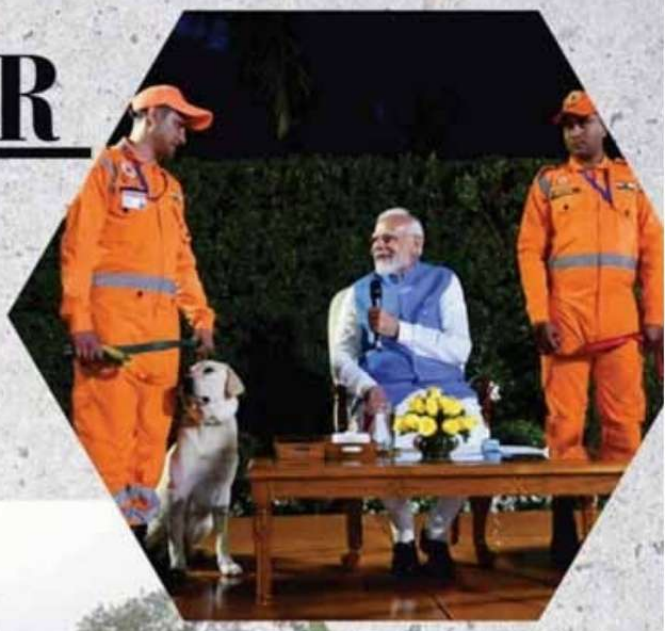
THE SAVIOUR



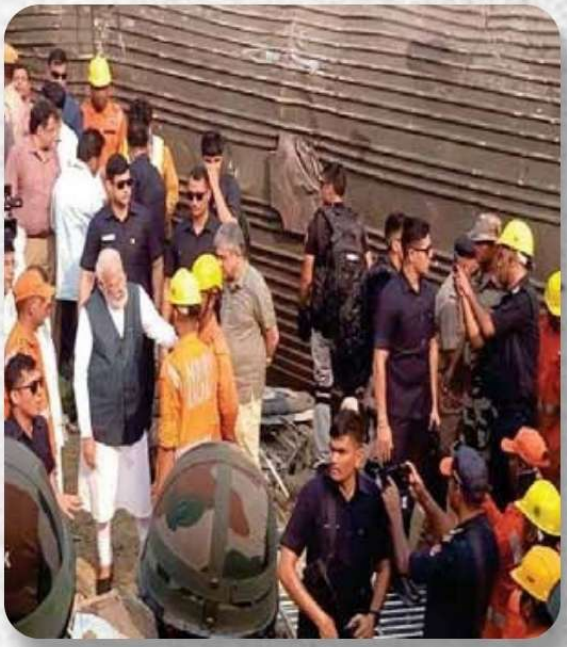
NDRF

ANNUAL
NEWSLETTER
Special Edition
March-2024

"आपदा सेवा सदैव सर्वत्र"

NDRF • INDIA

Saving Lives & Beyond...



Hon'ble Prime Minister at Balasore Train Incident

Field Visit of DG NDRF

NDRF First Mountaineering Expedition "Saahas"

Hon'ble Prime Minister with NDRF Rescuers

The Saviour

ANNUAL NEWS LETTER

Special Edition

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It is indeed a rare honour and privilege to be a part of this elite Force which has been at the forefront of tackling natural and man-made disasters with promptitude and professionalism, fulfilling our motto ***आपदा सेवा सदैव सर्वत्र*** which implies sustained Disaster Response Service under all circumstances.

The year 2023 kept us busy in responding to various calamities across the country and abroad in which NDRF contributed a great deal to mitigate and reduce the risk and damage due to disasters in the extremely challenging situation, notably during the Turkey earthquakes, Cyclone 'Biparjoy', CBRN emergency at Ludhiana gas leakage, the landslide in Maharastra & Himachal Pradesh, Silkyara tunnel collapse, drowning cases and floods in Punjab, Delhi, Haryana and Chandigarh, etc. Pre–positioning of teams as per the vulnerability profile of the region and coordination with the state's administration and other stakeholders paved the way for NDRF to rescue more than 57,315 precious human lives.

NDRF is committed to its avowed mission of making India disaster-resilient. The force has engaged itself in mock exercises, community awareness programs, FAMEX and school safety programs towards capacity building of various stakeholders. In this process, NDRF has sensitized more than 83 lacs people.

NDRF has set high standards for itself by adopting best practices. These are the result of our ability to look for unique, scientific and innovative approaches in the face of a limitless array of potential challenges our responders face at the time of disasters. I encourage all the force members to reaffirm their resolve to make NDRF a true world-class disaster response organization and continue striving for greater heights of professionalism and glory in the years to come. Let us strive hard. Let us make us the best. Let all tactics, strategies and methods of disaster management be in our ken.

With this resolve, I see the NDRF taking bold and confident steps into the future. I extend my best wishes to all the Officers, Jawans and their families of the elite Force.

Jai Hind.

Atul Karwal, IPS

Director General, NDRF

Scaled Mount Everest in 2008

Indian Police Medal for Meritorious Service (IPM) in 2010

President's Police Medal for Distinguished Service (PPM) in 2016

Police Medal for Gallantry in 2020

First Bar to the Police Medal for Gallantry, Independence Day, 2020.

Kathin Seva Padak

Parakram Padak

Ati Utkrisht Seva Padak

EXPEDITION LEADER
SH GAMBHIR SINGH CHAUHAN, DIG (NORTH ZONE)

SUMMITEERS

AC/GD PARVEEN SINGH

AC/GD SANTOSH KUMAR

INSP/GD BUDDHI LAL

INSP/GD PREM NEGI

ASI/GD MEGH SINGH

HC/GD KANCHAN KHAMPA

CT/GD SATPAL

CT/GD ANIL KUMAR

CT/GD PURSHOTTAM NEGI

CT/GD SAKSHI SHARMA

PRIDE & HONOUR

PRESIDENT'S POLICE MEDAL FOR DISTINGUISHED SERVICE- 2023


SH. JACOB KISPOTTA, COMDT.

POLICE MEDAL FOR MERITORIOUS SERVICE -2023


SH. BHARAT BHUSHAN VAID, DIG


SH. SUNEEL KUMAR SINGH, COMDT.


SH. HITENDER PAL SINGH KANDARI,COMDT.


DR. K. L. RONGMEI, COMDT.


SH. SUNIL DUTT VERMA, DC

On 06 Feb'2023, an earthquake of magnitude 7.8 struck Turkiye and North- West Syria. The Govt. of India promptly responded and launched Operation ***'Dost'.*** Subsiquenly 03 NDRF teams (01 each from 2nd Bn, 08th Bn and 11th Bn) consisting of total 152 rescures were airlifted from Hindon Airbase to Turkiye.

All the 03 teams conducted CSSR operations in which they rescued 02 live victims and retrieved 85 dead bodies.

Hon'ble Prime Minister, Shri Narendra Modi lauded the good work undertaken by the teams in challenging situations and keenly listened to the experiences shared by the NDRF Rescuers. He was particularly appreciative of the involvement of the Mahilas in the operation in sub-zero temperatures and the effective use of the Canines in making two live recoveries. He enthused all the Rescuers to work with greater zeal and fervour and make NDRF the best Disaster Force in the world.

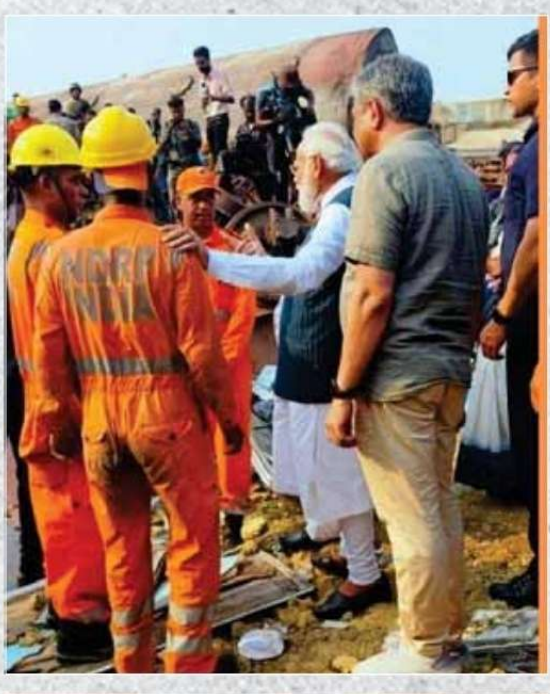
LUDHIANA GAS LEAKAGE- A CBRN EMERGENCY

On 30th April 2023, 02 NDRF teams were mobilized for Giaspura Sua Road, Distt- Ludhiana, Punjab in connection with a *Gas leakage* in the Industrial area. Teams conducted CBRN operation and rescued 07 persons (children 05 and adults 02) and 01 livestock from the incident site and shifted them to safer place. NDRF teams collected the samples from the probable leakage sites and handed over to the district administration for further investigation. NDRF teams monitored the concentration of the gas leakage in the affected area and carried out decontamination of the incident site. Gas leakage points were completely sealed by the team.

On 03rd June 2023, the triple train collision occurred in Balasore district, Odisha where Shalimar - Chennai Coromandel Superfast Express, Howrah-Yesvantpur Superfast Express and one goods train collided with each other. 09 NDRF rescue teams were immediately mobilized to the incident site.

Due to its prompt and specialized response, NDRF was able to evacuate 44 precious lives and retrieve 121 dead bodies.

Hon'ble Prime Minister Shri Narendra Modi also visited the incident site of the Balasore Train tragedy and took stock of the situation with NDRF Rescuers.



During the flood season, teams of NDRF remained deployed in various parts of the country viz. Andhra Pradesh, Assam, Bihar, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Telangana, Uttar Pradesh, Uttarakhand and West Bengal.

The NDRF teams carried out rescue and relief work throughout the country. During the entire flood season of 2023, NDRF rescued 6130 Persons, evacuated 35,794 Persons, 2572 Livestock, retrieved 49 dead bodies and provided Medical Assistance to 934 needy people and assisted the respective State Administration in the distribution of relief material.

Total 37 NDRF teams remained deployed during the *Cyclone 'Biparjoy'* in various States viz. **Gujarat, Rajasthan, Maharashtra, Karnataka** and **Diu.**

Gujarat: 18 NDRF teams were deployed in various districts of Gujarat like Porbandar, Valsad, Gir Somnath, Rajkot, Kutch, Jamnagar, Morbi, Devbhumi Dwarka & Junagarh. NDRF teams assisted State administration in the mass evacuation of 1,43,053 persons. Teams also rescued 07 persons, evacuated 02 livestock and removed 71 uprooted trees, 10 Electric Poles and cleared 10.1 Kms of road.

Rajasthan: 08 teams were deployed in various districts of Rajasthan like Jalore, Rajsamand, Sirohi and Pali. NDRF teams assisted State administration in the mass evacuation of 10,051 persons. Teams also rescued 137 persons and evacuated 04 livestock.

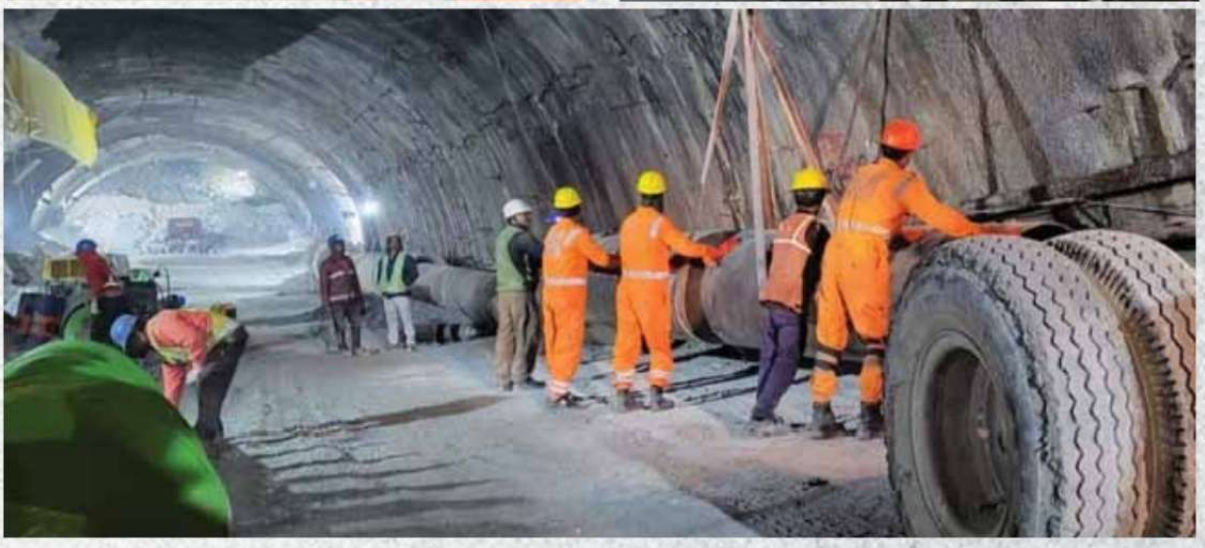
Besides, 06 teams in Maharashtra, 04 teams in Karnataka and 01 team in Diu were also deployed to evacuate people extend rescue and relief operations.

No casualty was reported due to the Cyclone 'Biparjoy'. Hon'ble Home Minister Shri Amit Shah applauded the role of NDRF during this difficult phase.

On 04th October 2023, a Lake Outburst took place due to incessant rains leading to the release of water downstream which resulted in flooding mamy districts viz. Mangan, Gangtok, and Pakyong of Sikkim and Jalpaiguri of West Bengal. The services of NDRF were called to assist the administration in rescue and evacuation work. In this connection 08 teams were deployed in these effected areas (06 teams for Sikkim and 02 teams for West Bengal).

The NDRF teams conducted FWR operations day and night and rescued 178 persons, evacuated 08 persons, retrieved 25 dead Bodies & shifted 710 persons to safer places.

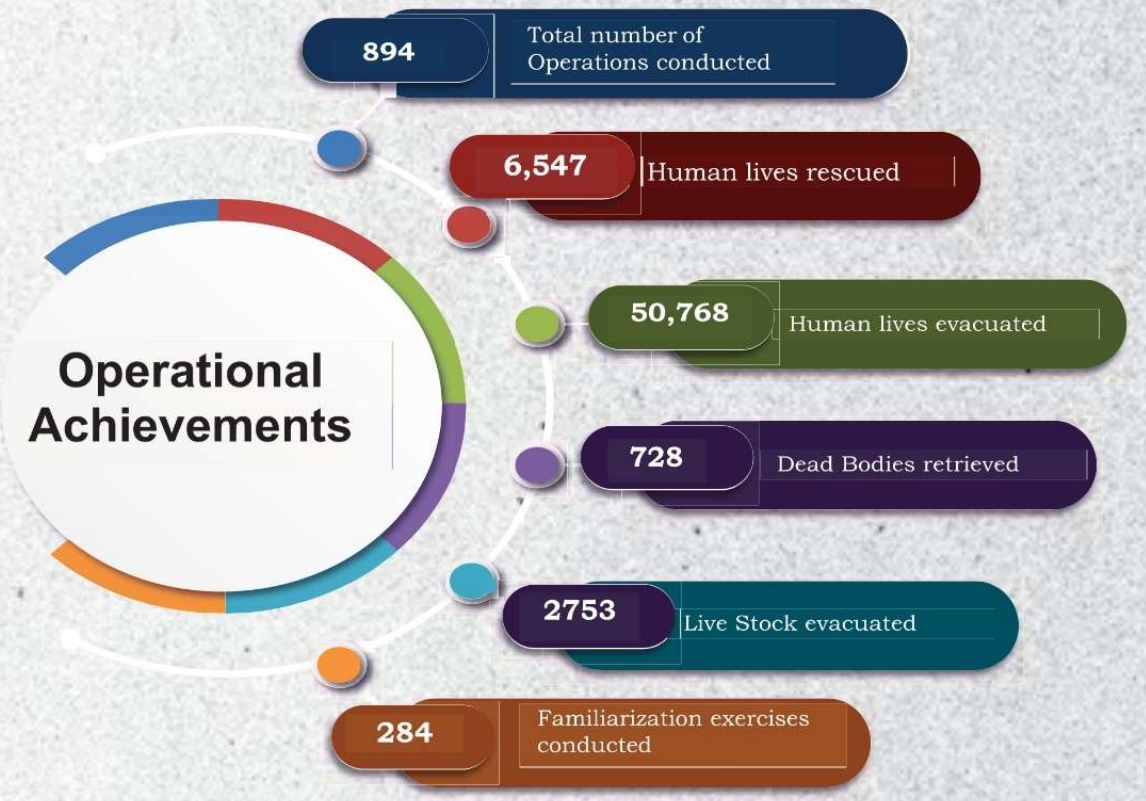
On 12 November 2023, the partial collapse of the *Silkyara- Barkot Tunnel* Uttarkashi occurred which resulted in the entrapment of 41 workers on the Silkyara side. In this rescue operation 02 well-equipped NDRF teams were promptly pressed into action. NDRF rescuers were involved in the 17-day-long rescue operation and conducted joint SAR operation alongwith NHIDCL, RITES, NHAI, RVNL, SJVNL, KRCL, BRO, ITBP, SDRF, PWD, Air Force, State Police, Rat miners & State Administration. By using different cutting and drilling methods, the whole operation was executed meticulously and in this successful operaion by collaborative efforts of all stakeholders, all 41 trapped persons were rescued.

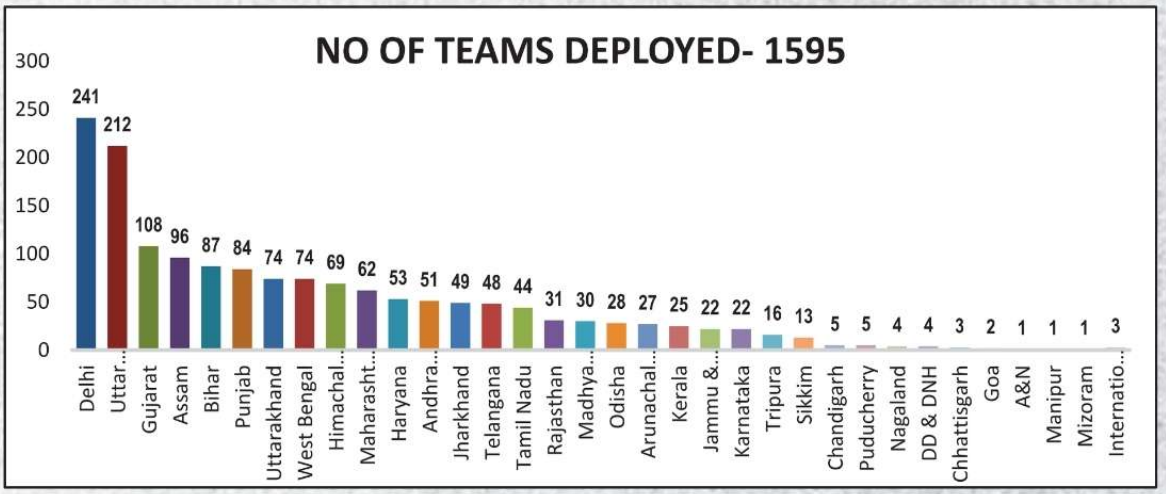


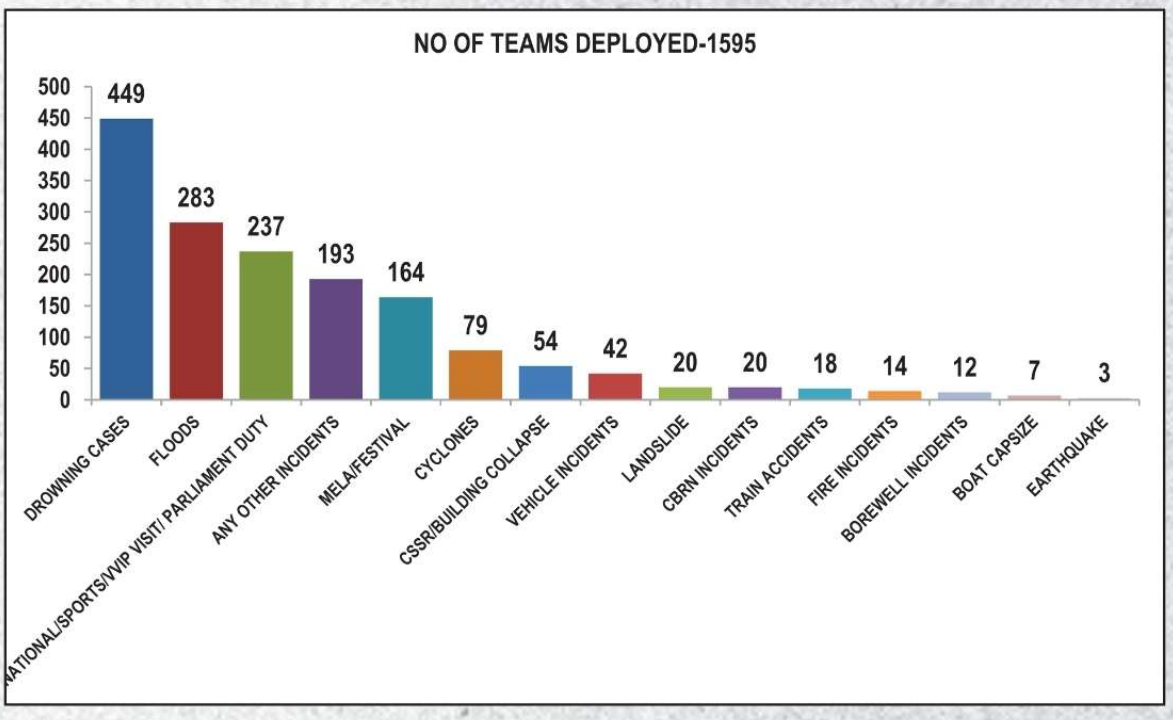
CYCLONE MICHAUNG

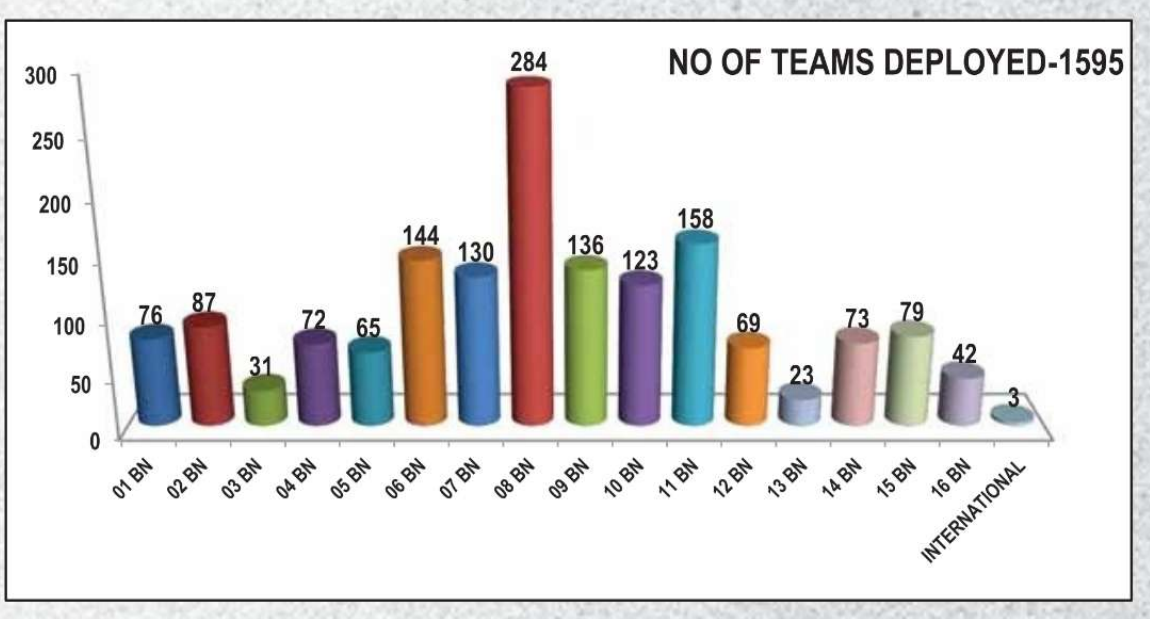
Severe Cyclonic Storm "***Michaung***" was a moderate tropical cyclone which formed in the Bay of Bengal during Nov'2023. On December 4, this cyclone reached to its peak intensity as it approached the coast of Tamil Nadu with wind speed of 110 kilometres per hour. On December 5, the storm made landfall between Nellore and Machilipatnam in Andhra Pradesh.

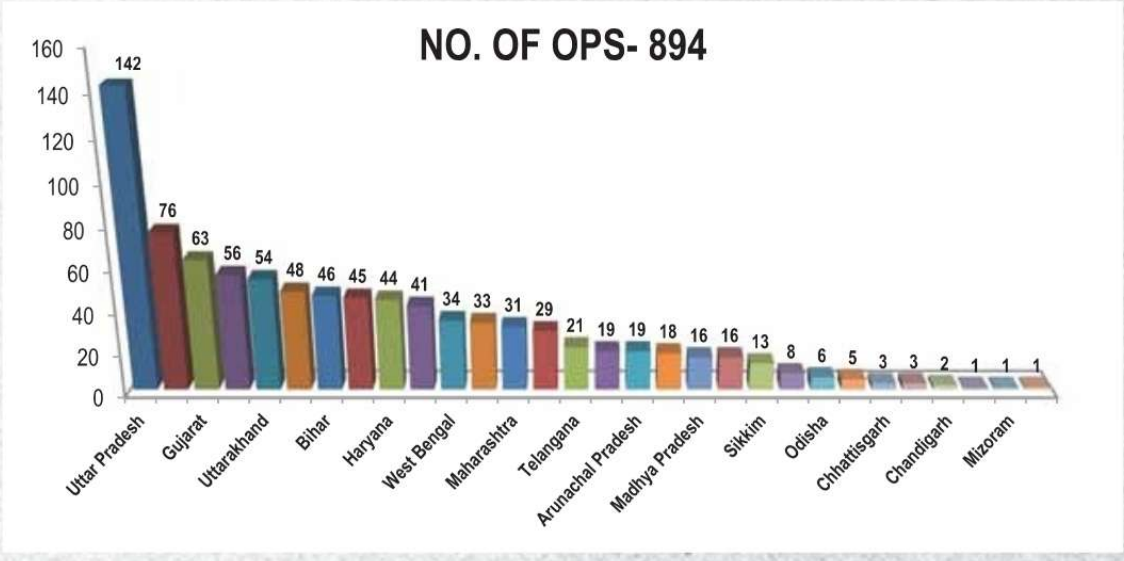
19 NDRF teams were deployed for rescue works in this Severe Cyclonic Storm at Thiruvallur & Chennai districts of the state of Tamilnadu. The teams conducted recce in vulnerable areas, assisted State Administration in Cyclone Awareness campaign and conducted rescue Ops, in which NDRF evacuated 6271 persons, 62 Livestocks, retrieved 05 dead bodies and removed 31 uprooted trees.

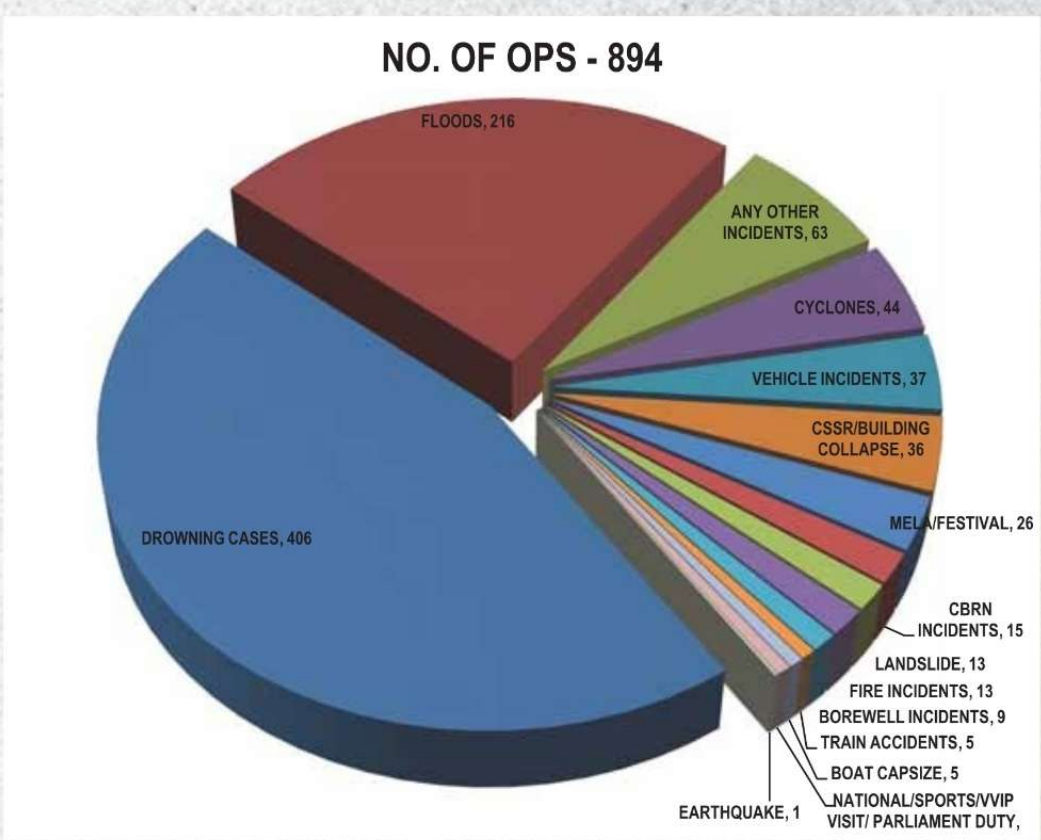

Operational Achievements
894
Total number of Operations conducted
6,547
Human lives rescued
50,768
Human lives evacuated
728
Dead Bodies retrieved
2753
Live Stock evacuated
284
Familiarization exercises conducted

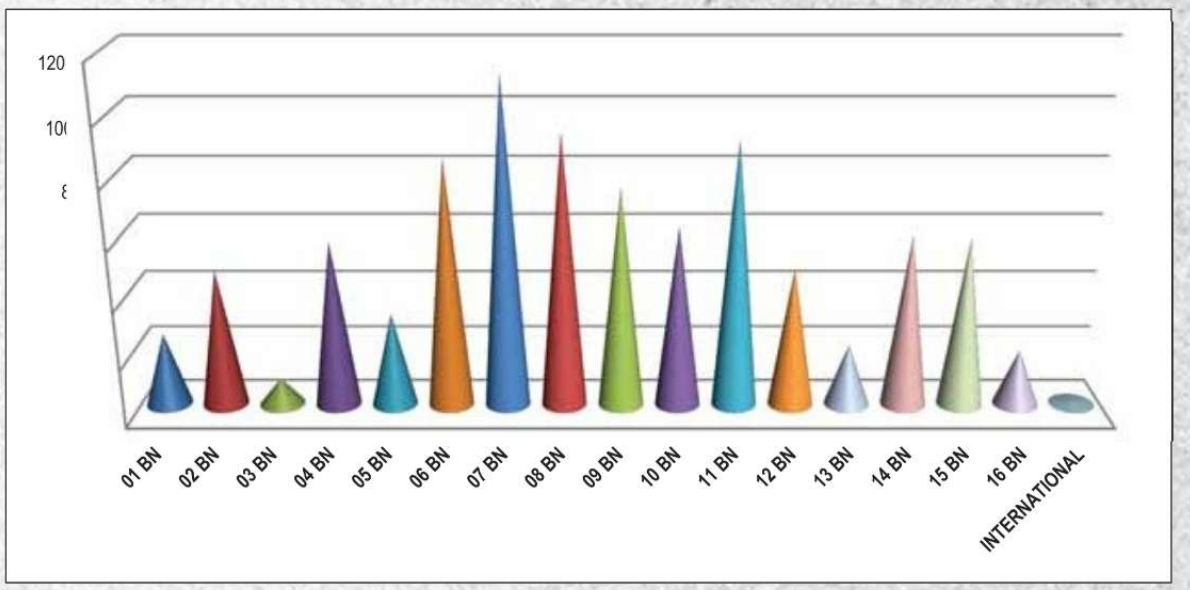

NO OF TEAMS DEPLOYED- 1595
300
250
200
150
100
50
0
241
212
108
96
87
84
74
74
69
62
53
51
49
48
44
31
30
28
27
25
22
22
16
13
5
5
4
4
3
2
1
1
1
3
Delhi
Uttar...
Gujarat
Assam
Bihar
Punjab
Uttarakhand
West Bengal
Himachal...
Maharasht...
Haryana
Andhra...
Jharkhand
Telangana
Tamil Nadu
Rajasthan
Madhya...
Odisha
Arunachal...
Kerala
Jammu &...
Karnataka
Tripura
Sikkim
Chandigarh
Puducherry
Nagaland
DD & DNH
Chhattisgarh
Goa
A&N
Manipur
Mizoram
Internatio...

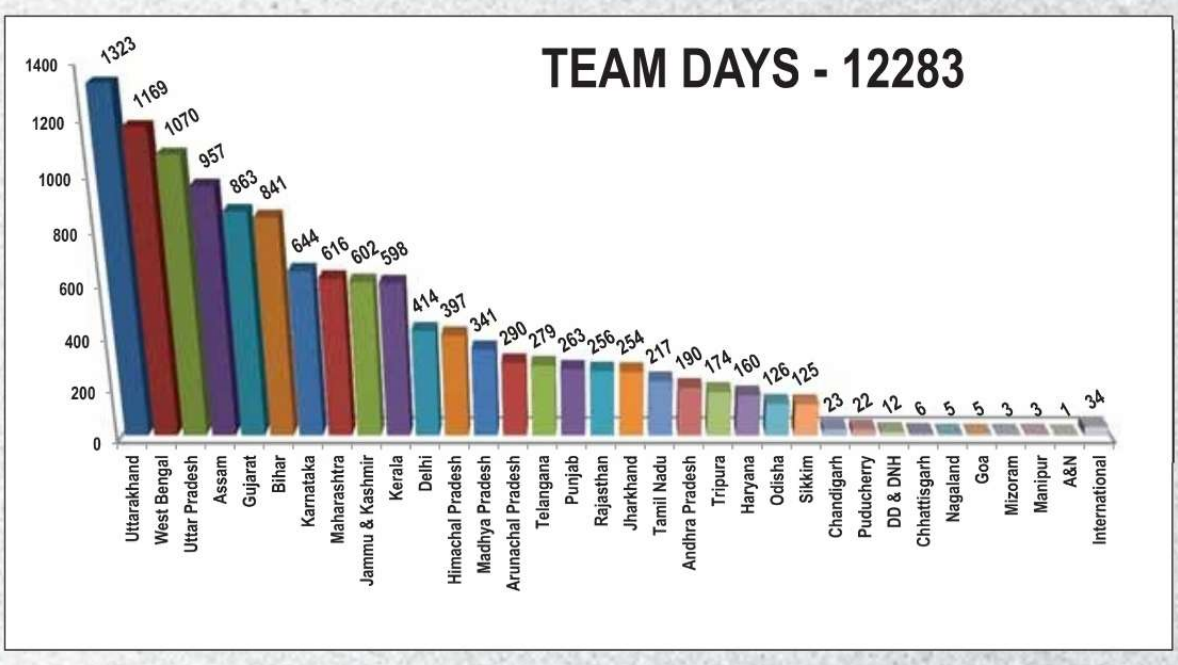

NO OF TEAMS DEPLOYED-1595
500
450
400
350
300
250
200
150
100
50
0
449
283
237
193
164
79
54
42
20
20
18
14
12
7
3
DROWNING CASES
FLOODS
ATIONAL/SPORTS/VVIP VISIT/ PARLIAMENT DUTY
ANY OTHER INCIDENTS
MELA/FESTIVAL
CYCLONES
CSSR/BUILDING COLLAPSE
VEHICLE INCIDENTS
LANDSLIDE
CBRN INCIDENTS
TRAIN ACCIDENTS
FIRE INCIDENTS
BOREWELL INCIDENTS
BOAT CAPSIZE
EARTHQUAKE

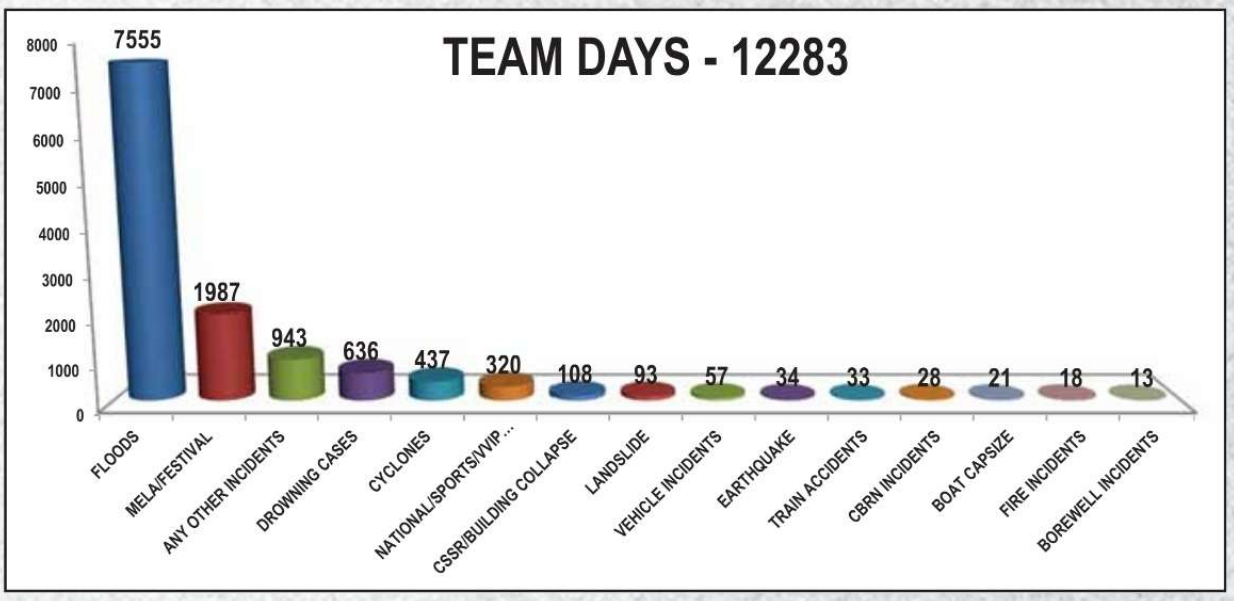

NO OF TEAMS DEPLOYED-1595
300
250
200
150
100
50
0
76
87
31
72
65
144
130
284
136
123
158
69
23
73
79
42
3
01 BN
02 BN
03 BN
04 BN
05 BN
06 BN
07 BN
08 BN
09 BN
10 BN
11 BN
12 BN
13 BN
14 BN
15 BN
16 BN
INTERNATIONAL

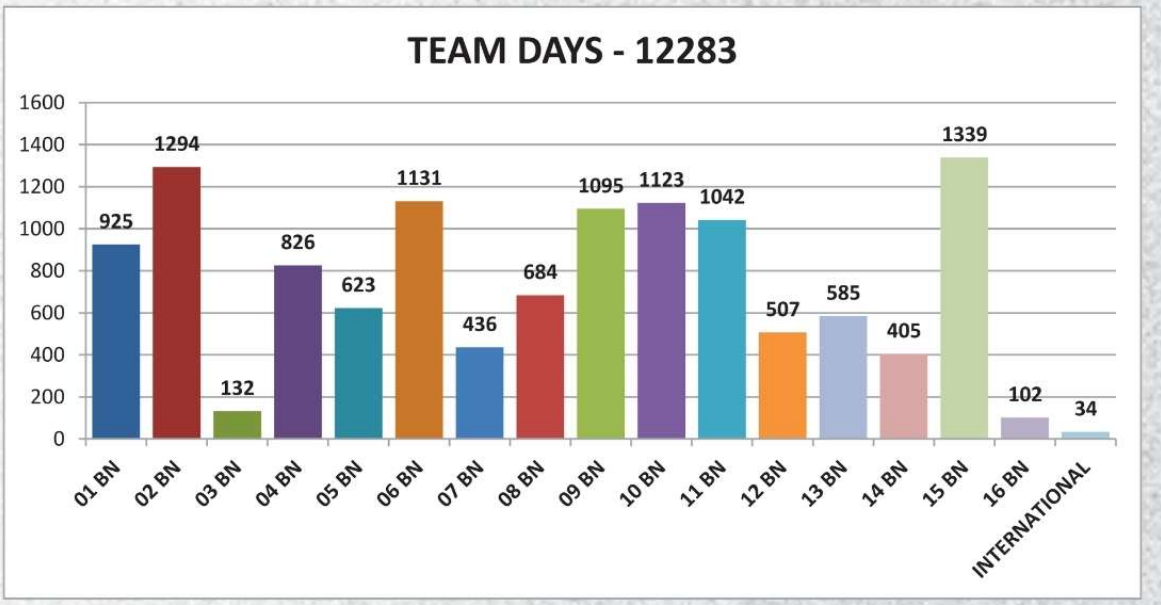

NO. OF OPS- 894
160
140
120
100
80
60
40
20
0
142
76
63
56
54
48
46
45
44
41
34
33
31
29
21
19
19
18
16
16
13
8
6
5
3
3
2
1
1
1
Uttar Pradesh
Gujarat
Uttarakhand
Bihar
Haryana
West Bengal
Maharashtra
Telangana
Arunachal Pradesh
Madhya Pradesh
Sikkim
Odisha
Chhattisgarh
Chandigarh
Mizoram


NO. OF OPS - 894
FLOODS, 216
ANY OTHER INCIDENTS, 63
CYCLONES, 44
VEHICLE INCIDENTS, 37
CSSR/BUILDING COLLAPSE, 36
MELA/FESTIVAL, 26
CBRN INCIDENTS, 15
LANDSLIDE, 13
FIRE INCIDENTS, 13
BOREWELL INCIDENTS, 9
TRAIN ACCIDENTS, 5
BOAT CAPSIZE, 5
NATIONAL/SPORTS/VVIP VISIT/ PARLIAMENT DUTY,
EARTHQUAKE, 1
DROWNING CASES, 406

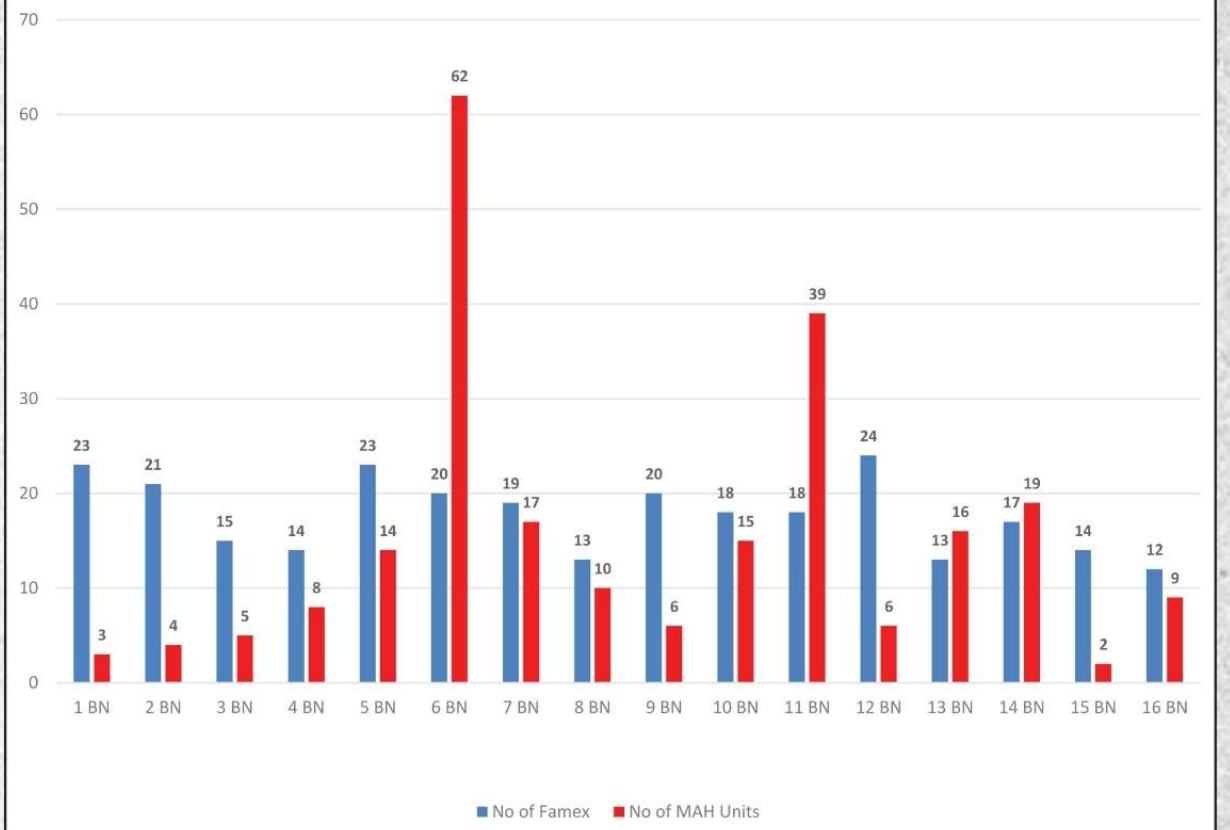

120
01 BN
02 BN
03 BN
04 BN
05 BN
06 BN
07 BN
08 BN
09 BN
10 BN
11 BN
12 BN
13 BN
14 BN
15 BN
16 BN
INTERNATIONAL


TEAM DAYS - 12283
1400
1200
1000
800
600
400
200
0
1323
1169
1070
957
863
841
644
616
602
598
414
397
341
290
279
263
256
254
217
190
174
160
126
125
23
22
12
6
5
5
3
3
1
34
Uttarakhand
West Bengal
Uttar Pradesh
Assam
Gujarat
Bihar
Karnataka
Maharashtra
Jammu & Kashmir
Kerala
Delhi
Himachal Pradesh
Madhya Pradesh
Arunachal Pradesh
Telangana
Punjab
Rajasthan
Jharkhand
Tamil Nadu
Andhra Pradesh
Tripura
Haryana
Odisha
Sikkim
Chandigarh
Puducherry
DD & DNH
Chhattisgarh
Nagaland
Goa
Mizoram
Manipur
A&N
International


TEAM DAYS - 12283
8000
7000
6000
5000
4000
3000
2000
1000
0
7555
1987
943
636
437
320
108
93
57
34
33
28
21
18
13
FLOODS
MELA/FESTIVAL
ANY OTHER INCIDENTS
DROWNING CASES
CYCLONES
NATIONAL/SPORTS/VVIP...
CSSR/BUILDING COLLAPSE
LANDSLIDE
VEHICLE INCIDENTS
EARTHQUAKE
TRAIN ACCIDENTS
CBRN INCIDENTS
BOAT CAPSIZE
FIRE INCIDENTS
BOREWELL INCIDENTS


TEAM DAYS - 12283
1600
1400
1200
1000
800
600
400
200
0
925
1294
132
826
623
1131
436
684
1095
1123
1042
507
585
405
1339
102
34
01 BN
02 BN
03 BN
04 BN
05 BN
06 BN
07 BN
08 BN
09 BN
10 BN
11 BN
12 BN
13 BN
14 BN
15 BN
16 BN
INTERNATIONAL

No. of FAMEx conducted- 284
MAH Units Covered -235



National Disaster Response Force (NDRF) organized a two days ***"Annual Conference on Capacity Building for disaster response 2023"*** on 5th and 06th June 2023 at Vigyan Bhawan, New Delhi. The conference was attended by DsG/ADsG of all State/UTs of the SDRFs, Home Guards, Civil Defence & Fire Services.

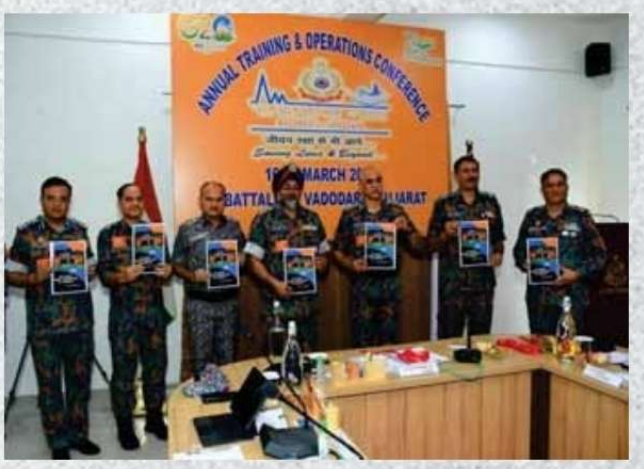
Hon'ble Minister of State (Home), Government of India, Sh. Ajay Kumar Mishra graced the occasion as chief guest and inaugurated the conference. Mrs. S. Sundari Nanda, Special Secretary (Internal Security) was the chief guest on the valedictory session. NDRF has been organizing this conference for capacity building of stakeholders for last 10 years.

The conference provides a common platform to all participating agencies for enhancing their planning & preparation for monsoon seasons. Moreover, the conference also gives an opportunity for the stakeholders to share their best practices and work on their operational gaps to improve the response capabilities and mutual cooperation in case of any disaster.

During the conference various agenda points like Integrated Response to Disaster Challenges, Monsoon Ops Preparedness, Co-ordination with SDRF and agenda points, Capacity Building for CBRN Contingency, Futuristic Response to Biological Emergency and many more topics to make the road map for strengthening and capacity building of SDRFs, Civil Defence, Home Guards & Fire Services, issues related to the Disaster Management Training, Good Practices adopted and way forward were discussed.

2nd Annual Training & Operations Conference (ATOC) was organized at 06th Bn NDRF in Vadodara (Gujarat) w.e.f 16-17th March 2023 under the chairmanship of Sh. Atul Karwal, IPS, DG NDRF. Sh. N. S. Bundela, IPS, IG NDRF, Sh. M.K. Yadav, DIG (Adm), Sh. Mohsen Shahedi, DIG (Ops & Trg and WCZ), Sh. Gambhir Singh Chauhan, DIG (E&NE Zone), Commandant of all 16 Bns, NDRF Academy and other dignitaries were also present in conference.

In this conference, the operational and training activities conducted by the NDRF were thoroughly discussed and analysed.



First NDRF Mountaineering Expedition ***'SAAHAS BHAGIRATHI-2'***

NDRF team Conquered Mount Bhagirathi (Height- 6,512 Meter) in 'Saahas Bhagirathi-2' Expedition. The expedition team comprising of 38 NDRF rescures was led by Sh. Gambhir Singh Chauhan, DIG, NDRF. The aim of this expedition was to prepare the NDRF rescuers to mobilize and operate at short notice in disaster-prone high-altitude areas of the country.

During the Internatioanl G-20 Summit, It was the first time in India when NDRF deployed the HAZMAT (Hazardious Materials) vehicles equipped with advanced equipment to respond to any probable CBRN emergency. This vehicle is indigenously made by Bharat Electronics Limited (BEL), an aerospace and defence PSU under the Ministry of Defence. The primary purpose of HAZMAT Vehicle is to detect, access and mitigate situations where hazadious substances pose risk to human health and environment. Initialy, 04 HAZMAT Vehicles are provided to NDRF and each of these vehicles costs Rs. 15 Cr.

NDRF HAZMAT vehicles will play a crucial role in safeguarding lives and minimizing the impact of hazardous material incidents and contribute to effective emergency response across India. Also, this vehicle was deployed in Ayodhya during the Ram Temple consecration cerermony when Hon'ble Prime Minister Narendra Modi participated in that ceremony.

ToT (Training of Trainers) Course

This course has been designed to be conducted after the advance course is completed and there are enough eligible candidates who have been adjudged to hold the aptitude for instructorship after evaluation in their respective advance course. Personnel undergo following modules in ToT courses.

Module A: Training for Instructor (TFI)

Module B: Instructors workshop (IW)

Following NDRF personnel got trained in the year 2023

S/N	Name of Courses	In 2023
1	TOT IN MFR & CSSR	192
2	TOT IN CBRN	159
3	TOT IN CADRE	130
4	TOT IN ADRC	200

MT (Master Trainer) Course

NDRF personnel, who have already undergone the Training of trainers (ToT) course having been assessed as outstanding performance in the course is eligible for MT Course

S/N	Name of Courses	In 2023
1	MT IN MFR & CSSR	66
2	MT IN CBRN	94

Mountaineering Courses

For augmenting NDRF preparedness in mountaineering search and rescue and avalanche rescue vulnerability, NDRF Rescuers have been trained from NIM Uttarkashi, JIM J&K, NIMAS Dirang, ABVIMAS Manali and J&K Police Samba

S/N	Name of Courses	In 2023
1	Mountaineering Basic	243
2	Mountaineering Advance	46

Deep Diving Advance Courses

NDRF Rescuers have been trained from SEA-Kolkata, IRA- Kolad, Navy, SRTA etc

S/N	Name of Courses	In 2023
1	Deep Diving Advance Course	560

PEER INDIA

Program for Enhancement of Emergency Response (PEER) Course is designed to develop all required knowledge and skills related to TFI and skills to take lecture presentation for advance courses. Two batches were conducted at Vijayawada and Pune. In which 54 NDRF Officials got trained.

CBRN Emergency Management Course

This course is designed for Officers at NDRF Academy in which 24 Officers from various organizations of CAPFs, Military and SDRFs have been trained.

Forest Fire

Based on recommendations made by expert committee under NDMA, MHA has assigned the additional role of handling forest fire besides disaster management to NDRF. Accordingly, it has been directed to train and equip 03 teams of NDRF i.e 01 team in 15th Bn NDRF, Uttarakhand, 01 team in 1st Bn NDRF, Guwahati and 01 team in 10th Bn NDRF, Andhra Pradesh to deal with forest fire on a pilot basis. 03 Teams of NDRF have been trained by CASFoS located at Coimbatore and Dehradun.

SDRF Courses during the year 2023

S/N	Type of Course	Location	Trainees
1	ToT MFR & CSSR	NDRF Units	159
2	MT MFR & CSSR	NDRF ACA.	75
3	ToT CADRE	NDRF ACA.	90
4	ToT CBRN	5th BN NDRF	89
5	MT CBRN	5TH BN NDRF	22
6	Bore well Rescue	10th BN NDRF	124
7	Basic DM Course	NDRF Units	963
		Total	1522

NDRF Academy, Nagpur Courses during 2023

S. No.	Organisation	No. of batches	Trained Personnel
01	NDRF	20	1028
02	SDRF	06	165
03	CD	21	609
TOTAL		47	1802

Details of courses at NDRF Academy during 2023 are as follows:-

S/N	Course Name	Batches	Participants	Org.
1	SCHOOL SAFETY & HOW TO CONDUCT MeX (OFFRS & SOS)	4	135	NDRF
2	FIRE FIGHTING	2	66	
3	TOT IN MFR & CSSR (CT to ASI)	1	33	
4	TOT IN MFR & CSSR (OFFRS & SOS)	4	133	
5	MT IN MFR & CSSR (OFFRS & SOS)	2	66	
6	IRS & INSARAG	2	61	
7	GLOF RESCUE COURSE (ONLINE)	1	30	
8	BASIC FIRST RESPONDER COURSE (BFRC) FOR OFFICERS	1	22	
9	**Online** TTX on "Flood"	1	163	
10	**ONLINE** TTX ON "EARTHQUAKE"	1	159	
11	**ONLINE** WORKSHOP ON GLOF	1	160	
	Total	**20**	**1028**	
1	TOT CADRE	3	90	SDRF
2	MT IN MFR & CSSR	3	75	
	Total	**6**	**165**	
1	AUXILIARY FIRE FIGHTING	2	78	Civil Defence
2	CIVIL DEFENCE INSTRUCTOR	2	86	
3	FLOOD/ CYCLONE DISASTER RESPONDERS	2	75	
4	COMMINITY DISASTER PREPAREDNESS	1	24	
5	MANAGEMENT OF DECEASED	1	30	
6	SEARCH & RESCUE TECHNIQUES (CSSR)	1	29	
7	BASIC LIFE SUPPORT (BLS)	1	34	
8	EMERGENCY OPERATION CENTRE MANAGEMENT	1	25	
9	VERTICAL ROPE RESCUE	1	31	
10	BIOLOGICAL INCIDENT FIRST RESPONDERS	1	9	
11	TOT ON RADIOLOGICAL & NUCLEAR EMERGENCIES	1	26	
12	TOT IN DISASTER PSYCHO-SOCIAL INTERVENTION	1	27	
13	CHEMICAL DISASTER FIRST RESPONDER	1	16	
14	UNEXPLODED BOMBS AND EXPLOSIVE SAFETY	1	24	
15	EMERGENCY RESPONSE TO RAIL TRANSPORT ACCIDENTS	1	29	
16	INDUSTRIAL DISASTER MANAGEMENT	1	25	
17	CIVIL DEFENCE & DISASTER MANAGEMENT	1	23	
18	ToT on CIVIL DEFENCE.	1	18	
	Total	**21**	**609**	
	G/Total	**47**	**1802**	

The National Disaster Response Force (NDRF) deployed 115 nos of specialized teams for CBRN cover against any probable CBRN exigency in 46 different cities across the country to cover various events of International G-20 Summit. In addition to its deployment, NDRF also conducted regular mock drills in collaboration with all stakeholders. These drills served as a proactive measure, ensuring that all agencies involved were well-prepared and could coordinate seamlessly during any possible CBRN exigency.

The main event was conducted from 9-10 September 2023 at New Delhi in which Heads of State and Heads of Govt of G-20 member Nations and Heads of various International Organizations participated.

During this important occasion in order to counter any possible CBRN contingency, NDRF was tasked to provide CBRN cover to all the Venues and the Hotels where the delegates were scheduled to stay.

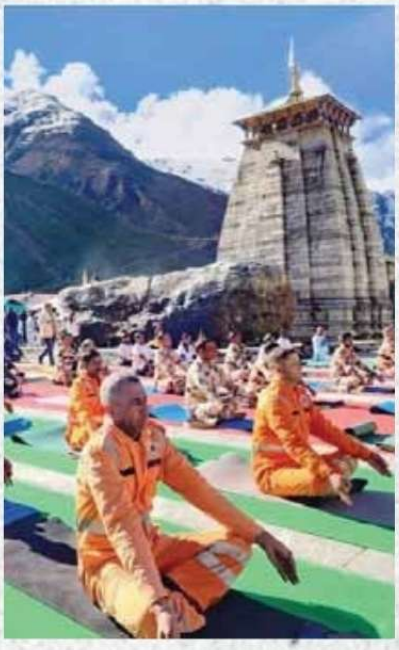
NDRF deployed about 600 well-trained Rescuers in 11 teams equipped with the latest CBRN equipment. Besides, four state of the art Hazmat vehicles fabricated by M/S Bharat Electronics Limited at Pune and equipped with the latest gadgets for Chemical and Radiation detection and assessment were also deployed at strategic locations to counter any possible CBRN threat.

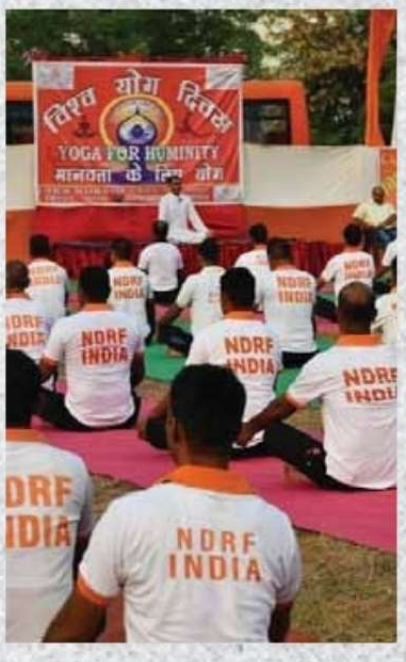
During the year 2023, NDRF along with other stakeholders conducted Mock drill exercises to deal in disaster situations like Earthquakes, Floods/Cyclones, Rail accidents and CBRN emergencies and sensitized the people about the steps to be taken during these disasters.

During the year 2023, a total of 611 Mock exercises were conducted through which, NDRF has sensitized more than 1,25,322 people.

During the year 2023, Under the Disaster Management Training Program umbrella, NDRF conducted a series of community awareness and school safety programs across various schools, colleges, and districts in different states of India. By these initiatives, approximately 6.5 lacs people got benefitted, which marks a substantial impact in enhancing disaster preparedness and resilience among communities across the country.

The brave-heart Martyrs of the National Disaster Response Force (NDRF) were remembered with pride & reverence on the occasion of 'Police Commeration Day' at NPM, Chankyapuri, New Delhi. Shri Ajay Kumar Bhalla, Union Home Secretary graced the occasion as Chief Guest and conveyed gratitude to our valiant heroes who sacrificed their lives at the altar of duty. Shri Atul Karwal, DG NDRF also expressed his heartfelt gratitude to the families of Martyrs and NDRF's resolve to keep serving the Nation with same dedication & commitment.





On 21st June, 2023, "International Day of Yoga" was observed by NDRF with full zeal & enthusiasm at all its field formations. This year the theme of Yoga Day was **'Yoga for Vasudhaiva Kutumbakam'** i.e. Yoga for the welfare of all in the form of 'One World-One Family'. NDRF rescuers practiced various 'Yoga Asanas' and Yoga postures at their Units and from their homes alongwith their family members as well.

The FitRise 75 NPA Triathlon, held at the Sardar Vallabhbhai Patel National Police Academy (SVPNA) in Hyderabad, marked the grand finale of a 75-day fitness program commemorating 75 years since the inception of the academy. This triathlon saw enthusiastic police personnel from 19 different teams across the country competing in three challenging events:

- ✓ Swimming: 1 km swimming
- ✓ Cycling: 40 km cycling leg
- ✓ Runing: 10 km running

Among the participating teams apart from NDRF, were various Central Armed Police Forces (CAPFs), including BSF, ITBP, SSB, CISF, RPF, IB, SPG, and NSG, as well as state police forces from Assam, Andhra Pradesh, Uttar Pradesh, Madhya Pradesh, and Delhi.

NDRF secured fourth position in the triathlon and stood first among the CAPFs.

IRONMAN 70.3 Goa - Anything is possible

IRONMAN 70.3 Goa is a prestigious international triathlon that took place in the beautiful State of Goa in the month of Oct' 2023. The event featured a 1.9 km *Swim*, a 90 km *Cycling*, and a 21.1km *Run*.

The Ironman team of NDRF, 2023 was headed by *Sh. Narendra Singh Bundela, IPS, IG NDRF* and the officers and men of NDRF had participated actively in this triathlon. There were 06 solo participants and 05 relay participants and the entire participants had finished the triathlon in flying colours and the relay teams of NDRF had secured 08th, 09th and 11th positions among the best finishers of Ironman 70.3 Goa Championship. The endeavours of NDRF to remain fit and to promote a sense of physical fitness among the rescuers is being ensured and NDRF continues to participate such triathlon events actively and wholeheartedly under the guidance of *Sh Atul Karwal, IPS, DG NDRF*.

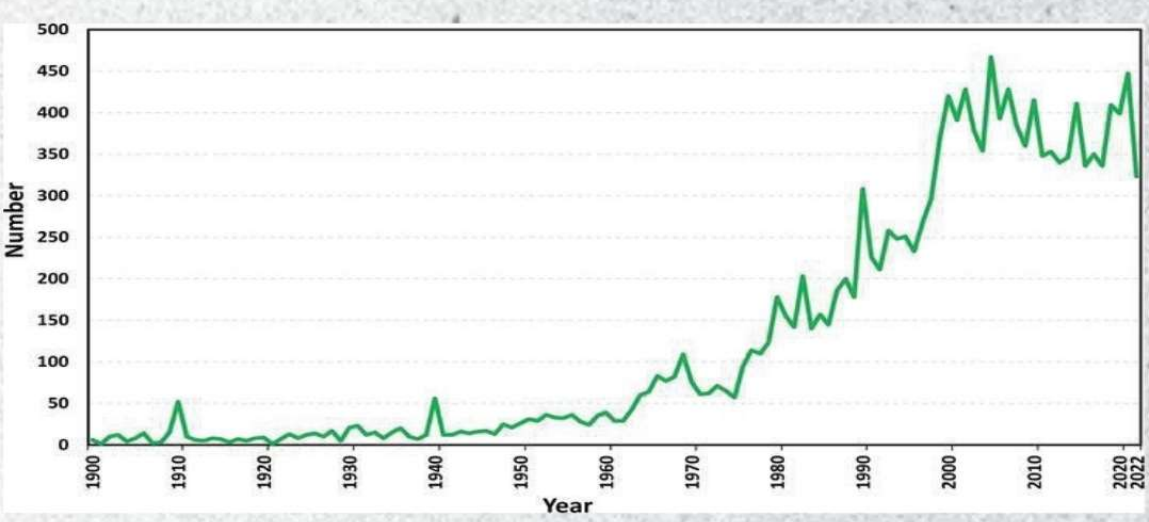
CLEANLINESS DRIVE UNDER "SWACHHTA HI SEVA (SHS)" CAMPAIGN

Under Swachh Bharat Abhiyan that aims to clean streets, roads and infrastructure of cities, smaller towns and rural areas NDRF has organised various cleanliness drives, rallies and programmes across the country to encourage and sensitize its personnel and common people about the mission with the theme Garbage-Free India.

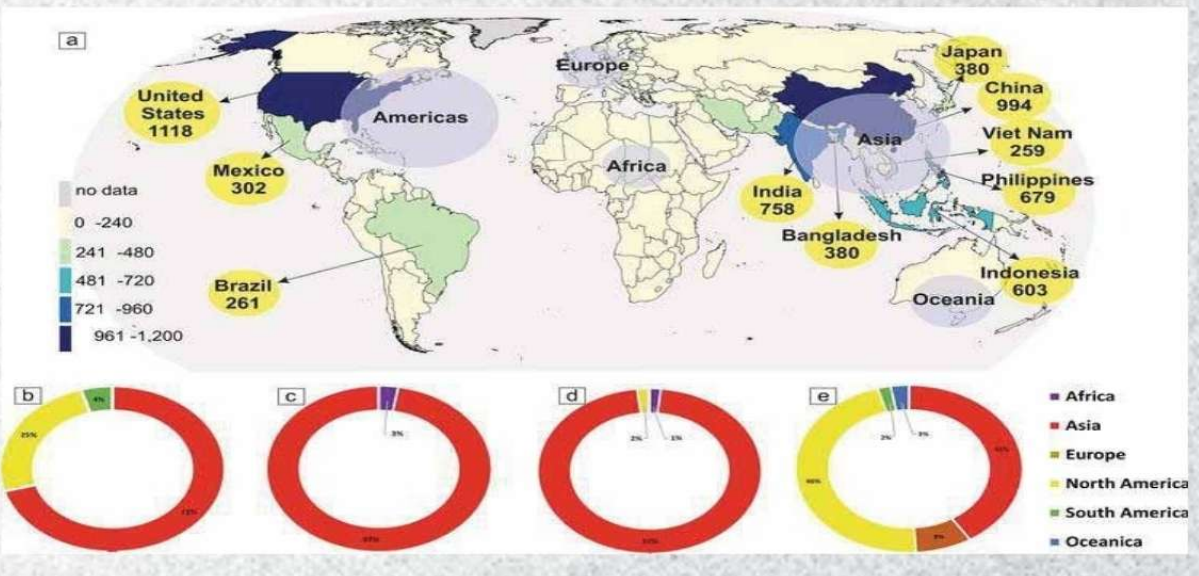
"The only easy day was yesterday." – US Navy Seals

Mohsen Shahedi,

Natural hazards have become an increasingly prevalent threat to the world, with the frequency of recorded disasters rising in the recent years. A study of primary natural hazards worldwide from 1900 to 2022, including earthquakes, volcanic eruptions, landslides, floods, droughts, wildfires, storms, and extreme temperatures by EM-DAT i.e. The International Disaster Database shows that storms have the highest frequency of occurrence (38%), droughts are the deadliest (53%), floods affect the most people (50%), and storms cause the most economic losses (41%).



The global map below shows the data from 1900-2022 per continent – (a) The number of natural hazards in the continents and countries shown on the map (b) frequency (c) deaths (d) total affected people(e) direct economic losses (USD).



A further analysis of the data shows that a total of 6358 natural hazard events occurred globally during this period. The majority of these events were caused by meteorological hazards (42%), followed by hydrological hazards (35%), climatological hazards (6%), and geophysical hazards (17%).

Disaster group	Disaster sub- group	Frequency	Deaths	Total affected people	Economic losses (in million USD)
Natural	Geophysical	1086	2,080,899	91,040,860	1,233,472
	Hydrological	2250	6,933,023	3,690,221,086	1,126,788
	Climatological	357	11,719,664	2,383,019,623	607,107
	Meteorological	2665	1,444,862	1,253,312,381	2,246,627
	Total	6358	22,178,448	7,417,593,950	5,213,995

This study of the primary natural hazards worldwide from 1900 to 2022 shows that earthquakes, volcanic eruptions, landslides, floods, droughts, wildfires, storms, and extreme temperatures have been the primary natural hazards globally during the last 123 years. Regarding continent-wise impact, Asia has experienced the highest frequency of natural hazards, with the most significant number of deaths and total affected people. North America follows in terms of natural hazard frequency, with Africa experiencing the highest number of fatalities and North America experiencing the most total affected people. North America has also suffered the highest economic losses due to natural hazards, followed by Asia and Europe. The highest frequency of natural hazards with the most significant economic losses is caused by meteorological events. Climatological events are the deadliest, while hydrological events affect the most people. This study is critical in enhancing our understanding of natural hazards worldwide as the database can support informed decision-making in risk assessment, disaster management, and mitigation efforts. The results underscore the importance of continued monitoring of natural hazards and preparedness measures to mitigate their impact.

Indian Scenario in 2023 –

The year 2023 was an eventful year for India as far as disasters are concerned – both natural and man-made. It would be worthwhile to undertake a review of the major operations attended by NDRF and analyse the insights, lesson learnt and the takeaways.

(a) "Op Dost" in Turkiye (8-18 Feb)– It saw deployment of three USAR Teams of NDRF in foreign land in sub-zero temperature. The teams recovered 2 live victims and 85 dead bodies from the rubble. Insights/Lessons learnt

(i) International exposure to field Comdrs/ specialists is essential.
(ii) Familiarization with INSARAG methodology and functioning.
(iii) Need to develop self-contained USAR Teams with latest eqpt, logistics and vehicles.
(iv) Need for robust battery-operated tools
(v) Adequate preparation for cold/hot climatic conditions
(vi) Preparation for Level 4 disasters in India especially in mountain States in earthquake zone 4/5.
(vii) Logistics base – lining up of relief stores for worst-case scenario

(b) Balasore Train Accident (2-4 June)– It was a horrendous nightmare with a rarely witnessed accident involving three trains resulting in 291 deaths. In this 9 Teams of 3 & 2 Bn NDRF were deployed and they rescued 44 victims alive and retrieved 121 dead bodies.

Insights/Lessons learnt

(i) Prioritizing live rescue in mass casualty scenario – appreciation by Team Comdr & tasking
(ii) Knowledge of train bogies – their make and design
(iii) Practice of cutting through mangled coaches – use of plasma cutters & latest techniques
(iv) Rotation of manpower and significance of hydration breaks/ backpacks
(v) Establishment of staging area and self-contained camps to meet basic requirements in long drawn op.
(vi) Conduct of wide area search to check for injured/bodies
(vii) Dead body management – system for proper identification
(viii) Co-ordination with local administration for providing Green Corridor
(ix) Adequate equipping of RRCs to make them self-contained
(x) Readiness of local units to provide logistical support promptly
(xi) Ensuring formal reporting by Team Comdr to Incident Comdr and initial affirmation of reaching incident site to CR.

(c) Silkyara Tunnel Rescue (12Nov-01 Dec)– A 17-day long rescue operation in challenging situation which eventually resulted in rescue of 41 trapped workers. It highlighted the importance of "whole of govt approach" in dealing with disasters.

Insights/Lessons learnt

(i) Simultaneous involvement of multi-pronged rescue op
(ii) Preparing for unknown and developing situations
(iii) On the spot improvisations in tools and techniques
(iv) Training for confined spaces – use of eqpt & limitations
(v) History repeats itself – Lessons from the past (Bilaspur Rescue Op – HP 2015)
(vi) Communication with victims eases out situation – training in effective comn skills
(vii) Expectations V Realities for NDRF – Challenges for leadership

(d) Cyclone Maichung (30 Nov-09 Dec) – It resulted in 25 deaths. 35 NDRF Teams of 4 & 10 Bn were deployed. 6415 civilians were evacuated with 62 livestock and 09 persons were rescued alive.

Insights/Lessons learnt

(i) Advance co-ordination with States/UTs a must – action of NDRF should not be limited to merely providing teams but getting involved in deployment plan
(ii) Improving training & technique of deep divers for recovery in riverine/muddy waters
(iii) Preventive measures for boat puncture
(iv) Prioritizing distress calls by Team Comdr – Co-ordination with local rep and placement of local language knowing personnel in team.

(e) Cyclone Biparjoy (7-22 June)– It was a zero-casualty operation highlighting close co-ordination at various levels and monitoring at the highest level in the govt. 37 Teams from 6/5/10 Bn NDRF were deployed across four States and UT. In this Teams conducted mass evacuation of 1,43,053 affected persons in Gujarat and 10,051 affected persons in Rajasthan.

Insights/Lessons learnt

(i) Pre-emptive action on war-footing – shifting of affected persons to cyclone shelters, removal of hoardings, presence of all functionaries at one location for quick decision making.
(ii) Avoid temporary cyclone shelters in low-lying areas to prevent shifting in event of Inundation.

(iii) Use of chainsaws and safety drills
(iv) Appreciation and plan for post-landfall effect and spread
(v) Requirement of container vehicles to undertake SAR during rains with safety of Equipment.

(f) Ludhiana Gas Leak (30 April – 01 May) - It amply reflects the problems the unorganized sector poses in many cities and towns across the country and the need to undertake hazard mapping. The initial response was by 13 Bn followed by team from 7 Bn NDRF. It resulted in death of 11 civilians from hydrogen sulphide.

Insights/Lessons learnt

(i) Use of PPE & eqpt in unknown situations
(ii) Update knowledge on characteristics of chemicals & their effect
(iii) Follow SOP – First detection & assessment and then rescue
(iv) Importance of distance sampling & monitoring contamination levels
(v) Co-ordination with CBRN experts for guidance
(vi) Significance of Familiarization of MAH Units

(g) Himachal Floods (June-July) & Sikkim Flash Floods (4 Oct-01 Nov) – In HP 26 Teams were deployed -- 1327 persons were rescued & 5094 persons were evacuated; in Sikkim &WB 8 Teams were deployed – 178 persons were rescued and 8 evacuated; 25 dead bodies were recovered.

Insights/Lessons learnt

(i) Timely actions on early warnings can save valuable lives
(ii) Unpredictability of heli-services due to inclement weather conditions – mountain training/trekking
(iii) Small Team Ops – Formation and drills
(iv) Rope rescue drills across high current rivers & streams
(v) Maintaining last mile connectivity
(vi) Advance placement of teams to avoid delay due to road blockades

(h) Delhi (12-20 July) & Haryana Floods (25 June-24 July) – In Delhi 17 teams from 8&16 Bn were deployed and they rescued 1617 persons and evacuated 7385 persons besides 956 livestock. In Haryana, 19 Teams were deployed who rescued 675 persons and evacuated 2100 persons besides 63 livestock.

Insights/Lessons learnt

(i) Drills in shallow waters and patches of land and water
(ii) Animal rescue techniques & drills
(iii) Barrage opening – Expertise V Limitations
(iv) Handling of media – professionalism and tact

(i) G-20 Events – NDRF was assigned the important role of providing CBRN cover for the events conducted in 46 cities across India in which 115 Teams were deployed primarily for CBRN Cover. The Main event was conducted at New Delhi from 9-10 Sept in which 11 Teams of 8/16/7 Bn were deployed in full strength with Hazmat vehicle.

Insights/Lessons learnt

(i) Role Clarity in multi-agency set up
(ii) CBRN Emergency Management - SOP & Guidance of CBRN Experts
(iii) Co-ordination with multiple stakeholders

(iv) Need for threat assessment and analysis
(v) Conduct of MEx on multiple scenarios
(vi)Upgradation of eqpt profile creates confidence in Rescuers – HAZMAT Vehicle deployment.

Needless to say, the need of the hour is to focus on training for diverse and unknown situations and follow up closely on all incidents in others AoR as NDRF is a national asset and can get deployed anywhere, anytime.

Leadership in such situations is most critical to appreciate the problem at hand in correct perspective weighing all pros and cons and to take crucial decisions in crisis with required efficiency and efficacy even while ensuring the safety of the Rescuers.

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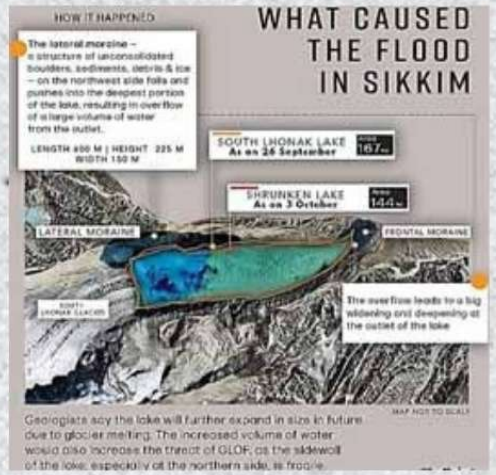
The Himalayas, a majestic crown upon the Indian subcontinent, also harbor a hidden threat – glacial lakes. On October 3rd, 2023, this threat materialized in Sikkim as a Glacial Lake Outburst Flood (GLOF) unleashed its fury. The South Lhonak glacial lake, swollen by years of receding glaciers, breached its banks, sending a torrent of water cascading down the Teesta River Valley. The ensuing devastation was immense – bridges crumbled, roads vanished, and vital infrastructure projects lay in ruins.



This disaster, however, also became a stage for extraordinary courage and unwavering resolve. The National Disaster Response Force (NDRF) emerged as a beacon of hope in the midst of the chaos.

A Rising Threat, a Swift Response Sikkim, nestled in Seismic Zone IV/V and experiencing high annual rainfall, is no stranger to natural disasters. The state boasts over 300 glacial lakes, ten of which, including South Lhonak, pose a constant threat of GLOFs. The 2023 event tragically highlighted this vulnerability.

Following the first reports at 3:00 AM on October 4th, the NDRF swung into action. Recognizing the gravity of the situation, the Director General orchestrated a meticulously planned response. Teams stationed at Pakyong and Silliguri were immediately mobilized towards the most affected areas. This initial deployment was swiftly followed by four more teams, strategically positioned across Sikkim and West Bengal, to collaborate with the state governments.

The NDRF's dedication and skill were on full display. Pre-positioned teams, equipped with advanced communication tools and essential supplies, were ready to face the challenge. Their bravery shone through as they navigated treacherous currents, rescuing 186 individuals from life-threatening situations. The NDRF also played a crucial role in retrieving the remains of 26 victims, ensuring a dignified farewell for the departed.

Beyond rescue, the NDRF provided vital humanitarian assistance to over 710 civilians, both residents and stranded tourists. This humanitarian spirit exemplifies the core values of the NDRF – selfless service and unwavering commitment in the face of adversity.

The editorial can be further enriched by including a more detailed account of the NDRF's operations. Here's a breakdown of their actions based on the provided information:

October 4th: Eight NDRF teams were mobilized upon request from the Sikkim State Disaster Management Authority. Search and rescue operations commenced along the Teesta River.

October 5th: Three teams actively rescued people trapped in buildings and along the river. Team 2C stands out for rescuing 169 people from various buildings.

October 7th-9th: NDRF teams conducted a thorough reconnaissance of the Chungthang region, engaging with local officials and searching for missing individuals.

October 8th: A significant milestone was achieved as all teams successfully

The NDRF's success story is woven with the threads of overcoming significant challenges:

- High water currents and obstacles in the riverbed: Navigating these treacherous waters posed a constant threat to the safety of rescuers.
- Locating and reaching victims: The raging currents made locating and reaching stranded individuals extremely difficult.
- Time constraints: The rapidly rising floodwaters created a desperate urgency to act swiftly.
- Limited accessibility: Damaged infrastructure left 13 villages completely cut off, hindering rescue efforts.
- Adverse weather conditions: Bad weather hampered the use of both Air Force and Army helicopters, further restricting mobility.

- The Sikkim GLOF serves as a stark reminder of the growing threats posed by climate change. It highlights the need for proactive measures like:
- Improved early warning systems: To provide timely evacuation warnings and facilitate a quicker response.
- Enhanced infrastructure resilience: Building dams and bridges capable of withstanding extreme weather events.
- Investing in mitigation strategies: Exploring solutions to manage the size and stability of glacial lakes.

Abstract

Uttarkashi is one of the most vulnerable districts of Uttarakhand in terms of natural hazards. This article explores the integration of National Disaster Response Force (NDRF), Crisis management strategies, innovations and collaborative efforts with State / Central agencies involved to ensure successful evacuation of 41 workers from the collapsed tunnel (on 12-11-2023) in adverse conditions. The insight also aims to guide future proactive measures and adaptive strategies in safeguarding precious lives.

Keywords

PMO, NDRF, Silkiyara Tunnel

Introduction

The Silkiyara tunnel, a vital component of the region's infrastructure, serves as a crucial link for transportation. The geographical location, characterized by rugged terrains and unpredictable weather conditions, added a layer of complexity to the tunnel's significance. In the wake of a natural disaster or crisis, the importance of swift and effective response measures became the need of the hour.

It was the day of Deepawali when people were preparing for celebration, at around 0900 hours, I got a call from my team deployed at Uttarkashi (since April-2023 for taking care of Chardham pilgrims and as a precaution in case of excessive rain related disaster in the district), that an under construction tunnel from Silkyara to Barkot (appx. 4.5 km) collapsed in between and informed that around 50 workers are reported to be trapped inside.

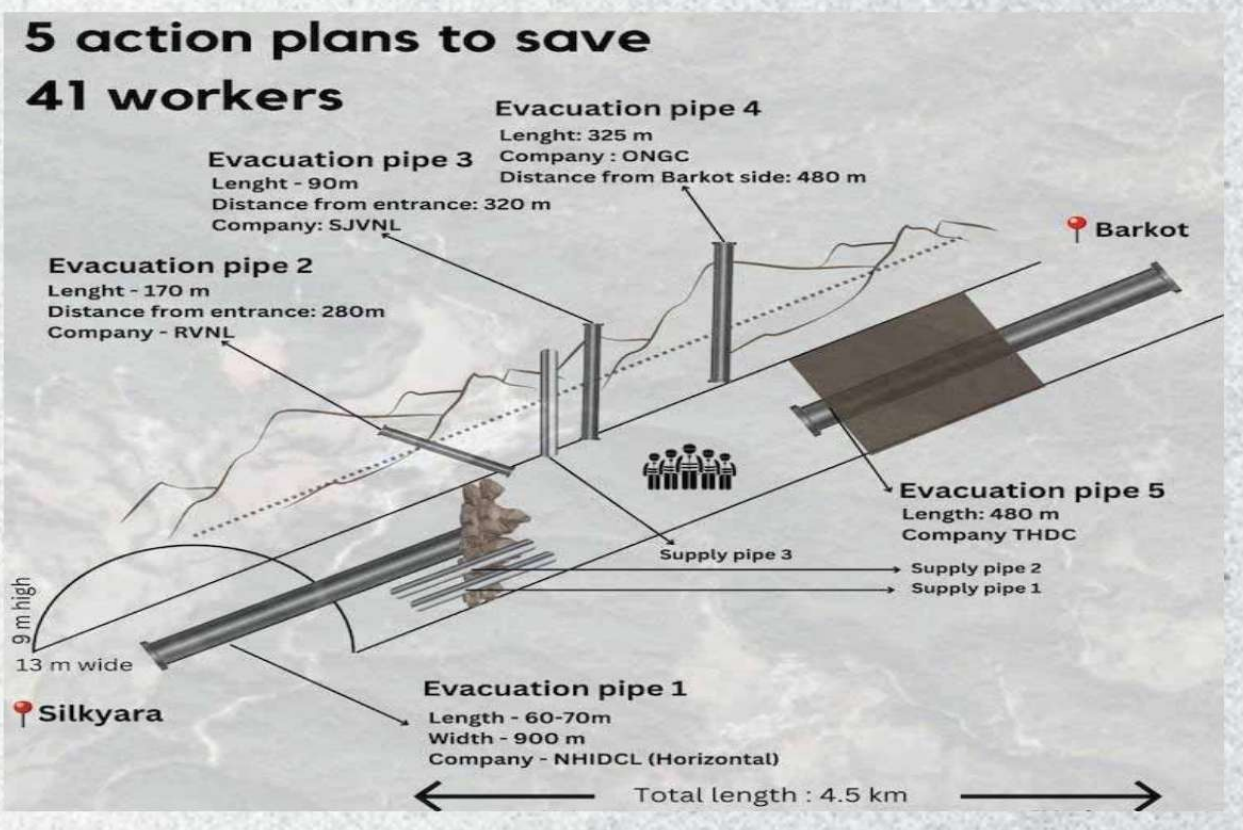
Accordingly, NDRF team at Uttarkashi was directed to proceed to the incident site.

The Silkiyara tunnel operation marked a significant chapter in my professional journey in the force, where I undertook a pivotal role in ensuring the success of this most challenging operation. As Commandant of NDRF unit and as a team leader I ensured meticulous planning, effective execution and coordination with all agencies / stakeholders for successful completion of the operation which lasted for 17 days.

My journey through the intricate passage Silkiyara tunnel was not merely a professional duty but an immersive experience in tackling engineering marvels, fostering teamwork, and navigating unforeseen challenges. Building a perfect team became as crucial as addressing the engineering intricacies of the tunnel. PMO five-point strategy for speedy rescue of the trapped victims played crucial role for this break through and from the angle of NDRF side simultaneous efforts in the form of planning / execution with the help of some innovative equipment made by our rescuers was the key of success.

PMO Five Point Strategy

- Drilling through debris by Auger Machine (Assigned to NHIDCL)
- Vertical boring for man size hole approximate 1 to 1.2 mtr (Assigned to SJVNL)
- Perpendicular micro-tunnelling (Assigned to RVNL)
- Vertical boring (24 inches) at Barkot end (Assigned to ONGC)
- Tunnelling of remaining tunnel from the Barkot end (480 mtr) (Assigned to THDC)



Preparedness Strategies

A meticulous plan was framed and executed by the Unit Commandant, 15 NDRF to respond swiftly to any unforeseen incidents within Silkiyara tunnel. From regular drills to state-of-the-art supervision system was in place under top brass of NDRF HQ (i.e. DIG (Ops), IG and Director's General). Keeping in view the PMO, 5 points strategies in mind, teams were organised / equipped and trained for incident free completion of this herculean task.

Collaborative / Coordinated Response Efforts

The synergy between various agencies i.e. PMO, USDMA, NHIDCL (NEC), NDRF, SDRF, BRO, SJVNL, PWD, L&T, RVNL and ONGC ensures a cohesive response, minimizing time and expediting recovery. The success of the Silkiyara tunnel operation was underpinned by seamless coordination and collaboration among various agencies. NDRF worked in tandem with local authorities, the fire department, and other stakeholders. Regular briefings and updates ensured everyone involved was on the same page, enhancing the overall effectiveness of the operation.

Technological Innovations

The integration of Collapsed Structured Search & Rescue equipment (CSSR) and Mountaineering equipment along with innovations (JUGAAD) by NDRF rescuers, the wheel-based stretcher, trolley's for extracting debris / muck and capsule (in case of vertical intervention) contribute to proactive risk management and enhanced operational safety and capability of our rescue team.

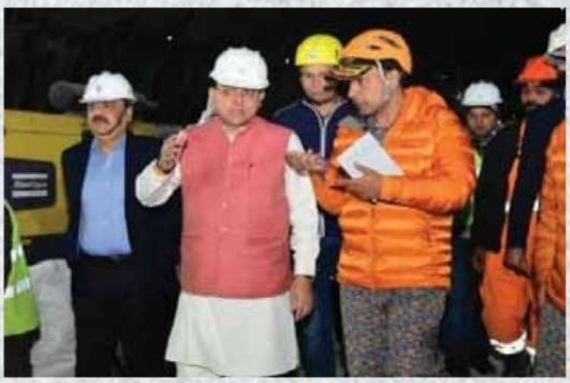
Evacuation and Safety Measures

The primary objective of the operation was the safe evacuation of individuals trapped within the tunnel. NDRF implemented robust evacuation procedures, prioritizing the safety of both the rescue teams and the individuals trapped in the tunnel. Medical teams were on standby to provide immediate assistance, and communication channels were established to keep those inside the tunnel informed about the ongoing rescue efforts.

The Silkiyara tunnel operation yielded valuable lessons for future disaster responses. It highlighted the importance of specialized training, advanced equipment, and seamless coordination. The experience underscored the need for ongoing preparedness measures, considering the unpredictable nature of disasters.

The Silkiyara tunnel operation stands as a testament to the NDRF's commitment and capability in managing complex emergency situations. The collaborative efforts, strategic response strategies, showcased in this operation serve as a blueprint for effective disaster response, setting a benchmark for future endeavours in safeguarding lives and infrastructure. The operation also highlights the importance of man's innovative ideas of survival as exhibited by the NDRF rescuers and 'Rat-Hole miner' while scientific technology plays an important role in any rescue operation, man's innovative ideas also supplement and complement in such endeavours.

Sh. Bhaskar Khulbe, Ex-Advisor to PM and Sh. Narendra Singh Bundela, IPS, IG, HQ NDRF alongwith Sh. Sudesh Kumar Drall, Commandant chalking out the plan.



Sh. Sudesh Kumar Drall, Commandant briefing to Hon'ble CM of Uttrakhand Sh. Pushkar Singh Dhami about rescue operation.

Sh. Atrul Karwal, IPS, DG NDRF planning for rescue operation with NDRF officers.

Sh. Mohsen Shahedi, DIG (Ops) and Sh. Sudesh Kumar Drall, Commandant, 15 BN NDRF giving instructions to rescuers about rescue operation.

NDRF rescuers entering in the tunnel to rescue trapped workers.

It has been a long period, but still deeply itched in my mind of 6yrs old boy Prince who was rescued from 60 feet bore well, in an operation which lasted for about 50 hrs. The place was Kurukshetra, Haryana in the year 2006. The brave army men from Indian army after great struggle had brought Prince safely over ground, the whole countrymen heaved a sigh of relief and overjoyed, as it was the first successful operation watched live, wherein a child was pulled out of borewell, alive. It was expected that society would take lesson from this incident and precautions would be taken, so that no such incidents get repeated. The Supreme Court also had issued elaborate guidelines in 2009 and 2010, but not much of change could be seen and still borewell accidents have been taking place time to time. Unused or discarded bore wells still remain open and children have been the victims of this death trap. Since 2009 over 40 children have died after falling into the borewell and over 70 % of rescue operations failed. The borewell operation poses totally a new challenge to a rescuer. Every rescue operation is different, reason being kind of soil varies from place to place on which borewell is sunk, the manner in which victim is stuck, the condition of the victim, the depth at which victim has fallen etc. Also there is no time tested standardized equipment which can be used to extricate the victim. The equipment which are used are normally improvised and all depends upon the ingenuity of the rescuer and its use at a given situation, to get a desired result.

My life experience of saving people in NDRF during disasters was limited to floods, cyclones and collapse structures when I was called for rescue of a 11 years old boy Rahul on 10.06.2022, who had slipped into a 08 inch borewell and stuck at 63 feet deep of 83 feet deep borewell. The place of occurrence was Pirdih village, Janjgir - Champa dist. of Chhattisgarh. On receiving of the message my mind quickly switched on to recollecting series of past borewell incidents of past which had taken place. This was no easy task, as it was not flood rescue, nor CSSR, neither CBRN for which we routinely train every day, but we were to venture into totally uncharted territory. Anyway, we all in NDRF are trained to rewire our mind to deal with any eventuality.

I was in 3 Bn. HQrs Mundali and tasked to rush as fast as I could to the incident site. I selected a team of 22 committed men and collecting every equipment possible which could be of use and moved, without wasting any time. Simultaneously, I maintained contact with the RRC team at Bhilai which had already moved for the incident site. The long journey remained a busy one working on wheel, busy collecting information from local administration about the situation, guiding them on the probable use of heavy equipment which could be required, also guiding on small but important things whatever came to my mind. We utilized the journey period in planning and did not want to this valuable time to go waste.

The RRC Bhilai Team reached the operation site at 2351 hrs on 10.06.2022 and launched the operation subsequently; I along with my men from Cuttack joined them at 0737hrs on 11.06.2022. Even after about 11 hours road journeys none of our men showed any sign of fatigue and got back to work, as if they were on a mission. After discussion and survey of the area, coordination was worked out with the local administration and the locals. The scene of incident was secured from onlookers. A wooden plate was placed on the mouth of the borewell, so that debris and dust does not fall on the victim, assessed location and condition of the victim, availability of related equipment, finding the depth at which the boy was trapped, so that proper supply of oxygen could be provided to the victim continuously. The whole activity was being monitored through borewell inspection camera. The boy had stuck in a cavity at 63 feet depth. The team tried to rescue him by using different type of improvised device like (J-hook, Umbrella tool, Magic ball, Hand loop, etc) but all went in vain because victim was not responding to the rescuers. Two way communication systems was set up between victim and the rescuers, so that not only the condition of the child could be monitored, but also moral support to the child can be given. Rescuer carried out strategic and realistic approach for effective operation, strengthened the coordination amongst the various stakeholders and managed the media. In the meantime, victim was fed with banana, liquid juice and ORS so that his health condition may be maintained at an optimum level. Child's health condition was monitored throughout by inspecting camera.

After many unsuccessful attempts to reach the boy, on dated 13.06.2022, the teams opted for another option to dig parallel up to 63 feet, maintaining a safe distance from the borewell shaft. After, reaching the approximate depth from surface level, the teams made a horizontal tunnel reaching up to 22 feet, connecting the borewell shaft with the alternative passage. After reaching there the team encountered with hard dolomite rock, like a last bastion to be scaled. It was a big shock to the rescuers. But by now we were like battle hardened soldiers, ready to do anything to reach the little boy, who was so close, yet seemed so far. After discussion, using all our skills and acumen we launched the final assault.

A hole was meticulously drilled at the top of the rock, offering minimal space for a temporary arrangement using jute bags inside the tunnel to shield the child from falling debris. Simultaneously, another hole was crafted at the base of the rock, serving as an anchor point for securing it with a rope. Subsequently, the team successfully pulled the massive rock away from the tunnel, clearing the path for the rescuers. As they progressed further into the tunnel, it became evident that extracting the child from the borewell shaft to the horizontal tunnel would be a daunting task. To ensure the child's safety, an improvised chain pulley system was installed within the tunnel, using a crowbar, pulley, and carabineer. Since the victim was positioned 2 feet below the bottom of the horizontal tunnel, a slender boy picked locally was carefully lowered into the borewell shaft to assist with placing the improvised harness on the victim. To minimize the risk of injury, an improvised body harness was created using a saree, instead of rope.

By employing this method, the rescuers successfully pulled out the boy Rahul from the borewell shaft and safely transferred him to the horizontal tunnel."

The rescue operation was conducted under harsh weather condition. Whole operation lasted for about 104 hours. Operation was conducted under scorching heat of 40°c, but it was the determination and commitment of the rescuers, could extricate and save the precious life of a boy at 2355hrs on 14.06.2022 who was transported to Apollo hospital, Bilaspur for further treatment.

Challenges:

There were enormous challenges faced by the rescuers during this herculean task, like first and foremost was that the boy was differently able, who could not understand our signals. Secondly, the borewell was slightly bent, as the casing pipe was had been removed earlier. Reaching food and medicine to the boy was difficult which reached only after repeated attempts. Presence of water in the borewell and insects could be seen by inspecting camera. The operation was conducted in a very narrow and limited space to move and no space to change positions. One had to work continuously, as time was crucial for the survival of the victim.

It can be understood that borewell incidents are totally avoidable, if we take proper steps to fill the borewells or block the holes. This can be done at district level and with help of local block level authorities. The guidelines of Supreme Court must be followed in letter and spirit

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Emerging threat of Cyber and Information Crimes and securing ourselves against them

Rajesh Kumar
Dy Comdt(Comn-IT/PRO)
HQ NDRF

INTRODUCTION

Cyber crimes now a days are not limited merely to hacking and spreading malwares. The new trend of such crimes is focused more on social engineering and stealing personal information of a common person and further using it to gain access to one's digital private zone resulting into committing number of crimes with or without knowing the individual what is happening with him. Reach of technology up to last mile has facilitated the public with host of benefits in day to day life like online banking, easy access to all type of information, online reach to every department, work from home to name a few. The technology has reached to everybody however everyone is not well aware of the dark side of use of it resulting in falling in trap of cyber criminals and losing money, time and peace of mind. In such a scenario it is imperative to keep ourselves abreast with the latest trends in cyber crimes and with ways to safeguard ourselves from being victim of such a crime.

CYBER CRIME AND SECURITY

Cybercrime is a criminal activity that either targets or uses a computer, a computer network or a networked device to gain unauthorised access to others' network/data for malicious motive. Cyber security is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from such malicious attacks attempted by cyber criminals.

INFORMATION SECURITY

The information security is also an integral part of cyber security as theft of information and using it for further illegal motives is one of the most used tools by such criminals.

EFFECTS OF CYBER AND INFORMATION CRIMES

After invent of 4G and now 5G technology, reach of common man to latest technology and inclusion of technology in multiple facets of life and due to lack of awareness about modus operandi of criminals and precautions against them the crimes related to cyber world and information theft are increasing day by day and affecting the lives of lacs of population badly.

TYPES OF CYBER CRIMES

There are numerous types and modus operandi of cyber crimes, however few which are more prominent are listed below:

a) Hacking
b) Pornography
c) Child Pornography
d) Cyber Stalking
e) Denial of service Attacks
f) Virus attacks
g) Phishing
h) Cyber Defamation
i) Info/ Data theft
j) Breach of Privacy and Confidentiality
k) E-commerce/ Investment Frauds
l) Financial frauds
m) Cyber Terrorism

HOW TO SAFEGUARD OURSELVES FROM BEING VICTIM OF CYBER ATTACKS

It is general thinking that to safeguard from cyber crimes one has to be techno savvy and has to take lot of technical measures to safeguard from these attacks. However it is proven fact that with a basic awareness and small steps from user side can minimise the possibility of being victim of cyber fraud drastically. Following are few do's and don'ts which if followed can place us in a safer cyber space.

Cyber security Do's

1. Keep a strong password: Passwords are the first line of defense in protecting access to personal accounts and sensitive information online. A password of at least 12 characters long is considered strong, still more is better. It should be a combination of uppercase letters, lowercase letters, numbers, and symbols. No word of a dictionary or the name of a person, character, product, or organization should be used. Password should be changed periodically. A study shows that cracking a password of 13 characters consisting of Numbers, Upper and Lowercase Letters and Symbols by brute force technique will take 1500 years.
2. Use multi-factor authentication, wherever available. It will ensure double check on the secure access to your data.
3. Always maintain a backup of your critical data.
4. Keep your Operating System and BIOS firmware updated with the latest updates/patches.
5. Install enterprise antivirus client offered by the government on your official desktops/laptops. Ensure that the antivirus client is updated with the latest virus definitions, signatures and patches.
6. Never leave your PC unattended without signing off/ shut down.
7. Keep the GPS, blue tooth, NFC and other sensors disabled on your computers and mobile phones. They maybe enabled only when required.
8. Download Apps only from authorized channels/app stores of google (for android) and apple (for iOS).

9. Use a Standard User (non-administrator) account for accessing your computer/laptops for regular work.
10. Ensure authenticity before clicking on any shortened URLs like tinyurl.com/ab534/). Malwares and phishing sites abuse URLshortener.
11. Observe caution while opening any link shared through SMS or social media offering lucrative offers/discounts. Such links may lead to a phishing/malware webpage, which could compromise your device.
12. Report suspicious emails or any security incident to incident@cert-in.org.in and incident@nic-cert.nic.in.
13. Adhere to the security advisories published by NIC-CERT (https://nic-cert.nic.in/advisories.jsp) and CERT-In (https://www.cert-in.org.in).

Cyber security Don'ts

1. Don't use the same password in multiple services/websites/apps.
2. Don't save your passwords in the browser or in any unprotected documents.
3. Don't write down any passwords, IP addresses, network diagrams or other sensitive information on any unsecured material (ex: sticky/post-it notes, plain paper pinned or posted on your table etc.)
4. Don't save your data and files on the system drive (Ex: c:\ or root).
5. Don't upload or save any internal/restricted/confidential official data or files on any non-government cloud service (ex: google drive, drop box, etc.).
6. Don't use obsolete or unsupported Operating Systems.
7. Don't use any 3rd party anonymization services (ex: Nord VPN, Express VPN, Tor, Proxies, etc.)
8. Don't install or use any pirated software (ex: cracks, keygen, etc.).
9. Don't open any links or attachments contained in the emails sent by any unknown sender.
10. Don't share password of any device or account with any unauthorized person.
11. Don't disclose any sensitive details on social media or 3rd party messagingapps.
12. Don't plug-in any unauthorized external devices, including USB drives shared by any unknown person.
13. Don't use any unauthorized remote administration tools (ex: Team viewer, Ammy admin, any desk etc.)
14. Don't use administrator account or any other account with administrative privilege for your regular work.
15. Don't use any external mobile App based scanner services (ex: Cam scanner) for scanning internal office documents.
16. Don't use any external websites or cloud-based services for converting/compressing an official document (ex: word to pdf or file size compression)

Apart from aforementioned guidelines, following few points are also required to be kept in mind in day to day like to ensure cyber hygiene.

1. Due to extensive use of network services for different purposes in day to day life, keeping a difficult password and still remembering is a tough task for

anybody. To over come this issue, all the passwords must be maintained in a hard copy (like diary) and be kept at safe place to access it in case of need.

2. Minimum required information should be kept on social media or other public platforms as the criminals use this information for profiling and social engineering.
3. Never fall in trap of free....There ain't no such thing as a free lunch in this world. Things that appear to be free will always have some hidden or implicit cost.
4. Owing the deep fake technology onboard, avoid sharing too much of photographs and videos of family and kids to avoid misuse of them.
5. Never share OTP or any personal information to any unauthorized person
6. Any cyber fraud can be reported on national cyber helpline number 1930.

For more information and guidelines on cyber security issues following table may be referred.

Resource URL	Description
https://www.meity.gov.in/cyber-security-division	Laws, Policies & Guidelines
https://www.cert-in.org.in	Security Advisories & Alerts
https://nic-cert.nic.in	Security Guidelines & Alerts
https://www.csk.gov.in	Security Tools & Best Practices
https://infosecawareness.in	Security Awareness Materials
http://cybercrime.gov.in	Report Cyber Crime, Safety Tips

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Anil Kumar Pal
Dy.Commandant
11 BN NDRF

It was a cold winter evening of 24 January in Lucknow. I was returning after day long schedule from my RRC office. On the way, I received the call from Relief Commissioner UP that a five storied building "Alaya Apartment" at Wazir Hasan road Hazaratganj had collapsed and 40-50 persons might have trapped in the structure, NDRF teams were urgently required. I immediately shared this piece of information to my commanding officer at HQ 11 Battalion Varanasi and with his consent moved the alert team to the incident place.

On site it was a chaos, crowd full of screams and yell. The building was in a heavily inhabited area, the access to vehicles and heavy machinery was limited. The whole building was collapsed in a Pan-Cake collapse pattern, roofs were one on other leaving no void created of beam and columns negating options for shoring to make access.

On discussion with resident society, family and relatives the district administration concluded that after rescue of surface victims seven persons more were trapped inside the debris. I after assessing the whole situation and safety precautions divided the team into search and rescue (SAR) small groups and tasked at four fringed sites of collapsed structure to adopt hailing method. This becomes fruitful and rescuers noticed three calls from different locations at outer parameter of debris. Now with the help of cutting equipments narrow access were created and giving support to the unstable structure with RAMSET and wooden planks 03 victims were extricated including one teenager and old man.

Now locating rest of the 04 victims was a challenging task. I called upon the families of trapped and with clues of their description, time, situation and house photographs, I drew up an eye sketch house plan and came to conclusion of the probable locations of trapped victims. Again the SAR sub teams deployed at 02 sites to make vertical and horizontal approach to the required depth assessing by identifying household items and by the use of technical gadgets i.e. victim locating camera (VLC) and Life Detector (Type-I). At last the team got success to extricate all the 04 victims including 02 live victims. However, the last victim could be extricated in the evening on 26 January after a continuous search of more than 50 hours in the adverse climatic conditions.

The urbanization rate in India has increased very fast from 11.4% in 1901 to 28.53% in 2001 and a projected growth of 40% till 2030. The unplanned old cities has ballooned up in size and population with no heed on renovation or timely abandon the old constructions and simultaneously the new constructions do not follow the government approved construction plan and building bye

laws. These situations that too in a country whose 58.6% of landmass is prone to earthquakes pose a big challenge for rescue agencies for CSSR Ops which in coming days will increase in frequency and severity.

During any CSSR Ops the most challenging task is to locate the victim as once located the approach can be made with the available tools and skills gained through past experience and rigorous training. The conventional methods and equipments feel short of, new sophisticated equipments based on heat sensing & sound sensing and cellular mobile based technologies might be foreseen which automatically can provide distress signals with precise location on remote activation. Technology intervention SAR Ops might be more advantageous for successful result for agencies in rescue and tech-driven approach shall stand ahead to NDRF among all.

"Each Ops is unique and sets its own matrix of challenges based on time and situation but it invariably engraves indelible memories on ones conscience which lets you think and rethink what could have been better and what the lesson it has taught and simultaneously gives you a live experience to enrich your skill and response for the next"

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Hari Ram Yadav
Dy.Commandant
NDRF HQ

Forest Fire:

Introduction: Forest fire is a global phenomenon and our country also experience it with frequent intervals. It is referred as uncontrolled burning of natural vegetation cover which leads to widespread damage to precious floral cover. The combustion of vegetation also cause immense adverse effect in the natural habitats. Over all forest ecosystem severely get deteriorated due to heat, poisonous gases and their combined result. Such forest fire also affects the ecosystem beneath the surface and which initiates denudation process resulting in uncontrolled soil erosion, loss of arable land, and abnormal flooding in lower plans. Forest fires poses serious threats to bio-diversity and environmental conditions. Its adversaries also affects the socio-economic activities of primitive societies and their livelihood.

Effects of Forest Fire:

India has rich bio diversity with a forest cover of 21.67% (Year 2019 Report) of its geographical area. This forest cover is very diverse with different climatic and spatial physiographic peculiarities. The Himalayas have alpine forest cover in higher reaches but deciduous type of vegetation of in NE Regions and rest of the sub-tropical regions. There is tropical rainforest also found in islands of A&N. Indian sub-continent experience a long but dry climatic condition after reversal of South West monsoon. Most of the area of the country comes under effect of North East monsoon wind patter which travels over the land surface. The dry nature of wind poses prolonged dry conditions. In the western Himalayan region, the western disturbances bring moisture but the form of precipitation is dry in the form of snow fall. Deposition of dry leaves, twigs, branches on ground accumulate huge amount of fuels for widespread forest fire.

Instances in India:

- ✓ The Himachal Pradesh and Nagaland-Manipur border saw prolonged fires in January.
- ✓ There was a major wildfire between February and March in the Simlipal National Park in Odisha.
- ✓ According to the Indian Express, Southern Chhattisgarh, Central Odisha, Western Maharashtra, and areas of Andhra Pradesh and Telangana are highly prone to forest fires.
- ✓ Bandhavgarh Forest Reserve in Madhya Pradesh and sanctuaries in Gujarat also witnessed forest fires.
- ✓ Massive forest fires in Manipur and Nagaland destroyed thousands of squire meter area in Dzukou Valley in 2020-21.

Preventive Measures:

Forest Survey of India (FSI) repots reveal that more than 95% of the Forest Fires caused due to man-made factors. Almost 50% of the forest areas are fire-prone. North-Eastern states records more than 50 percent of the Forest Fires of the country. The combination of natural and social factors raise the fire potential and behaviour. In some parts of India, the extinction of traditional community institutions for managing forest fire lands has also contributed to more unwanted forest fires. The prolonged effects of the present-day outline of forest fires on India's forest ecology and the wider economy are still not understood properly. Although MoEF&CC has issued national guidelines on Forest Fire Prevention Management (FFPM) in 2000, but it remain unimplemented. Significant variation persist from state to state and district to district in local policies and working plans. On the other hand, shortage of dedicated funding, public engagement, equipment and training are other constraints.

Response Force: National Disaster Response Force

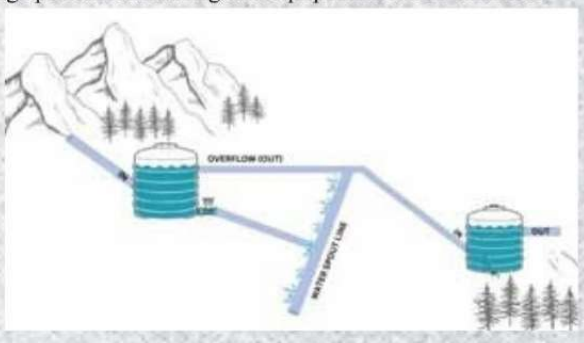
Legislated Responsibility- NDRF was raised in 2006 under the DM Act of Dec 2005 with a mandate to deal with all man-made and natural disasters, except fire, which comes primarily under the mandate of Fire Services. The core competencies of the Force revolve around Flood Water Rescue (FWR) Operations, Collapsed Structure Search & Rescue (CSSR) which includes response during earthquakes, landslides and incidents of building collapse, and Chemical, Biological, Radiological and Nuclear (CBRN) Contingencies.

State Disaster Response Forces (SDRF)- Government of India has directed all states to form SDRFs to act as first responders. A well-trained SDRF element having adequate manpower can take on the responsibility of fighting Forest Fires and become the joint first responder along with community-based response groups. The supplementary effort would then come from the NDRF which too must develop this expertise and add weight to the effort once it becomes necessary.

Identification of Manpower for NDRF for the New Mandate- NDRF being fully committed throughout the year for its mandated tasks, assigning of an additional responsibility would require additional manpower. This manpower will have to be specially trained for their new role, equipped, and be in a continuous state of readiness by carrying out Familiarization exercises, Mock exercises, monitoring of the ground situation and co-ordination with stakeholders. As of now, NDRF has identified its three battalions i.e. 1st (NE Region), 10th (South & Central India), and 15th (Northern Region) BN with core competency to respond in forest fires. The earmarked team of these identified comprises of 50 rescuers each. Total 150 rescuers of NDRF undergone a specialized training at CASFoS Dehradun and Coimbatore. These core competency BNs continuous also participate in forest fire mock exercises and regular training. These BNs have be authorized with specialized equipment and to adopt best practice from worldwide to respond in forest fire.

Suggestions:

- ✓ The concept and methodology along with best practices of countering the threat of Forest Fires by different affected countries be incorporated.
- ✓ Community Awareness Programme (CAP) be institutionalized with appropriate incentives to the communities.
- ✓ Dependency on forest should be minimized by effective implementation of the National action Plan on Forest Fire issued by MoEF&CC.
- ✓ Response agencies be strengthened by providing specialized training and equipment. Mock exercises with NDRF, SDRF, Fire department and forest authorities should be conducted in identified grey areas. Indian Air force should also develop capacity appropriately.
- ✓ Apart from technical support by satellite, special task force with sufficient infrastructure like aerial recce, watch towers, CCTV etc should be deployed for effective monitoring.
- ✓ Community should be involved as volunteer force in fire lane making well in advance in vulnerable forest area.
- ✓ Tourism activities should be restricted in vulnerable zones under close supervision of forest authorities.
- ✓ States, especially in Himalayan regions, should develop infrastructure for multiple water storages in a way that may be used to create fire safe lanes using water spouts in forest fire emergencies without electric pumps, but for rest of the time, it may be used as potable water.



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India have a coastline of 8118 Kms, the longest being in the state of Gujarat, having coastline of about 1596 Kms. High population density, geographical location and physiological features of this coastal state makes it extremely vulnerable to natural disasters like cyclones and its associated hazards such as storm, gusty winds and heavy rains being among them. Cyclones are huge revolving storms caused by atmospheric disturbances around an area of low atmospheric pressure. As far as India is concerned, cyclonic storm develops over tropical oceans like the Indian Ocean, Bay of Bengal and the Arabian Sea. About one-fourth of the State population live in coastal regions of Gujarat and this includes 75 coastal towns and 42 ports. Gujarat's coastal population is growing at a faster pace than the rest of the State, thanks to rapid growth of ports, saltpans, energy and road infrastructure.

Salient features of Cyclone "Biparjoy"

The cyclone "Biparjoy" originated from a depression that was first noted by the India Meteorological Department (IMD) on 6 June, before intensifying into a cyclonic storm. Extremely Severe Cyclonic Storm (ESCS) Biparjoy has been one of the longest duration cyclones over the North Indian Ocean (NIO) with a total life period of 13 days and 3 hours (depression to depression).

The cyclone made landfall on Mandavi coast, Gujarat, India on June 16. It crossed Saurashtra & Kutch coast close to Jakhau Port with maximum sustained wind speed of 115-125 kmph gusting to 140 kmph. Biparjoy was downgraded to a depression and further into a well-marked low-pressure area late on 19 June.

Pre -Cyclone preparations

On receiving alert from Indian Metrological Department, Ahmedabad, and on requisition of State Emergency Operation Centre, Gandhinagar, 12 teams of 6th NDRF Battallion. Headquarters at Vadodara, Gujarat, were pre deployed from 10 June on coastal districts of Gujarat. These teams of NDRF were well equipped with all rescue equipments like boats, life jackets, lifebuoys, ropes and wood cutters.

On 12th June, Prime Minister chaired a high-level meeting to review the preparedness of Ministries/Agencies of Centre as well as Gujarat to deal with the situation arising out of the impending Cyclone 'Biparjoy'. Ministry of Home Affairs (MHA) was reviewing the situation 24x7 and was in touch with the State Government and the Central Agencies concerned. Indian Coast Guard and the Navy have deployed ships and helicopters for relief, search and rescue operations. Air Force and Engineer task force units of the Army, with boats and rescue equipment, are on standby for deployment. Surveillance aircraft and helicopters are carrying out serial surveillance along the coast.

State's Preparedness

As cyclone was approaching near, District Emergency Operations Centre (DEOC) was activated in all coastal districts to facilitate smooth flow of information. To beef up the preparations, series of official meetings followed at various levels. More than 4000 road side hoardings, old and large trees, dilapidated structure and loose metal sheets were removed to avoid becoming flying objects during landfall of cyclone. Electricity supply was cut off to minimize damage due to falling of electricity poles and trees. Pregnant women and ill were shifted to hospitals well before the landfall.

Cyclone shelters were identified in order to accommodate affected people. Availability of drinking water, food, milk, clothing and medicines was ensured in cyclone shelters. Members of Parliament and Cabinet Ministers of State themselves were present in district headquarters monitoring the situation and preparation. Medical teams with emergency medicines were deployed at cyclone shelter as well as different places of districts. To deal with emergency situation, blood banks were established in every district. Hospital's operation theatres were equipped with Generator set. All districts were connected by hot line through Gujarat State Wide Area Network (GSWAN). VSAT and Satellite phones were installed in every district control room. All mobile towers were connected with non-interrupted power supply.

Role of rescue and relief agencies

Total 19 teams of NDRF from 06th Battalion, Vadodara and 05th Battallion, Pune and 12 teams of State Disaster Response Force (SDRF) were deployed in coastal districts of the state. Since landfall of the cyclone Biparjoy was expected somewhere between Mandavi and Jakhau in Kutch District, maximum 06 teams of NDRF were deployed in different talukas of district Kutch.

NDRF Headquaters at Delhi established a 24x7 dedicated control room for Biparjoy and was constantly in touch with Indian Metrological department, Central Water Commission and Gujarat Government. Data related to course of cyclone, wind speed and rainfall was being shared on real time basis. For better coordination on ground, senior officials from NDRF were present in Mandavi (Kutch) themselves.

Before landfall of cyclone, rescuers of NDRF and SDRF along with district administration receed low lying area of all the coastal districts. Areas within 5 kms of coastline were identified and a detailed evacuation plan was mooted. One of the most challenging task before rescuers was to convince and shift people residing in low lying areas of coastal districts to cyclone shelters. Shifting pregnant women, old age, children and people residing in kuccha houses was another challenge. With combined efforts of local administration, Aapda Mitras, SDRF and NDRF a total of 1,56,963 people were shifted to cyclone shelters.

After Cyclone

The cyclone crossed Kutch coast close to Jakhau Port with maximum sustained wind speed of 115-125 kmph gusting to 140 kmph on 16th June. After landfall of Biparjoy cyclone, gusty winds uprooted thousands of trees. Many fruit orchards and farms were heavily damaged. Major highways and roads were blocked due to felling of trees.

Restoration of public utilities was primary responsibility of all the rescue and relief agencies. All rescue agencies started surveying the area for assessment of damage. Rescuers of NDRF along with SDRF, Fire department, Electricity and Forest Department undertook responsibility of restoring roads and electricity. To maintain smooth traffic movement, uprooted trees were removed swiftly. All rescue agencies in mutual co-ordination carried out restoration works at war footing level.

Achieving zero casualty

According to the India Meteorological Department (IMD), the cyclone had "extensive damaging potential" and was likely to have the greatest impact on Gujarat's Kutch, Devbhumi Dwarka, and Jamnagar districts but owing to the “well-in-advance” preparations for the cyclone and evacuation of more than one lakh people from the eight coastal districts, any big casualty had been averted. Compared to casualties of 2021 cyclone “Tauktе”, it is cent percent less, a huge feat for both Gujarat state and rescue and relief agencies.

In ensuring zero casuality in this cyclone, Community Awareness Programme, Mock Exercises, School Safety Programme and Familiarization Exercises carried out by teams of NDRF during past many years proved to be a game changer. Similarly during FAMEX (Familiarization exercise) conducted by 6th NDRF in its area of responsibility, NDRF trained general public in self defense against natural and manmade disasters.

Swift deployment of adequate number of NDRF and SDRF teams for relief and rescue operations along with units and assets of Army, Navy, Air Force and Coast Guard had been a crucial point towards achieving goal of zero casualties. The state faced the disaster with minimum damage and achieved the “zero casualties” mark owing to its comprehensive and advance planning and evacuation of more than one lakh people.

Union Home Minister Sh. Amit Shah visited the affected area and lauded the coordinated efforts and dedication of NDRF, SDRF and other rescue agencies. In a major achievement towards achieving zero casualties, he remarked that it was a major achievement of the Gujarat government that nobody died on account of cyclone Biparjoy which made landfall on the Kutch coast with a wind speed of 140 kmph. Not even a single casualty was reported because of Cyclone Biparjoy. The way the Gujarat government and Central agencies have worked to protect lives during the cyclone is a classic example of team work."

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"Navigating the Aftermath: Understanding the Causes and Consequences of Mizoram Rail Bridge Collapse Accident"

SI(GD) Pradeep Kumar
1st BN NDRF

Introduction

Mizoram is a hilly, zigzag mountainous state sharing border with Bangladesh and Myanmar. Most of the villages and main towns are connected by a network of unsurfaced roads, single lane tracks, highways, and bridges, which are vulnerable to landslide. The state capital is not connected by railways; only Railways station in Mizoram currently is Bairabi, which is approx. 112 kilometers from capital city Aizawl. In 2018 Northern Frontier railway undertook 52 Km broad gauge Bhairbi-Sairang New Line Railway Project to connect capital of the state to the rest of the country for boosting tourism and socio-economic development. To lay down the railway track on such hilly, undulating, riverine terrain, total 196 railway bridges planned for 52-kilometer stretch Bhairbi-Sairang railway line. The pillars for this railways track were very quiet high in this terrain, the topography is very difficult and the soil is soft and swells very easily because of rain. The work was being carried out under a joint venture between ABCI Infrastructures Private Limited and BBJ Construction Company limited a government of India enterprise.

Incident

The site where the incident took place is part of the Bairabi-Sairang New Line Railway Project. 3-4 columns with different height i.e few feet to 150 feet across the Kurung river to support the steel girder and further laying the railway track on it. Gantries are heavy steel structures used to lift and support bridge segments or girders as they are placed while being supported by the bridge piers instead of the ground. The column construction work was almost complete and girder laying work was going on. The incident occurred at about 9.30 a.m. near Sairang, while a girder (a steel structure) on which a railway track is laid collapsed while it was being placed on bridge no 196. Total 26 workers were working on the site when the bridge collapsed (As reported by Construction Company).

Response

The local community displayed remarkable solidarity by swiftly coming to the aid of the injured workers. Nearby residents played a crucial role in rescuing the injured individuals, promptly transporting them to hospitals for medical attention and informed the state responders about the incident, in turn state responder spring into action and all necessary support were extended at incident site. On seeing the gravity and chaos around the incident site, at about 1050 hrs

State Emergency Operation Center requisitioned for deployment of NDRF team which is stationed at RRC Aizawl about 12 Km from the incident site. Without taking so much reaction time, NDRF Team stationed at Aizawl reached at incident site in 25 minutes for rescue operation. After the initial assessment of incident site, it was informed that there were total 26 workers, out of those 03 injured were evacuated to hospital by local and remaining were still under the debris. One executive engineer of railway got trapped at the top of pillar which was approx. 140 feet high, he was later evacuated with the help of crane. On 23.08.2023, 18 dead bodies were recovered by collective efforts of NDRF, BSF, Railways and state responders. The remaining, 05 dead bodies were recovered in subsequent days and operation was closed on 25.08.2023 by state authorities. NDRF Team continuously worked at the incident site despite of adverse weather condition and challenging terrain.

Damage assessment

According to the Railway department, the girder was designed by the Paris-headquartered based STUP Consultants and proof checked was done by experts from the Indian Institute of Technology, Guwahati. The substructure was not damaged but upper part of pillars were minor damaged due to collapsed. The current deadline for bridge completion as per the Indian Railways was March 2024. The Government's dedication, responsiveness, and commitment to swiftly addressing the situation and supporting the victims and their families during this challenging time shows compassionate leadership and effective crisis management in times of need.

Conclusion

This bridges are undoubtedly very ambitious ventures of railways. This unfortunate accident occurred because of various reasons such as work pressure, unskilled manpower, non-availability of safety consultant at work site and other technical or administrative issues. India's extensive railway system is used by many millions of people every day. The government has launched high-speed trains as part of plans to modernize the network. The incident draws attention to the complexities and challenges that construction projects can entail, necessitating meticulous planning and safety measures throughout the process.

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Introduction: -

Borewell incidents are the tragic tales of negligence and carelessness which typically involve the falling of children into open, shallow, and uncovered borewells and open well.

Borewell Rescue Operations:

The borewell rescue operations typically refer to the efforts to rescue individuals/children who are trapped or stuck in a borewell. These operations can be challenging and dangerous, requiring specialized equipment and expertise.

India has the highest number of borewell accidents in the world. Since 2009, 40 children have lost their lives in borewell accidents. But Indian disaster responding agencies especially NDRF learnt from these accidents and developed their equipment and also developed expertise in handling such cases.

List of Borewell incidents in 2022-23

SL NO	DATE	PLACE	NDRF UNIT	ALIVE/DEAD
1.	22.05.2022	KhaiyalaBulanda, Punjab.	**7**	Dead
2.	10.06.2022	Pirdih, Chhattisgrah	3	Alive
3.	20.07.2022	Jakhrana, Rajasthan.	6	Dead
4.	15.09.2022	Jassapara, Rajasthan.	6	Alive
5.	10.01.2023	Hapur, Uttar Pradesh.	8	Alive
6.	14.03.2023	Khairkhedi, Madhya Pradesh	11	Dead
7.	20.05.2023	Bhojpur Kalan, Rajasthan.	6	Alive
8.	03.06.2023	Tamachan, Gujarat.	6	Dead
9.	06.06.2023	Mungaoli, Madhya Pradesh	11	Dead
10.	18.07.2023	Kajari Barkheda, Madhya Pradesh	11	Dead
11.	05.12.2023	Pipaliya, Madhya Pradesh	11	Dead

1. Borewell rescue operation in Khaiyal Bulanda, Punjab dtd. 22.05.2022 by 7th NDRF.

In this unfortunate incident a 6year old boy fell in to a 300 ft borewell and got stuck at 90ft. The child was playing in the field where a few stray dogs started chasing him, he climbed over borewell shaft which was covered with a jute bag, which could not bear the boy's weight and got tore, due to which the boy fell inside the borewell and got stuck at approx at 90 ft depth. After receiving requisition two teams, 7C (approx 72km away) & 7P (approx. 248 km away) left for incident site.

After reaching, team assessed situation and initially the C-Hook method was used to check whether rope could be noosed around the hands of stuck child. Multipurpose rope was lowered into the borewell with help of an improvised hook and child was retrieved from Borewell in unconscious state & handed over to civil administration. Later child was declared dead by Civil Hospital.

Innovation:

Team assessed the situation and determined the suitable rescue method and with the help of improvised C-hook and multipurpose rope method child was successfully extricated from borewell.

Suggestion:

- To prevent such type of accidents, all unused and operating borewells should be covered properly. Proper measures can help mitigate potential risks associated open borewells.

- Such incidents can be prevented by public education and awareness. Therefore, all out efforts should be made in spreading awareness in our AOR by our teams while conducting FAMEX, CAP & SSPs.

2. Borewell rescue operation in Pirdih, Chhattisgarh dtd 10.06.2022 by 3rd BN NDRF.

In this case, an 11-year-old boy fell and got stuck at 63 feet in an uncovered and abandoned borewell, of 8 inches diameter, without casing. The rescue team tried to pull out the boy by using various improvised techniques like J-hook, Umbrella tools, Magic ball, Rope knot, and PVC pipe but did not succeed as Rahul was a differently abled boy, with some physical limitations, so he could not follow the instructions given by the rescuers and at the bottom there was a cavity (2.5 to 3 feet) where he hid himself which made all rescue efforts in vain.

While the teams were trying improvised methods, other teams were digging a parallel bore to reach the victim. All available cutting & drilling heavy equipment like heavy and medium chipping hammers, Core cutting machines with high pneumatic pressure, Wagon drill machines, and hand rock breakers were being used. Once they located the victim, they sent a thin man and extricated the victim with the help of an improvised harness (made with a bedsheet & rope).

The rescue operation was continued for 5 days, the boy was given a Banana, ORS, and juice from time to time to keep him hydrated and was kept on continuous monitoring by camera.

Innovation:

- Improvised pulley system developed by NDRF team to pull out heavy rocks.

- Made improvised harness with bedsheet & rope to extricate the victim.

Suggestion:

Working with a differently-abled person in a borewell accident is difficult so team has to modify the rescue techniques to meet the particular requirements. Challenges may include communication difficulties, understanding instructions, or physical limitations that impact the conventional rescue process.

Overcoming these challenges requires specialized training for responders, the use of appropriate communication methods, and the deployment of equipment and techniques that consider the unique circumstances of individuals with different abilities.

3. Borewell rescue operation in Jakhrana, Rajasthan dtd 20.07.2022 by 6th BN NDRF.

In this case retrieval of the dead body from a dried borewell posed a significant challenge, as it was buried beneath 270 feet of soil, making it difficult for 6th BN NDRF rescuers to access and recover. Despite employing both standard and improvised techniques, their efforts remained unsuccessful. Then, civil administration with the consent of their family members used a borewell drilling machine and retrieved some parts of the body.

Suggestion:

The team tried all the improvised equipment/techniques to retrieve the dead body but in vain. In such cases even NDRF have limitations. Specialized expertise and equipment are required to handle such complex incidents. It highlights the need for collaborative efforts with experts and equipped agencies to handle such unique challenges (if needed)

4. Borewell rescue operation in Jassapara, Rajasthan dtd 15.09.22 by 6th BN NDRF.

The right response at the early stage guarantees the safety of victims and essentially supports the whole process of saving lives. The same happened in the above incident where experienced 6th BN NDRF team being well versed with such incidents made the right decision to use improvised borewell rescue equipment like J-Hook, L-shaped rod and ring method and rescued the child alive within a short period.

Innovation:

Improvised borewell equipments available with NDRF were being used and successfully extricated victim alive.

5. Borewell operation in Hapur, Uttar Pradesh. dtd 10.01.2023 by 8th BN NDRF.

The biggest challenge in this incident was that the child was incommunicado as he was deaf and dumb and was reluctant to provide any sort of support in the rescuer's direction. First rescuers tried the J-hook and rope loop method to extricate the victims which were not successful. The team simultaneously prepared an improvised iron ring to anchor the victim along with an umbrella tool and successfully extricated the victim alive.

Innovation:

As there was no specific pre-fabricated/ readily available equipment with rescuers to handle such incidents, rescuers prepared an innovative rescue iron ring along with an umbrella tool and successfully rescued the 04 years old boy.

6. Borewell operation in Khairkhedi, Madhya Pradesh dtd 14.03.2023 by 11th BN NDRF:

This is one such incident where there was no scope for using improvised devices to extricate the body as the body was submerged in soil. A parallel hole was dug and once they reached the depth of the victim parallelly, they made a horizontal bore with the help of a chipping hammer and retrieved the body.

Suggestion:

There was no scope for using improvised devices but some devices for the suction of soil/ mud from borewell may be explored/developed. Developing suction-based technologies will speed up rescue operations by efficiently removing soil and debris, facilitating faster access to the individual trapped in the borewell.

7. Borewell rescue operation in Bhojpura kala, Rajasthan. dtd 20.05.2023 by 6th BN NDRF:

The 6th NDRF team's swift response to the incident and use of improvised equipments once again saved a 9-year-old child from the borewell. Their quick and effective actions highlight the importance of well-preparedness and efficient response of teams in dealing such emergencies.

The team used J type hook & L-shaped rod and ring to hold the child and the child was successfully rescued alive and shifted into a nearby hospital for further medical examination. This incident shows that if the child is conscious & responding to rescuers instructions with selective/appropriate improvised equipments they can easily extricate victim.

Innovation:

As the child was conscious and responding to the instructions, rescuers used improvised J-hook and L-shaped rod & hook and successfully rescued the victim.

8. Borewell operation in Tamachan, Gujarat dtd 03.06.2023 by 6th BN NDRF:

This incident where the girl's body was submerged in the borewell water posed additional challenges for 6th BN NDRF rescuers. Initially unable to see the body, the water was drained, and attempted retrieval using an improvised L-type hook & Ring rope. At approx. 5 feet height the body stuck in the borewell. Then horizontal approach was made from the side (which was being dug by the Army & Fire service) to reach the girl and retrieve her dead body.

Suggestion:

There was no new initiative taken during the ops but the successful extrication of the dead body involved improvised borewell rescue equipment (L-type hook & Ring rope) & overcoming the hurdle at 5 feet by digging a parallel bore. This shows that in borewell incidents parallel bore digging tools/equipment should always be ready.

9. Borewell operation in Mungaoli, Madhya Pradesh dtd 06.06.2023 by 11th BN NDRF:

This is one such incident where there was no scope for using improvised devices to extricate the body as the body was submerged in soil. A parallel hole was dug and once they reached the depth of the victim parallelly, they made a horizontal bore with the help of a chipping hammer and retrieved the deceased body.

Suggestion:

- There was no scope for using improvised devices but some devices for the suction of soil/ mud from borewell may be explored/developed.

- Developing suction-based technologies will speed up rescue operations by efficiently removing soil and debris and facilitate faster access to the individual trapped in the borewell.

10. Borewell operation in Kajari Barkheda, Madhya Pradesh dtd 18.07.23 by 11th BN NDRF:

This was a very tragic incident where a 2-year-old girl fell into the borewell while playing outside the house and stuck at 15 feet. By the time 11 Bn team reached, civil administration dug 15 feet parallel bore. With the help of camera NDRF team tried to access the situation of child but there was no response from the child. Child's body was partially covered by plastic sheet and only head was visible. After digging 15 feet, horizontal approach (tunnel) was made with the help of medium chipping hammer and digging tools and extricated the body of victim and handed over to civil administration.

Suggestion:

Awareness required to be generated about dangers of borewells at home is crucial. Local communities may be engaged to share guidelines through workshops, informative pamphlets. Parents should be encouraged to secure borewell areas and monitor closely to prevent tragic incidents.

11. Borewell operation in Pipaliya, Madhya Pradesh dtd 05.12.2023 by 11th BN NDRF:

4-year-old girl fell in open borewell and stuck at 17 feet depth. She was playing in the field of her maternal uncle, when she fell into an open borewell. By the time NDRF team reached the incident site parallel digging was in progress. 11th BN NDRF tried to extricate the child with the all available improvised borewell equipments but they did not succeed as only hands of the child were visible in camera. With the help of parallel digging the baby was successfully extricated but her condition was critical hence sent to hospital where she died.

Suggestion:

- This rescue operation stresses on importance of time in borewell rescue operation. Being successfully rescued from borewell, girl dies in hospital hours after admission in hospital.
- Borewell rescue operations are being carried out with improvised techniques along with monitoring and giving basic supplies to victims trapped in borewells.
- The techniques being used can vary from one area to another within country based on the specific circumstances and available resources. Local authorities, emergency services, and experienced rescue teams are typically responsible for borewell rescue operations, ensuring the safety and well-being of trapped individuals.

SOME COMMON METHODS INCLUDE:

A. Manual Digging: Rescuers manually dig a parallel shaft next to the borewell to reach the trapped individual. This is a slow and labor-intensive method but it can be effective.

B. Drilling: In some cases, hydraulic drills or other drilling equipment may be used to create a parallel shaft. This method is faster but requires proper planning and expertise.

The steps involved in digging a parallel bore for such a rescue are:

1. Assessment and Planning:

- Assess the situation to determine the depth and diameter of the trapped borewell and the condition of the soil.
- Identify a safe and suitable location to dig the parallel bore, ensuring it is clear of obstructions or utilities.
- Plan the parallel bore's path, depth, and alignment to reach the trapped location accurately. The safe distance from which a parallel bore is to be dug will depend on factors like the depth of the borewell, geology, and soil conditions, placement of a child in the bore, availability of resources, and conditions at the site.

2. Gather Equipment and Expertise:

- Mobilize a skilled drilling team with experience in rescue operations.
- Ensure you have the appropriate drilling equipment, including a drilling rig capable of boring a hole of similar dimensions as the trapped borewell.
- Have backup equipment and resources available in case of technical difficulties.

3. Safety Precautions:

- Implement stringent safety protocols to protect both the drilling team and those in the trapped borewell.
- Secure the area to prevent unauthorized access.
- Be prepared to handle any emergencies or accidents that may arise during the operation.
- Start drilling the parallel bore, following the planned path, depth, and alignment.
- Monitor the progress closely to ensure the bore is on track and that it doesn't deviate from the desired path.

4. Communication and Monitoring:

- Maintain constant communication with those inside the trapped borewell if possible.
- Continuously monitor air quality and provide proper ventilation for those trapped.
- Regularly check for any signs of progress or changes in the borewell.
- Ensure that the soil in the borewell does not sink

5. Rescue Operation:

- Once the parallel bore reaches the depth and alignment of the trapped borewell, carefully assess the situation to determine the best approach for rescue.
- Utilize specialized equipment, such as cameras and lifting mechanisms, to assess and facilitate the rescue operation.
- Ensure the safety and well-being of those inside the trapped borewell throughout the rescue process.

6. Medical Assistance:

- Be prepared to provide immediate medical attention and care to children rescued from the borewell.
- Have medical personnel and equipment on standby for this purpose.

It's crucial to involve experienced drilling and rescue teams, follow safety protocols, and maintain open communication with all involved parties during a parallel borewell rescue operation. This is a complex and delicate process, and the safety and well-being of those trapped should be the top priority.

C. Borewell Cameras: Specialized cameras and sensors can be lowered into the borewell to assess the situation and monitor the trapped person.

D. Dewatering: Pumps can be used to remove water from the borewell to provide more space for the rescue operation.
E. Use of Cranes and Winches: Cranes and winches may be employed to carefully lift the trapped individual out of the borewell.

EQUIPMENT/METHODS DEVELOPED OR INNOVATED IN INDIA: -

The types of methods and equipment to be used depend upon the condition of the child/victim and the geography of the incident place. Some improvised borewell rescue equipment are:

- Pedant jhula
- Sand filling method
- Magic ball
- Cloth buckets
- Umbrella tool
- Universal jaal yantra
- Robotic arm
- Iron ring with rope
- Three PVC pipes with rope

1. PEDANT JHULA

Condition:

- The child is conscious and at the bottom of the borewell.
  Items required
- A piece of flat wood of 3" width, rope, torch/CCTV camera

Procedure:

- Make a jhula by using rope and flat wood
- The length of the jhula is less than the diameter of borewell.
- Place the jhula carefully inside the borewell using a torch, then advise the victim to stand at the jhula and hold the rope firmly
- Pull the rope upwards carefully and remove the victim

2. SAND FILLING METHOD:

Condition:

The child is conscious and at the bottom of the borewell. Can follow of directions.

Items required:

Funnel, Flexible PVC pipe (as per the length of the borewell), stopper pin-2 (to fix funnel with pipe), sand, nose mask, and safety goggles (for children).
Procedure:

- Connect the funnel with flexible PVC pipe by using stopper pins
- Pass the safety goggles and nose mask for the child's safety.
- Drop the sand carefully into the borewell till the child reaches the surface.

MAGIC BALL:

Condition: The child is conscious and held in between the borewell

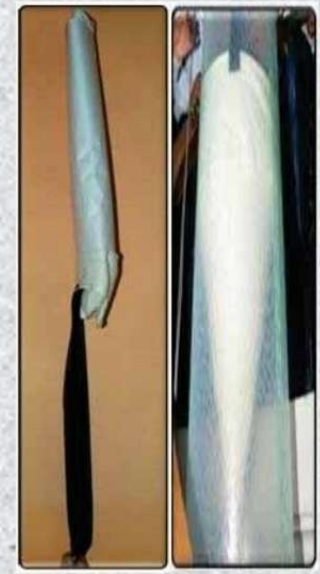
Items required:

- Half meter Pant piece
- PVC pipe of Diameter 32mm
- Funnel, torch, CCTV, Rope

Procedure:

- With the help of Pant cloth make a Ball.
- The mouth of the ball is connected with a PVC pipe.
- With the help of an A4 size paper fold the ball cylindrically.
- Paper is connected with a twine.
- Then place the ball inside the borewell.
- Noted that the diameter of the ball is fewer than the diameter of the borewell.
- If the pipe is short, connect the pipe with another long pipe.

4. CLOTH BUCKET: -



Condition:

- The child is conscious and held in between the borewell, and his/her legs are free downwards and there is a gap.

Items required:

A strong cloth of 70 cm (pant piece), 3mm steel wire, 2" leather strip/ belt, a weight piece, twine, torch/CCTV camera.

Procedure:

- Make a conical cloth bucket and insert the weight piece.
- The diameter of the cloth bucket is smaller than the diameter of the borewell.
- The bucket is tied with a 2" leather strap/belt.
- The bucket is folded with a twine and inserted into the borewell.
- After reaching the bottom near the leg unfold the bucket.
- Instruct the child, to hold the rope and place both legs inside the bucket.
- Then carefully pull the bucket upwards by using the rope and remove the child.

5. UMBRELLA TOOL:

Condition: The child is conscious and at the bottom of the borewell. Can follow of directions.

Items required:

Umbrella tool, 3 mm multi strain steel wire/rope, rubber band, t orch and CCTV camera.

Procedure:

- The dia. of the opened umbrella is less than the dia. of Borewell.
- First, fold the umbrella tool and cover it with a ribbon.
- The ribbon is tied with a long twine.
- The handle of the umbrella is connected with 3 mm steel Wire.

Or rope.

- Place the umbrella inside the borewell carefully.
- When reached at the bottom of the borewell pull the twine connected with the ribbon and removes the ribbon.
- Now the umbrella is open.
- Advise the child to stand at the umbrella and hold the rope with Hand firmly.
- Then pull the umbrella upwards carefully and remove the victim from the bore well.

UNIVERSAL JAAL YANTRA

Condition:

If the child has reached the bottom of the borewell and he/she is Conscious or unconscious.

Items:

- Jaal yantra, steel wire, rope, long stick, torch.

Features of jaal:

- The jaal of the fibre glass strap of 2.5mm thick and 16 nos. This jaal is adjustable from 6 to 14 inches depending upon the size of the borewell.
- The wall of the jaal is 5mm thick and 30 inches long.
- A long stick with one end is slightly flat with the jaal to adjust the location of the jaal inside the borewell.
- Two locking wires also connected with the jaal with the help of them, we can tight and lock the jaal.

Procedure:

- Firstly, place the jaal inside the borewell with the help of rope.
- Then cover the child with the jaal.
- If there are any difficulties to place, use a long stick and adjust the location of the jaal.
- After covering the child completely, pull the wire rope, tight and lock it.
- Then pull the jaal with the child carefully and remove it from the borewell.

7. ROBOTIC ARM:

The borewell rescue tool is made up of metal (iron). The whole tool works by a DC gear motor operated by a 12V battery. The pair of hands (metal) is attached to the tool. The special threaded shaft is driven by a DC motor with the help of chains and freewheels. There is a DC camera with a mic and a portable TV.

COMPONENTS:

DC GEAR MOTOR

SHAFT AND NUT

WHEEL ON MOTOR - 14 SPIKES

STAND

WORKING OF BOREWELL RESCUE TOOL: -

The motor in the tool drives the shaft which is attached by a pair of hands. The hands can be compressed and expanded by driving a motor clock and anti-clock direction. The camera and TV are used to monitor the operation inside the borewell tool.

The tool can be sent inside the borewell by a rope and pulley system. The operation can be monitored on the monitor attached outside of the borewell. When the hands on the tool reach the child, with the help of a motor the robotic arm will be compressed to hold the child tightly. The pressure gauge is used to monitor the pressure exerted by hands on a child. Then the tool is taken out with the child.

WORKING OF BOREWELL RESCUE TOOL (Hand Catching Model): -

The motor in the tool drives the shaft which is attached by pairs of clamps and ropes. The clamps are used to tie and untie the rope by driving the motor clockwise and anti-clockwise. The camera and TV are used to monitor the operation.

The tool will be sent inside the borewell by a rope and pulley system. The operations are monitored on the outside of the borewell. The clamps on the tool reach the child, and the motor is driven to tie the rope to hold the child's hand tightly.

INDIGENOUS INNOVATIONS WITH RESCUE ROBOT:

Robotic hand

Robotic grasper

Life-Saving machines using Special Graspers: -

Pulling of a child is made possible by special graspers, who can grasp the shoulder or the wrist or the ankle of the child.These have been specially designed and fabricated to provide open and close control at one end and the facility to extend it by adding additional pipes at the other end.

A safety rope is provided which acts as a support for the grasper. It is possible to lower the grasper up to 40 feet inside the borewell and the depth of reach can be increased by adding additional pipes.

Working:

- First, the child is provided with a sufficient amount of oxygen using an oxygen cylinder and then the well is lightened for visibility and the camera is used for watching the child's activities and position.
- The setup is sent through the hole and it consists of a motor, bevel gears, rotating plates, a camera, single single-acting cylinder, and spike rods.
- The full setup is connected through a rope in the outer frame structure. The motor is used for rotating the plates to search the gap between the wall and the child once the gap is detected; the cylinder attached to the plate is extended below the child.

(REFERENCE- Research paper by Dr. T Nithiyanandam and K S Satish Kumar and S Suresh, Dept. of Mechanical Engineering, Rathinam Technical Campus, Coimbatore, T.N. India. Published in International Journal of Production Technology and Management)

8. Iron ring with rope:

Condition:

If the child has reached the bottom of the bore well and he/she is conscious or unconscious.

Items required:
- Iron rod
- Rope

Procedure

- The iron ring with rope device is made in the shape of a ring.
- it should be 1 inch less than the size of the borewell.
- A loop of rope is tied around the iron ring with the help of thread.
- Now the ring with rope is slowly sent into the borewell.
- When the ring with loop reaches the waist of the child, pull the rope.
- The loop of the ring tightens around the child's waist and holds the child.
- The iron ring provides extra support/balance to the child
- With the help of rope and ring pull the child out of the borewell.

9. Lifesaving 03 pipes using special grasper:

Condition:

If the child has reached the bottom of the bore well and he/she is conscious or unconscious.

Items required:

- PVC pipe
- PVC pipe coupling & equal tee
- Rope
- Steel ring

Procedure

- This equipment consists of 04 plastic pipes of 40 feet each which can be extended.
- Three pipes are joined together in length at one end to make a round rope trap.
- One end of this trap is at the beginning of the pipe at another end.
- After seeing the position of the child trapped inside the borewell these pipes with rope trap inserted into the borewell and the rope's nose pulled at the other end of pipes
- After tightening the nose in the lower body of the child, pull out the whole equipment along with the child from the borewell.

Conclusion:

To save lives in borewell incidents, first responders mostly utilize manual digging, and parallel borewell drilling also comes into play, as well as other specific equipment. Other equipment like operational robots and other advanced rescue devices have been looked at to enhance rescue operations. Despite considerable progress, focusing only on preventive measures and borewell construction is not enough to reduce the problem.

In conclusion, analyzing both successful and failed borewell rescue operations in India highlights the critical need for active measures and comprehensive safety protocols. Successful operations highlight the importance of swift response, collaboration among agencies, and utilization of improvised as well as traditional rescue methods. On the other hand, failed attempts are those in which the victims were dead before the arrival of NDRF teams. Authorities should prioritize strict safety guidelines, regular training, and public awareness to prevent such incidents and ensure the success of future rescue missions.

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राष्ट्रीय आपदा मोचन बल का ऐतिहासिक प्रथम पर्वतारोहण अभियान ''साहस'' भागीरथी–2 –2023

'You cannot Conquer a Mountain, though it may Conquer you.
-Jimmy Chin.

राष्ट्रीय आपदा मोचन बल (एन0डी0आर0एफ0) भारत सरकार के अधिकृत राष्ट्रीय स्तरीय आपदा मोचन बल है, जो आपदा मोचन के क्षेत्र में सशक्त और सक्रिय भूमिका निभाता है। यह बल विभिन्न प्रकार की प्राकृतिक और मानवजनित आपदाओं के समय में तत्परता से कार्रवाई करने के लिए प्रशिक्षित है। वर्तमान समय में अत्यधिक उँचाई वाले क्षेत्रों में आपदाओं की बढ़ौत्तरी के कारण एन0डी0आर0एफ0 के लिए मैदानी क्षेत्र के साथ–साथ पर्वतीय क्षेत्रों में भी बचाव एवं राहत कार्य करने के लिए काफी चुनौतियों का सामना करना पड़ रहा है, जिससे निपटने के लिए श्री अतुल करवल, भा0पु0से0, महानिदेशक, रा0आ0मो0बल द्वारा एन0डी0आर0एफ0 के कुशल प्रशिक्षित दल, को अत्यधिक उँचाई वाले क्षेत्रों में बचाव एवं राहत कार्य को करने के लिए सक्षम बनाने हेतु श्री गंभीर सिंह चौहान, उप महानिरीक्षक को वर्ष–2023 में पर्वतीय बचाव दल (Mountain Rescue Team) तैयार करने एवं पहले पर्वतारोहण अभियान की विस्तृत योजना एवं क्रियान्वयन हेतु संपूर्ण जिम्मेवारी सौंपी। इसी कडी में एन.डी.आर.एफ0 के प्रथम अभियान हेतु माउण्ट भागीरथी–2 का चयन किया गया, जिसकी उँचाई 6512 मी0 है।

भागीरथी–II उत्तराखण्ड़ के उत्तरकाशी जिले के गोमुख ग्लेशियर के पूर्व में स्थित भागीरथी श्रंखला की महत्वपूर्ण चोटी है। इसके पूर्व की ओर गंगोत्री ग्लेश्यिर, पश्चिम की ओर वासुकी ग्लेश्यिर और उत्तर की ओर चतुरंगी ग्लेश्यिर है जो कि एक अत्यन्त महत्वपूर्ण, कठिन एवं चुनौतीपूर्ण शिखर है। टीम के सदस्यों ने निरंतर अभ्यास, प्रशिक्षण एवं अनुभवी पदाधिकारियों के मार्गदर्शन में इस पीक को आरोहण करने का निर्णय लिया।

श्री अतुल करवल, भा0पु0से0, महानिदेशक के मार्गदर्शन एवं श्री गंभीर सिंह चौहान, उप महानिरीक्षक के अनुभवी एवं कुशल नेतृत्व में इस अभियान का फलैग आफ उत्साह के साथ 15 मई 2023 को नई दिल्ली में माननीय गृह राज्य मंत्री श्री अजय कुमार मिश्रा जी के द्वारा किया गया। 15 मई 2023 से 10 जून 2023 तक भागीरथी–II चोटी, ऊँचाई 6512 मीटर (21365 फीट) पर ''साहस'' नाम से चलाये गये इस अभियान में कुल 38 सदस्यों की टीम ने भाग लिया। इस अभियान की अवधि के दौरान दल को विषम भौगोलिक एवं मौसमी परिस्थितियों का सामना करना पडा, लेकिन टीम ने अपनी लगन, जुझारूपन एवं समन्वय से अभियान को जारी रखते हुये तथा 30 मई 2023 को दल के 10 सदस्यों ने कठोर और अत्यधिक खराब मौसम की स्थिति में उत्तराखण्ड की भागीरथी–II चोटी पर दिन में 1.30 मिनट पर लगातार बर्फबारी व बर्फीली तुफानी हवाओं एवं चुनौतीपूर्ण हालात में सफलतापूर्वक चढ़ाई की। सफल आरोहण करने वालो में 02 अधिकारी, 03 अधीनस्थ अधिकारी एवं 05

अन्य कर्मी शामिल थे। इस महत्वपूर्ण उपलब्धि के साथ उन्होंने भागीरथी–II शिखर पर राष्ट्रीय और एन0डी0आर0एफ0 ध्वज फहराकर एन0डी0आर0एफ0 में एक नया कीर्तिमान स्थापित किया। इस अभियान के दौरान मौसम की कठिनाईयों का सामाना करना बहुत मुश्किल और चुनौतीपूर्ण रहा, लेकिन टीम ने इसे पार करने का साहस दिखाया, जो उनके साहस और दृढ़ संकल्प को दर्शाता है। यह सफलता निश्चित रूप से बचाव कर्मियों को प्रोत्साहित करेगी और उच्च पर्वतीय क्षेत्रों में बचाव करते समय उन्हें आत्मविश्वास देगी। अभियान का समापन दिनांक 10 जून 2023 को उत्तराखण्ड के मुख्यमंत्री श्री पुष्कर सिंह धामी ने उत्तराखण्ड राज्य के देहरादून में अपने आवास पर श्री अतुल करवल, भा0पु0से0, महानिदेशक, रा0आ0मो0बल, टीम के सदस्यों एवं अन्य गणमान्य व्यक्तियों की उपस्थिति में ध्वजारोहण करके किया, तथा रा0आ0मो0बल के पहले अभियान की सफलता की भूरी–भूरी सराहना की एवं बधाई दी।

एन.डी.आर.एफ. द्वारा High altitude में बचाव दनों को तैनात करने के लिये देश के प्रतिष्ठित पर्वतारोहण संस्थानों से अपने कर्मियों में उच्चकोटि का प्रशिक्षण दिया है तथा अवलांच एवं माउंटेन रेस्कयू हेतु लनगातार प्रशिक्षण, अभ्यास एवं आधुनिक उपकरणों से भी टीम को सुसजित किया है ताकि किसी भी प्रकार के बचाव कार्य में अपना पूर्ण योगदान दे सके और एन.डी. आर.एफ के मंत्र "आपदा सेवा सदैव सर्वत्र" को पर्वतीय क्षेत्रों में राहत एवं बचाव कार्यो में सार्थक कर सके। एन.डी.आ.एफ. भविष्य में आने वाली चुनौतियों का सामना करने के लिये लगातार प्रयासरत है तथा इस प्रकार के अभियान को दलों को भेज कर अपने कर्मियों को उच्च इलाकों में आपदाओं हेतु तैयार कर रही है। इस प्रथम सफल अभियान ने बल के कर्मियों में नई उमंग, जोश एवं साहसिक खेलों के क्षेत्र में जागरूकता का संचार किया है जोकि एक सकारात्मक एवं उत्साहवर्धक उपलब्धि है।

इस अभियान के दौरान टीम ने न केवल सफल आरोहण किया वरन् गगोंत्री–गौमुख नदंवन क्षेत्र में काफी यात्रियों एवं ट्रैकर्स की मदद भी की तथा 02 फसें हुये ट्रैकस की जान भी बचाई जिसकी भूरी–भूरी प्रशंसा की गई। दल ने इस अभियान के दौरान गोमुख ग्लेश्यिर क्षेत्र में सफाई अभियान चलाकर फैकें हुये कचरे का निष्पादन किया तथा लोगों को इस बारे में जागरूक भी किया।

'The hardest mountain to climb is the one Within'

-James Lynn.

Rashtriya Raksha University (RRU) is an Institution of National Importance under the Ministry of Home Affairs. It is a pioneering national security and police University of India. An MoU has been signed between NDRF and RRU on 08th Feb, 2023. The purpose of this MoU is to synergize the expertise of the Rashtriya Raksha University and the rich experience of NDRF with the aim of accrediting academic programs, undertaking up-skilling and training programs and encouraging innovations in the field of Disaster Management in General and for research, innovation, incubation, training and online education through the various entities created under the aegis of RRU; accordingly both the Parties are entering into this Memorandum of Understanding.

NDRF teams deployed across country to ensure effective operational readiness and timely response. There is need to improve & develop communication skill of NDRF personnel should be made aware about English Language to be spoken during operations and capacity building programs for interacting with victim, Local administrations, School Students and Media representatives. The National Institute of Open Schooling (NIOS) is identifying to conduct "Online English Communicative certificate course" for NDRF personnel and course curriculum also finalized. Accordingly, an MoU has been signed between NDRF and NIOS on 22nd Nov, 2023.

Swiss Agency for Development and Cooperation (SDC) has accepted mentorship for 01 USAR Heavy Team of NDRF for IEC and confirmed commitment to support NDRF with Swiss Technical Assistance, through training and coaching for an International External Classification (IEC) in USAR. Accordingly, a SoI has been signed between NDRF and SDC on 26th Feb, 2024.

NDRF reposted

Narendra Modi @narendramodi · Feb 20

Glimpses from the interaction with the human assistance and disaster relief personnel who were a part of 'Operation Dost.'

PMO India

The better our own preparation, the better we will be able to serve the world.

"
हमें दुनिया के सर्वश्रेष्ठ
राहत और बचाव दल
के रूप में अपनी पहचान
को सशक्त करना होगा।

NDRF reposted

PMO India @PMOIndia · Feb 20

The efforts of entire team involved in rescue and relief measures during #OperationDost is exemplary.

Amit Shah

@AmitShah

Proud of our NDRF.

In the rescue operations in Türkiye, Team IND-11 saved the life of a six-year-old girl, Beren, in Gaziantep city.

Under the guidance of PM @narendramodi, we are committed to making @NDRFHQ the world's leading disaster response force. #OperationDost

Rajnath Singh @rajnathsingh · Feb 7

Two C-17 Globemaster III heavy lift aircraft of #IAF have departed India for Türkiye carrying @NDRFHQ teams and #HADR equipment.

India stands in solidarity with the people of Türkiye in this difficult time.

Dr. S. Jaishankar

@DrSJaishankar

Indian @NDRFHQ teams have now reached Gaziantep and commenced search and rescue operations.

Wish them the very best in their efforts.

#OperationDost

Sonal Mansingh

@sonal_mansingh

Wonderful article on how India is increasing its soft power through NDRF in Turkey and Syria and gives out a message to all other world supergroups like NATO.

NDRF reposted

India TV @indiatvnews · Jun 3

ओडिशा ट्रेन हादसे के रेस्क्यू ऑपरेशन में NDRF ने भी पूरी ताकत झोंक दी है..NDRF के डी. आशुतोष कविराज से सुनिए इस रेस्क्यू ऑपरेशन में किस तरह की परेशानी आ रही है..

#TrainAccident #OdishaTrainAccident #BalasoreTrainAccident #NDRF @manishindiatv

NDRF reposted

Pushkar Singh Dhami @pushkardhami · Jun 10

आज कैंप कार्यालय में भागीरथी-2 चोटी का पर्वतारोहण कर लौटे @NDRFHQ के जवानों का स्वागत किया। इस अभियान को सफलतापूर्वक पूर्ण करने पर दल के सभी सदस्यों को बहुत-बहुत बधाई!

राज्य में प्राकृतिक आपदाओं के दौरान राहत एवं बचाव कार्यों में #NDRF के जवानों और अधिकारियों द्वारा सेवा और...

Show more

NDRF reposted

News18 India @News18India · Jun 14

#CycloneBiparjoy: #NDRF के DIG मोहसिन शाहिदी ने कहा- अभी तक 44 हज़ार से ज़्यादा लोगों को सुरक्षित जगहों पर पहुँचाया गया.

#BiparjoyAlert #CycloneBiparjoyUpdate #GujaratNews #MohsenShahedi #GujaratStorm @jaspreet_k5 @NDRFHQ

ਦੇਸ਼ ਦੁਨੀਆ

92179-18897
98889-75440
0161-5035741

ਆਈ.ਟੀ.ਐੱਲ, ਘਾਬਦਾਂ ਦੇ ਮੁੱਖ ਗੇਟ 'ਤੇ ਕਰਵਾਈ ਗਈ ਸੰਗਰੂਰ ਜ਼ਿਲ੍ਹੇ ਦੀ ਸਾਲ 2023 ਦੀ ਆਫ਼-ਸਾਈਟ ਮੌਕ ਡਰਿੱਲ

Biparjoy exits, rain-battered Kutch struggles to stay afloat

More Misery Set To Unfold When Waters Recede; Heavy Rain Continues In State

'NO LOSS OF LIFE'

जवानों की मेहनत व अक्षित के हौसले ने 'खींची' जिंदगी की डोर

ना घबराया और ना ही रोया, बाहर निकालने पर भी रहा सामान्य

रस्सी की जगह 8 पाइपों का प्रयोग

कृषि मंत्री 3 घंटे तक करते रहे मॉनिटरिंग

एनडीआरएफ ने मनाया आइकॉनिक इवेंट्स वीक

தினத் தந்தி

நாளை தொடங்கும் ஜி20 மாநாட்டில் வெளிநாட்டு பிரதிநிதிகள் பங்கேற்பு

புதுவையில் 5 இடங்களில் 144 தடை

வர்த்தக நிறுவனங்களுக்கு கட்டுப்பாடு இல்லை

सतलुज में गिरी गाड़ी मिली, सवार दो लोगों का पता नहीं

एनडीआरएफ टीम ने कहा, गाड़ी नीचे गाद में फंस गई है, जिस कारण गाड़ी को डाले गए स्लिंग टूट रहे

चमेरा डैम में 5 लोगों सहित समाई आल्टो कार का नहीं मिला सुराग

सर्च अभियान के दौरान मिले 2 अन्य लापता व्यक्तियों के शव

एनडीआरएफ ने मनाया आइकॉनिक इवेंट्स वीक

मनाया अंतरराष्ट्रीय योग दिवस

कल्याणी. वसुधैव कुटुबकम थीम के साथ एनडीआरएफ की सेकेंड वाहिनी ने अंतरराष्ट्रीय योग दिवस मनाया. वाहिनी के मुख्यालय हरिणघाटा सहित प्रतिक्रिया केंद्रों (आरआरसी) कोलकाता, सिलीगुड़ी, पाकयोंग (सिक्किम) और पश्चिम बंगाल के विभिन्न जिलों में प्री मानसून ड्यूटी में तैनात टीमों ने भी योग दिवस मनाया. कमांडेंट गुरमिंदर सिंह ने वाहिनी मुख्यालय परिसर में योग सत्र का उदघाटन योग मंत्र के साथ किया और अधिकारियों व एनडीआरएफ कर्मियों के साथ योगासन किया. साथ ही योग से होने वाले लाभों के बारे में बताया. इस अवसर पर सेकेंड वाहिनी एनडीआरएफ द्वारा आपदा सैनिकों के परिवार के सदस्यों के लिए योगासन प्रतियोगिता का आयोजन किया गया, जिसमें महिलाओं और बच्चों ने विभिन्न प्रकार के योगासन और प्राणायाम किये. प्रतियोगिता में विजयी प्रतिभागियों का उनका मनोबल बढाने के लिए कमांडेंट गुरमिंदर सिंह ने उन्हें सम्मानित किया.

रेलवे में ट्रेन एक्सीडेंट का मॉक-ड्रिल, पूरी तैयारी के साथ चला राहत अभियान

Thank You

6/07/2023

Respected Sir,

Greetings of the day!

Subject: A letter of gratitude to the National Disaster Response Force (NDRF) for your heroic efforts in rescuing the people in the train accident of Balasore, Odisha.

I am B.Sridevi, School Innovation Ambassador & Coordinator of Delhi Public School, Rajnanadgaon, Chhattisgarh, is writing this letter of gratitude, to the entire Team of National Disaster Response Force (NDRF) for your heroic efforts in rescuing the people.

On 2nd of June 2023, we read the news of horrific accident with a heavy heart, moist eyes and shaking hands that has left us shattered. The immense bravery and presence of mind shown by Venkatesh NK sir, while rescuing the trapped passengers from the crashed trains is highly appreciable and he proved once again that a soldier is never off duty.

I am appreciative of the NDRF team's prompt intervention and action, unwavering assistance, and skill that helped in saving the lives. It is priceless how quickly and precisely you responded.

We feel extremely grateful to have you at the need of hour and through your actions, you have shown how invaluable your contributions are to public safety.

I am also thankful for the team members for their tireless efforts that went beyond their call of duty to ensure that everyone was rescued safely.

On behalf of the entire families, who have got their near and dear ones rescued, I would like to express my gratitude by saying **"The divine in us honors the divine in you"**. I would dedicate a line I've read in a book in my childhood, to Venkatesh Sir which says **"Daivam Manushya Rupena"**.

Your efforts and sacrifices are neither unknown nor unnoticed. Our thoughts and prayers are always with Team NDRF.

JAI HIND!

B.SRIDEVI,
School Innovation Ambassador & Coordinator,
Delhi Public School,
Rajnandgaon (C.G.)
491441
(Ph : 8819981130
Sridevib.93@gmail.com)

Thank You

सचिव (पश्चिम)
SECRETARY (WEST)

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No. Q/RRC/124/03/2023

May 23, 2023

Dear Shri Karwal,

The Turkish Presidency recently hosted a ceremonial event to thank all countries which extended humanitarian support to Türkiye in the wake of the 6th February earthquakes. President Erdogan presented a Letter of Appreciation from Foreign Minister Mevlut Cavusoglu addressed to the Ambassadors present.

2. Our quick response following the devastating natural disaster was widely appreciated by the Turkish authorities and the public at large. I am happy to share the Letter of Appreciation from the Turkish Foreign Minister Mevlut Cavusoglu with you as an acknowledgement and recognition of your role and that of your team in making *Operation Dost* a resounding success.

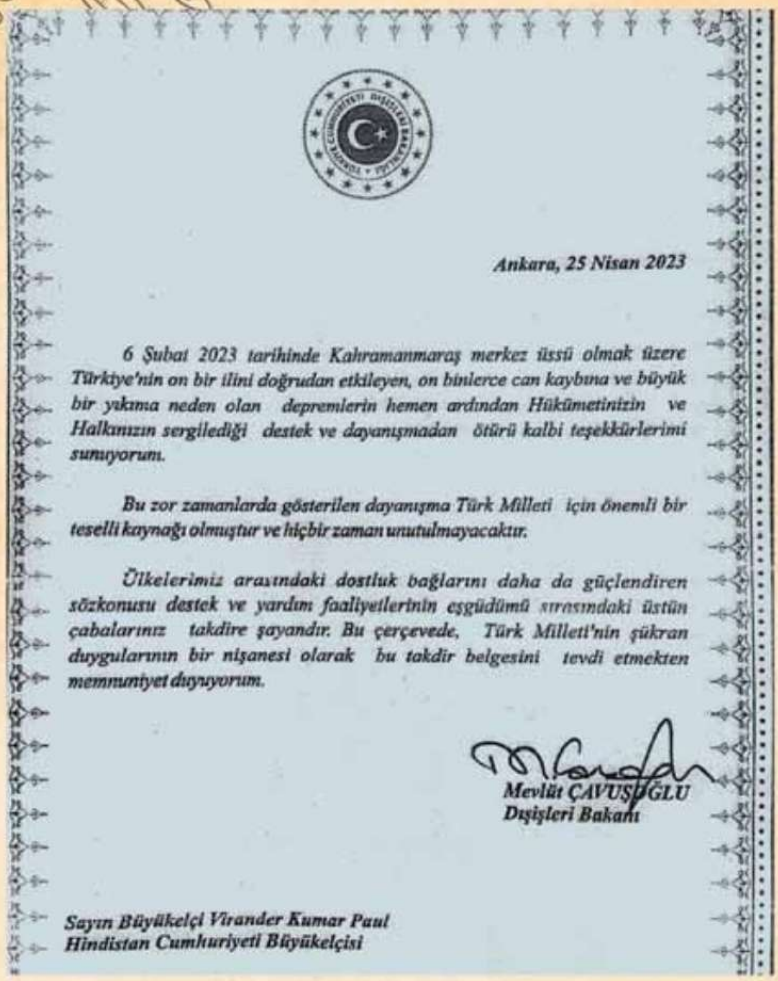
Best Wishes,

Yours sincerely,

Verma

(Sanjay Verma)

Shri Atul Karwal, IPS
Director General
National Disaster Response Force
6th Floor NDCC-II Building
Jai Singh Road
New Delhi 110001



Ankara, 25 Nisan 2023

6 Şubat 2023 tarihinde Kahramanmaraş merkez üssü olmak üzere Türkiye'nin on bir ilini doğrudan etkileyen, on binlerce can kaybına ve büyük bir yıkıma neden olan depremlerin hemen ardından Hükümetinizin ve Halkınızın sergilediği destek ve dayanışmadan ötürü kalbi teşekkürlerimi sunuyorum.

Bu zor zamanlarda gösterilen dayanışma Türk Milleti için önemli bir teselli kaynağı olmuştur ve hiçbir zaman unutulmayacaktır.

Ülkelerimiz arasındaki dostluk bağlarını daha da güçlendiren sözkonusu destek ve yardım faaliyetlerinin eşgüdümü sırasındaki üstün çabalarınız takdire şayandır. Bu çerçevede, Türk Milleti'nin şükran duygularının bir nişanesi olarak bu takdir belgesini tevdi etmekten memnuniyet duyuyorum.

Mevlüt ÇAVUŞOĞLU
Dışişleri Bakanı

Sayın Büyükelçi Virander Kumar Paul
Hindistan Cumhuriyeti Büyükelçisi

***Transalation of above letter*:**

Ankara, 25 April 2023

I would like to express my heartfelt thanks for the support and solidarity displayed by your Government and your people right after the earthquakes that directly affected eleven provinces of Turkey, including Kahramanmaraş epicenter on February 6, 2023 and caused tens of thousands of loss of life and great destruction.

The solidarity shown in these difficult times has been an important source of consolation for the Turkish Nation and will never be forgotten.

Your outstanding efforts during the coordination of these support and aid activities, which further strengthen the friendship ties between our countries, are commendable. In this context, I am pleased to present this certificate of appreciation as a token of the gratitude of the Turkish Nation.

Mevlüt Çavuşoğlu
Minister of Foreign Affairs

H.E. Ambassador Virander Paul
Ambassador of the Republic of India

GLIMPSES 2023

आपदा सेवा सदैव सर्वत्र

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