

Disaster Management - NDRF, Armed Forces and Community Participation

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Abstract

India is one of the most disaster prone countries in the world. Although we presently have a very elaborate system, it appears reactive at times in its response. Hence, the basic theme of our future strategy to combat disasters rests on a number of factors, most importantly, a shift of thrust from relief to disaster prevention, preparedness and mitigation, advance planning, adequate financial support, backed by decentralization and quick response. To achieve this, the capability at National, State and District levels needs to be strengthened. Hence, while these National and State structures continue to integrate and strengthen, the Armed forces will continue to play an important role in combating disasters as first responders. Like wise the actualization of the concept of Community Participation and Voluntary Organizations would have to be thought through to achieve the desired end state. This paper tries to analyze the difference in approach in disaster rescue and relief operations, through two case studies which devastated the Nation in the recent past - the Kashmir floods of 2014 and the Kerala floods of 2018 and suggest a possible way ahead.

Keywords: Armed Forces; Civil Administration; Community Participation; Coordination; Natural Disasters.

Introduction

Disasters occur all over the world with surprising diversity of locations and mediums through which they perpetrate. Yet, we face them with a reactive mind-set rather than a preventive or proactive one. While we do respond to extraordinary demands in the aftermath of any disaster, we forget the need for continued vigil, preparedness and conscious effort to reduce the occurrence and impact of disasters in the first place. A preventive approach is a complementary pre-requisite to the aspect of post-disaster management. Risk of disaster can be minimized if our geologists, meteorologists, seismologists and hydrologists could identify the areas prone to such disasters and advise the civil authorities to avoid creating population centers or industrial assets at such locations.

What Are Disasters?

Disasters are defined as “a serious disruption of the functioning of a society, causing widespread human, material, or environmental losses which exceed the ability of the affected society to cope using its own resources” [1]. A disaster is the product of a hazard such as flood, cloud burst, earthquake or windstorm, which coincides with a vulnerable situation developing which encompasses an impact on villages, cities and communities. There are two main sub themes to this definition: hazard and vulnerability. Without hazard or vulnerability there can be no disaster and therefore a disaster occurs when hazards and vulnerability co-terminate.

Therefore, a ‘disaster’ [2] manifests in a serious disruption to community life, arising most often with little or no warning; which threatens to or causes damage to property and loss of life in that community. This sudden surge of disruption is beyond the day-to-day capability or capacity of various statutory authorities and the government in power. Hence, to bridge the gap the organization and special mobilization of resources needs to be undertaken to add up to that readily (normally) available to these authorities [3]. The affected community has to therefore respond by taking exceptional measures [4].

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India is hit by a large number of disasters occurring in the Asia Pacific region, which accounts for nearly 62% of the natural disasters that occur across the world [5]. By virtue of their location most of the states in India are prone to some natural disaster/calamity. However, there are some States, especially those located in the Himalayan region or along the 7400 kilometre coastline which are more susceptible to natural calamities/disasters like earthquakes, avalanches, land-slides, cyclones and floods. A total of 24 out of our 29 States and seven Union Territories (total 36) are disaster prone [6].



Fig. 1: Flood Prone States

Phases of Disaster Management

The disaster management cycle [7] can be broken down into a number of phases for the sake of a planning process but each phase is not mutually exclusive from the other. The phases of the cycle are the preparatory, emergency/response, rehabilitation and the redevelopment phase (Fig. 2).

Prevalent Disaster Response Mechanism in India

After 2005, a paradigm shift has taken place in our approach towards Disaster Management in India. The enactment of the Disaster Management Act and establishment of an institutional machinery at the Centre, the State and the District Level have resulted in formulation of an organized framework to the whole Disaster Management set-up. However, each disaster brings its own set of challenges and new issues emerge complicating the minimum critical requirements put in place for rescue and relief, especially when a disaster strikes. Hence, Government at the Centre and nodal agencies have an exceedingly important role to play. They must take a lead in helping translate the thinking from the conceptual level to the formulation of concrete developmental plans. The apex body has been constituted and announced in the first week of Oct 2005. The structure/organization is as shown as in (Fig. 3).

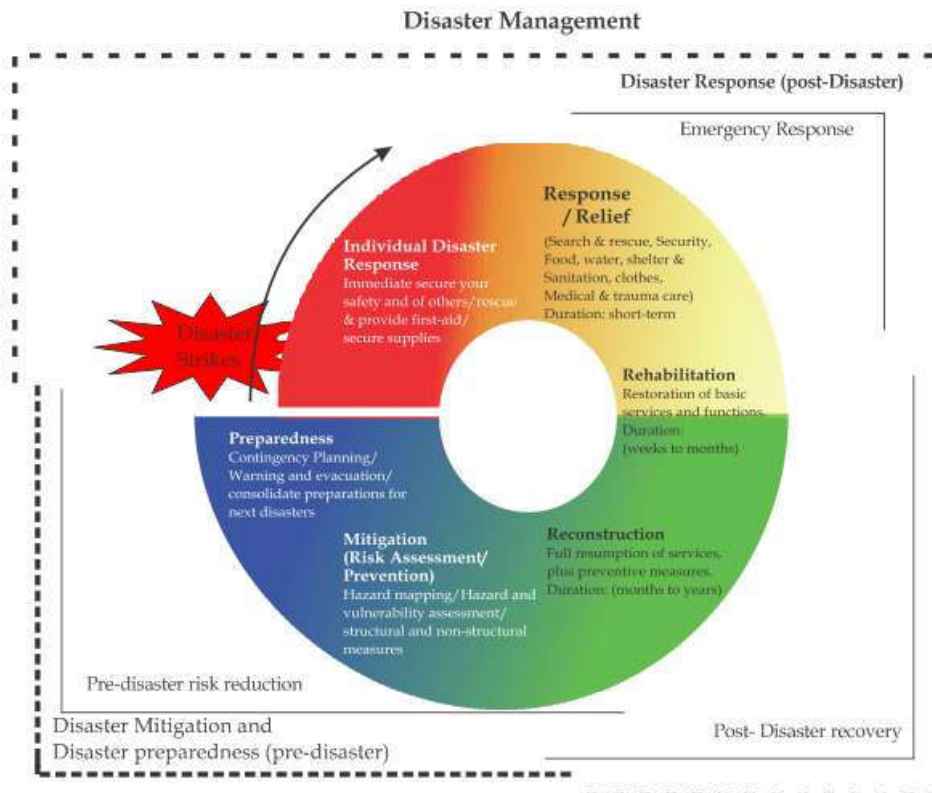


Fig. 2: Disaster Management Cycle

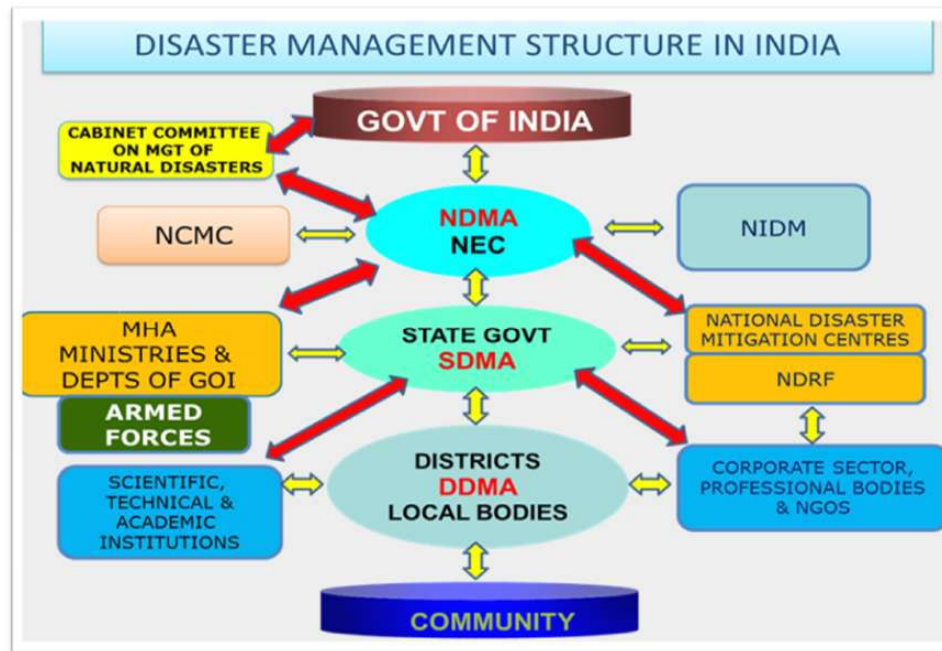


Fig. 3: Disaster Management Structure

National Disaster Response Force

The process of raising a National Emergency Force started with the training of eight battalions. These battalions were picked up from ITBP, CISF and other CPOs. Three training centres at NISA, Hyderabad, ITBP Training Centre at Bhanu and CTC, Coimbatore had been identified and the nucleus of these battalions were trained there. Thereafter another four battalions have been raised taking the total number of National Disaster Response Force battalions to 12 battalions – each of 1149 strength [8]. The battalions are dispersed across India based on each region's vulnerability profile and to cut down the response time. Each battalion has 18 specialist search and rescue teams (45 personnel per team) completely self-contained with engineers, electricians, dog squads, technicians and paramedics/medical.

The Armed Forces

Conceptually, the Army, Air Force and Navy ought to be requisitioned for aid to civil authorities only when the situation goes beyond the control/capability of the State civil administration as disaster rescue and relief is a State subject. In reality, however, the Army, Air Force and Navy form the backbone of the government response capability/capacity and are invariably the immediate or more often than not, the first responders in all disaster situations. The Armed Forces generally are called upon to help with the following types of assistance:-

(a) *Infrastructure for Command and Control.* Setting up of command and control organisation including communications, specialist manpower and initial reconnaissance by air.

(b) *Medical Aid.* Provision of medical care including treatment at the nearest Defence Services hospital.

(c) *Transportation of Relief Material.* Provision of logistic back up vehicles such as aircraft/helicopters/ships/boats for transportation, air drop of relief material.

(d) *Establishment of Relief Camps.* Including all logistic support.

(e) *Construction and Repair of Roads and Bridges.* Defence engineers can undertake construction and repair of roads and bridges to enable relief teams/material to reach affected areas.

(f) *Maintenance of Essential Services.* Repair, maintenance and running of essential services may have to be undertaken in the initial stages of disaster relief.

(g) *Evacuation of People to Safer Areas.* This is one of the most important tasks that the Armed Forces may be assigned to do.

(h) *Stage Management of International Relief.* Stage management of handling of international relief can be undertaken by the Armed Forces in case requested to do so by the civil administration.

(j) *Diving Effort*. Also Search and Rescue operations (Task for Navy).

Principles of Employment of the Armed Forces

The Army, Air Force or Navy are requisitioned by the State Government from the Central Government, in aid to civil authorities for assisting in rescue and relief. This requisition is governed by following principles:

(a) *Judicious Use of Armed Forces*. Assistance by the State government should be requisitioned only when it becomes critical/absolutely necessary and when the civil administration finds the situation beyond the capacity/capability of its resources. However, this does not imply that the State Governments response must be graduated or the Army would wait to be requisitioned. If the magnitude of the disaster so dictates, all national and even neighboring State resources must be simultaneously made available/deployed.

(b) *Immediate Response*. When natural and other calamities occur, the speed for rendering aid is of paramount importance. Under such circumstances, prior sanction for assistance may not always be forthcoming. In such cases, when approached for assistance the Armed Forces should provide the same without delay.

(c) *The Command of Troops*. The Army, Air Force or Navy units while undertaking tasks in aid to civil authority continue to be under command of their own hierarchy ie military commanders and assistance rendered is strictly on a task to task basis.

(d) *No Menial Tasks*. While assigning troops to particular tasks, it must be ensured that they are not employed for menial tasks especially in the rehabilitation phase. Tasks to the soldier's like disposal of dead bodies/carcasses should be avoided except if the casualties are of Defense personnel.

(e) *Requisition of Aid on Task Basis*. While requisitioning the Defense Forces the assistance should not be asked for in terms of number of columns, engineer and medical teams. Civil administration should spell out the tasks, and leave the planning and execution to Defense authorities.

(f) *Regular Co-ordination and Liaison*. To ensure optimum efficiency, regular co-ordination and liaison needs to be carried out at every level and contingency plans for each eventuality need to

be worked out. Thereafter, contingency plans for each eventuality must be disseminated to the lowest level / link of the civil administration.

(g) *Advance Planning and Training*. Once the contingency plans are worked out, the Armed Forces located in disaster prone areas will carry out detailed planning to cater for each of the contingencies. The troops should be well briefed, trained and stores earmarked to meet these contingency.

(h) *Integration of all available Resources*. All available resources to include equipment, medical resources and accommodation with the civil administration, Non-Government Organizations and civil firms need to be aggregated while evolving plans for disaster relief. Integration of all the resources will enable achieving optimum results.

(j) *Early Derequisitioning*. The situation in a disaster would take a certain time to stabilize. Once the civil administration is capable to sustaining further operations in the affected areas the Armed Forces should be derequisitioned.

The State Level

At the State level Disaster Management is the responsibility of the Chief Minister and on his behalf the Chief Secretary. All decisions on the conduct of relief operations are taken by them. There are also Relief Commissioners who are appointed or already in place who are directly responsible for the execution of the relief and rehabilitation operations planned. The District Commissioners head the District level Disaster Management Committees while the Block Development Officer /Tehsildar leads the team at the block level. The State Level Disaster Management [9] structure is as under (Fig. 4).

Role of Non Government Organizations'

Emerging trends across the world and more recently in India have highlighted the role Non Governmental Organizations play in providing succor to the affected. These groups have evolved into becoming an effective alternative communication link between various affected communities and the National and State disaster management agencies, besides monitoring progress and completing the feedback loop with the affected community. When disaster strikes they can be of tremendous help at each phase of the disaster cycle ie from the preparation phase, to

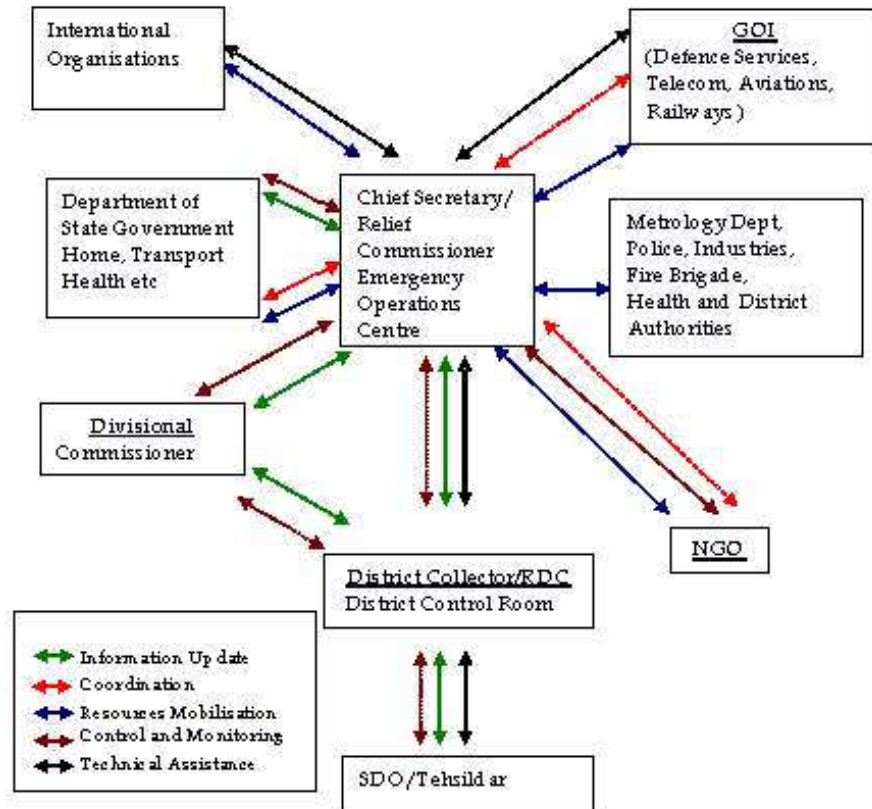


Fig. 4: model Showing disaster relief cycle at state

the relief and rescue phase and finally as part of the reconstruction and rehabilitation phase. Globally and in India, the Red Cross is the most coordinated and effective non governmental organization and has been successful in integrating community participation in all phases of Disaster Management.

Community Participation In Disaster Management

The Concept. A few decades ago, disaster occurrences were seen to be one-off events and the only responders had to be by Governments and Non Governmental Relief Organizations. However, today the understanding has become more board based and looks at the socio – economic impact and post disaster psychological issues. Hence affected people / communities come into play. Community participation across the world, generally, refers to the people’s involvement in a project to address their own problems or to improve their social and economic conditions. Their participation revolves in goal setting and thereafter preparing options, evaluating programs and plans and finally

execution and implementation. The United Nations defines “community participation as the collective action by the various strata of people or interest groups, in which all members of a group contribute, share or are influenced by the interchange of ideas and activities toward problem-solving or decision-making ie basically a dynamic process”.

Alternative Perspective. Presently, Governments of various countries and international relief agencies, national rescue agencies and local relief and rescue agencies have adopted comprehensive disaster management programs and plans. These programs emphasize on community participation with an objective of reducing the sufferings and pain of victims and more importantly reducing the number human lives and livestock [10] lost. One such initiative has been by the Asian Disaster Preparedness Center which holds sub regional, national and regional training programs on “Community Based Approaches to Disaster Management”. This like other initiatives has shifted the decades old philosophical notion from the dominant community approach to an alternative

perspective. The ultimate objective of this alternative perspective is to introduce “Community Based Disaster Management Program”. This is basically a risk reduction program designed mainly for and by the people in a certain disaster prone area, which merits the participation of the entire community. The outcome of this program is expected to generate ‘suitable strategies’ for understanding the complexity and dynamics of the vulnerability, addressing this vulnerability by ultimately augmenting local capabilities / capacities.

Community Based Disaster Management. An outcome of this paradigm shift in thinking has been the gradual realization that the mitigation possibilities of a disaster are tremendously effective at the community level, because it is the community level themselves which are the first victims and therefore the first responders. So, disaster prone communities should be empowered with necessary information and thereafter proper training. A few governments like Bangladesh have benefited from the concept of “Community Based Disaster Management Program” and formulated

disaster management programs, plans and policy inspired by the philosophical notion of the alternative perspective. This has greatly enabled the vulnerable population to reduce risk. The Government of Bangladesh has taken a number of initiatives for the development of non-structural practices as well as physical infrastructure like construction of flood and cyclone shelters, building of flood protection embankments and development of simple, understandable and strong warning system that is linked to the local, regional and national information grid system. India too has realized the potential of Community Based Disaster Management and besides making it an intrinsic part of the National Structure (Figure 3 - Disaster Management Structure in India), India, has adopted a pilot project of “Community Approaches to Flood Management” in the states of Bihar, West Bengal and Assam. This is a start point to the Integrated Flood Management concept and is a part of the Associated Programme on Flood Management [11]. However, these are just baby steps considering the threat from floods across the country.

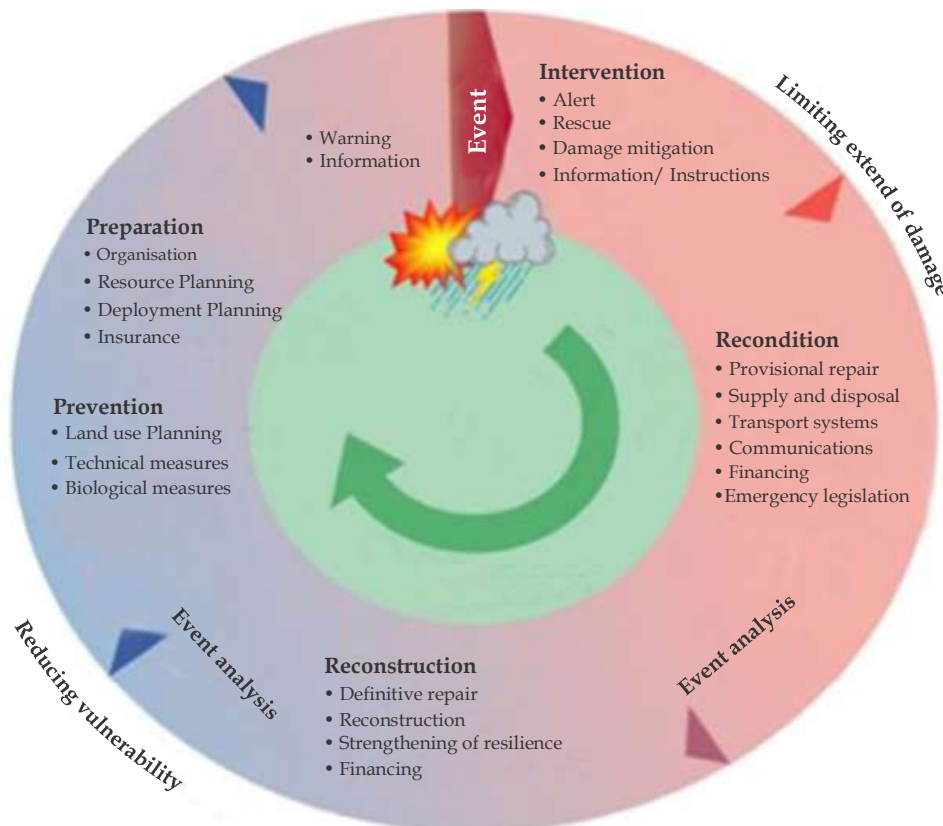


Fig. 5: Community Participation Options

Role of Community Participation. Community participation plays an essential role in each aspect of disaster management from floods, that is, preparedness for, response to and recovery from flood disasters. Community participation in flood risk assessment from the planning stage to the execution of risk control measures are the basic steps if flood risk management plans are to succeed. These steps are as shown in Figure 5.

Case Study – J & K Floods

Background. The natural pre-disposition of the Kashmir valley has made it vulnerable to periodic floods. As a result, disasters due to flooding are not entirely new phenomena to the people. As with many other densely populated regions in the flood prone Himalayan lower reaches, the geographical and ecological vulnerability of the valley floor to floods has been aggravated by recent anthropogenic causes. This has intensified the floods impact and intensity. In addition to the global concerns of greenhouse effect and climate change, the local factors have to do with deforestation in upper catchment areas, increased construction on the flood plain, changes in land use patterns, the shrinkage of wetlands in lower reaches and most importantly poor flood management.

The Floods and the Impact. The state of J & K received continuous heavy rainfall from 30 Aug to 05 Sep 14. In addition, on 06 Sep 14, cloud bursts occurred on the upper reaches of Sonamarg and Ganderbal. This resulted in a sudden rise in the water levels and soon the Jhelum and its tributaries were in a spate. By 07 Sep 14, the water was flowing nearly 18 ft above the danger mark. The rivers burst their banks and flooded the surrounding areas. In the state capital Srinagar, the Jhelum breached the bund on its banks at various locations and submerged the surrounding areas. In Srinagar, the areas of Kursu, Batwara, Gogchibagh, Sonawar, Tenggura, Rajbagh, Bemina, Batmaloo and Jawahar Nagar bore the max brunt and were under 16 feet or more of water. About 1.5 million families spread over 5796 villages were displaced by the floods for up to a month, often returning to find their houses destroyed and assets lost. As per assessments around 284 lost their lives, 0.36 million houses suffered damages, 91,000 cattle perished, 0.66 million hectares of cultivated land was destroyed, besides loss to private and public infrastructure.

National Disaster Management Effort. The Army, Air force, Navy as part of “OP MEGH RAHAT” and NDRF personnel was engaged in rescue and relief operations. The Indian Army deployed about

30,000 troops with 224 boats. About 30 transport aircrafts and 70 helicopters were deployed by the Indian Air Force. Three team of marine commando force (MARCOS) of Indian Navy were deployed. 15 Engineer Task forces of Indian Army were deployed with necessary engineer stores and equipments. 22 teams of NDRF consisting of 955 personnel along with the necessary equipments were deployed for assistance to the State Government in search and rescue operations [12].

State Effort. The relationship between the State and the Kashmir people has remained tense, volatile and prone to breakdown in the Kashmir valley and any trigger is intersected with the intense political contentions and multiple divisions on the ground. Hence, while the Government of Jammu & Kashmir did respond, it had to take its time as the governance machinery to include the state secretariat, control rooms, police headquarters, hospitals, fire services and critical infrastructure were under 15-18 feet of water. In addition, the entire communication system collapsed and telephones and cell phones were non operational making the entirety of the problem not comprehensible.

Community Participation. Limited community awareness, last mile connectivity and response and recovery planning were at preliminary stage in the State, hence community participation was limited. The community volunteers, NGOs and humanitarian agencies who were there, were working independently for helping the communities, without much direction of the government. In addition, the separatists who proclaim their oneness with the people during various incidents in the State were nowhere to be seen. These separatists did emerge after huge criticism in their conduct erupted, but instead of unifying the people and galvanizing rescue their presence complicated operations. The rescue work and relief operation which was going on well with the NDRF and Army teams working continuously to evacuate stranded people was now met by cases of stone pelting and intimidation of rescue teams.

Case Study – Kerala Floods

Background. The higher reaches of Eastern Kerala is densely forested and bounded by gorges, deep valleys and high mountains of the Western Ghats while the lower reaches are largely covered with coffee and tea plantations. As an outcome of the mountainous terrain, 41 rivers out of the 44 rivers that criss cross Kerala originate here. Of these three including the River Cauvery descends from the Western Ghats, but flow eastwards into neighboring

states. The coastal belt on the contrary is relatively flat, largely agricultural and densely inter spaced by an interconnected network of rivers and canals, which over time have been silted. The human contribution to flood aggravation is predominantly due to water bodies and wetlands reclamation, change in land use pattern by increased flood plain occupancy and deforestation in large parts of the upper catchments etc. As a result 26% of the State in which 20% of the population currently resides is vulnerable to flooding.

The Floods and the Impact. From 01 June 18 to 17 August 18, Kerala received a cumulative rainfall that was 42% more than the normal average rainfall of 1,635 mm (771 mm from 01 August 18 to 15 August 18). In meteorological terms heavy rainfall is defined when an area gets about 100 mm of accumulated rainfall in 24 hours. On 08 August 18 Kerala received 310 mm of rainfall while Idukki, a hilly district and Peerumade in Kottayam district received 349 mm. Such heavy rainfall resulted in the rapid filling of all the reservoirs forcing the authorities to open the shutters of 33 dams. As this released water gushed out of the dams through the already swollen rivers, they left a trail of shattered lives and destruction in their wake affecting 53 lakh people in the state, besides leaving 483 dead and 15 missing people. Over 23,000 houses were damaged or collapsed; 42,500 hectares of cultivated crops were destroyed; over 40,000 cattle and 2 lakh chickens perished as per National Disaster Management Authority data. In addition there was large scale damage to public property to include government buildings, hospitals, electricity transformers, Cochin airport, culverts, bridges and roads. So critical was the situation that the Government of India declared it to be of 'rare severity' [13].

National Disaster Management Effort. The Army, Air force, Navy, Coast Guard as part of "OP MADAD" and NDRF personnel was engaged in rescue and relief operations. 58 NDRF teams were deployed for flood relief in the State, the largest deployment ever since the force was raised in 2006. The South Western Naval Command deployed a total of 58 rescue and diving teams (18 additional teams came from the other Naval Commands) in multiple locations all equipped with Gemini boats. 10 Army flood relief columns, each having an approximate strength of 65 personnel carried out rescue operations in ten districts of Kerala, supported by 10 Engineer Task Forces (approximately 53 boats) each with strength of 40 personnel. Additional forces enabled the Army to construct 13 temporary bridges to reconnect 39 remote areas [14]. The Air Force conducted its

largest ever relief exercise (3107 support service personnel) with its aircraft dropping 2.47 lakh kilograms (27000 tons) of relief material, besides employing 29 helicopters deployed for relief and rescue sorties. The Indian Coast Guard also had 18 teams actively involved in rescue operations.

State Effort. The State Government played a pivotal role in unifying the State, while it decentralized its complete resources down to the district and even block levels. All local bodies' and block level staff – from municipal corporations to Panchayats were instructed to spend their funds in the best way they deemed without awaiting clearances/sanctions and they were directed to be part of the rescue and relief operations. With such freedom to act the Panchayats activated their Engineering wings into service and looked even beyond their mandate of rescue and relief into aspects like setting up and equipping relief camps. Most importantly once the NDRF teams and the armed forces arrived their effort was coordinated mainly by the districts authorities and the local effort worked in unison with the disaster management authorities' plans to avoid confusion and duplication of effort.

Community Participation. The community response of the people from across the state was phenomenal, but more so in the affected areas. All those affected had a desire to support one another and a sense of collective solidarity prevailed, which was evident across the political, religious and class line spectrum. The feeling was strengthened by the support of diverse social, religious, political and cultural groups which undertook spontaneous acts of selfless service. Such efforts enhanced the State government's initiative and activities. Some of the aspects which merit attention were:-

(a) *Activating the Fishermen Union.* Integration with the Fishermen's Unions which led to the mobilization of 700 boats in the worst affected districts. These fishermen knew the terrain and routes of ingress and egress due to which they were the first responders and were able to rescue approximately 120,000 people in the initial days. If this magnitude of rescues were organized with helicopter effort then the sortie generation rates would be colossal, besides requiring centralized deployment and coordination, in addition to having a lower output and greater loss of time in briefings and debriefings. Where rescue workers struggled in deeply flooded areas, the fishermen made much headway.

(b) *Harnessing Whatsapp.* [15] Thousands of locals exploited mobile phones and social media platforms as enablers in mobilizing

relief effort. A local Mr Kuruvilla integrated five major Whatsapp groups each with hundreds of volunteers who were coordinating relief and rescue efforts. These networks were further integrated with the network of the army navy and police personnel across districts. As a result upto 400 distress calls in a day per districts from the people marooned at home or from those with medical emergencies could be spoken to and evacuated to safety. Mr Kuruvilla documented all this information he received through the social media platforms on Excel spreadsheets before forwarding them to the District / Block authorities.

(c) *Improvisation.* Inspire, a group students doing mechanical engineering realizing the criticality of sustaining communications made about 400 power banks using 4 x 1.5 volt batteries joined in parallel for charging phones. With no electricity, a power bank is capable of boosting a mobiles charge by 20% in a few minutes. These were then wrapped in bubble paper and air dropped to those marooned in flood-affected areas.

(d) *Rehabilitation.* Once the flood waters receded organizations did not let up in their activity, rather they took to cleaning and clearing villages from the debris and from mud that the flood waters left behind. Young communications designers created flyers for spreading awareness using the form of info graphics on post flood issues like assessing your car post the receding of flood waters, mold growth in cars / scooters, to burying methods for animal bodies carcasses to prevent spread of epidemics and disease, while thousands of volunteers including paramedical staff and doctors worked in temporary camps undertaking duties like cooking food, unloading relief supplies, looking after the sick, elderly and children.

The Outcome of Community Participation. A combination of mass community participation and decentralized administration control led to very effective and fast rescue operations which restricted the death toll to 483. If this mass participation was lacking or slower, in a disaster of this magnitude and scale in a region with one of the highest population density in India (two and half times the national average), the loss of lives would have been unimaginable.

Organizing and Training for Community Participation

Organizing Community Participation. Locally based communities face the brunt of disasters. Hence, it is better to have people, especially volunteers, trained to deal with disaster pacific to their areas, than move thousands of trained people to disaster scenes across the nation.

In the last two decades, top down approaches to disaster management, without integrating local resources and capacities like in the Kashmir flood situation have miserably failed to address the needs of the vulnerable communities, while the bottoms up approach with the community as the fulcrum of disaster management activities, like in the floods of Kerala have displayed its potential.

However, proper awareness is a prerequisite. There will be more effective participation if the community is aware about the vulnerability and risk involved in various types of disaster in that area of the state where they reside. Local participation will not only ensure no delay in first intervention on occurrence of a disaster but being locals a linguistic, cultural and social bonding would be of a great assistance in the relief operations.

The National Disaster Response Force has realized the potential of this force multiplier and each Battalion carries out awareness campaigns, training including Chemical, Biological, Radiological and Nuclear (CBRN) training etc in their areas of deployment. The key naturally lies in the levels of stakeholder participation in this entire disaster risk management cycle.



Fig. 6:

Organizing Community Training. Community participation in the different activities in the flood management cycle can be effectively organized keeping three basic principles at the core, that is, what are a community's needs, focused community effectiveness and efficiency, and the endeavors practicality in implementation.

No	Community Participation	Implication
1	Has to match the community's needs for	- reduction of vulnerability - sustainability of activities for events infrequent - establish private - public partnerships, use NGOs
2	Keeping their effectiveness and efficiency by	- synergistic application for maximizing limited human resources and finances best - combination of methods mixing technological knowledge with community experience - connecting between individual requirements & Government preparedness
3	Seeking practicability in implementation	- flood risk management in each phase -preparedness, response & recovery - coordination and capacity building through participation and dialogue - less opportunities for 'realistic' training, activities and drills - exploiting social media platforms

Issues with Community Participation. It is evident that while community participation has its tremendous advantages, it can bring with it major issues which need to be addressed. Two of these issues are:-

(a) Some studies pre-existing associations can effectively mobilize people to assist one another, but in the reconstruction phase these same associations can also delay or block urgent decisions because of conflicts resulting from the societal social structure like disparity in wealth, gender, ages or culture/ethnicity.

(b) People are aware and involved with flood risks just after major floods. This awareness tends to diminish as time goes by without an incident. Hence, sustaining the community's awareness for floods is a critical aspect for organizing community activities.

Conclusion

Disasters endanger National security post-occurrence and have to be prevented at any cost and if they do occur their effects must be mitigated. Therefore, there is a crying need to identify flash-points which may trigger such disasters. Once identified, a capability of continuously monitoring the course of events that are likely to lead to such disasters, and further taking preventive actions

must be developed. Such response is often termed as 'Comprehensive Emergency Management'.

India is one of the most disaster prone countries in the world. Although we presently have a very elaborate system, it appears very reactive in its response. Hence, the basic concept of our futuristic strategy to overcome disasters rests on a number of factors, namely a shift of thrust from relief to disaster prevention (not easy but can be addressed by stringent Government policy), preparedness by, advance planning, mitigation of effect by adequate financial support, backed by decentralization and quick response. To achieve this, the capability at National level, the State level and the District levels needs to be strengthened.

Hence while these structures continue to integrate and strengthen, the Armed forces will continue to play an important role in combating disasters as first responders. In doing so their secondary tasking would have to be defined and their role would have to be dovetailed into the overall National disaster risk management strategy, for which they would need training and being kitted up. Like wise the actualization of the concept of Community Participation and Voluntary Organizations would have to be thought through, to achieve the desired end state. Unless a dedicated training is evolved and the States assumes more responsibility to ensure the people's involvement, we would not be able to fully cope with future challenges of combating intense disasters. As local self governance integrates community participation, the effectiveness of disaster management will improve and the role of the Armed Forces and the National Disaster Response Teams when they join the National effort.

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