use of innovations in the field and the impact of the alert system. Towards the end, it was aimed at exploring the possibility of dedicated air assets for NDRF and the response from the population towards awareness campaigns.

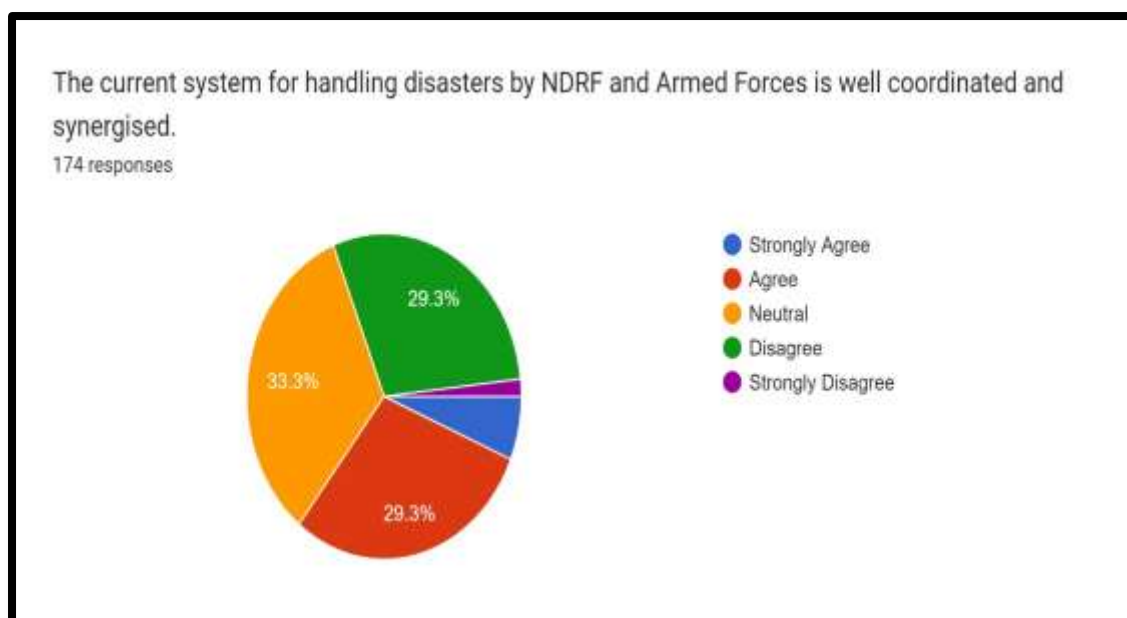
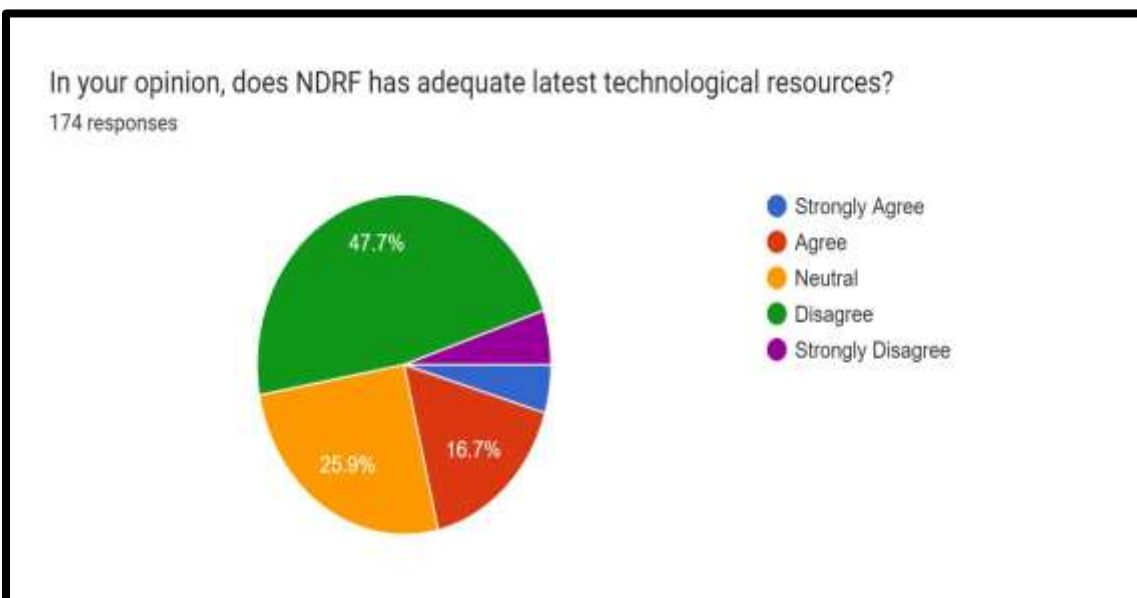
Disaster Handling Capacity of NDRF. 58 % of the respondents were of the opinion regarding the inability of NDRF to handle all disasters on their own. Although for any disaster, the country can pool in all resources at hand, but present cadre, structure and strength is inadequate.



Availability and Adequacy of Latest Resources. 58 % of respondents believe that NDRF lacks funds & latest technology to enhance its capabilities. Thus, it becomes obvious to fall back upon the armed forces for their assistance and equipment extensively.

Role of Armed Forces. 93% respondents believe that in case of any crisis, armed forces personnel are being employed extensively as compared to civil counterparts. Although vested as an additional task to aid the civil power, 58 % of respondents believe that it majorly affects their core competencies.

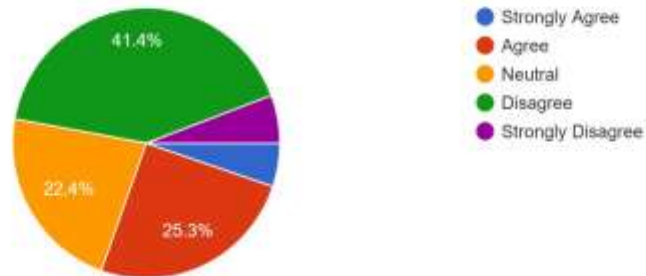
Synergy & Coordination 29 % respondents assume that the present system is synergized and coordinated. While there have been improvements in coordination between NDRF and Armed Forces, further efforts are needed to optimize communication. Implementation of IRS (Incident Response System) in true spirit can enhance the synergy level considerably.



Employability. Armed forces personnel are employed extensively, however only 30 % of the respondents believe that they are adequately trained. It is prudent that trained manpower from NDRF should be employed. Also 64% of respondents believe that in times of disasters all forces should come together to get the country out of the crisis. To enhance the cohesive employability there is need to conduct mock exercises, joint drills in the peace time to validate the procedures and overcome the shortcomings.

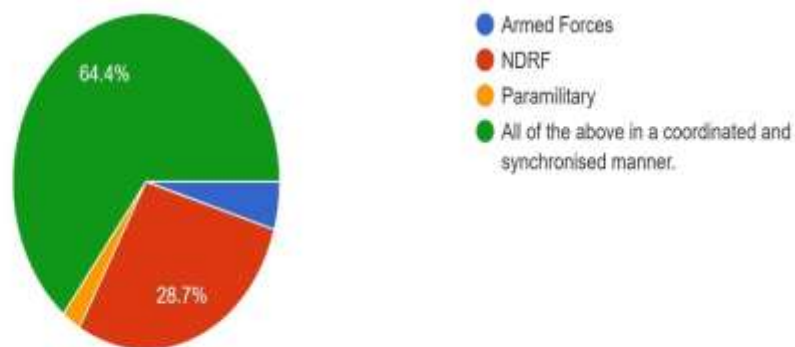
In your opinion, are Armed forces personnel adequately trained to take on all types of Disaster Management tasks?

174 responses



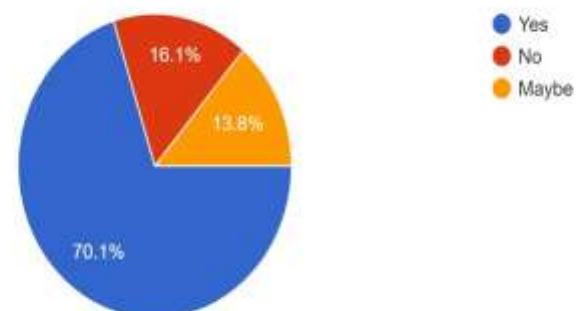
Which is better option for employment in Disaster Management

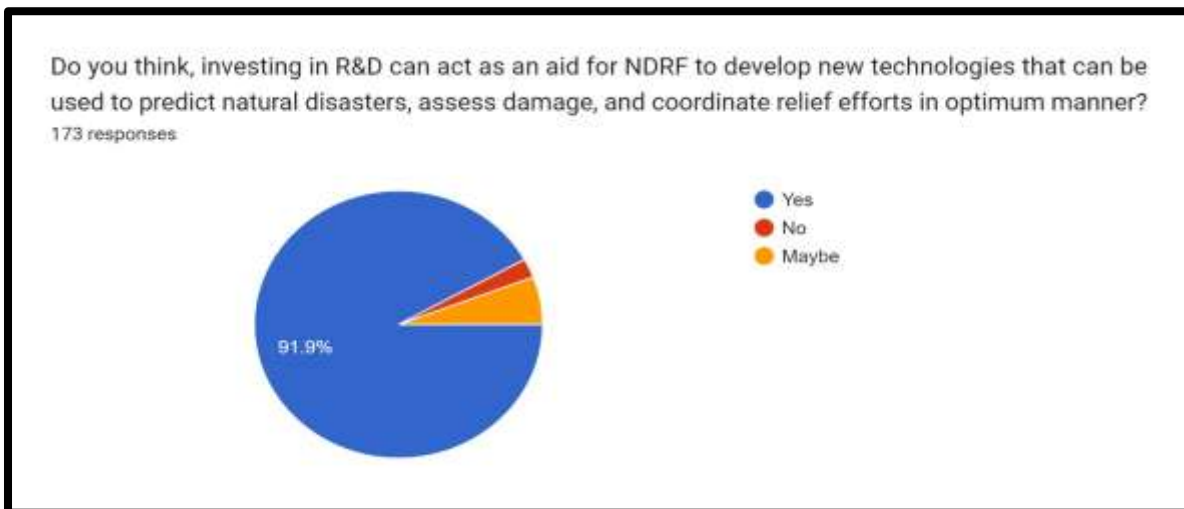
174 responses



In your opinion , NDRF and Armed Forces should have separate roles in disaster response and relief efforts.

174 responses

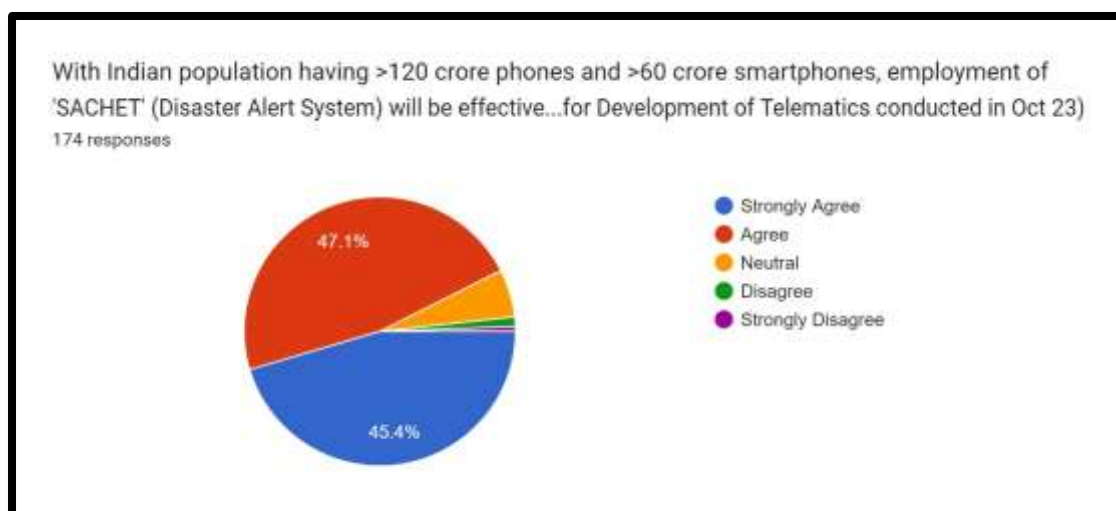
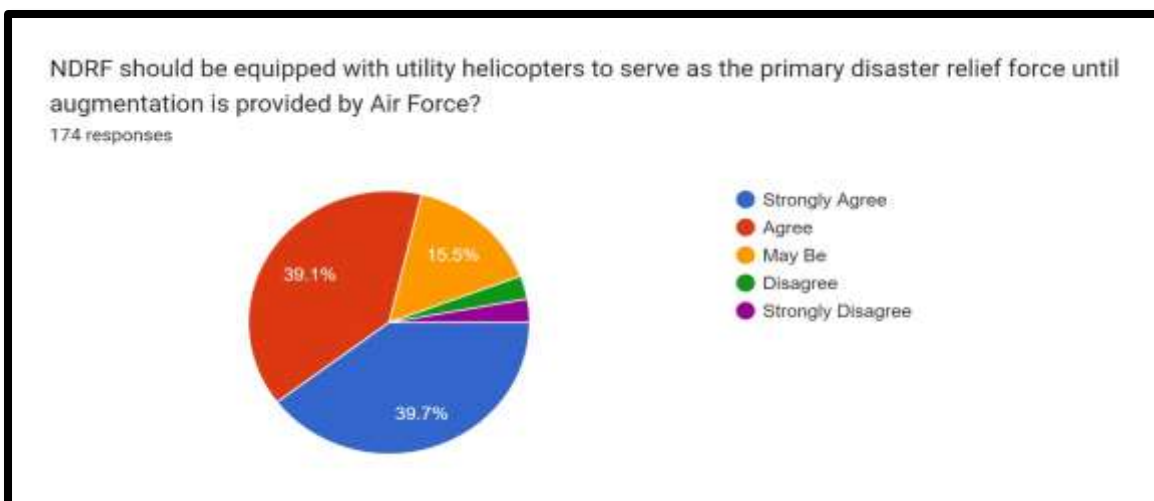


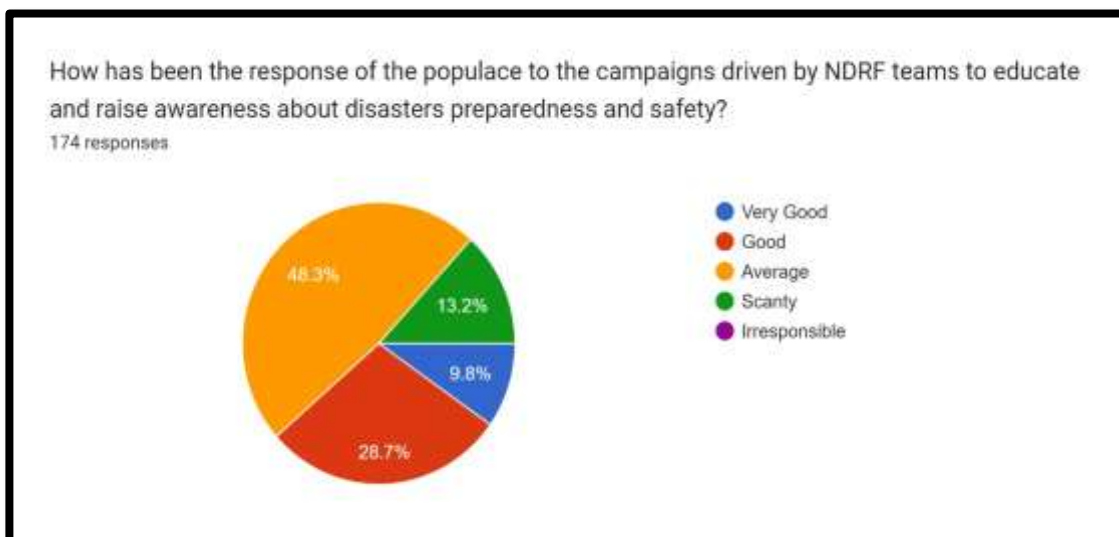


70 % of respondents believed there should be clear demarcation and area of operations for various agencies in case of disasters.

Innovations & Research- 91% respondents believe that there is a need to devote substantial efforts towards R&D and innovations to evolve new techniques to predict disasters, mitigate their effects and assist in relief efforts.

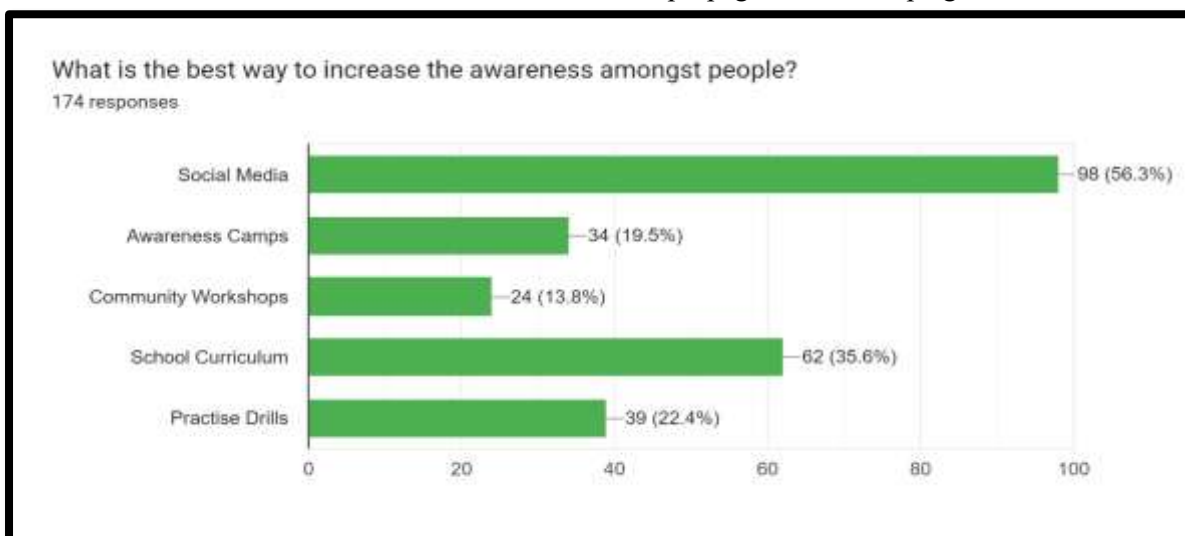
(h) 79% respondents believe that provision and autonomous operation of air assets with NDRF teams can greatly enhance the relief efforts by acting as prime force and in times of large-scale evacuation, assets from other services can be pooled in.





Smart Alert Systems- 92% of respondents believe that it will be an effective method to convey critical messages at short notice. However, with the IW overhang, it will be a great responsibility of the department to provide adequate firewall and fool proof mechanism to avoid any misuse by the miscreants to create any chaos.

Awareness Campaigns. Almost half of the respondents believe that response of the crowd towards awareness campaigns has been average. There is a need to increase the awareness and reach of these programs and if possible, to make it mandatory subject in the school curriculum. Also, 56% respondents believe that social media is the most influential means to propagate these campaigns.



DISCUSSION

National Security is multifaceted and an all-encompassing concept, including effective management of challenges of external security and ensuring internal stability which is pre-requisite for provision of an environment for sustained economic growth, development and building Comprehensive National Power. Another perspective of National security has been described as the ability of a state to cater to the protection and defence of its citizenry. United Nations Office for the Coordination of Humanitarian Affairs' (OCHA) expanded definition of human security calls for a wide range of areas including economic, health, food security and so on.^[5] Though it is not possible to eliminate the risks of disasters, based on Hazard Risk Vulnerability Analysis (HRVA) and Cost-Benefit Analysis of, investment in Risk Reduction, but development initiatives can be planned to reduce the losses. For instance, the 2015 UNISDR Report notes that a sustained investment on DRR strategies could reduce economic losses by 20 per cent.^[6] In this regard, it is for the first time that the 15th Finance Commission has recommended creation of National and State Disaster Mitigation Fund. In their interim Report for FY 2020-21,

allocation has been proposed for Natural Disaster Risk Management Fund to cater for mitigation, capacity building, response and relief, and recovery and reconstruction.^[7]

Threats posed by disasters and effects of climate change need to be tackled with a holistic, flexible, cooperative, coordinated and multifaceted approach. Therefore, DM as a tenant of National Security Strategy would encompass focus on all elements of DRR including capacity building besides climate change adaptation measures. Some of the recent initiatives taken by India include the following: First, India has increasingly undertaken several HADR missions to render help to countries in the region and beyond, which got affected by major calamities. For instance, in Nepal, India's response action comprised of sending 16 Teams of NDRF and Armed Forces, including positioning of helicopters for rescue and dispatch of immediate relief material to remote areas, dispatch of huge wherewithal and medicines (worth Rs 380 Cr); as well as India also pledged support of US\$ 100 million for reconstruction purpose.^[8]

Second, India has taken various regional initiatives, such as: (a) established SAARC Disaster Management Centre at Gandhinagar, that provides Capacity Building Training to Nepal, Bhutan and Bangladesh Disaster Response Teams. (b) India's South Asia Satellite (GSAT-9),^[9] formerly known as SAARC Satellite, is a geostationary communications and meteorology satellite operated by Indian Space Research Organisation (ISRO) for the SAARC region. (c) India provides technical support by sharing of data on Early Warning and forecasts through Indian Meteorological Department (IMD), Central Water Commission (CWC), ISRO and Indian National centre for Ocean Information Services (INCOIS).^[10] (d) India conducts joint DM exercises with SAARC countries.

CONCLUSION

Planning and resources play a significant role in success of NDRF. Recent calamities have demonstrated an over-reliance on military operations for the disaster relief. These incidents make it clear that the NDRF's resources need to be reviewed. From the research analysis, it can be concluded that: -

- (a) Unity, teamwork, synergy and cooperation are crucial to achieve the ultimate goal of saving lives.
- (b) Recent increases in natural and man-made disasters, have hinted toward the requirement to increase the HADR capabilities of the nation and NDRF in particular.
- (c) While the constitution and doctrines mandate military involvement in disaster response when requested, enhancing the mainstay NDRF capabilities is equally important.
- (d) There is a need to increase funds and resources (air assets, manpower) to NDRF to make it more self-reliant.

RECOMMENDATIONS

1. National Disaster Response Force (NDRF) stands as a beacon of hope in times of crisis, rushing to the aid of communities ravaged by floods, earthquakes, and other natural disasters. Yet, despite its unwavering dedication and exceptional skills, the NDRF faces challenges that limit its effectiveness. Having seen the technological possibilities in this field there are certain recommendations to enhance and augment NDRF to reach its full potential, ensuring a more robust and efficient response to future disasters. These are as follows: -

- (a) Reemployment Opportunities for Agniveers. First batch of the Agniveers have joined the services in Jan 2023 and 75% of these will be released after 4 years and only 25 % will be recalled or re-instated. This 3/4th strength of trained, disciplined, agile and physically fit youth can be subsumed as reserves or mainstay members of the NDRF teams.
- (b) Mountainous Training. At present, NDRF teams are not trained to operate in mountainous regions for disasters like Avalanches. Similar training can be imparted at established institutes abroad.
- (c) International Recognition. NDRF can be given international recognition at the UNDRR level to enhance their expertise and boost their morale. Participation in Intl Disaster Exercises like Chakravat-23 & DMEX-20 (BIMSTEC) can be increased to give them a broader perspective and to learn various innovative measures and techniques.
- (d) Autonomous Air Wing. NDRF should be provided with independent air assets including helicopters, transport aircraft and drones. If the requirement arises then Armed Forces assets can be augmented at short notice.

(e) MOCKEX/ FAMEX. Until NDRF obtains autonomous aviation assets, military personnel can engage in mock drills, exercises and familiarisation exercises on deputation or on temporary duty.

(f) Advanced Simulation and Training Technologies. Personnel of the NDRF may be provide with immersive training experiences in a variety of disaster scenarios using virtual reality (VR) and augmented reality (AR) training simulations. Haptic feedback technology can further enhance the realism of training simulations and improve decision-making skills under pressure. Moreover, personalised training programs can be planned based on individual performance and skill gaps.

1. While the NDRF is a convincing and constantly evolving force, it requires the latest equipment and sufficient resources to truly reach its maximum potential. With adequate technology and manpower, it can not only be an invaluable asset for India but also serve as an exemplary model for the world. Aid to civil authority in cases of disaster management is not normally declined as long as the term ‘disaster’ is interpreted correctly. However, military commanders should exercise caution for other requisitions and use discretion and, time permitting, take clearance from higher HQ. The NDRF's remarkable achievements and contributions to disaster response and humanitarian aid deserve immense appreciation. Their professionalism, expertise and compassion coupled with sound back up of technology can contribute immensely and reduce the over reliance on the Armed Forces.

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