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**STANDING COMMITTEE ON FINANCE  
(2018-19)**

**SIXTEENTH LOK SABHA**

**MINISTRY OF HOME AFFAIRS  
&  
MINISTRY OF FINANCE (DEPARTMENT OF EXPENDITURE)**

**CENTRAL ASSISTANCE  
FOR  
DISASTER MANAGEMENT AND RELIEF**

**SEVENTY-FIRST REPORT**



सत्यमेव जयते

**LOK SABHA SECRETARIAT  
NEW DELHI**

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**CENTRAL ASSISTANCE  
FOR  
DISASTER MANAGEMENT AND RELIEF**

*Presented to Lok Sabha on \_\_\_\_\_*

*Laid in Rajya Sabha on \_\_\_\_\_*

LOK SABHA SECRETARIAT  
NEW DELHI

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**COMPOSITION OF STANDING COMMITTEE ON FINANCE – 2018-19**

**Dr. M. Veerappa Moily - Chairperson**

**MEMBERS**

**LOK SABHA**

2. Shri T.G. Venkatesh Babu
3. Kunwar Pushpendra Singh Chandel
4. Shri Bandaru Dattatreya
5. Shri Nishikant Dubey
6. Shri Harish Dwivedi
7. Shri Gopalakrishnan Chinnaraj
8. Shri Rattan Lal Kataria
9. Shri Chandrakant Bhaurao Khaire
10. Shri Bhartruhari Mahtab
11. Shri Prem Das Rai
12. Shri Rayapati Sambasiva Rao
13. Prof. Saugata Roy
14. Shri Rajiv Pratap Rudy
15. Shri Jyotiraditya Madhavrao Scindia
16. Shri Gopal Chinayya Shetty
17. Shri Prathap Simha
18. Dr. (Prof.) Kiritbhai Premjibhai Solanki
19. Dr. Kirit Somaiya
20. Shri Dinesh Trivedi
21. Shri Shivkumar Chanabasappa Udasi

**RAJYA SABHA**

22. Shri Rajeev Chandrasekhar
23. Shri Anil Desai
24. Dr. Narendra Jadhav
25. Shri A. Navaneethakrishnan
26. Shri Mahesh Poddar
27. Dr. Mahendra Prasad
28. Shri C.M. Ramesh
29. Shri T.K. Rangarajan
30. Shri Digvijaya Singh
31. Dr. Manmohan Singh

**SECRETARIAT**

1. Shri N.C. Gupta - Joint Secretary
2. Shri Ramkumar Suryanarayanan - Director
3. Shri Tenzin Gyaltzen - Under Secretary

## **INTRODUCTION**

I, the Chairperson of the Parliamentary Standing Committee on Finance, having been authorized by the Committee, present this Seventy-first Report on the subject 'Central Assistance for Disaster Management and Relief' pertaining to the Ministry of Home Affairs & Ministry of Finance (Department of Expenditure).

2. The Committee heard the views of the representatives of the State government of Kerala on 18 December 2018 and of the State governments of Karnataka and Tamil Nadu on 19 December 2018. At their sitting held on 03 January, 2019, the Committee also heard the views of the State government of Andhra Pradesh.

3. The Committee at their sitting held on 30 January 2019 heard the views of the Ministry of Home Affairs, Ministry of Finance (Department of Financial Services and Department of Expenditure), Ministry of Defence, Indian Space Research Organisation (ISRO), Geological Survey of India (GSI), Indian Meteorological Department (IMD), Central Water Commission (CWC), Agriculture Insurance Company Ltd. (AICL), Oriental Insurance Company Ltd (OICL), New India Assurance Company Ltd (NIACL), National Disaster Management Authority (NDMA), National Disaster Reserve Force (NDRF) and State government of Odisha.

4. The Committee at their sitting held on 11 February, 2019 considered and adopted the draft report and authorised the Chairperson to finalise the same and present it to the Parliament.

5. The Committee wish to express their thanks to the officials, representatives and experts of the aforementioned Ministries, State Governments of Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Odisha, ISRO, GSI, IMD, CWC, AICL, OICL, NIACL, NDMA and NDRF for appearing before the Committee and furnishing the requisite material and information which were desired in connection with the examination of the subject.

6. For facility of reference, the observations/recommendations of the Committee have been printed in bold in the body of the Report.

**NEW DELHI**  
**11 February, 2019**  
**22 Magha, 1941 (Saka)**

**DR. M. VEERAPPA MOILY**  
**Chairperson**  
**Standing Committee on Finance**

## **PART - I**

### **Chapter - I**

#### **Disaster Management in India**

##### **A Introduction**

The United Nations defines disaster as 'the occurrence of sudden or major misfortune which disrupts the basic fabric and normal functioning of the society or community'. Section 2 (d) of DM act 2005 defines disaster as a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area. India's geo-climatic conditions as well as its high degree of socio-economic vulnerability, makes it one of the most disaster prone countries in the world. Most disasters result from the action or inaction of people and their social and economic structures. This happens by people living in ways that degrade their environment, developing and over populating urban centres. Communities and population settled in areas susceptible to the impact of a raging river or the violent tremors of the earth are placed in situations of high vulnerability because of their socio-economic conditions. Disasters-natural or human-made are common throughout the world. Disasters continue to occur without warning and are perceived to be on an increase in their magnitude, complexity, frequency and economic impact. Losses due to natural disasters are 20 times higher (as a percentage of GDP) in the developing countries than in industrialized ones. The Disaster Management policy frame work of India is consistent with the approaches promoted globally by the United Nations, in particular the Sendai Framework for Disaster Risk Reduction (DRR) 2015-2030. India is making all efforts to contribute to the realization of the global targets by improving disaster management by following the prescribed priorities for action under the Sendai Framework:

- (i) Understanding disaster risk;
- (ii) Strengthening disaster risk governance to manage disaster risk;
- (iii) Investing in disaster risk reduction for resilience;

- (iv) Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.

By 2030, India aims to achieve substantial reduction of disaster risk and minimize losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries in line with Sendai Framework. The disaster management policy of India is aimed at promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education. The National Disaster Management Plan-2016 has been aligned broadly with the goals and priorities set out in the Sendai Framework for DRR. In order to strengthen the existing disaster management system, the Disaster Management Act, 2005 was enacted and notified on December 26, 2005. The Act provides for institutional mechanisms for drawing up and monitoring the implementation of the disaster management plans, ensuring measures by various wings of Government for prevention, mitigating and minimize effects of calamities and for undertaking a holistic, coordinated, and prompt response to any calamity situation in the country

## **B Hazard profile of India and Institutional Mechanism**

India is highly vulnerable to floods, droughts, cyclones, earthquakes, landslides, avalanches and forest fire. Out of 35 states and union territories in the country, 27 of them are disaster prone. Almost 58.6% landmass is prone to earthquakes of moderate to very high intensity; 12% land is prone to flood and river erosion; out of 7516 kms, 5700 kms of the coastline is prone to cyclones and tsunamis; 68% of cultivable land are vulnerable to drought and hilly area are at risk from landslides and avalanches. Fire incidents, industrial accidents and other manmade disasters involving chemical, biological and radioactive materials are additional hazards, which have underscored the need for strengthening preparedness, mitigation and response measures. The country is prone to disasters due to adverse geo climatic conditions, topographic features, environmental degradation, population growth, urbanization and industrialization. India receives heavy rainfall from June to September every year during the South West (SW) Monsoon Season. The rainfall during this period accounts for about 70-90 % of the total annual rainfall over India. As a consequence of this rainfall, flooding of rivers is a natural weather phenomenon. Over 40 Million hectares’ land of the country is prone to floods and river erosion. The flood prone regions of India are the Himalayan Rivers Basin (Kosi

and Damodar Rivers in particular), the North Western River Basin (Jhelum, Ravi, Sutlej and Beas Rivers) and the central and Peninsular River Basin (Narmada, Chambal, Godavari, Krishna and Cauvery River). Institutional mechanisms have been put in place to build a safe and disaster resilient India by developing a holistic, proactive, multi-disaster oriented and technology driven strategy through a culture of prevention, mitigation, preparedness and response. The Disaster Management Act, 2005 (DM Act 2005) lays down institutional and coordination mechanism for effective Disaster Management at the national, state, district and local levels. As mandated by the DM Act, Government of India (GoI) created a multi-tiered institutional system consisting of the National Disaster Management Authority (NDMA) headed by the Prime Minister, the State Disaster Management Authorities (SDMAs) headed by the respective Chief Ministers and the District Disaster Management Authorities (DDMAs) headed by the District Collectors and co-chaired by Chairpersons of the local bodies. These bodies have been set up to facilitate a paradigm shift from the hitherto relief-centric approach to a more proactive, holistic and integrated approach of strengthening disaster preparedness, mitigation, and emergency response. For the purpose of specialized response to a threatening disaster situation or disasters/ emergencies both natural and man-made such as those of CBRN origin, the Act has mandated the constitution of a National Disaster Response Force (NDRF). There are institutional mechanisms at the National and State level for effective management of natural disasters. Though the primary responsibility for disaster management rests with the States Government, the Government of India extends all possible logistics and financial support to the States to supplement their efforts to meet the situation effectively. Financial assistance is provided to the affected States from State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF) as per laid down procedure. Keeping in view our federal polity, the concerned State Governments undertake necessary relief measures in the wake of notified natural disasters including flood and cyclone, from the SDRF already placed at their disposal in accordance with the approved items & norms of assistance and magnitude of the ground situation. When the available resources of States are inadequate, additional financial assistance is extended from the National Disaster Response Fund (NDRF) by following the laid down procedure, which includes an assessment based on the visit of an Inter-Ministerial Central Team. Financial assistance under SDRF/ NDRF is towards relief and not for compensation of loss as

suffered/ claimed. The State Governments can use this allocation for 12 notified natural calamities viz; avalanche, cyclone, cloudburst, drought, earthquake, tsunami, fire, flood, hailstorm, landslide, pest attack and cold wave/ frost. In addition, 10% of the annual fund allocation of the SDRF may be used for localized State specific natural calamities. The concerned State Governments, as the first responders, to the disaster situation(s) undertake immediate rescue and relief operations which inter alia include

- (i) Evacuation and shifting of the people to safer places
- (ii) Setting up of relief camps
- (iii) providing gratuitous relief
- (iv) distribution of essential commodities
- (v) provision of safe drinking water
- (vi) health and hygiene measures to prevent outbreak of any epidemic during post disaster situation, etc.

The concerned State Governments have been taking necessary rescue & relief operations in the affected areas which include evacuation of people to safer places, operation of relief camps, cattle camps and providing essential commodities. States also take necessary steps to prevent outbreak of any epidemic during floods/ post flood period. Government of India supplements the efforts of States in providing response and immediate relief in the event of a severe hazard that is beyond the coping capacity of the State.

### **C Preparedness and Disaster Risk Reduction**

Government of India assists States in formulating policies and standard operating procedures to enhance their preparedness for hazards. The formulation of plans and guidelines for disaster management for ensuring timely and effective response to disaster and reduce risk is looked after by Ministry of Home Affairs. National Disaster Management Authority is primarily mandated to assist in laying down the policies. Towards enhancing preparedness, NDMA has undertaken several steps like issue of guidelines covering various disasters and cross-cutting themes; implementation of pilot programs which can be scaled up by the States; training of volunteers & rescue personnel; conduct of mock exercises; implementation of major cyclone risk mitigation

program; strengthening of State Disaster Management Authority (SDMA) and District Disaster Management Authority (DDMA); Information, Education and Communication (IEC) activities; conduct of workshops/seminars/conferences on various issues related to disaster risk reduction and management. NDMA has released 26 sets of guidelines on management of natural and man-made disasters. The Authority has also issued guidelines to assist States in preparation of State disaster management plans and provided financial support to States/UTs for preparing their state disaster management plans. Guidelines on 'Management of Floods,' Management of Cyclones and Management of 'Urban Flooding' were issued ten years ago to assist State Governments in preparation of their Flood/Urban Flood and Cyclone Management Plan. The National Disaster Management Plan (NDMP) was released in May, 2016 to assist all stakeholders including State Governments in disaster risk management of various hazards including Floods and Urban Flooding and enables all the stakeholders to prepare their respective Disaster Management Plans with well-defined roles and responsibilities. The National Cyclone Risk Mitigation Project (NCRMP), is being implemented in 08 Cyclone Prone Coastal States of the country to upgrade cyclone forecasting, tracking and warning systems and capacity building in multi-hazard risk management; and to construct major infrastructure including multipurpose cyclone shelters and embankments. A Flood Management Program has been launched by Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India for flood management and river management. NDMA has also prepared roadmap for mitigation of urban floods.

National Emergency Communication Plan is aimed at providing V-SATS for voice, data and video communication between National Operation Centre, NDRF and NDMA. The National School Safety Program(NSSP) has been successfully implemented by NDMA in partnership with NIDM and the States/UT Governments in 8600 schools in 43 Districts spread over 22 States/UTs of the Country. Workshops have been organized to discuss the issues related to Hydro-metrological disasters including Floods and Urban Flooding. A 10 Point advisory for immediate attention on Urban Flood Preparedness and mitigation were prepared and sent to all the Flood prone States .A roadmap for mitigation of urban floods was prepared and circulated to the States/UTs. A Pilot Project named "Aapda Mitra" for training of volunteers from local community for

flood rescue for training of 200 volunteers in each of 30 identified flood prone districts is being implemented.

## **D Role and Preparedness of National Disaster Management Authority**

National Disaster Management Authority has been established under section 3 of Disaster Management Act, 2005, and its powers and functions have been set out in section 6 of the Act. NDMA is primarily mandated to lay down the policies, plans and guidelines for disaster management for ensuring timely and effective response to disaster and allocation from NDRF and SDRF is looked after by Ministry of Home Affairs. NDMA, inter alia, is mandated to lay down guidelines to be followed by the State Authorities in drawing up the State Plan. NDMA is also required to lay down guidelines to be followed by the different Ministries or Departments of the Government of India for the purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects. For implementing a holistic and integrated approach to Disaster Management in India, NDMA has undertaken several steps like issue of guidelines covering various disasters and cross-cutting themes; Implementation of pilot programmes which can be scaled up by the States; training of volunteers & rescue personnel; conduct of mock exercises; implementation of major cyclone risk mitigation programme; strengthening of State Disaster Management Authority (SDMA) and District Disaster Management Authority (DDMA); Information, Education and Communication (IEC) activities; conduct of workshops/seminars/conferences on various issues related to disaster risk reduction and management. As required under this Act, NDMA has issued guidelines for preparation of state disaster management plans. NDMA has also provided financial support to States/UTs for preparing their state disaster management plan including State of Kerala. NDMA, in particular, has undertaken following steps to facilitate States in handling floods/urban floods and cyclones:

- (i) Guidelines on 'Management of Floods,' Management of Cyclones and Management of 'Urban Flooding' were issued in January, 2008, April 2008 and September, 2010 respectively to, inter-alia, assist State Governments in preparation of their Flood/Urban Flood and Cyclone Management Plan.
- (ii) National Disaster Management Plan (NDMP) was released in May, 2016 to assist all stakeholders including State Governments in disaster risk

management of various hazards including Floods and Urban Flooding. This Plan takes into account the action points emanating from National Guidelines issued by NDMA on disaster specific and cross-cutting issues. This Plan enables all the stakeholders to prepare their respective Disaster Management Plans with well defined roles and responsibilities.

- (iii) A workshop was organized by NDMA in February 2016 to discuss the issues related to Urban Flooding.
- (iv) 10 Point advisories for immediate attention on Urban Flood Preparedness and mitigation were prepared and sent to all the Urban Flooding prone States in May, 2016 for necessary action.
- (v) A roadmap under three timeframes short term, medium term and long term for mitigation of urban floods was prepared by an Expert Group constituted by NDMA. The roadmap was circulated to the States/UTs to take necessary action to implement the Roadmap as per the three timeframes for urban flood preparedness and mitigation.
- (vi) NDMA is also implementing a Pilot Project named 'Aapda Mitra' for training of volunteers from local community for flood rescue. The project envisages training of 200 volunteers in each of 30 identified flood prone districts in various States. Kottayam District of Kerala is covered under the pilot phase.
- (vii) Various IEC activities have been undertaken for flood/urban flood and cyclone preparedness through print, electronic and social media. These awareness campaigns are being regularly undertaken before SW and NE monsoons and cyclone seasons.

Campaign	Period (April 2018 till date)
Cyclone	May – June (Pre South West Monsoon)
	Oct – Mid Dec (Pre North East Monsoon)
Flood	Jun – Sep (South West Monsoon)
	Oct – Mid Dec (Pre North East Monsoon)
Urban flooding	(South West Monsoon) July – Dec
	(Pre North East Monsoon) July – Dec

- (viii) NDMA has also implemented a scheme on strengthening of State Disaster Management Authority (SDMA) and District Disaster Management Authority (DDMA) under which human resource were provided. Kerala, Karnataka and Andhra Pradesh have implemented this scheme.
- (ix) NDMA under a project called National Disaster Management Services (NDMS) to provide failsafe communication during disasters, has decided to install a VSAT based network for communication in 120 locations in all States/UTs. Kerala has four such sites, namely, Thiruvananthapuram (State Capital), Ernakullam, Idukki and Wayanard. 4 Satellite Mobile (INMARSAT) under this project have also been provided during recent flood.
- (x) A Study on Soil piping in the highlands and foothills of Kerala was also conducted to study the phenomenon of soil piping and its mitigation measures through Centre for Earth Science and Studies (CESS), Thiruvananthapuram and Department of Revenue, Kerala.
- (xi) In order to build up the coping capacity to handle disasters, 621 District Level Mock Exercises have been conducted by NDMA so far. Over a period of time the level of exercises have been scaled-up to State and Multi-State Level to enable entire administration machinery of the State to get training in handling disasters. In the last two years 19 State Level and 04 Multi State Level Mock Exercises have been conducted. The response from the States has been encouraging. Further, NDMA has scaled-up the scope of Chemical and Industrial Mock Exercises also. A total of 88 Chemical and Industrial Mock Exercises have been conducted. Since 2016-17, NDMA is undertaking a demand driven Scheme under which Rs.1 Lakh per district for Mock Drill was provisioned in all the States throughout the country. Under this scheme, an amount of Rs 13 lakhs and Rs 16 lakhs was sanctioned to Govt. of Andhra Pradesh and Govt of Karnataka respectively during 2018-19. Govt of Kerala and Govt of Tami Nadu were sanctioned Rs 14 lakhs and Rs 04 lakhs during 2016-17.

- (xii) NCRMP is under implementation in the State of Andhra Pradesh, Karnataka and Kerala. The Project closure date in respect of AP is 31.12.2018 and that in respect of Karnataka and Kerala is 31.03.2020.

State	Outlay Rs. In Cr		Fund released (GoI) Rs. In Cr	Expenditure (GoI) Rs. In Cr	Progress so far
	GoI	States			
Andhra Pradesh	1039.78	299.66	1038.8	851	Early Warning Dissemination System (EWDS) nearing Completion. 219 Multi Purpose Cyclone Shelter (MPCS), 698 Km of roads, 30 Nos Bridges and 29.90 Km of Saline Embankment completed.
Karnataka	101.18	28.30	52.09	11.35	EWDS under tendering Stage, 7 MPCS under Construction, 45 Km of roads completed, 2 Nos bridges and 7 Km of Saline Embankment & balance 4 MPCS and 3 Km of roads under tendering.
Kerala	133.48	34.00	16.63	1.75	EWDS under tendering Stage, 1 MPCS under construction & balance 20 MPCS under tendering stage.

## **E Role and preparedness of Geological Survey of India**

In 2004, Government of India declared Geological Survey of India (GSI) as Nodal Agency for landslides in India. Accordingly, GSI was entrusted the responsibility to carry out the landslide studies throughout the country. It is worth mentioning that the flood and cyclone related studies do not come under the purview of GSI, therefore, GSI is responsible for:

- (i) Coordinating and undertaking geological studies for landslide hazard mitigation.
- (ii) Carrying out landslide hazard zonation.
- (iii) Monitoring landslides.

- (iv) Studying the factors responsible for sliding and suggesting precautionary as well as preventive measure.
- (a) The specific mandates are:
  - (i) Finalization of uniform methodologies for Landslide Hazard Zonation (LHZ) on macro scales (1:50,000/1:25,000) and meso scales (1:10,000)
  - (ii) Carrying out Landslide Hazard Zonation of vulnerable areas on macro and meso scales
  - (iii) Carrying out mapping and monitoring of landslides
  - (iv) To evolve an Early Warning System
  - (v) To prepare Inventory/ Database on LHZ
  - (vi) Awareness Generation
  - (vii) Coordination
- (b) The Standard Operating Procedure (SOP) adopted for landslide disaster management plan:
  - (i) Human Resource: GSI has specialized Landslide Divisions, with about 100 geoscientists engaged in landslide studies. The workforce takes up pre and post-disaster studies apart from regular projects of GSI on landslides. In case of catastrophic events, geoscientists from different Regions are mobilized for emergency response and studies are carried out. A befitting example can be cited during landslides in Karnataka and Kerala in 2018.
  - (ii) Pre-Disaster Studies: Landslide Susceptibility Zonation (LSZ) on Macro Scale (1:25,000/50,000) & meso scale (1:10,000/5000), Monitoring of conspicuous landslides and Development of Early Warning System are the major activities taken up annually as a part of pre-disaster studies. GSI has taken up a National Flagship Program on Landslide Susceptibility Mapping (NLSM) to study about 4.27 lakh sq. km hilly area of India, inhabited by around 5-6 crore of population. This flagship program is going to be completed by March 2020. The main objective is to report with LSZ Map depicting the stability status of the existing thickly populated townships/ important civil engineering structures, proposed expansion schemes for urban development, new construction sites of townships in the landslide prone hilly terrain etc. through some much detailed stability

investigations by including geotechnical parameters. Development of early warning systems on local and regional scales is also a major objective.

- (iii) Post Disaster Studies (Response to Disaster): It is done in three stages like, Level-1 : Immediate response (Reconnoitry Studies); Level-2: Preliminary feasibility & multithematic (Response study) and Level-3: Detailed site-specific studies. The Level-1 and 2 are done within 15 to 60 days of the disaster whereas the Level-3 is done based on the results of level-1 & 2 and on request from the stakeholders. The main objective is to do rapid assessment of damages, preliminary identification of landslides, its broad typology, identification of stretches of affected roads/ accessibility corridors and if possible, tentative identification of probable safer slopes for temporary rehabilitation. To identify activity, extent, causes and failure mechanisms of such landslides for effectively suggesting the slope protection measures; to suggest suitable and stable sites for housing buildings, suggesting realignment of roads and for preparing the foundation for constructing some critical infrastructures (e.g., bridges, rope ways, transmission tower etc.)

#### **F Response of NDMA in States of Kerala, Karnataka, Tamil Nadu and Andhra Pradesh**

Kerala state experienced an unusual natural calamity during the month of July and Aug 2018, affecting almost whole of the state. During this period NDMA Control Room functioned 24 X 7. Control Room remained in constant touch with NERC(MHA), NDRF HQ and SEOC-Kerala. Control Room also shared details of all the distress calls received on Disaster Help Line no-1078, Whatsapp, Emails and Twitter handle of NDMA with NERC (MHA), NDRF HQ and SEOC-Kerala.

- (i) Immediately after the occurrence of the calamity, NDMA deputed Joint Advisor (Operations), for about a week to SEOC Kerala, to establish effective coordination. During such coordination, 5000 high density plastic bags for packaging of air dropped relief material were made available by NDMA to the State Govt of Kerala through a private organization.
- (ii) A Meeting was held on 21.08.2018 in NDMA under the chairmanship of Shri R K Jain, Member, NDMA with representatives of Civil Society Organizations/ Non-

Government Organizations and Resident Commissioner, of Govt. of Kerala to facilitate coordination on relief efforts for Kerala Floods.

(iii) The response to Kerala Floods 2018 was highly coordinated effort between the State Government and Central Government. The response and relief was being monitored at the highest level by the NCMC.

(iv) A team comprising Shri R.K. Jain, Member, Shri Kamal Kishore, Member and Dr. Thiruppugazh, Joint Secretary, NDMA conducted field visits in Kerala during 30<sup>th</sup> August to 01 September, 2018 and held meetings with Chief Secretary and other officers of State Government. The team also met Chief Minister, Kerala and shared best practices for effective recovery and reconstruction.

(v) A team comprising experts from GSI, CBRI and NDMA visited 15 landslides sites in Idduki district of Kerala during September 12-14, 2018. The report of the team containing their recommendations has been sent to Chief Secretary, Government of Kerala.

Government of Kerala vide D.O. letter dated 18.09.2018 from Chief Secretary raised the following two issues for consideration of the Govt. of India:

- (i) The State Government intends to facilitate soft loans through Kudumbashree, the Women Self Help Groups to affected MSMEs and families at the rate of 9% interest. The Government has ordered interest subvention for these loans from the Chief Minister's Distress Relief Fund. However, State Level Bankers are insisting on 12% interest.
- (ii) Many of the affected MSMEs and families have loans from RBI regulated banks and Non-Banking Financial Companies that requires to be restructured for a period of 5 years, with additional top-up loans for coping up and recuperate from the floods. These loans need to be covered under the MUDRA scheme or CGTMSE scheme, as the case may be.

The issues was taken up with Ministry of Micro, Small & Medium Enterprises and Department of Banking and Financial Services vide NDMA' D.O. letters dated 19.09.2018 and further vide D.O. letter dated 21.09.2018 to Department of Banking and Financial Services, In this regard, response received from . In this regard, response

received from Department of Financial Services and M/o MSME was communicated to the Chief Secretary of Kerala vide D.O. letter No. 48/3/2018-RR dated 27<sup>th</sup> September, 2018 with the request to indicate the specific issue, if any, along with financial implications for processing further. A meeting was called by National Disaster Management Authority (NDMA) with concerned stakeholders i.e. Department of Financial Services, Ministry of Micro, Small and Medium Enterprises (MSME), Reserve Bank of India (RBI), Government of Kerala and State Level Bankers' Committee of Kerala to discuss the issues raised by Govt. of Kerala. The following issues emerged during the meeting held on 15.10.2018:

- (i) Kerala Government devised a loan scheme in consultation with SLBC for providing Rs.1 lakh to flood / landslide affected individuals through Kudumbashree. The State offered subvention scheme of 9% and requested the banks to peg their rate of interest at 9% to make the facility interest free in effect and was taken in the SLBC and some banks have agreed. While the banks have agreed to the same now to charge interest @9%, yet the disbursement is very slow.
- (ii) As regards MSME loans the restructuring / rescheduling have been approved by SLBC in accordance with RBI Guidelines. However, the banks have not expedited the process to provide relief to flood affected MSMEs.
- (iii) The restructuring of the existing loans, there is no problem, however, fresh trade loans below Rs. 10 lakhs are not covered CGTMSE scheme.

After the detailed discussions with Chief Secretary, Government of Kerala the following emerged:

- (i) Issue regarding facilitating loan through Kudumbashree (Women Self Help Group) at 9% subvention stands resolved.
- (ii) Issue regarding loans below 10 lakh to retailers will stand resolved if Ministry of MSME approve the proposal to make retail trade loan below 10 lakh eligible under CGTMSE. It was decided that NDMA will take up the matter with M/o MSME.

- (iii) For speedy disposal of loans to MSME and flood affected families it was decided that NDMA will take up with Department of Financial Services, Ministry of Finance.

In follow up of the decisions taken with regards to decisions, a D.O. letter dated 16.10.2018 from NDMA was written to Secretary, Department of Financial Services to issue necessary instruction in this regard. In response Department of Financial Services vide letter dated 16.10.2018 issued necessary directions to Chairman, SBI and MD & CEO of all Public Sector Banks. In follow up of decision at para 5(iii) above, a D.O. letter was sent to Secretary, Ministry of Micro Small and Medium Enterprises (MSME) from NDMA to take a decision in this regard. In response, the Ministry of MSME has issued necessary approval vide O. M. No. 17(16)2018-EA Dated 17.10.2018. In the meeting of National Disaster Management Authority held on 18.10.2018 and presided by the Hon'ble Chairman of the Authority, the Authority was apprised of the action taken by NDMA.

(i) Titli : Tropical Cyclone 'Titli' made landfall during 0530 hrs-0830 hrs on 11 Oct 2018; 18.8° north / 84.4° east (Centre of Eye lies over the land) near Palasa, Srikakulam, Andhra Pradesh. IMD continuously monitored the development and issued bulletins. INCOIS- IMD also continued to issue joint bulletins with regard to Ocean storm forecast associated with Cyclonic storm- VERY SEVERE CYCLONIC STORM TITLI to all the concerned States. Regular advisories were issued to the State/UT by NERC (National Emergency Response Centre) DM Division MHA to keep a close watch, monitor the situation in their areas regularly and take appropriate precautionary measures. closely monitored the development. Awareness creation was on through social media during which Do's and Dont's for Cyclone were also widely circulated. Alert window of NDMA Website which contained IMD alerts was continuously updated for use by all stakeholders and public at large.

(ii) Gaja : The Cyclonic Storm 'Gaja' made landfall on 16.11.2018 at 0030 hrs to 0330 hrs in Nagapattinam Distt as Severe Cyclone Storm. The States of Odisha, Andhra Pradesh, Tamil Nadu, Andaman Nicobar, West Bengal, Puducherry were all informed about this development. National Emergency Response Centre (NERC), MHA also issued messages about all this development to all the concerned States from 10.11.2018 onwards. Subsequently, IMD continuously monitored the development and

issued bulletins. INCOIS- IMD also continued to issue joint bulletins with regard to Ocean storm forecast associated with Cyclonic storm-GAJA to all the concerned States. NDMA closely monitored the development. Awareness creation was on through social media during which Do's and Dont's for Cyclone were also widely circulated. Alert window of NDMA Website which contained IMD alerts was continuously updated for use by all stakeholders and public at large.

(iii) Phethai : The cyclonic storm 'Phethai' made Landfall on 1330 hrs – 1430 hrs on 17 Dec 2018; 25 KM south of Yanam (Puducherry) and 40 KM south of Kakinada District East Godavari (Andhra Pradesh). A depression formed over southeast Bay of Bengal (BoB) on 13.12.2018 intensifying into a deep depression (DD) in southeast & adjoining central BoB on 14.12.2018. It intensified into a cyclonic storm “Phethai” over southwest BoB on 15.12.2018 and further intensified into severe Cyclone on 16.12.2018. On 17.12.2018 its weakened in to a cyclonic storm and crossed Andhra Pradesh coast 25 Km south of Yanam and 40 km south of Kakinada between 1330 to 1430 hours. The situation in Andhra Pradesh & Puducherry during Cyclone ‘Phethai’ was monitored by National Disaster Management Authority at the highest level 24x7 basis. Awareness creation was on through social media during which Do's and Dont's for Cyclone were also widely circulated. Alert window of NDMA Website which contained IMD alerts was continuously updated for use by all stakeholders and public at large.

## **G. Response of GSI in Karnataka and Kerala**

(i) Karnataka: This year due to “abnormally high” rainfall, number of landslides were reported in districts covered by Western Ghats of Karnataka. Kodagu district in particular was severely affected.

(a) During the intervening night of 9th and 10th June, 2018 many landslides were reported from Virajpet- Makutta (Kerala boundary). In pursuance of the request by Principal Secretary to Revenue Department, Government of Karnataka, a team of geologist visited the sites of landslide occurrences. After the detailed study a report was submitted to Principal Secretary to Government Revenue Department (Disaster Management, Bhoomi & UPOR).

- (b) On 22.08.2018 a team was sent to Landslide hit areas of Kodagu bordering Dakshina kannada district and done preliminary assessment. The team visited the landslide affected areas near Jodpal. Preliminary studies were taken at Jodpal, a severely affected area by landslide. Preliminary investigation was also carried out at Kattalkadu Village and was declared safe, for villagers to come back, by the team. Investigations were also carried out along the road leading to Arekallu village wherein two landslides were studied.
- (c) Subsequently, a team visited the area from 27th August 2018 to 1st September 2018. The investigation aimed at the assessment of the nature, causes, the future risk and vulnerability at the landslide sites as well as suggesting remedial measures, both immediate and long term.
- (d) GSI team carried out post disaster studies in Kodagu and about 105 landslides and subsidence were studied. Out of these 105 landslides and subsidence, 42-point geo parametric data were collected for 85 landslides and subsidence while rest 20 nos. landslides were inaccessible during the field visit. The 42-point geo parametric datasheet, recommendations and remedial measures of each landslide were given in detail. Long term strategies and General recommendations to be adopted for mitigations of the landslides in Kodagu District were also suggested. Considering the magnitude of destruction, size/volume of landslides and risk involved, 10 major landslides were identified for detailed site specific study.
- (e) The detailed note on the preliminary studies were prepared and the same was submitted to Chief Secretary Government of Karnataka, Deputy Commissioner Kodagu, Director KSNDMC on 14.09.2018.
- (f) A separate team from GSI simultaneously visited a proposed rehabilitation sites for affected people by landslide occurrences in Kodagu district for preliminary geotechnical investigation on 26th & 27th August, 2018. They visited Nine rehabilitation sites and found that out of nine sites, eight were geo-technically stable. There were no signs of slope failures, ground movement, no surface cracks found at those sites during preliminary investigation. Certain precautionary measures were also suggested for those sites. Note on Preliminary Geotechnical Investigation of the Rehabilitation Sites Proposed by

District Administration was prepared and submitted to Deputy commissioner Kodagu on 04.10.2018.

(ii) Kerala: In Kerala, 'exceptionally high' rainfall evoked a number of landslide incidences in central and northern part of Kerala. A total of 59 landslide incidences were reported in Kozhikode, Wayanad, Kannur, Malappuram, Palakkad and Idukki Districts of Kerala during the month of June 2018 itself. The government of Kerala requested GSI to study the landslide incidences in the state.

- (a) GSI responded immediately in coordination with state revenue authorities and carried out post disaster landslide studies in July 2018 to assess these slides and to evaluate the causative factors and suggest possible remedial measures. The details of the study and the 42-point geo-parametric datasheet for landslide inventory were prepared and submitted to respective revenue authorities and Kerala State Disaster Management Authority (KSDMA).
- (b) 10 teams, consisting of two geologists in each team, were formed and deployed to different districts to carry out the landslide inventory mapping of Kerala which is expected to be completed by March 2019.
- (c) In addition to the above, the officers are also engaged with studies of many critical landslide affected sites based on the request from various agencies such as PWD (Roads & Bridge), NH, Power Grid Corporation, Forest, Irrigation department, KSEB, District authorities, etc.
- (d) A total of 1220 nos. landslides have been identified and studied by GSI till date and details of the landslides which affected infrastructure were submitted to the state government.
- (e) Due to landslides, there were total 756 houses affected in 12 districts of Kerala. Based on the studies done, GSI has recommended the local authorities to relocate about 478 houses, out of 756, to a safer place identified by GSI. The District wise details of landslides studied by GSI and houses affected and to be relocated are given in a tabular form below:

District	Landslides studied by GSI	Number of houses affected	Number of houses to be relocated
Thiruvananthapuram	2	Nil	Nil
Kollam	4	Nil	Nil
Pathanamthitta	51	36	32
Kottayam	37	3	2
Idukki	565	345	200
Ernakulam	15	7	2
Thrissur	36	43	34
Palakkad	241	130	82
Malappuram	80	27	16
Kozhikode	31	18	17
Wayanad	134	109	73
Kannur	24	38	20
<b>GRAND TOTAL</b>	<b>1220</b>	<b>756</b>	<b>478</b>

This is to mention that the works related to landslide studies, in Kerala and Karnataka, is going on war footing scale and targeted to be completed by March 2019.

## Chapter - II

### Overview of Natural Disaster / Calamities in States of Karnataka, Kerala, Tamil Nadu & Andhra Pradesh

#### A Background

National Disaster Management Authority has been established under section 3 of Disaster Management Act, 2005, and its powers and functions have been set out in section 6 of the Act. NDMA is primarily mandated to lay down the policies, plans and guidelines for disaster management for ensuring timely and effective response to disaster and allocation from NDRF and SDRF is looked after by Ministry of Home Affairs. During the year 2018, South West Monsoon was excess in Kerala and South Interior Karnataka. Due to this there was floods in almost all districts of Kerala; in Kodagu, Chickmagalur, Shivamogga and Hassan districts of Karnataka and in Dharmapuri, Salem, Erode, Karur, Tiruchirapalli districts in Tamil Nadu during mid of August 2018. Similarly, Very Severe Cyclonic Storm “Titli” crossed Andhra Pradesh coast near Palasa in Srikakulam District leading to flooding in Nagavali and Vamshadhara rivers in Srikakulam and Vijayanagaram Districts during mid of October 2018. Severe Cyclonic Storm “Gaja” affected the Southern States namely, Tamil Nadu, Kerala and Union Territory of Puducherry in the mid of November 2018. While the damages due to storm “Gaja” was mainly due to winds associated with cyclone, the heavy rains associated with “Gaja” created flooding in small river catchments in the States of Tamil Nadu and Kerala in the districts of Theni and Kottayam respectively. During the mid of December 2018, Severe Cyclone “Phethai” crossed the coast near Kakinada/Yanam in the State of Andhra Pradesh/Union Territory of Puducherry. Since the rainfall was for short duration, no major flooding occurred due to storm “Phethai”.

#### B Rainfall and Flood situation in Kerala

Central Water Commission studied the hydrological aspects of the rainfall in Kerala and published a Report on Kerala Floods. From the report, it was inferred that Kerala experienced an abnormally high rainfall from 1<sup>st</sup> June 2018 to 19<sup>th</sup> August 2018. This resulted in severe flooding in 13 out of 14 districts in the State. As per IMD data, Kerala received 2346.6 mm of rainfall from 1<sup>st</sup> June 2018 to 19<sup>th</sup> August 2018 in contrast to normal rainfall of 1649.5 mm. This rainfall was about 42% above the normal. Further,

the rainfall over Kerala during June, July and 1<sup>st</sup> to 19<sup>th</sup> of August was 15%, 18% and 164% above normal respectively. Further, out of 758.6 mm rainfall from 1<sup>st</sup> August 2018 to 19<sup>th</sup> August 2018, about 414 mm rainfall occurred in just three days viz 15-17, August 2018, which created severe flooding in the State. Due to severe rainfall from 15-17, August 2018, the gates of about 35 dams were also opened due to extremely large inflow of water in the reservoirs.

## **Flood Situation**

Kerala is situated along the Western Ghats with most of the towns and cities located on the foothills. The State has several small intra-state rivers, almost all of them flowing west toward Arabian Sea. These rivers have very small catchment areas. Also, the steep slopes of rivers involved, leave a very small response time to issue a conventional statistical-correlation based (level) forecast for any station with respect to any base station upstream. Thus, rivers are flashy in nature and swell up pretty quickly, and hence, effective level based forecast is very difficult to make. Further, for developing a correlation for flood estimation with respect to dam releases, the non-availability of historical outflows from dam as well as real time dam releases is also a limitation. However, the flood forecasting by rainfall-runoff mathematical modelling for Kerala may be possible. Sufficiently representative areal and temporal distribution of real time rainfall would be required for sufficient number of stations from IMD in order to make flood forecasting by modelling. Additionally, it is essential to know the real time data available with State Government in respect of out flow / reservoir levels/ area capacity curve from the various dams in Kerala and their schedule of operation to be executed in responding to flood situations. The mathematical models to forecast floods in advance with a purposeful lead time also require its calibration with these inputs for historical events of floods to be furnished by the Kerala Government. Thus, while constraints of terrain and short time of concentration are a limitation for a worthwhile forecast by conventional system at any Flood Forecasting station, and in case of mathematical model based flood forecasting, the non-availability of real time rainfall data for sufficient number of locations, data of releases from dams and historical data of floods have been major limitations for an effective forecast of floods in Kerala. The State Government authorities have been requested to provide detailed information about the Reservoir Salient Features, Area Elevation Capacity Curves, Rule Curves, Hourly

Reservoir Levels, Rainfall, Inflows and Hourly Outflows from dams to CWC for developing mathematical models for simulating runoff at different locations of the rivers. These mathematical models with appropriate information in advance of quantity of rainfall occurrences when provided by IMD would be developed into Flood Forecasting models for various rivers in Kerala. However, CWC has 22 Flood Monitoring Stations setup in various Districts of Kerala. Out of these 22 stations, 12 stations witnessed Extreme Flood Situation during the period 15<sup>th</sup> to 18<sup>th</sup> August 2018. The near real-time data is being entered in eSWIS (CWC website) and the hydrographs have been shared regularly on near real time basis with General Public for their information through the website. Based on the water level trend and rainfall situation, CWC has issued Daily Flood Situation Report cum Advisories through social media platform. During the Annual Relief Commissioner's Conference held in May 2018, it was informed that CWC will be disseminating the flood information through Face book Page @cwccfcr (new name: CWCOfficial.FF) and Twitter handle @FFM\_CWC (new name @CWCOfficial\_FF) also and requested all the State Government to follow these social media platforms for immediate dissemination of information. These flood related information have been shared regularly through various social media platforms which are being followed by various authorities and general public during 2018 floods. Reservoirs are operated by State Govt./ Project Authorities as per the operational manual finalised for respective reservoir. The operation can be modified based on Inflow forecasting. However, inflow forecast may be possible only based on quantitative rainfall forecast and in as much advance as possible which however so far is not available in case of Kerala. In order to study these aspects in respect of Kerala in detail, a Committee was constituted in CWC with main tasks as under:

- (i) The Atlas of frequency based inundation plans.
- (ii) Study of feasibility of establishing Flood Forecasting Network
- (iii) Setting up of model to provide Flood Forecasts.
- (iv) Study of Feasibility of integrated Reservoir Operations

The Committee visited Kerala during 25-27<sup>th</sup> September 2018 and had meeting with all stakeholders including Kerala Water Resources Department (KWRD), Kerala State Electricity Board (KSEB) and other stakeholders impressing upon them the importance of real-time flood forecasting and what CWC/MoWR,RD&GR can do to help

the State in this regard. After the meeting, it was agreed by all stakeholders that there should be a comprehensive flood forecasting network and three basins namely, Periyar, Bharathapuzha and Pamba may be taken up on pilot basis and feasibility be studied. The Committee also addressed letters to IMD to provide Quantitative Precipitation Forecast for various river basins and to provide Gridded Real-time Rainfall Data for use in the mathematical model to be developed for Kerala. Letters have also been written to Kerala Government to provide data on salient features of all reservoirs, rule curves, area-elevation-capacity curves, historic 10-daily inflows and outflows, rainfall for the last 30 to 40 years to update or develop new rule curves for reservoirs as well as to provide real-time information on reservoir levels, inflows and hourly outflows on operational basis during the flood season to CWC. The present status of the work of the Committee is as under:

There are two river systems in Kerala which are inter-state namely, Periyar and Bharathapuzha which have sufficiently large catchment and have warning time of 12 to 24 hours. Further, river Pamba also was affected severely by the August 2018 flood and hence, it was decided that three of the existing Hydrological Observation (HO) Stations in Kerala namely, Neeleswaram on river Periyar in Ernakulam District, Kumbidi on river Bharathapuzha in Palakkad District and Malakkara on river Pambain Pattanamthitta District shall be studied in detail for providing conventional flood forecasting with warning time of 12 hours.

Further, the mathematical models for all the basins in Kerala including inflow forecasts to major dams are being developed while information sought from Kerala Government for model calibrations are awaited. Feasibility of opening flood forecasting (through conventional statistical and mathematical models) will be included in the final report. CWC is trying to commence the flood forecasting activity at the earliest, possibly from the flood season of 2019 after getting financial and administrative approvals.

## **C Rainfall and Flood situation in Karnataka and Tamil Nadu**

### **Karnataka**

(i) Rainfall Situation : The Government of Karnataka has submitted a Memorandum to the Government of India, in September, 2018 vide which, it was informed that due to above normal rainfall since May, 2018 till 21st August, 2018, flood and rainfall induced

landslides occurred in Malnad (Kodagu, Chikkamangaluru, Hassan, Shivamogga) and Coastal Districts (Dakshin Kannada, Udupi and Uttar Kannada) of Karnataka during 2018. The Kodagu and other Malnad and Coastal districts received heavy rainfall in the range of 700 mm to 1712 mm with % departure from normal ranging from 100 to 722% during 8th to 19th August, 2018, caused loss of human lives, livestock and loss/damages to the crops and infrastructure and the economy of the State.

(ii) Flood Situation : Due to this extremely heavy rainfall during the period 15th to 18th August, most of the dams in Upper Cauvery Basin and Upper Tungabhadra basin in the affected districts started surplussing leading to Extreme Flood Situation in River Cauvery & its tributaries Harangi & Kabini and in Rivers Tunga & Bhadra. These created Extreme Flood Situation (Water Level exceeding the Highest Flood Level on record) in the downstream areas of Harangi Dam in Kodagu and Mysuru District; in the downstream areas of Kabini Dam in Mysuru District and in downstream reaches of Gajanur and Bhadra dams in Shivamogga and Chickmagalur District during the above period.

## **Tamil Nadu**

Due to very heavy rainfall in Coimbatore, Nilgiris District along the Western Ghats; heavy releases from Bhavanisagar Dam and Moyar Dam; and the releases from main Cauvery in Karnataka lead to Extreme Flood Situation along river Bhavani in Coimbatore, Nilgiris and Erode District of Tamil Nadu and river Cauvery in Dharmapuri, Salem, Erode, Karur and Tiruchirapalli Districts during 16th to 20th August 2018.

## **D Cyclonic storm 'Thitli', 'Gaja' and 'Pithai'**

(i) Tithli

(a) Meteorological Situation

Very Severe Cyclone "Titli" crossed North Andhra Pradesh Coast near Palasa in Srikakulam District on 11<sup>th</sup> October 2018. Due to this cyclone heavy to very heavy rainfall occurred in Srikakulam, Vijayanagaram Districts of Andhra Pradesh and in Gajapathi, Rayagada District of Odisha during the period 11<sup>th</sup> to 13<sup>th</sup> October 2018.

(b) Flood Situation

River Nagavali and Vamshadhara who have their catchment areas in Odisha received extremely heavy rainfall and affected Andhra Pradesh in Srikakulam and Vijayanagaram Districts leading to Above Normal (Water Level between Warning and Danger Levels) and heavy inflows into Gotta Barrage in Srikakulam District of Andhra Pradesh on river Vamshadhara during the above period.

(ii) 'Gaja'

(a) Meteorological Situation

Severe Cyclonic Storm 'Gaja' affected the States of Tamil Nadu, Kerala and Union Territory of Puducherry and crossed the Tamil Nadu coast near Vedaranyam in Tiruvarur District of Tamil Nadu. This Cyclone affected the areas with strong winds and rainfall which was confined to the areas near the cyclone centre. The major damages reported are due to the very strong winds which uprooted and damaged various infrastructures.

(b) Flood Situation

Since the rainfall was confined to the track of the cyclone, the rainfall affected small rivers such as Sholayar a tributary of Vaigai River in Theni District of Tamil Nadu as well as Meenachil in Kerala in Kottayam District of Kerala with rapid rise in water levels. Otherwise no major flood situation was reported from this cyclone.

(iii) Phethai

The Severe Cyclone "Phethai" crossed Andhra Pradesh/Puducherry areas close to Kakinada/Yanam on 19<sup>th</sup> December 2018. Since the rainfall associated with the system were on the recession period of river no major flood was witnessed in any of the basins in Andhra Pradesh.

## **E Suggestions / Assessment on Central Assistance for Disaster Management by Government of Odisha and Tamil Nadu.**

### (i) Odisha

- (a) Assurances from NDRF to Odisha for relief and restoration measures on account of Cyclone Titli especially towards Gratuitous Relief and Repair & Restoration of damaged infrastructure may be reconsidered by the Govt.
- (b) In view of the methodology of estimation of requirement of funds for Disaster Relief going by actual expenditure incurred in the past, low income States like Odisha, despite high vulnerability to natural disasters and significant losses suffered by disasters, are not able to get higher allocations from SDRF than some of the less disaster-prone and economically better off States. Estimation of the requirement of funds for Disaster Relief should, therefore, be independent of actual expenditures and be rather based on vulnerability of the State to Disasters through scientifically validated hazard vulnerability risk profiles of States.
- (c) Releases out of NDRF should be taken into account while calculating the size of SDRF.
- (d) Additional allocation of 50 percent of the aggregate size of the SDRF may be considered in favour of the low income States and States which are more prone to disasters.
- (e) Taking into consideration the combined effect of increasing incidence of natural disasters, revision in the SDRF norms and price rise, 15 percent annual increase (instead of 5% at present) in the corpus of SDRF should be allowed for the period of 2020-2025.
- (f) Restoration works of all public infrastructure damages by any approved disaster may be considered for funding under SDRF/ NDRF.
- (g) Provision may be made for immediate release of an advance amount on adhoc basis from NDRF in case of Natural Disasters of rare severity so as to enable States to take up immediate relief, pending the visit of the central team, submission of its report and the examination of the report by the HLC. Besides,

funding of relief and rehabilitation during Natural Calamities of rare severity out of NDRF should be flexible, adequate and objective.

- (h) The ceiling limit of 10% of SDRF for expenditure towards 'State Specific Disasters' should be done away with and all expenditure in connection with notified 'State Specific Disasters' should be charged to SDRF. There should be additional 10% increase in the corpus of SDRF to accommodate expenditure in connection with notified 'State Specific Disasters'.
- (i) Management of man-made disasters as per provisions of Disaster Management Act, 2005 may be considered to be financed from NDRF (100 %) or from any other specific fund to be created by GoI.
- (j) Keeping in view the wide diversity in geographical, social and economic factors across different regions in the country which requires a flexible approach to relief and rehabilitation, the following items should be included in the list of items and norms of expenditure for SDRF & NDRF.
- (k) Provision should be made in the guidelines for expenditure out of SDRF for maintenance of Multipurpose Cyclone Shelters.
- (l) Provision should be made in the guidelines for expenditure to be incurred out of SDRF for repair/maintenance emergency equipment.
- (m) Exemption of examination and tuition fees for the children of calamity affected small and marginal farmers should be included in the norms of expenditure out of SDRF for reimbursement to the concerned authority.
- (n) Expenditure for repair / restoration (of immediate nature) of the damaged infrastructure relating to all type of damaged infrastructure including all educational institutions & non residential government buildings should be met out of SDRF/ NDRF instead of present provision for funding the repair and restoration of only specified type of damaged infrastructure.
- (o) Restoration work of public infrastructure damaged due to different natural disasters should be allowed from SDRF/ NDRF on actual cost basis on the principle of Build-Back-Better as per schedule of rates of the State Governments

instead of present provision for funding the repair and restoration of immediate nature.

- (p) There should be provision for giving subsidy to farmers, out of SDRF, whose land is inundated by saline water for more than 15 days due to Cyclone, Storm Surge and Tsunami.
  - (q) In severe drought conditions, norms may be relaxed for expenditure on capital works like digging of bore-wells, installation of pump sets etc. as these works are life-saving in nature.
  - (r) The corpus of NDRF may be considered for enhancement to an adequate level so as to ensure immediate release of funds from NDRF to the State in case of severe disaster in future.
  - (s) In addition to the disaster response, disaster mitigation activities may be considered for Central support.
  - (t) Electronic Fund Management System in line with MGNREGs needs to be developed for ensuring DBT from State/ Centre
  - (u) Representation of the State in the Central Team/ Sub-Committee of the NEC while deciding the assistance to the state.
- (ii) Tamil Nadu
- (a) Multi-hazard Resistant Housing :

Gaja Cyclone has inflicted extensive damages to houses of the poor people living in kutcha houses and huts, especially in the districts of Nagapattinam, Tiruvarur, Thanjavur and Padukottai. The destruction of houses will adversely affect the living conditions of poor who will have to reconstruct their houses with a meagre assistance of Rs. 5,200/- being sanctioned under SDRF. Even if they reconstruct their huts they will have to live under the threat of natural disasters years after year. One of the key observations made by the Hon'ble Prime Minister is to learn lessons from each disaster to strengthen our resilience and build the infrastructure better. As a permanent solution, support has to be extended to the poor landless labourers working in different sectors both in rural and urban areas

to build multi-hazard resistant concrete houses. It is requested that taking in to account that coastal districts of Tamil Nadu are always subject to natural disasters at recurring intervals, Government of India may sanction an additional allocation for Tamil Nadu to build multi-hazard resistant houses at a cost of Rs. 3,00,000/- per house for about approximately 2 lakh people both in rural and urban areas. A special sanction of Rs. 6,000 crores may be made for reconstruction of the houses for the poor in the coastal districts of Tamil Nadu.

(b) Multi-hazard Resistant Powerlines :

Several districts plunging into darkness during the disasters caused by cyclones is a recurring feature in Tamil Nadu. This is due to the crippling of the power infrastructure especially the transmission lines, high tension and low tension poles, transformers and damages to substations due to the high winds gusting upto 100 kmph to 160 kmph during cyclones. Crippling of infrastructure, besides upsetting the normalcy of the people affected, we also have a telling impact on the economy of the State as well as the various sectors dependent on power supply. Year after year during North East Monsoon the power sector comes under tremendous stress due to the cyclones which are common during this period. The TANGEDCO is forced to spend thousands of crores on a regular basis. In order to overcome the recurring damages to the power sector it is essential to convert high tension and low tension overhead lines into underground cables at least in the town areas of the coastal districts of Tamil Nadu, which requires funding by the extent of Rs. 7,077 crores (Rupees 3710 crores for conversion of High Tension overhead lines and Rs. 3367 crores for conversion of low tension overhead lines into underground cable lines). It is requested that a special package of Rs. 7077 crores may be sanctioned by Government of India for conversion of High Tension and Low tension overhead lines in the coastal districts of Tamil Nadu.

(c) Enhanced allocation under NADP/RKVU (Rashtriya Krishi Vikas Yojana) :

Due to extensive damage that "Gaja Cyclone" has wrecked in the Coastal Districts of Tamil Nadu, there was extensive damages to the Coconut / Cashew / Mango trees and Banana Plantations. There is a minimum need to extend

assistance to the farmers to re-grow the Coconut / Cashew / Mango trees which plays significant roles in generating income and providing employment in the rural economy. In addition, there is also a need to increase areas under Banana plantation to restore the area of coverage that has been lost due to the Gaja cyclone. Taking into account the extensive damages, it is requested that an additional allocation may be made under NADP / RKVY scheme to provide assistance to the farmers who have lost their crops. It is requested that Rs. 625 crores may be sanctioned under NADP / RKVY scheme as a special case to farmers who have lost the trees / crops during the Gaja cyclone.

(d) Permanent Restoration of Damaged Roads :

The roads in the cyclone affected districts have been very badly damaged. Since smooth restoration and rehabilitation efforts in various sectors require proper road connectivity to all areas including interior areas. Therefore Rs. 378 crores is required for permanent restoration of very badly damaged roads.

(e) Rural Infrastructure :

The rural infrastructure in Rural Development Department is severely hit by cyclone "Gaja". Therefore an amount of Rs. 425 crores is needed towards permanent restoration of damaged infrastructure in Rural Development Department - roads, drinking water, electric poles, etc.,

(f) Livelihood support :

(i) Support for landless labourers : Rural farmers are largely depended on their livestock to offset the negative impact of the vagaries of monsoon. Unfortunately the cyclone Gaja, has devastated the livestock wealth in several districts of Tamil Nadu shaking the very axis of their hope and livelihood. As per the preliminary estimates approximately 1002 cattle, 4441 sheep and goat and 74,908 poultry have died due to the Gaja cyclone. The Department of Animal Husbandry proposes to provide succor to the affected farmers by means of assistance through special package of "Free distribution of Milch cattle and Sheep / Goats" and "Scheme for Poultry Development" which will provide sustainable livelihood opportunities to the Gaja affected people and ensure

continuous income generating opportunities. 10,000 affected farmers will be provided with recently calved crossbred Milch Cows capable of producing 7 to 10 litres milk per day to one cow to each farmer. Cost of each milch cow shall be approximately Rs. 35,000 to Rs. 40,000 and the total cost will be Rs. 40 crore. 50,000 affected farmers will be provided with 4 goats / sheep of 6-8 months age at an unit cost of Rs. 15,000 at a total cost of Rs. 75 crore, 50000 affected farmers will be provided with 50 numbers of 4 week old backyard or native chicks at a unit cost of Rs. 7,000 at a total outlay of Rs. 35 crore. The total cost of the livelihood programme shall be Rs. 150 crore. Each farmer shall be provided with any one of the above mentioned activities in line with the guidelines of the above schemes depending on their abilities.

(ii) Support for fisherman : Gaja cyclone caused wide spread damages to fishermen properties and affected their livelihood. In order to mitigate the livelihood loss to the fishermen in Nagapattinam, Thiruvavur, Thanjavur and Pudukottai districts, alternative and allied livelihood support activities such as sea weed farming, Marine cage culture of fin fishes, Capacity building programmes to fisherwomen in value added fish products, Fish Marketing, capacity building for fisher youth in modern fish marketing, Marine water sports, Marketing infrastructure support to fisheries cooperatives and Fish Landing Centres through insulated fish transport vehicles and retail fish marketing support to fisherwomen and retailers through small transport vehicles with accessories may be taken up at a cost of Rs. 60 crores. The similar alternative livelihood support may be extended to calamity prone other coastal districts at a cost of Rs. 40 crores. This livelihood support will ensure the calamity prone coastal fisher population to have sustainable and increased income and upliftment of their socio economic status. A total project to the tune of Rs. 100 crore may be considered as a special project.

### **Revision of SDRF Norms**

It is once again reiterated that there is a need to enhance existing the scale of assistance from the existing level of all the components. It is also suggested that the existing schemes for assistance for damage of Huts, damages to tree crops and assistance for damaged boats, nets and engines of fishermen as noted below:

(i) Damages to Huts (Fully and Partly) : The norms of assistance to fully damaged / destroyed huts is Rs. 5000/- and for partly damaged huts is Rs. 4100/-, various representatives are being received both in the districts and State level that the assistance given is too low. Therefore it is suggested that amount for fully damaged huts be revised to Rs. 25,000/-.

(ii) Damage / Destruction to Coconut / Mango / Cashew : Currently input subsidy for damages to Coconut / Mango /Cashew trees is Rs. 18,000/- per hectare, as a perennial crop, which is very meagre when compared with the efforts taken by farmers to raise such tree crops. It takes compared with the efforts taken by farmers to raise such tree crops. It takes minimum five to seven years for these crops to come up to bearing and the farmers have to face distress on multiple accounts economically, socially as well as emotionally and psychologically. Farmers need to spend substantial amount to cut and remove such fallen trees. Instead of categorizing them under perennial crops, assistance should be granted on per tree basis by taking into account the huge cost involved in raising it over years due to its long gestation period for fresh plantations to yield. Therefore, it is requested that the scale of assistance be enhanced from Rs. 18,000/- per hectare to Rs. 2000/- per tree (cost of cutting and removal included).

(iii) Fisheries Sector :

(a) Proposal to compensate fully damaged vessels : As per the SDRF norms fully damaged mechanised, FRP vallams and catamaran boats are eligible for Rs. 5 lakh, Rs. 75,000 and Rs. 32,000 respectively which is very insufficient to compensate the affected of cyclone as prevailing cost involved in boat building process is 2 to 4 times higher than that of the SDRF norms fixed. Therefore, minimum of Rs. 10 lakh for each mechanised boats, Rs. 1.5 lakh for each FRP Vallam and Rs. 65,000 per each catamaranan should be provided in all the fully damaged cases and accordingly SDRF norms to be revised or gap over and above the SDRF norms may be met under the other schemes / sources.

(b) Proposal to compensate partly damaged vessels and Nets and Engines :

i) Norms under the SDRF as a compensation for damage of nets is only Rs. 10,000/- & for OBM / IBE engines its Rs. 5,000/- each which is insufficient. As

per the prevailing cost it has to be Rs. 25,000/- & may be considered under SDRF norms or gap may be met from other funds as deemed fit.

- ii) Similarly maximum limits fixed under SDRF norms for partial damages of mechanised boats, FRP vallams, catamaran may be increased from existing Rs. 3 lakhs to Rs. 5 lakhs, Rs. 20000/- to Rs. 30,000, Rs. 10,000 to Rs. 15,000/- respectively.

Government of Tamil Nadu has been repeatedly giving representations for revision of norms for assistance under NDRF / SDRF. We are thankful that Ministry of Home Affairs in Government of India had constituted a Committee to examine the issue and it is learnt that the Committee has submitted its recommendations. It is requested that orders notifying new norms may be issued early enhancing the assistance for various sectors, especially the power sector as represented repeatedly by Government of Tamil Nadu.

## **F Assessment of Damages / losses to the States of Kerala, Karnataka, Tamil Nadu, Andhra Pradesh and Odisha.**

### **KERALA**

(i) The Government of Kerala commissioned a Post Disaster Need Assessment (PDNA) to be lead by the United Nations Organizations. Accordingly, the PDNA concluded with a damage and loss estimate of Rs.26,720 crores and a build-back-better need of Rs.31,000 crores. Sector wise assessment as in the PDNA is given below. It was for the first time that the entire PDNA exercise was being conducted in any State in such a comprehensive manner.

Sector	Damage	Loss	Total Effect		Total Recovery	
	INR Crores	INR Crores	INR Crores	USD Million	INR Crores	USD Million
<b>Social Sectors</b>						
Housing, Land and Settlements	5,027	1,383	6,410	916	5,443	778
Health and Nutrition	499	28	527	75	600	86
Education and Child Protection	175	4	179	26	214	31
Cultural Heritage	38	37	75	11	80	11
<b>SUB-TOTAL</b>	<b>5,739</b>	<b>1,452</b>	<b>7,191</b>	<b>1,028</b>	<b>6,337</b>	<b>906</b>
<b>Productive sectors</b>						
Agriculture, Fisheries and Livestock	2,975	4,180	7,155	1,022	4,498	643
<b>SUB-TOTAL</b>	<b>2,975</b>	<b>4,180</b>	<b>7,155</b>	<b>1,022</b>	<b>4,498</b>	<b>643</b>

Infrastructure sectors						
Water, Sanitation and Hygiene	890	471	1,361	195	1,331	190
Transportation <sup>a,b,c</sup>					10,046	1,435
Power <sup>b,c</sup>					353	50
Irrigation <sup>b,c</sup>					1,483	212
Other infrastructure <sup>b,c</sup>					2,446	349
<b>SUB-TOTAL</b>	<b>890</b>	<b>471</b>	<b>1,361</b>	<b>195</b>	<b>15,659</b>	<b>2,236</b>
Cross-cutting sectors						
Environment	26	0.04	26	4	148	21
Employment and Livelihood	881	9,477	10,358	1,480	3,896	557
Disaster Risk Reduction	17	583	599	86	110	16
Gender and Social Inclusion	0.9	0	0.9	0.13	35	5
Local Governance	28	0	28	4	32	5
<b>SUB-TOTAL</b>	<b>953</b>	<b>10,060</b>	<b>11,013</b>	<b>1,574</b>	<b>4,221</b>	<b>604</b>
<b>TOTAL (A)</b>	<b>10,557</b>	<b>16,163</b>	<b>26,720</b>	<b>3,819</b>	<b>30,715</b>	<b>4,389</b>
Integrated Water Resources Management (B)	0	0	0	0	24	3
<b>GRAND TOTAL (A + B)</b>					<b>30,739</b>	<b>4,392</b>
<b>GRAND TOTAL (ROUNDED OFF)</b>					<b>31,000</b>	<b>4,400</b>

<sup>a</sup> Recovery costs for roads from urban and rural infrastructure sections are included

<sup>b</sup> In Rapid Damage and Needs Assessment, the cost of damage and loss has not been quantified.

<sup>c</sup> Estimates taken from the World Bank-Asian Development Bank Joint Rapid Damage and Needs Assessment (IRDNA).

Note: Figures are rounded and so column totals may not add up precisely.

## (ii) Estimate of Damage and Needs

(a) Estimated total loss due to Kerala Floods 2018 - Rs.26,720 crores (PDNA Kerala, 2018)

(b) Estimated amount required for rebuilding better - Rs.31,000 crores.

## (iii) Availability of Funds

(a) Chief Minister's Distress Relief Fund - Rs.2,683.18 crores

(b) State Disaster Response Fund 2018-19 - Rs.214 crores

(c) Additional advance allocation from NDRF 2018-19 (Floods) - Rs.600 crores

(d) Expenditure from SDRF as on 5-12-2018 - Rs.601.85 crores

Pending bills (ready of immediate disbursement) - Rs.700 crores (more bills expected).

## KARNATAKA

### (i) Extent of Damage due to Natural Calamities

Nature and period of natural calamity: Flood during August 2018

Sl. No.	Item	Details
1.	Total number of Districts in the state	30
2.	Number and names of districts affected	8
3.	Number of villages affected	963
4.	Population affected (in lakh)	3.85
5.	Total land area affected (in lakh ha)	
6.	Cropped area affected (in lakh ha)	
	(i) Total cropped area affected (in lakh ha)	3.21
	(ii) Estimated loss to crops (Rs. in lakhs)	167084.00
	(iii) Area where cropped damage was more than 33% (in lakh ha)	3.15
7.	Percentage of area held by SMF	
	(i) in the State as a whole	40%
	(ii) in the affected districts	53%
8.	Houses damaged:-	
	(a) No. of houses damaged :-	7865
	(i) fully damaged pucca houses	842
	(ii) fully damaged kutcha houses	686
	(iii) Severely damaged pucca houses	3580
	(iv) Severely damaged kutcha houses	2757
	(v) Partially damaged houses pucca houses	0
	(vi) Partly damaged houses katcha houses	0
	(vii) No. of huts damaged	0
	(viii) No. of Cattle Sheds damaged	0
	(b) Estimated value of damage to houses (Rs. in lakh)	16751.00
9.	No. of Human lives lost	67
10.	No. of persons with grievous injuries	98
11.	No. of persons with minor injuries	196
12.	Animals lost:-	
	(a) No. of big animals lost	189
	(b) No. of small animals lost	51
	(c) No. of poultry (birds) lost	0
13.	Damage to public properties:-	
	(a) Estimated value of the damage to public properties (Rs. in lakhs)	178113.00
14.	Estimated total damage to houses, crops and public properties (Rs in lakhs)	361948.00

(ii) Status of expenditure from State Disaster Response Fund (SDRF) Account during 2018

(Rs. in Crore)

Sl. No.	Item	Amount
	<b>(i) Receipts</b>	
1.	Opening Balance in CRF account as on 1.4.2018 (of Financial year):	
	(a) SDRF	
	(b) NDRF	41.98
	(c) Total	41.98
2.	SDRF Release made during instant financial year (Central and State Share) (upto 30.8.2018)	
	(a) First installment (Rs.120 cr central + Rs.40 cr state)	120.00
	(b) Second installment	
	(c) Total	120.00
3.	NDRF Release during the instant financial year if any	Nil
4.	Interest received on investments made as per the CRF Scheme	Nil
5.	<b>Total funds available in the SDRF Account</b>	<b>201.98</b>
	<b>(1 + 2 + 3 + 4)</b>	
	<b>(i) Expenditure</b>	
6.	Expenditure incurred as per norms on approved natural calamities as per the Scheme of SDRF/NDRF (indicate calamity - wise expenditure)	
	(a) Flood	69.00
	(b) Drought	
7.	Expenditure incurred on training to specialized teams of the State personnel	
8.	Expenditure incurred on procurement of search and rescue equipment etc. (as per extant approved items).	
9.	Total Expenditure incurred (6 + 7 + 8)	69.00
10.	Balance available in the SDRF account of the instant financial year:-	
	(a) SDRF	91.00
	(b) NDRF	41.98
	<b>(c) Total</b>	<b>132.98</b>

## TAMIL NADU

### (i) ASSISTANCE FROM GOVERNMENT OF INDIA

(a) The State Executive Committee headed by the Chief Secretary of the State which administers State Disaster Response Fund in Tamil Nadu ensures that the funds drawn from the State Disaster Response Fund are utilized only for the items of expenditure contained in the guideline issued by the Ministry of Home Affairs, Government of India following prescribed norms.

The contribution to be provided by the Government of India and the Government of Tamil Nadu to the State Disaster Response Fund for Tamil Nadu State, as recommended by the Fourteen Finance Commission, for the period from 2015-16 to 2019-20 is as follows:

(Rupees in Crores)

Year	Share of G.O.I from 2015-16 to 2017-18 (75%) 2018-19 & 2019-20 (90%)	Share of G.O.T.N. from 2015-16 to 2017-18 (25%) 2018-19 & 2019-20 (10%)	Total
2015-2016	509.25	169.75	679.00
2016-2017	534.75	178.25	713.00
2017-2018	561.00	187.00	748.00
2018-2019	707.40	78.60	786.00
2019-2020	742.50	82.50	825.00
<b>Total</b>	<b>3054.90</b>	<b>696.10</b>	<b>3751.00</b>

(b) The details of fund available in the State Disaster Response Funds are given below:

(Rs. in Crores)

1.	Opening balance as on 01.04.2017	491.62
2.	1st installment of SDRF for the year 2017-18	393.00
3.	2nd installment of SDRF for the year 2017-18	0.00 Will be released in December 2018
	Total	884.62
4.	(a) Expenditure incurred for various relief works under SDRF	155.64
	(b) Expenditure incurred on procurement of search and rescue equipment	21.10
	(c) Expenditure incurred on Capacity Building	0.02
	Total	176.76
5	Amount available as on date	707.86

As on date, the State Government has released Rs.707.86 Crores under SDRF for immediate relief and restoration activities in view of the extensive damages caused by the Severe Cyclonic storm GAJA. For the additional requirement of funds as per the memorandum, additional release of Rs.723.14 Crore from the National Disaster Response Fund is necessary, which may kindly be sanctioned at the earliest. The state government will need a sum of Rs.723.14 Crores for immediate relief and temporary restoration from NDRF and Rs.14910 Crores for subsequent permanent restoration as special assistance from Government of India. The total requirement sought from Central Government is Rs.15633.14 Crores.

## ANDHRA PRADESH

(i) Sector Wise Estimated Damages / Losses:

Sector Wise Damages/Losses & the Amount Required For Restoration

Sl. No.	Sector	Estimated Losses (Rupees in Crores)
1.	Roads & Buildings	100.46
2.	Panchayat Raj	1.7
3.	Power	4.3727
4.	Rural Water Supply	0.9664
5.	Endowments	0.09
6.	Forest Department	0.2
7.	Health Department	0.134
8.	Fisheries Dept	0.81
9.	Agriculture	292.75
10.	Horticulture (Input subsidy as per NDRF norms)	164.27
11.	House Damages/Inundated	0.919
12.	Ex-gratia (Injured Person)	0.001
13.	Essential Commodities & Relief Camps etc.,	33.7896
	<b>Total Damages in Cost</b>	<b>600.464</b>

## (ii) Sector wise Damages/ Losses (As per NDRF Norms)

SECTOR WISE DAMAGES/LOSSES AND THE AMOUNT REQUIRED FOR RESTORATION					
Sl. No.	SECTOR	Number of affected Districts	Amount required		
			(Rupees in Crores)		
			Temporary Restoration	Permanent Restoration	Total
1.	Roads & Buildings	7	16.06	84.4	100.46
2.	Panchayat Raj	1	0	1.7	1.7
3.	Power	5	4.3727	0	4.3727
4.	Rural Water Supply	1	0.9664	0	0.9664
5.	Endowments	1	0.09	0	0.09
6.	Forest Department	1	0.2	0	0.2
7.	Health Department	2	0.134	0	0.134
8.	Fisheries Dept	1	0.451	0	0.451
9.	Agriculture (Input subsidy as per NDRF norms)	6	74.887	0	74.887
10.	Horticulture (Input subsidy as per NDRF norms)	6	11.083	0	11.083
11.	House Damages/Inundated	5	0.919	0	0.919
12.	Ex-gratia (Injured Person)	1	0.001	0	0.001
13.	Essential Commodities & Relief Camps etc.,	5	33.7896	0	33.7896
	<b>Total Damages in Crores</b>		<b>142.9537</b>	<b>86.1</b>	<b>229.0537</b>

**ODISHA**

(i) The details of damages caused to public infrastructure of Departments are given below:

Amount required towards relief and restoration

Sl. No.	Departments	(Rs. in lakh)
1.	Water Resource Department	
	Loss to rivers & canal embankment	30033.68
	Loss to drainage channels	364.20
	Loss Repair to Minor Irrigation Project	2827.65
	Loss to buildings of MI Sector	120.00
	Loss to Lift Irrigation Projects	1657.38
	Loss to river & canal embankment roads	629.25
	Loss to damaged buildings of WR sector	667.90
2.	Works Department	
	Loss to Roads, Culverts	11695.99
	Loss to NHs maintained by State	1421.00
3.	Rural Development Department	
	Loss to Roads, Culverts	28641.53
	Loss to Buildings (PHC/CHC etc.)	1776.20
4.	Housing & Urban Development Department	
	Damages to urban roads, drains and culverts	5633.37
	Repair of water supply system tube wells	1712.00

5.	Panchayati Raj and DW Department	
	Repair of GP/PS Roads	44236.33
	Repair of Drinking water supply system	5039.65
	Loss to Panchayat Ghars	8229.02
	Repair of School Buildings	3482.63
6.	Agriculture Department	
	Prepair/restoration of damaged Water Harvesting Sructures	893.99
	Loss to Seed storage Godown	46.50
	Damage to lift irrigation	7.65
	Damage to infrastructure	204.00
7.	Energy Department	
	Repair/restoration of Electrical lines	13303.18
8.	Fisheries & Animal Resource Department	
	Provision of cattle feed	148.98
	Medicines & Animal Care	143.84
	Loss of net and boats	28.70
	Animal/livestock Loss (Replacement of animal)	314.47
	Disposal of Carcasses	16.29
	Damage to Veterinary Institutions like VD,LAC etc.	253.00
	Repair of damaged fish pond	55.69
	Repair of fish seed farm	4.593
	Loss to Govt. Fish farms & fish fed ice plant	58.25
9.	ST & SC Dev., Minorities & Backward Classes Department	
	Repair of School Buildings	684.09
10.	Women & Child Dev. Dept.	
	Repair of Anganwadi Centres & other buildings	1728.50
11.	Textile & Handloom Dept.	
	Loss to Rural Artisans (Handicraft Sector)	0.86
	Loss to Handloom Sector (Weavers)	7.24
	Loss to Sericulture Sector	341.80
12.	Cooperation Department	
	Damage to Buildings of cooperative society	1348.23
	Damage to Buildings of MARKFED	62.65
	Damage to Aska Co-operative Sugar Industries	1510.84
	Damage to ARCS office, Gunupur, Rayagada	1.00
	Damage to assets of RMCs of Gajapati, Ganjam, Rayagada, Kandhamal	85.00
13.	Special Relief Commissioner	
	HB Assistance	20944.17
	Ex-gratia for loss of lives	284.00
	Emergent Relief (Gratuitous Relief)	37581.00
	Search & Rescue	1000.00
	De-silting of Agriculture land (Sand cast)	161.662
	Provision of input subsidy to farmers	30766.58
	Provision of Temporary accommodation, food, clothing & medical care	15500.00

	Emergency Supply of Drinking Water	1000.00
	Clearing of Debris	500.00
	Clothing & Utensils	777.21
	Grand Total	277931.75

(ii) Submission of Memorandum to GoI: The Government of Odisha submitted its Preliminary and Final Memorandum to Government of India on 20.10.2018 and 31.10.2018 respectively seeking Central Assistance from NDRF.

(iii) Visit of Inter-Ministerial Central Team: In response to Memorandum, an Inter-Ministerial Central Team led by Joint Secretary, Ministry of Home Affairs, Government of India visited the State from 31.10.2018 to 2.11.2018 for an on the spot assessment of the damages in the wake of Very Severe Cyclonic Storm 'TITLI' and associate disasters.

(iv) Assistance Received from NDRF: The High Level Committee in its meeting held on 17 Dec 2018 have approved an expenditure of Rs. 1023.59 crore and taking into account the funds available in SDRF of the State, an amount of Rs.341.72 crore has been released by the Government of India from NDMA on 1 Jan 2019.

(v) The State Government has since released an amount of Rs.1696.09 crore to the Collectors of the affected districts and the concerned departments towards different relief measures and repair/restoration of damaged infrastructure. Thus, the expenditure approved by HLC as well as the funds released from NDRF is grossly inadequate especially towards Gratuitous Relief and repair & restoration of damaged infrastructure and the same needs reconsideration.

## CHAPTER - III

### Overview of Central Assistance and Relief for Disaster Management and Natural Calamities

#### A Financial Mechanism and role of Central & State Governments

The primary responsibility of undertaking rescue, relief and rehabilitation measures in the event of a natural disaster rests with the concerned State Government. The Central Government, wherever required, supplements the efforts of the State Governments by providing logistics and financial support in cases of natural disasters of severe nature and beyond coping capacity of the State resources. Early Warning Systems are in place to provide early warning of an impending disaster by the forecasting agencies of Government of India on real time basis to all the concerned stakeholders for taking appropriate precautionary measures. This helps in timely evacuation of the vulnerable population and improves preparedness. Ministry of Home Affairs remains in constant touch with the States for assisting them to ensure effective relief & response. The logistic support provided by the Government of India includes mobilizing and deployment of aircrafts, helicopters, boats/ BAUTS and equipment including rescue and medical aid. Government of India provides immediate response and rescue by dispatching specialist teams of National Disaster Response Force and personnel of Armed Forces – Army, Navy, Coastguards and Airforce and Central Para Military Forces are also mobilized in the rescue effort. Twelve battalions of National Disaster Response Force (NDRF) have been deployed throughout the country specifically for rescue, relief and response during disaster. Based on vulnerability profile of different regions of the country, these specialist battalions have been presently stationed at the various strategic locations all over the country. The States have also been encouraged to develop State Disaster Response Force (SDRF). Regular mock drills are being organized by the NDRF. NDRF teams are constantly engaged in familiarization exercises (FAMAX) as also in community awareness/ preparedness programmes in far flung and inaccessible areas. Besides provision of immediate relief materials & essential commodities including medical aid and stores, Government also assists in restoration of critical infrastructure and facilities including communication network and such other assistance as may be required by the affected States to meet the situation effectively. Besides assisting States in preparedness, risk mitigation and

response in the event of a disaster, Government of India has made financial arrangements in the form of State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF) for the purpose of immediate relief during severe natural Calamity. The funds are for the purpose of assisting States in providing immediate relief to the affected community in the event of any of the twelve notified natural calamities viz; avalanche, cyclone, cloudburst, drought, earthquake, tsunami, fire, flood, hailstorm, landslide, pest attack and cold wave/ frost. In addition, 10% of the annual fund allocation of the SDRF may be used for localized State specific natural calamities. Government of India (GoI) had enhanced the allocation under SDRF from Rs 33,580 crore for the period 2010-11 to 2014-15 to Rs 61,220 crore for the period 2015-16 to 2019-20. The norms for relief assistance were also enhanced in the year 2015. From the year 2018-19, Central share in SDRF for all states has been enhanced from 75% to 90% by which there will be an additional SDRF contribution by Central Government of Rs. 1690.35 crore in 2018-19 and Rs. 1774.67 crore in 2019-20. During Financial Year 2018-19, an amount of Rs. 11542.50 crore has been allocated as Central Share to all the States in their SDRF accounts. The SDRF is released in two installments as per Guidelines. Government has already released Rs. 7353.265 crores Central Share to 26 States. In addition, financial assistance from NDRF amounting to Rs. 5507.72 crore has also been released from NDRF to 09 States during the current financial year which were affected by calamities of a severe nature.

State Governments are primarily responsible for execution of relief operations in the wake of natural calamities. Government of India supplements the efforts of the State Governments by extending financial assistance, if necessary, from NDRF as provided in the recommendations of the Finance Commission. Some of the salient features of Central assistance for disaster Management are as follows:

- (i) The Central assistance for disaster response has evolved over the awards of successive Finance Commissions.
- (ii) State Disaster Response Funds (SDRFs) and National Disaster Response Funds (NDRF) are set up at the State and the Union levels under sections 48(1) (a) and 46(1) of the Disaster Management Act, 2005 respectively.
- (iii) As recommended by the 14<sup>th</sup> Finance Commission (FFC), at present the NDRF scheme covers the following 12 natural calamities: Cyclone, Drought,

Earthquake, Fire, Flood, Tsunami, Hailstorm, Landslide, Avalanche, Cloud Burst, Pest Attack and Cold wave & Frost.

- (iv) Guidelines for operation of NDRF and SDRF are framed by Ministry of Home Affairs, which is the nodal Ministry concerned with disaster management.
- (v) The funding of assistance is towards providing immediate relief. It is not for compensation or loss.

Mitigation and long term reconstruction of assets is not financed through NDRF, but through overall development plans of the Centre and the States. Ministry of Finance has introduced flexi-fund component within CSS wherein at least 25% of plan budget of each CSS is earmarked for meeting, inter-alia, the objectives of undertaking mitigation / restoration activities in the case of natural calamities in sectors covered by CSS.

## **B National Disaster Response Force (NDRF)**

In the event of a calamity of severe nature when SDRF is insufficient to meet the relief requirement, additional assistance from NDRF in excess of the balances available in its SDRF account is released after following the laid down procedure *viz*, assessment by the Inter- Ministerial Central Team (IMCT), recommendation of Sub Committee- of National Executive Committee and approval by High Level Committee (HLC) thereof. NDRF is therefore, released to supplement the efforts of state government in providing immediate relief/assistance in case of severe calamities. The quantum of assistance from NDRF is subject to adjustment of 50% of the balance in SDRF as on 1<sup>st</sup> April of the current financial year. Mitigation, and long term reconstruction of assets is not financed through NDRF, but through overall development plans of the Centre and the States. 14<sup>th</sup> Finance Commission in its report (para10.26) has stated that if the cesses are discontinued or when they are subsumed under GST in future, the union Government would ensure an assured source of funding for the NDRF. NDRF is a cess based fund and the provision for the Fund is made on the basis of collections in the form of National Calamity Contingency Duty (NCCD) imposed on specified goods under Central Excise and Customs. NCCD was levied through Finance Act, 2001 on tobacco products, vehicles, petroleum crude oil and cellular mobile phones being goods manufactured or produced as per rates specified in Seventh Schedule of the Finance Act, 2001. With the introduction of GST, NCCD on vehicles and cellular mobile phones was abolished by amending the Seventh Schedule to Finance Act, 2001 through the Taxation and

Amendment Laws, 2017 Act notified on 5<sup>th</sup> May, 2017. However, NCCD continues to be levied on tobacco products as an additional duty of excise as central government has power to levy additional duties on tobacco products in addition to the GST and Compensation Cess leviable on tobacco products. Further, NCCD is also being levied on Crude petroleum as petroleum has been kept out of the purview of levy of GST and Central Excise Duty and NCCD is leviable on it. With the introduction of GST, the scope of coverage of NCCD is shrinking thereby reducing the tax receipts on this account. It may be stated that tax revenue collection in the form of NCCD has been substantially reduced from Rs. 5690 crore in 2015-16 to Rs. 2500 crore in 2018-19 (BE). Any expenditure from NDRF beyond the funds available under NCCD has an adverse impact on the finances of Government of India.

<b>Comparison of NCCD Receipts and NDRF releases (Rs. in Crore)</b>			
Year	National Calamity Contingency Duty	NDRF Released	Difference between NCCD received and NDRF released
2010-11	3900	4,179	-279
2011-12	3998	2,459	1539
2012-13	2810	2,810	0
2013-14	4650	4,650	0
2014-15	3461	3,461	0
2015-16	5690	12,452	-6762
2016-17	6450	11,441	-4991
2017-18	3660	4,723	-1063
2018-19*	2500	5,508*	

\* Releases for FY 2018-19 is up to 21.12.2018.

NDRF is maintained by Government of India in the Public Account.

(i) Ministries responsible for operation of Scheme of NDRF:

Ministry of Agriculture: Drought, hailstorm, Pest attack, Cold Wave & Frost

Ministry of Home Affairs: All other calamities.

(ii) Assessment of Relief Assistance from the NDRF : Upon a request made by a State not having adequate balance in its State Disaster Response Fund (SDRF), Ministry of Home Affairs or the Ministry of Agriculture, as the case may be, assess need for additional assistance from NDRF under the existing guidelines and the approved items and norms of expenditure notified by MHA. Details of releases from NDRF during 2010-11 to 2017-18 ( till date) are as under:

( Rs. in crore)

Year	Budget Estimate	Released
2010-11	3560.00	4179.25
2011-12	4525.00	2458.92
2012-13	4620.00	2810.29
2013-14	4800.00	4649.94
2014-15	5050.00	3460.88
2015-16	5690.00	12451.96
2016-17	6450.00	11441.30
2017-18	7167.00	4722.53
2018-19 (till date)	10000.00	5507.72

The Ministry of Home Affairs (MHA) oversees the utilisation of releases from NDRF for the purposes for which funds have been released and monitor compliance with the guidelines of NDRF. States will need to provide the required information to MHA.

### **C State Disaster Response Force (SDRF)**

Fourteenth Finance Commission (14<sup>th</sup> FC) has adopted the practice of previous Commissions and used past expenditure on disaster relief for the period 2006-07 to 2012-13 to determine the SDRF corpus for each State and accordingly, recommended an amount of Rs. 61,219 crore as aggregated corpus of State Disaster Response Fund (SDRF) for all States for award period 2015-20 with States contributing 10% (6122 crore) and the remaining 90% (Rs. 55097 crore ) coming from Central Government. State- wise allocation to the SDRF alongwith Central and States' shares for the award period 2015-20. The 14<sup>th</sup> FC has also recommended that upto 10% of fund available under the SDRF can be used by a State for occurrences which State considers to be disasters within its local context and which are not in the list of disasters notified by MHA. The Government has accepted the above recommendation with the modification that the percentage share of the States will continue to be as before, and that the flows will also be of the same order (linked to the extent of cess), as in the existing system; and that , once GST is in place, the recommendation of FFC on disaster relief would be fully implemented. Accordingly, Central share of SDRF has been released to States up to 2017-18 as per the earlier pattern of sharing (recommended by the 13<sup>th</sup> FC) i.e. 75:25

between Centre and States in case of general category States and 90:10 in case of special category States. Subsequently, with the implementation of GST it has been decided to implement the recommendation of 14<sup>th</sup> FC in full w.e.f. 01.04.2018. Accordingly, all States will contribute 10% to the SDRF and the remaining 90% would be contributed by the Union Government during 2018-19 and 2019-20 as per the recommended allocation by 14<sup>th</sup> FC. Ministry of Finance, Department of Expenditure releases the Centre's share of SDRF to the State Governments in two instalments - in June and in November every year, upon recommendation of Ministry of Home Affairs. Year- wise releases of Central contribution to SDRF are as under:

( Rs. in crore)

Year	Budget Estimate	Amount Released
2010-11	4677.82	4337.63
2011-12	4911.70	4279.45
2012-13	5157.29	5208.29
2013-14	5415.17	6034.09
2014-15	5685.95	5629.45
2015-16	8512.50	8756.01
2016-17	8938.20	8374.95
2017-18(RE)	9382.80	9382.80
2018-19 (till date)	9852.13	7353.27

**D. Response of National Disaster Response Force (NDRF) in States of Kerala, Karnataka, Tamil Nadu and Andhra Pradesh**

(i) General preparedness:

a) Familiarization Exercise (FAMEx) conducted in 2018:

Sl.N.	State	Districts/Places	No of FAMEx
1.	Kerala	Kasargod, Kannur, Thrissur, Palakad	4
2.	Karnataka	Hassu, Tumkuru	2
3.	Tamil Nadu	Ramnath, Pudukkotti, Nityapuram, Tiruvallur, Nagapattinam, Cuddalore, Salem, Dharmapuri	8
4.	Andhra Pradesh	Anantapur, Kadappa, Nellore, East Godavari, West Godavari	5

During the Famex, NDRF teams stayed in these districts for a period of two weeks and conducted various community awareness programmes and training for the preparedness of stake holders as well as community.

b) Community Awareness Programme (CAP) conducted in 2018:

Sl.No.	State	No of Programmes	No of Beneficiaries
1.	Kerala	14	1935
2.	Karnataka	12	2672
3.	Tamil Nadu	25	11665
4.	Andhra Pradesh	42	8328

c) School Safety Programme (SSP) conducted in 2018:

Sl.No.	State	No of Programmes	No of Beneficiaries
1.	Kerala	2	573
2.	Karnataka	5	1845
3.	Tamil Nadu	11	4603
4.	Andhra Pradesh	2	511

d) Mock exercise conducted in 2018:

Sl.No.	State	No of Mock Exercise	No of Beneficiaries
1.	Kerala	5	801
2.	Karnataka	4	1191
3.	Tamil Nadu	12	3794
4.	Andhra Pradesh	21	25015

e) DM division MHA organized a conference of relief commissioners/secretaries (DM), department of Disaster Management on 18<sup>th</sup> May 2018 in which relief commissioners/ representative of the states participated in the conference to review the status of preparation for the south west monsoon 2018.

f) In addition, NDRF also conducted annual conference on capacity building of SDRF on 25<sup>th</sup> June 2018 in which the dignitaries and delegates of various states/UTs participated in the conference to streamline the efforts and achieve standardization in protocols, preparedness process, training and response.

(ii) Deployment/Achievement of NDRF in 2018:

KERALA :

Teams deployed	No. of Persons rescued	No. of Persons Evacuated	Dead Bodies Retrieved	Live Stock
77	537	24940	22	131

Brief of some Major operations in 2018:

Floods:

(a) First phase : ( 14.06.2018 to 19.06.2018 )

During this period, in view of heavy rainfalls, 05 teams were deployed Kerala. During the deployment, NDRF teams rescued 02 persons, evacuated 355 persons, retrieved 12 dead bodies and rescued 12 livestock. In addition to rescue and response operations, NDRF also organized medical camps and provided medical assistance to needy persons.

(b) Second phase: ( 08.08.2018 to 20.08.2018 )

NDRF deployed 58 teams to provide the immediate response in flood affected areas of Kerala i.e Thrissur, Ernakulum , Alappuzha , Wayanad, Kozhikode, Idukki , Pathanamthitta, Mallapuram, Kottayam, Trivandrum . Out of 58 teams, 52 teams were airlifted from other NDRF locations to Kerala. During the deployment, NDRF teams rescued 535 persons, evacuated 24690 persons, retrieved 10 dead bodies and rescued 119 livestock. In addition to rescue and response operations, NDRF also organized medical camps and provided medical assistance to 6821 needy persons.

(c) Landslide: NDRF carried out search operations at Kattipare Karinchalamala near Thamarassary in Calicut district of Kerala where many persons got missing in the landslide triggered by torrential rains. NDRF team retrieved 10 dead bodies.

(d) Cyclone 'Gaja': 02 teams deployed at Sabarimala were put on high alert for Cyclone 'Gaja' w.e.f. 11.11.2018 to 29.11.2018.

(e) Cyclone "OCKHI": 04 NDRF teams deployed at Thrissur and Sabrimala for emergency response were put on high alert for Cyclone "Ockhi" w.e.f. 01.12.2017 to 04.12.2017.

**KARNATAKA :**

Teams deployed	No. of Persons rescued	No. of Persons Evacuated	Dead Bodies Retrieved
37	45	465	12

Brief of some Major operations in 2018:

(a) Landslide: 03 NDRF teams carried out rescue operations at village Joduopala, Tehsil-Medikeri, Kodugu in connection with landslide due to heavy rainfall, rescued 40 persons & evacuated 465 persons and retrieved 05 dead bodies. NDRF teams also provided medical assistance to 419 persons.

**TAMIL NADU :**

Teams deployed	No. of Persons rescued	No. of Persons Evacuated	Dead Bodies Retrieved
19	0	0	6

Brief of some Major operations in 2018:

(a) Cyclone 'GAJA': 09 teams were deployed at Chennai, Nagappattinam, Ramanathapuram, Cuddalore & Chidambaram w.e.f. 11.11.2018 to 29.11.2018. During the deployment teams conducted operation and removed 1850 trees, 172 Electric Poles and cleared 215.5 Km of road.

(b) Cyclone 'OCKHI': 04 NDRF teams deployed at Kanyakumari, Cuddlore and Chennai for emergency response and removed 751 Nos fallen trees and cleared 97 KM road.

**ANDHRA PRADESH :**

Teams deployed	No. of Persons rescued	No. of Persons Evacuated	Dead Bodies Retrieved
22	610	336	51

Brief of some Major operations in 2018:

(a) Flood :NDRF teams conducted search and rescue operations at West Godavari & East Godavari and rescued over 610 persons including children & elderly and evacuated 306 persons to safer place.

(b) Cyclone “TITLI”: 07 teams were prepositioned on 10.10.2018 in Srikakulam, Vishakhapatnam and Vijayanagaram Districts. During the deployment teams conducted operation and rescued 02 persons alive, evacuated 130 persons, removed 1043 Trees, 145 Electric Poles, Transformer-03, BSNL Tower-01, cleared 277 Kms of road.

(c) Cyclone “PHETHAI”: 11 teams of NDRF deployed in Distt.-East Godavari,West Godavari and Vishakhapatnam w.e.f. 15.12.2018 to 18.12.2018.

(d) Boat Capsize: 02 NDRF teams conducted rescue operation at Vill- Manturu, Mandal-Devipatnam, Distt- East Godavari (Andhra Pradesh) in connection with a boat capsized in Godavari river and retrieved 19 dead bodies.

(iii) Relief distribution

(a) During the Kerala floods 2018 NDRF sent NER stores a comprises 309 Inflatable lighting Systems, 450 Lifebuoys, 3971 Life Jackets and 1580 Gum Boots to assist the Kerala Govt.

(b) In addition NDRF teams also assisted State Governments of Kerala, Karnataka, Tamil Nadu and Andhra Pradesh in distribution of relief materials (food packets, water bottles etc.) during the floods.

(c) NDRF Activities/operations in the state of Kerala, Karnataka, Tamil Nadu and Andhra Pradesh since 2006 to till date:

i. Familiarization Exercise (Famex) since 2006 to till date:

SI No.	State	Total No of Famex
1.	Kerala	79
2.	Karnataka	66
3.	Tamil Nadu	91
4.	Andhra Pradesh	52

ii. Community Awareness Programme (CAP) since 2006 to till date:

<b>SI No.</b>	<b>State</b>	<b>Total No of Programmes</b>	<b>Total No of Beneficiaries</b>
1.	Kerala	132	155281
2.	Karnataka	73	144940
3.	Tamil Nadu	219	192495
4.	Andhra Pradesh	226	199821

iii. School Safety Programme (SSP) since 2006 to till date:

<b>SI No.</b>	<b>State</b>	<b>Total No of Programmes</b>	<b>Total No of Beneficiaries</b>
1.	Kerala	38	13667
2.	Karnataka	19	7310
3.	Tamil Nadu	110	46377
4.	Andhra Pradesh	24	7697

vi. Mock exercise conducted since 2006 to till date:

<b>SI.No.</b>	<b>State</b>	<b>No of Mock Exercise</b>	<b>No of Beneficiaries</b>
1.	Kerala	43	18805
2.	Karnataka	42	15288
3.	Tamil Nadu	94	31484
4.	Andhra Pradesh	54	42526

- v. Operational details of NDRF in Kerala, Karnataka, Tamil Nadu and Andhra Pradesh since 2006 to till date:

<b>State</b>	<b>No. of Persons rescue/Evacuation</b>	<b>Dead Bodies retrieved</b>
Kerala	26794	38
Karnataka	809	60
Tamil Nadu	39386	115
Andhra Pradesh	66053	132

- (d) Summary of over all activities/achievements of NDRF since 2006 to till date (Covering all States/UTs and International operations):

Human lives rescued	<b>1,15,735</b>
Human lives evacuated	<b>5,81,885</b>
Dead Bodies retrieved	<b>3,589</b>
Live-Stock evacuated	<b>2,360</b>
Total No. of Operations conducted	<b>2,404</b>
Total No. of FAMEx conducted	<b>1,765</b>
Total No. of Community Awareness Programmes (CAPs) conducted	<b>5,791</b>
Total number of beneficiaries by CAPs	<b>53,09,433</b>
Total No. School Safety Programmes (SSPs) conducted	<b>1,809</b>
Total number of beneficiaries by SSPs	<b>7,60,980</b>
Total number of Mock Exercise conducted/participated	<b>2,035</b>

Total number of beneficiaries by Mock Exercises	<b>9,12,438</b>
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**E. Assistance provided by National Disaster Response Force & State Disaster Response Force**

Sl. No.	Items	NORMS OF ASSISTANCE
1.	Gratuitous Relief	
	a) Ex-Gratia payment to families of deceased persons.	Rs.4.00 lakh per deceased person including those involved in relief operations or associated in preparedness activities, subject to certification regarding cause of death from appropriate authority.
	b) Ex-Gratia payment for loss of a limb or eye(s).	Rs. 59100/- per person, when the disability is between 40% and 60%.  Rs. 2.00 lakh per person, when the disability is more than 60%.  Subject to certification by a doctor from a hospital or dispensary of Government, regarding extent and cause of disability.
	c) Grievous injury requiring hospitalization	Rs. 12,700/- per person requiring hospitalization for more than a week.  Rs. 4,300/- per person requiring hospitalization for less than a week.
	d) Clothing and utensils/ house-hold goods for families whose houses have been washed away/ fully damaged/severely inundated for more than two days due to a natural calamity.	Rs.1,800/- per family, for loss of clothing.  Rs.2,000/- per family, for loss of utensils/ household goods.
	e) Gratuitous relief for families whose livelihood is seriously affected.	Rs. 60/- per adult and Rs. 45/- per child, not housed in relief camps. State Govt. will certify that identified beneficiaries are not housed in relief camps. Further State Government will provide the basis and process for arriving at such beneficiaries district-wise.  Period for providing gratuitous relief will be as per assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period of assistance will upto to 30 days, which may be extended upto 60 days in the first

		instance, if required, and subsequently upto 90 days in case of drought/ pest attack. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation for the year.
2.	<b>SEARCH &amp; RESCUE OPERATIONS</b>	
	(a) Cost of search and rescue measures/ evacuation of people affected/ likely to be affected	As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF). - By the time the Central Team visits the affected area, these activities are already over. Therefore, the State Level Committee and the Central Team can recommend actual/ near-actual costs.
	(b) Hiring of boats for carrying immediate relief and saving lives.	As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF).  The quantum of assistance will be limited to the actual expenditure incurred on hiring boats and essential equipment required for rescuing stranded people and thereby saving human lives during a notified natural calamity.
3	<b>RELIEF MEASURES</b>	
	a) Provision for temporary accommodation, food, clothing, medical care, etc. for people affected/ evacuated and sheltered in relief camps.	As per assessment of need by SEC and recommendation of the Central Team (in case of NDRF), for a period up to 30 days. The SEC would need to specify the number of camps, their duration and the number of persons in camps. In case of continuation of a calamity like drought, or widespread devastation caused by earthquake or flood etc., this period may be extended to 60 days, and upto 90 days in cases of severe drought. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation for the year. Medical care may be provided from National Rural Health Mission (NRHM).

	b) Air dropping of essential supplies	As per actual, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF). - The quantum of assistance will be limited to actual amount raised in the bills by the Ministry of Defence for airdropping of essential supplies and rescue operations only.
	c) Provision of emergency supply of drinking water in rural areas and urban areas	As per actual cost, based on assessment of need by SEC and recommended by the Central Team (in case of NDRF), up to 30 days and may be extended upto 90 days in case of drought. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation for the year.
4.	<b>CLEARANCE OF AFFECTED AREAS</b>	
	a) Clearance of debris in public areas.	As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central team for assistance to be provided under NDRF.
	b) Draining off flood water in affected areas	As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central team (in case of NDRF).
	c) Disposal of dead bodies/ Carcasses	As per actuals, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF).
5	<b>AGRICULTURE</b>	
(i)	Assistance farmers having landholding upto 2 ha	
A.	Assistance for land and other loss	
	a). De-silting of agricultural land (where thickness of sand/ silt deposit is more than 3", to be certified by the competent authority of the State Government.)	Rs. 12,200/- per hectare for each item.  (Subject to the condition that no other assistance/ subsidy has been availed of by/ is eligible to the beneficiary under any other Government Scheme)
	b) Removal of debris on agricultural land in hilly areas	
	c) De-silting/ Restoration/ Repair of fish farms	

	d) Loss of substantial portion of land caused by landslide, avalanche, change of course of rivers.	Rs. 37,500/- per hectare to only those small and marginal farmers whose ownership of the land is legitimate as per the revenue records.
B.	Input subsidy (where crop loss is 33% and above)	
	a) For agriculture crops, horticulture crops and annual plantation crops	Rs. 6,800/- per ha. in rainfed areas and restricted to sown areas.  Rs. 13,500/- per ha. in assured irrigated areas, subject to minimum assistance not less than Rs.1000 and restricted to sown areas.
	b) Perennial crops	Rs. 18,000/- ha. for all types of perennial crops subject to minimum assistance not less than Rs. 2000/- and restricted to sown areas.
	c) Sericulture	Rs. 4,800/- per ha. for Eri, Mulberry, Tussar Rs. 6,000/- per ha. for Muga.
(ii)	Input subsidy to farmers having more than 2 Ha of landholding	Rs. 6,800/- per hectare in rainfed areas and restricted to sown areas. Rs.13,500/- per hectare for areas under assured irrigation and restricted to sown areas. Rs. 18,000/- per hectare for all types of perennial crops and restricted to sown areas.  Assistance may be provided where crop loss is 33% and above, subject to a ceiling of 2 ha. per farmer.
6.	ANIMAL HUSBANDRY - ASSISTANCE TO SMALL AND MARGINAL FARMERS	
	i) Replacement of milch animals, draught animals or animals used for haulage.	Milch animals -  Rs. 30,000/- Buffalo/ cow/ camel/ yak/ Mithun etc. Rs. 3,000/- Sheep/ Goat/ Pig  Draught animals -  Rs. 25000/- Camel/ horse/ bullock, etc. Rs. 16,000/- Calf/ Donkey/ Pony/ Mule  - The assistance may be restricted for the actual loss of economically

		<p>productive animals and will be subject to a ceiling of 3 large milch animals or 30 small milch animals or 3 large draught animals or 6 small draught animals per household irrespective of whether a household has lost a larger number of animals. (The loss is to be certified by the Competent Authority designated by the State Government).</p> <p>Poultry:-  Poultry @ 50/- per bird subject to a ceiling of assistance of Rs 5000/- per beneficiary household. The death of the poultry birds should be on account of a natural calamity.  Note: - Relief under these norms is not eligible if the assistance is available from any other Government Scheme, e.g. loss of birds due to Avian Influenza or any other diseases for which the Department of Animal Husbandry has a separate scheme for compensating the poultry owners.</p>
	<p>ii) Provision of fodder / feed concentrate including water supply and medicines in cattle camps.</p>	<p>Large animals- Rs. 70/- per day.  Small animals- Rs. 35/- per day.  Period for providing relief will be as per assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period for assistance will be upto 30 days, which may be extended upto 60 days in the first instance and in case of severe drought up to 90 days. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit, subject to the stipulation that expenditure on this account should not exceed 25% of SDRF allocation for the year. Based on assessment of need by SEC and recommendation of the Central Team, (in case of NDRF) consistent with estimates of cattle as per Livestock Census and subject to the certificate by the competent authority about the requirement of medicine and vaccine being calamity related.</p>
	<p>iii) Transport of fodder to cattle outside cattle camps</p>	<p>As per actual cost of transport, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF) consistent with estimates of cattle as per Livestock Census.</p>

7	FISHERY	
	<p>i) Assistance to Fisherman for repair / replacement of boats, nets – damaged or lost</p> <ul style="list-style-type: none"> <li>-- Boat</li> <li>-- Dugout-Canoe</li> <li>-- Catamaran</li> <li>-- net</li> </ul> <p>(This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/ assistance, for the instant calamity, under any other Government Scheme.)</p>	<p>Rs. 4,100/- for repair of partially damaged boats only</p> <p>Rs. 2,100/- for repair of partially damaged net</p> <p>Rs. 9,600/- for replacement of fully damaged boats</p> <p>Rs. 2,600/- for replacement of fully damaged net</p>
	ii) Input subsidy for fish seed farm	<p>Rs. 8,200 per hectare.</p> <p>(This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/ assistance, for the instant calamity, under any other Government Scheme, except the one time subsidy provided under the Scheme of Department of Animal; Husbandry, Dairying and Fisheries, Ministry of Agriculture.)</p>
8	HANDICRAFTS/HANDLOOM – ASSISTANCE TO ARTISANS	
	i) For replacement of damaged tools/ equipment	<p>Rs. 4,100 per artisan for equipments.</p> <p>- Subject to certification by the competent authority designated by the Government about damage and its replacement.</p>
	ii) For loss of raw material/ goods in process/ finished goods	<p>Rs. 4,100 per artisan for raw material.</p> <p>- Subject to certification by Competent Authority designated by the State Government about loss and its replacement.</p>
9	HOUSING	
	a) Fully damaged/ destroyed houses	
	i) Pucca house	Rs. 95,100/- per house, in plain areas.
	ii) Kutcha House	
	b) Severely damaged houses	Rs. 1,01,900/- per house, in hilly areas including Integrated Action Plan (IAP) districts.
	i) Pucca House	
	ii) Kutcha House	
	(c) Partially Damaged Houses –	
	(i) Pucca (other than huts) where the damage is at least 15 %	Rs. 5,200/- per house

	(ii) Kutcha (other than huts) where the damage is at least 15 %	Rs. 3,200/- per house
	d) Damaged / destroyed huts:	Rs. 4,100/- per hut,  (Hut means temporary, make shift unit, inferior to Kutcha house, made of thatch, mud, plastic sheets etc. traditionally recognized as hut by the State/ District authorities.)  Note: -The damaged house should be an authorized construction duly certified by the Competent Authority of the State Government.
	e) Cattle shed attached with house	Rs. 2,100/- per shed.
10	<b>INFRASTRUCTURE</b>	
	<p>Repair/restoration (of immediate nature) of damaged infrastructure:</p> <p>(1) Roads &amp; bridges (2) Drinking Water Supply Works, (3) Irrigation, (4) Power (only limited to immediate restoration of electricity supply in the affected areas), (5) Schools, (6) Primary Health Centres, (7) Community assets owned by Panchayat.</p> <p>Sectors such as Telecommunication and Power (except immediate restoration of power supply), which generate their own revenues, and also undertake immediate repair/ restoration works from their own funds/ resources, are excluded.</p>	<p>Activities of immediate nature :</p> <p>Illustrative lists of activities which may be considered as works of an immediate nature are given in the enclosed Appendix.</p> <p>Assessment of requirements :</p> <p>Based on assessment of need, as per States' costs/ rates/ schedules for repair, by SEC and recommendation of the Central Team (in case of NDRF).</p> <ul style="list-style-type: none"> <li>- As regards repair of roads, due consideration shall be given to Norms for Maintenance of Roads in India, 2001, as amended from time to time, for repairs of roads affected by heavy rains/floods, cyclone, landslide, sand dunes, etc. to restore traffic. For reference these norms are <ul style="list-style-type: none"> <li>• Normal and Urban areas: upto 15% of the total of Ordinary Repair (OR) and Periodical Repair (PR).</li> <li>• Hills: upto 20% of total of OR and PR.</li> </ul> </li> <li>- In case of repair of roads, assistance will be given based on the notified Ordinary Repair (OR) and Periodical Renewal (PR) of the State. In case OR &amp; PR rate is not available, then</li> </ul>

		<p>assistance will be provided @ Rs 1 lakh/km for State Highway and Major District Road and @ Rs. 0.60 lakh/km for rural roads. The condition of “State shall first use its provision under the budget for regular maintenance and repair” will no longer be required, in view of the difficulties in monitoring such stipulation, though it is a desirable goal for all the States.</p> <ul style="list-style-type: none"> <li>- In case of repairs of Bridges and Irrigation works, assistance will be given as per the schedule of rates notified by the concerned States. Assistance for micro irrigation scheme will be provided @ Rs. 1.5 lakh per damaged scheme. Assistance for restoration of damaged medium and large irrigation projects will also be given for the embankment portions, on par with the case of similar rural roads, subject to the stipulation that no duplication would be done with any ongoing schemes.</li> <li>- Regarding repairs of damaged drinking water schemes, the eligible damaged drinking water structures will be eligible for assistance @ Rs. 1.5 lakh/ damaged structure.</li> <li>- Regarding repair of damaged primary and secondary schools, primary health centres, Anganwadi and community assets owned by the Panchayats, assistance will be given @ Rs 2 lakh/damaged structure.</li> <li>- Regarding repair of damaged power sector, assistance will be given to damaged conductors, poles and transformers upto the level of 11 kV. The rate of assistance will be @ Rs. 4000/poles, Rs 0.50 lakh per km of damaged conductor and Rs. 1.00 lakh per damaged distribution transformer.</li> </ul>
11	Procurement of essential search, rescue and evacuation equipments including communication equipments, etc. for response to disaster.	<ul style="list-style-type: none"> <li>- Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC).</li> <li>- The total expenditure on this item should not exceed 10 % of the annual allocation of the SDRF.</li> </ul>

12	Capacity Building	<ul style="list-style-type: none"> <li>- Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC).</li> <li>- The total expenditure on this item should not exceed 5% of the annual allocation of the SDRF.</li> </ul>
13.	State specific disasters within the local context in the State, which are not included in the notified list of disasters eligible for assistance from SDRF/ NDRF, can be met from SDRF within the limit of 10% of the annual funds allocation of the SDRF.	<ul style="list-style-type: none"> <li>- Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC).</li> <li>- The norm for various items will be the same as applicable to other notified natural disasters, as listed above. or</li> <li>- In these cases, the scale of relief assistance against each item for 'local disaster' should not exceed the norms of SDRF.</li> <li>- The flexibility is to be applicable only after the State has formally listed the disasters for inclusion and notified transparent norms and guidelines with a clear procedure for identification of the beneficiaries for disaster relief for such local disasters', with the approval of SEC.</li> </ul>

Note:- (i) The State Governments are to take utmost care and ensure that all individual beneficiary-oriented assistance is necessary/ mandatory disbursed through the bank account (viz; Jan Dhan Yojana etc.) of the beneficiary.

(ii) The scale of relief assistance against each items for all disasters including 'local disaster' should not exceed the norms of SDRF/ NDRF. Any amount spent by the State for such disasters over and above the ceiling would be borne out of the resources of the State Government and not from SDRF.

## **F Financial assistance to Andhra Pradesh, Karnataka, Kerala & Tamil Nadu**

(i) Andhra Pradesh: In order to support the affected people of the State Government of Andhra Pradesh, the Government of India has released both the installments of Central Share of SDRF amounting to Rs.458.10 crore and Rs. 539.52 crore from NDRF to Government of Andhra Pradesh for management of relief as approved by the High Level Committee (HLC), in its meeting held on 17.12.2018 subject to adjustment of 50% of balance available in the SDRF account of the State for the instant calamities and Air bills, on actual basis, based on the bills received from IAF. An amount of Rs. 1048.52 crore is available in SDRF account for management of relief necessitated by natural disasters during 2018-19 by taking into account the opening balance and releases of both the installments of Central & State share of Rs.509 crore.

(ii) Karnataka: In order to support the affected people of the State Government of Karnataka, the Government of India has released 1st installment of Central Share of SDRF amounting to Rs. 144.00 crore and Rs. 525.22 crore from NDRF to Government of Karnataka for management of relief as approved by the High Level Committee (HLC) in its meeting held on 19.11.2018 subject to adjustment of 50% of balance available in the SDRF account of the State for the instant calamities and Air bills, on actual basis, based on the bills received from IAF. An amount of Rs. 727.20 crore is available in SDRF account for management of relief necessitated by natural disasters during 2018-19 by taking into account the opening balance and releases of 1st installment of Central & State share of Rs. 160.00 crore.

(iii) Kerala: In order to support the affected people of the State Government of Kerala, the Government of India has released both the installments of Central Share of SDRF amounting to Rs. 192.60 crore and Rs. 2904.85 crore from NDRF to Government of Kerala for management of relief in respect of floods/ landslides of 2018 as approved by the High Level Committee (HLC), in its meeting held on 6.12.2018 subject to adjustment of 50% of balance available in the SDRF account of the State for the instant calamities and Air bills, on actual basis, based on the bills received from IAF. An amount of Rs. 3405.93 crore is available in SDRF account for management of relief necessitated by natural disasters during 2018-19 by taking into account the opening balance and releases of both the installments of Central & State share of Rs.214.00 crore.

(iv) Tamil Nadu: In order to support the affected people of the State, the Central Government had released assistance of Rs. 353.70 crore from SDRF as an interim relief on 03-12-2018. By taking into account the opening balance of Rs. 491.62 crore and releases of both the installments of central and State share of Rs.786 crore, an amount of Rs.1277.62 crore is available in SDRF account for management of relief. After the event of cyclone Gaja, an Inter-Ministerial Central Team (IMCT) was deputed to Tamil Nadu and Puducherry, which conducted a visit from 24th–27th November, 2018. IMCT has sought certain clarifications, which were furnished by the State on 13.12.18 and 15.12.18. The report of the IMCT, on finalization will be placed before the Sub-Committee of the National Executive Committee (NEC) and High Level Committee (HLC) for consideration in its meeting to be held shortly.

As per the recommendation of Ministry of Home Affairs (MHA), first and second installments of Center's share of SDRF for the current year ( 2018-19) has been released to the states of Andhra Pradesh, Kerala and Tamilnadu. In case of Karnataka only first installment has been released so far. Details are as under:

(Rs. In Crore)

State	Allocation of Center's share for 2018-19	Amount of 1 <sup>st</sup> installment released	Amount of 2 <sup>nd</sup> installment released
Andhra Pradesh	458.10	229.05	229.05
Karnataka	288.00	144.00	-
Kerala	192.60	96.30	96.30
Tamilnadu	707.40	353.70	353.70

Central assistance from NDRF has been released to these States in the wake of recent floods/ cyclone based on the approval of High Level Committee (HLC) and recommendation of MHA as under:

(Rs. In crore)

States	Central assistance released from NDRF
Andhra Pradesh	539.52
Karnataka	525.22
Kerala	2904.85
Tamilnadu	-

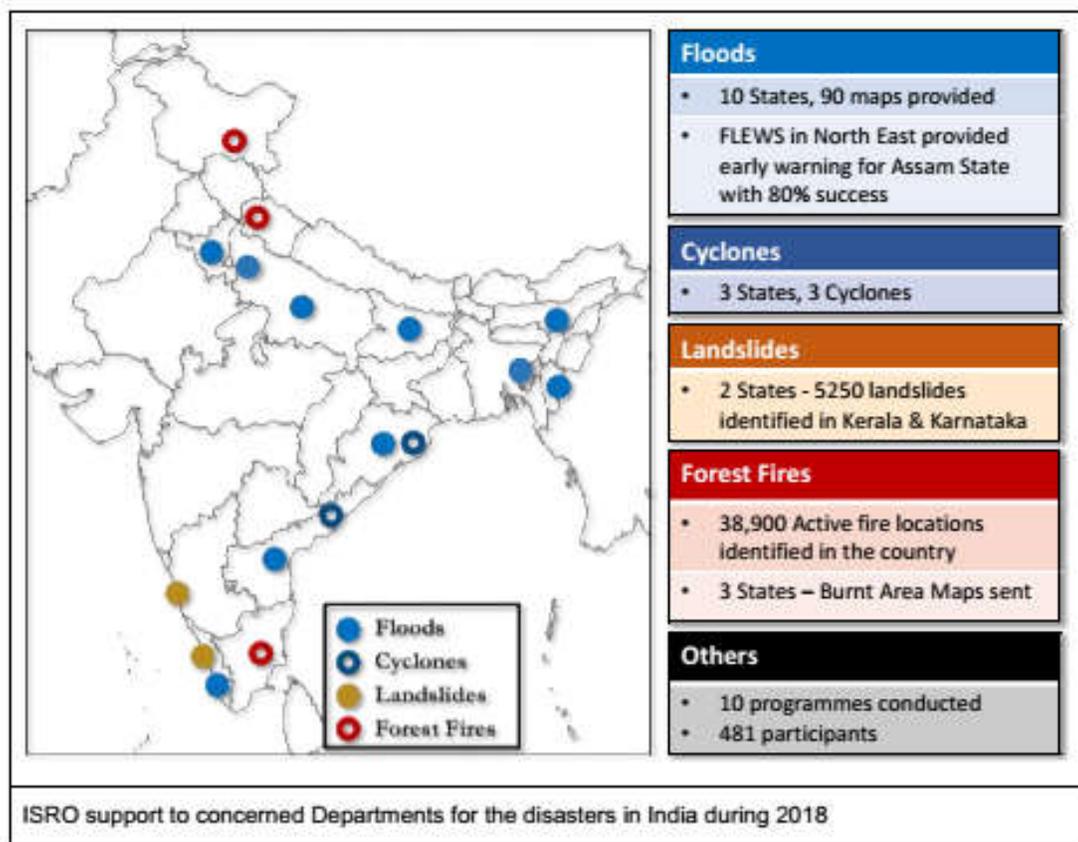
In the wake of Gaza cyclone in Tamilnadu, the Inter-Ministerial Central Team (IMCT) has submitted its report to MHA, Which is scheduled to be considered by Sub-Committee of National Executive Committee (SC-NEC) on 26<sup>th</sup> Dec 2018. Release of Central assistance to the State would be processed after recommendation of SC-NEC and approval by HLC.

## Chapter - IV

### Role of Indian Space Research Organisation (ISRO) in disaster forecasting / management

#### (i) Background

The Disaster Management Support (DMS) Programme of ISRO has been providing space based information support under major disasters, affecting our nation. While communication satellites help in providing connectivity, the earth observation satellites provide images on disaster events to help the respective State Govt and the Center in decision-making. During 2018, the disasters faced by the country were floods (in 10 States), landslides (in Karnataka & Kerala States), forest fires (in Uttarakhand, J&K and Tamilnadu) and 3 cyclones over Odisha, Andhra Pradesh and Tamilnadu States. During 2018, ISRO mapped floods in about 109 districts of 10 states and 90 maps were disseminated to the concerned departments.



Indian Remote Sensing satellites were extensively used all the major disasters in the country. Satellites, such as, RESOURCESAT 2 / 2A, CARTOSAT, OCEANSAT, INSAT 3D/ 3DR etc. India is actively represented in UN International Charter for Major Disasters. ISRO is the Board member and actively participates on behalf of Government of India. On the occasion of major disasters, India is able to freely obtain satellite data from the charter. During past year, we could also use data from other satellites under the UN International Charter Framework, particularly the Kerala floods, that helped in providing vital information to the Govt. of Kerala during floods. ISRO kept a constant watch on the flood situation in the country during the monsoon season 2018. Floods occurred in Kerala during July & August 2018 due to heavy rainfall and in Andhra Pradesh due to cyclones in October & December 2018. The inputs generated using satellite data were disseminated to the following Central Ministries / Departments depending on the type of disaster.

S No	Central Ministry / Department
1	Ministry of Home Affairs
2	National Disaster Management Authority
3	National Disaster Response Force
4	Central Water Commission
6	India Meteorological Department
7	Geological Survey of India
8	Forest Survey of India

(ii) Kerala Floods

Kerala received first spell of heavy rainfall during second and third week of July 2018 causing floods in many parts of Kerala during July. The second spell of heavy rains occurred in August (1st Aug to 19th Aug Kerala had received 758 mm rainfall; source: IMD) led to devastating floods due to initial conditions and causing huge damage. Decision Support Centre at NRSC, ISRO monitored the situation continuously from July using satellite data inputs obtained from Indian and foreign satellite data and provided spatial flood maps and information in near realtime. Table-1 shows the list of satellite data Ten districts were flood affected namely Alappuzha, Kottayam, Trishur, Ernakulam, Pattanamtitta, Kollam, Malappuram, Palakkad, Thiruvananthapuram and Kozhikode. The worst affected districts are Alappuzha, Kottayam and Trishshur. 21

flood maps showing the spatial flood extent along with the flood reports were disseminated to the Kerala disaster management authority and Kerala State Remote Sensing Centre besides nodal ministries. ISRO acquired satellite data over flood affected areas and prepared flood maps in near real time mode and disseminated to the concerned departments. Also, all the processed data were published on Bhuvan Geoportal for the State Government to use in near real-time basis.

Table-1: List of satellite data analysed

S No		Event	Date	Satellite/Sensor	Districts affected
2	Kerala	Floods	16-07-18	Sentinel-1 SAR	Alleppey,Ernakulam,Kottayam,Malappuram,Pattanamtitta,Quilon,Trichur
			21-07-18	Radarsat-2 SAR	Alappuzha, Kottayam, Trishshur
			9-08-18	Sentinel-1 SAR	Alappuzha, Trishshur, Kottayam, Pattanamtitta
			11-08-18	Radarsat-2 SAR	Alappuzha, Trishshur, Kottayam, Pattanamtitta, Malappuram, Kollam
			14-08-18	Radarsat-2 SAR	Alappuzha, Trishshur, Kottayam, Pattanamtitta, Kollam
			14-08-18	Radarsat-2 and ALOS-2 PALSAR-2	Alappuzha, Trishshur, Kottayam, Pattanamtitta, Kollam, Malappuram,Palakkad
			17-08-18	ALOS-2 PALSAR-2	Alappuzha, Kottayam, Ernakulam, Pattanamtitta, Kollam, Trishshur
			18-08-18	TERRASAR-X	Alappuzha, Ernakulam, Kottayam
			18-08-18	Radarsat-2 SAR	Alappuzha, Kottayam, Ernakulam, Pattanamtitta, Trishshur
			21-08-18	Radarsat-2 SAR	Alappuzha, Kottayam, Pattanamtitta, Ernakulam,, Kollam
			21-08-18 (18:30 Hrs)	Radarsat-2 SAR & Sentinel-1A SAR	Alappuzha, Kottayam, Trishshur Pattanamtitta, Mallapuram, Thiruvananthapuram,Ernakulam, Kollam
			21-08-18 (19:30 Hrs)	TERRASAR-X	Alappuzha, Kottayam, Kollam, Pattanamtitta, , Ernakulam
			24-08-18	Radarsat-2 SAR	Alappuzha, Kottayam, Trishshur, Mallapuram, Pattanamtitta, , Ernakulam, Palakkad,

			27-08-18	Sentinel-1B SAR	Alappuzha, Kottayam, Trishshur, Kollam, Pattanamtitta, Mallapuram, Palakkad, Thiruvananthapuram
			28-08-18	Radarsat-2 SAR	Alappuzha, Kottayam, Trishshur, Pattanamtitta, Mallapuram

The inputs generated using satellite data were disseminated to the following State Ministries / Departments.

S No	Ministry / Department
1	Kerala State Disaster Management Authority
2	Kerala State Remote Sensing Application Centre

Government of Kerala was able to effectively utilise these maps in handling the relief and rehabilitation activities, through the Kerala State Disaster Management Authority.

(a) **NavIC Devices:** In the aftermath of Ockhi cyclone, Kerala showed keen interest in using NavIC (Navigation using Indian Satellite Constellation) based location information, similar to using GPS. Recently ISRO has realised a constellation of 8 IRNSS satellites (Indian Regional Navigation Satellite System) that can be used by a device on the ground to get location coordinates. ISRO quickly realised NavIC devices, with the help of Indian Industry, and demonstrated the efficacy of using such devices by the fishermen community. The Device, with the battery bank, can work through a simple hand-held Mobile to provide vital information for the fishermen while they are in deep sea. The Mobile App that works with the NavIC device, can provide information on potential fishing zones, alert messages on impending disasters like cyclone or Tsunami, voice alert on the maritime zone crossing etc. The NavIC based services can function up to about 1500 km from the Indian Region, hence the fishermen who are in the deep see get the benefit of receiving various important information to help them to take decision, while in the deep sea. Using such devices, a few field trials were done with active participation of fishermen community and the State Government, which proved to be successful. Based on the success, it was decided to develop more such devices to provide to the fishermen community. During December 2018, CM, Kerala distributed about 250 such devices to the fishermen community. ISRO continues to improve upon the devices and its functionality to enable better solutions for the fishermen in sea. A focussed one-day workshop was held with active participation of State and the

fishermen community. The workshop focussed on how to use the devices at the State level with the participation of various Fishermen from different parts of the State. The workshop not only provided details on the use of the devices and the mobile App, but also held practical demonstrations for the fishermen to use the devices in the sea.

(iii) Andhra Pradesh Andhra Pradesh was hit by two cyclones namely Titli and Phethaii in October and December 2018 respectively.

Cyclone 'Titli' made landfall near Palasa, Andhra Pradesh on October 11, 2018 between 0430 to 0530 hrs IST. Incessant rains lashed Andhra Pradesh under the influence of Cyclone and northern part of Andhra Pradesh was severely affected. For cyclone 'Titli', ISRO analysed three satellite data sets and three flood maps showing the spatial flood extent along with the flood reports were disseminated to the AP Relief Commissioner besides nodal ministries in near real time. It was observed that Srikakulam and Vizianagaram districts were affected by flood. Table- 1 shows the list of satellite data.

Cyclone 'Phethaii' made landfall near Katrenikona, in East Godavari district, Andhra Pradesh on December 17, 2018 afternoon. Incessant rains lashed Andhra Pradesh under the influence of Cyclone and East Godavari and West Godavari districts were reported to be flooded. For cyclone ' Phethai ', DSC analysed the Resourcesat - 2A, AWiFS satellite image of December 19, 2018 and disseminated flood inundation information in near real time to the AP Relief Commissioner besides nodal ministries. It was observed that East Godavari and West Godavari districts were affected by flood.

List of maps sent:

S No		Event	Date	Satellite/Sensor	Districts affected
1	Andhra Pradesh	Cyclone (Titli)	12-10-2018	Radarsat-2 SAR (0600 hours IST)	Srikakulam Vizianagaram
			13-10-2018	Resourcesat-2 AWiFS (1030 hours IST)	Srikakulam Vizianagaram
			13-10-2018	Radarsat-2 SAR (1800 hours IST)	Srikakulam
		Cyclone (Phethai)	19-12-2018	Resourcesat -2A , AWiFS (1030 hours IST)	East Godavari West Godavari

The inputs generated using satellite data were disseminated to the following State Ministries / Departments.

S No	Ministry / Department
1	Andhra Pradesh State Disaster Management Authority
2	Andhra Pradesh Space Application Centre

NavIC Devices : Similar to the NavIC based solutions provided to Kerala fishermen, a field trial was taken up with a few AP fishermen also. About 10 fishermen of AP State were provided with the device after a brief training on how to use the device. Based on the feedback from the fishermen we could take further course of action of providing more such device, based on the directions of Fisheries Depart of the State Government.

(iv) Karnataka

Heavy rains & Landslides were reported in Karnataka during August, 2018. Accordingly, ISRO acquired satellite data over landslide affected areas and prepared landslide maps in a near real time mode and disseminated maps and information to the concerned departments. A total of about 900 landslides were mapped as part of the exercise.

List of maps sent

S No	Satellite Data	Remarks
August, 2018		
1	23-Aug-2018	1 Landslide Map
2	28-Aug-2018	1 Landslide Map
3	04-Sep-2018	1 Landslide Map
4	07-Sep-2018	1 Landslide Map
	Total	4 Landslide Maps

The inputs generated using satellite data were disseminated to the following State Ministries / Departments.

S No	Ministry / Department
1	Karnataka State Disaster Management Authority
2	Karnataka State Disaster Monitoring Centre

NavIC Devices : The State Fisheries department of Government of Karnataka has shown keen interest in using the NavIC based solutions for fishermen community. At the

same time, ISRO took the help of local college students and faculty to reach out to the fishermen in Malpe and Gangulli area, close to Udupi. Similar to the NavIC based solutions provided to Kerala fishermen, two field trials were conducted with active participation of both Malpe and Gangulli fishermen. A dedicated workshop was held with the fishermen to understand the issues faced at both the locations. About 12 devices were provided to the fishermen, after a brief training on how to use the device. Interesting feedbacks were obtained, which further resulted in improvements in the mobile App. With the improvements incorporated, the devices are being redeployed through these fishermen to further evaluate and provide inputs so that we can customise the tools for their advantages. The State Government has shown keen interest in providing these devices to the fishermen. Secretary and senior officials, Dept of fisheries, Govt. of Karnataka had detailed technical discussions on the subject and all necessary details are being provided to the Karnataka State for needful action.

(v). Tamilnadu

ISRO has been supporting Tamilnadu State Govt with regard to disaster support, particularly the floods that occurred during 2015 due to heavy rains and in 2016 due to cyclone Vardah. ISRO prepared EO based products on both the occasion and provided vital information for decision makers in Tamilnadu Govt.

Table-1: List of maps sent

S No	Satellite Data	Remarks
<b>November, 2015</b>		
1	11-Nov-2015	1 Flood Map
2	14-Nov-2015	1 Flood Map
3	17-Nov-2015	1 Flood Map
4	23-Nov-2015	1 Flood Map
<b>December, 2015</b>		
5	3-Dec-2015	1 Flood Map
6	4-Dec-2015	1 Flood Map
7	5-Dec-2015	1 Flood Map
8	7-Dec-2015	1 Flood Map
9	8-Dec-2015	1 Flood Map
	<b>Total</b>	<b>9 Flood Maps</b>

The inputs generated using satellite data were disseminated to the following State Ministries / Departments.

S No	Ministry / Department
1	Tamilnadu State Revenue Department
2	Chennai Water Works Department

During 2016, Vardah cyclone, about 3,600 damage locations were identified using high resolution satellite data and 1200 locations using mobile app. These were highly useful to the Government. The products were not only sent to the Tamilnadu, but was also published on near real-time basis on Bhuvan Geoportal for online use by Government and many other voluntary organisations who were helping the people and the Government in managing the disaster due to floods.

NavIC Devices : Similar to the other Governments, Tamilnadu has evinced keen interest to use NavIC based solutions for the fishermen community in Tamilnadu. Based on a series of interactions with the Tamilnadu authorities and Department of Fisheries, it was decided to provide NavIC devices to the Government. Tamilnadu Government requested for about 200 devices so that the same could distributed to a set of discrete cluster of fishermen community. Accordingly, 200 NavIC devices were delivered to Tamilnadu Government. Hon'ble Chief Minister, Govt of Tamilnadu distributed these units to fisherman on 17-Dec-2018. Soon, a one-day training was organised for the users, on the usage of these devices and the Mobile App. ISRO is closely monitoring for further feedbacks from these devices to ensure any hand-holding and further improvements that may be required, based on local requirements.

## **OBSERVATIONS/RECOMMENDATION**

**1. The Committee have taken this subject for detailed examination particularly in the context of the recent devastating cyclone/floods/landslides in Odisha, Andhra Pradesh, Tamil Nadu, Karnataka and Kerala and the financial constraints faced by the affected States in meeting their relief, rehabilitation and reconstruction expenditure. The Committee note that the country has become all the more vulnerable in recent years to floods, droughts, cyclones, earthquakes, landslides, avalanches etc. due to factors such as climate change, deforestation, encroachments etc. our country's geo-climatic conditions as well as its high degree of socio-economic vulnerability makes it one of the most disaster-prone countries in the world. Out of 36 States and Union Territories in the country, 27 of them are disaster-prone.**

**2. The chief legal framework for disaster management is provided by the Disaster Management Act 2005 and the institutional mechanism comprises of the National Disaster Management Authority, headed by the Prime Minister, State Disaster Management Authorities headed by the respective Chief Minister, the National Disaster Response Force (NDRF) and the District Disaster Management Authority headed by the District Collector.**

**3. The financial mechanism for immediate disaster relief is provided to the affected States from the State Disaster Response Fund (SDRF) and also the National Disaster Response Fund (NDRF) by way of additional financial assistance when in the event of a calamity of severe nature SDRF is insufficient to meet the relief requirement. The quantum of assistance from NDRF is subject to adjustment of 50% of the balance in SDRF as on 1st April of the current financial year. With the implementation of the GST regime, the Ministry of Finance has decided to implement the recommendation of the 14th Finance Commission in full, with effect from 1st April 2018, wherein all States will contribute 10% of the SDRF and the remaining 90% would be contributed by the Union Government during 2018-19 and 2019-20. In this regard, the 14th Finance Commission has adopted the practice of previous Commissions and used past experience on disaster relief for the period 2006-07 to 2012-13 to determine the SDRF corpus for each state and accordingly, recommended an amount of Rs 61,220 crore as**

aggregated corpus of SDRF for all States for the award period 2015-20. The Ministry of Finance, Department of Expenditure releases the Centre's share of SDRF to the state governments in two installments- in June and in November every year, upon recommendation of Ministry of Home Affairs. On the other hand, NDRF is a cess-based fund and the provision for this fund is made on the basis of collections in the form of National Calamity Contingency Duty (NCCD) imposed on specified goods under central excise and customs. The Committee, however, find that with the introduction of GST, the scope of coverage of NCCD is shrinking, thereby reducing the tax receipts on this account. The revenue collection in the form of NCCD has thus substantially reduced from Rs 5690 cr in 2015-16 to Rs 2500 cr in 2018-19, which has constrained the funding scope from NDRF. The Committee would expect the GST Council and the Ministry of Finance to take a view on augmenting this fund.

4. However, the Committee note that the Government of India has enhanced the allocation under SDRF from Rs 33,580 cr for the period 2010-15 to Rs 61,220 cr for the period 2015 to 2020. According to the submission made by the Ministry of Home Affairs, during FY 2018-19 an amount of Rs 11,542.50 cr. has been allocated as central share to all the states in their SDRF accounts. In addition, financial assistance from NDRF amounting to Rs 6921.49 cr. has also been released to 13 States affected by calamities of a severe nature during the current financial year. The Committee have also been informed that the Terms of Reference of the 15th Finance Commission *inter-alia* include reviewing the present arrangements regarding financing of disaster management initiatives with reference to the funds constituted under the Disaster Management Act, 2005.

5. With particular reference to the States of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Odisha, severely affected by the recent cyclone/floods, it has been submitted to the Committee that central assistance has been released amounting to Rs 458.10 cr (SDRF) and Rs 539.52 cr (NDRF) for Andhra Pradesh; Rs 288 cr (SDRF) and Rs 525.22 cr (NDRF) for Karnataka; Rs 192.60 cr (SDRF) and Rs 2904.85 cr (NDRF) for Kerala; Rs 707.40 cr (SDRF) and Rs 900.31 cr (NDRF) for Tamil Nadu; Rs 778.50 cr (SDRF) and Rs 341.72 cr (NDRF) for Odisha. However, the Committee note that these States have demanded more funds from the

central government due to a mis-match between their estimates and the availability of funds under SDRF, particularly for reconstruction/restoration works, which could suffer due to limited resources with the states.

6. Some chronically disaster-prone states such as Odisha have submitted to the Committee that major items of relief/reconstruction expenditure are not covered in the existing SDRF/NDRF assistance norms followed by the central government. According to them, due to inadequate assistance, systems quality, capacity and strength gets reduced, increasing their vulnerability to further damages. Keeping in view the considered submissions made by the affected states, the Committee would recommend that the rates and scale of assistance under SDRF/NDRF last fixed in the year 2015 should be suitably enhanced so that major heads of relief/restoration expenditure are covered like restoration of all government educational institutions, non-residential government buildings, all transmission power sub-stations/infrastructure, maintenance of multipurpose cyclone shelters repair/maintenance of emergency equipment, distribution of cattle fodder and other such expenditure. The Committee would also suggest that restoration work of damaged public infrastructure should be allowed from SDRF/NDRF on "actual cost basis" on the "principle of build-back-better" as per schedule of rates of state governments instead of the present approach of funding only the repair/restoration of immediate nature. Accordingly, norms may be relaxed for re-construction of permanent nature and in severe drought conditions, for expenditure on capital works like borewells, pump sets and in the case of cyclones, multi-hazard resistant housing etc.

7. In this context, the Committee would also recommend that the estimation of the requirement of funds for disaster relief and reconstruction should be normatively based on particular vulnerability of the state to disasters through scientifically validated hazard vulnerability risk profile of a state instead of past expenditure.

8. Keeping in view the suggestions made by the affected states , their fiscal constraints and the rigidity of the existing funds, the Committee are also inclined to recommend the operationalisation of the Separate Disaster Mitigation Fund for undertaking permanent mitigation measures in disaster-prone states in addition

to the existing financial assistance for immediate relief through SDRF/NDRF. The existing provision for this fund should therefore be notified and this should also be made State specific keeping in view the specific vulnerability of a State to a disaster. This will mark a paradigm shift from a relief centric approach to risk reduction through prevention and mitigation. The Committee believe that any investment on mitigation and prevention of disaster risk will go a long way in building the capacity for significantly reducing expenditure on relief and disaster response. Towards this end, the Committee desire that comprehensive insurance coverage should be provided to all the properties (including public properties) located in the disaster prone area / zone and all insurance claims including crop insurance should be settled in a fast-track mode.

9. Further, with a view to bringing greater flexibility to the funding mechanism, the Committee would recommend that an additional 10% of the allocation of the centrally sponsored schemes may be "specially earmarked" to undertake permanent restoration of damaged structures, which can be sanctioned by the concerned Ministry based on the recommendation of the State Executive Committee of the SDMA. The Committee would thus expect greater availability of resources for disaster management at the hands of the affected States through these measures.

10. In this regard, the Committee also desire that the borrowing powers of the affected States may also be enhanced in the event of a calamity/disaster, while also permitting them to raise resources, both domestically and externally subject to usual clearances. The Committee believe that in view of the diversity in geographical, social and economic factors across different regions in the country, a flexible and pragmatic approach should be adopted towards relief, rehabilitation and reconstruction.

11. Accordingly, the ceiling limit of 10% of SDRF for expenditure towards 'state specific disasters' like drought should be done away with and all expenditure towards notified 'state specific disasters' should be straightaway charged to SDRF. For this purpose, the corpus of SDRF may be increased by an additional 10% to accommodate this expenditure.

12. On the whole, considering the wide gap between the funds sought by the affected States and those released by the central government, the Committee are constrained to recommend annual increase of 15% (instead of the present 5%) in the total corpus of SDRF for the period 2020-25, particularly in view of the increasing incidence/frequency of natural disasters in the country. Further, provision should be made for immediate/automatic release of advance amount on adhoc basis from NDRF in cases of natural disasters of "rare severity" so as to enable the affected states to take up immediate relief work, pending the visit of the central team and completion of other procedures. Safeguards may however be provided to ensure that the funds made available are well utilised.

13. Taking into account the afore-mentioned recommendations of the Committee for revision in the existing norms and modifications in the present financial arrangement, the Committee would urge the Ministry of Home Affairs and the Ministry of Finance to submit revised memorandum to the 15th Finance Commission for their due consideration. If necessary, appropriate modifications may also be brought in the Disaster Management Act, 2005 to give effect to the suggested changes.

14. The Committee acknowledge the efforts of the concerned state governments (specially the district administration), the NDMA and the National Disaster Response Force and personnel of the Armed Forces in undertaking immediate rescue and relief operations in the disaster-affected areas. The central government agencies have been supplementing the efforts of States in providing immediate response and relief in the event of a severe disaster that is beyond the coping capacity of the State. The Committee are happy to note that IMD and ISRO have been coordinating and synergising their capacities for disaster-forecasting and preparedness. Further, ISRO has also been providing technical support for restoration of telecommunication networks. The Committee would expect ISRO to utilize their capacities to enhance their participation and support in this regard including drought and water-level mapping in coordination with the NDMA and the state authorities.

15. The Committee has attempted to bring together all the concerned agencies including the representatives of the State governments for deliberations in a

single forum during the course of examination of this subject. The Committee would now expect that the Ministry of Home Affairs and the NDMA would take this process forward and provide an institutionalised mechanism to bring together all the central agencies involved in the management of national disasters like the Indian Space Research Organisation (ISRO), Indian Meteorological Department (IMD), Geological Survey of India (GSI), Central Water Commission (CWC), Department of Financial Services and other designated agencies with a view to coordinating and harmonising their role and capacities for disaster preparedness, response, relief and reconstruction. The disaster preparedness, relief and reconstruction experience and models evolved in countries like Philippines should also be studied and their best practices appropriately incorporated in our disaster management approach . Details of follow-up action initiated in this regard may be submitted to the Committee within one month of presentation of this Report.

**NEW DELHI**  
**11 February, 2019**  
**22 Magha, 1941 (Saka)**

**DR. M. VEERAPPA MOILY,**  
**Chairperson,**  
**Standing Committee on Finance.**

**Minutes of the Seventh sitting of the Standing Committee on Finance (2018-19)The Committee sat on Tuesday, the 18 December, 2018 from 1500hrs. to 1700hrs. in Committee Room 'D', Parliament House Annexe Ext. Block A, New Delhi.**

**PRESENT**

**Dr. M. Veerappa Moily - Chairperson**

**LOK SABHA**

2. Kunwar Pushpendra Singh Chandel
3. Shri Bandaru Dattatreya
4. Shri Nishikant Dubey
5. Shri Gopalakrishnan Chinnaraj
6. Shri Bhartruhari Mahtab
7. Shri Rayapati Sambasiva Rao
8. Prof. Saugata Roy
9. Shri Gopal Chinayya Shetty
10. Shri Prathap Simha
11. Dr. Kiritbhai Premjibhai Solanki
12. Shri Dinesh Trivedi
13. Shri Shivkumar Chanabasappa Udasi

**RAJYA SABHA**

14. Shri Rajeev Chandrasekhar
15. Shri Anil Desai
16. Dr. Narendra Jadhav
17. Shri A. Navaneethakrishnan
18. Shri Mahesh Poddar
19. Dr. Mahendra Prasad
20. Shri T.K. Rangarajan

**SPECIAL INVITEES**

21. Shri M.B. Rajesh, Lok Sabha
22. Shri K.K. Rajesh, Rajya Sabha
23. Shri K. Somaprasad, Rajya Sabha
24. Shri Joice George, Lok Sabha
25. Shri Anirudhan Sampath, Lok Sabha
26. Shri K.V. Thomas, Lok Sabha
27. Shri P. K. Sreemathy, Lok Sabha
28. Shri P. Karunakaran, Lok Sabha
29. Shri N.K. Premachandran, Lok Sabha
30. Kodikunnil Suresh, Lok Sabah

## **SECRETARIAT**

- |    |                              |   |                     |
|----|------------------------------|---|---------------------|
| 1. | Shri N.C. Gupta              | - | Joint Secretary     |
| 2. | Shri Rajesh Ranjan Kumar     | - | Director            |
| 3. | Shri Ramkumar Suryanarayanan | - | Additional Director |
| 4. | Shri Kulmohan Singh Arora    | - | Deputy Secretary    |

## **WITNESSES**

### **GOVERNMENT OF KERALA**

1. Dr. Sekhar L. Kuriakose, Member Secretary, Kerala State Disaster Management Authority
2. Mr. K Mohammed Y Safirulla, District Collector, Ernakulam

2. At the outset, the Chairperson welcomed the Members and special invitee M.P's from the State of Kerala alongwith the witnesses of State Government of Kerala. After the customary introduction the witness of State Government of Kerala made a power point presentation before the Committee. The major issue discussed included various challenges faced by the Government of Kerala, mammoth nature of relief, rehabilitation and rebuilding responsibilities, quantum of central assistance requested and provided, measures taken towards reconstruction process, need for a forthcoming role of centre in event of such Disasters / Natural calamities, requirement of more funds with regard to the recommendations made by the Finance Commission, suggestion and need to rebuild roads under the Pradhan Mantri Gram Sadak Yojana (PMGSY). The Committee further deliberated upon the need to revise the criteria for various aspects related to compensation, worst affected areas, districts, communities etc, effect of floods on the State of tourism, assessment of reasons for such a devastating scale of floods, steps put in place to anticipate such disasters / natural calamities at the State level, involvement of private sector and utilising Corporate Social Responsibility (CSR) funds in the rehabilitation process, issues related to insurance of life, agriculture, general sector and indemnification thereof and helpful and indispensable role played by traditional fisherman community in rescue related work. The Committee directed the witnesses to furnish written replies to the queries which could not be readily replied by them during the sitting.

2. The Committee, thereafter selected the subject 'Strengthening of the Credit Rating Framework in the Country' for examination and report thereto. The Committee also decided to take evidence of the stakeholders and the representatives of concerned Ministries / Department / Organisation on the subject.

The witnesses then withdrew.

A verbatim record of the proceedings has been kept

The Committee then adjourned.

**Minutes of the Eighth sitting of the Standing Committee on Finance  
(2018-19)The Committee sat on Wednesday, the 19 December, 2018 from 1500hrs.  
to 1730hrs. in Committee Room 'D', Parliament House Annexe Ext. Block A, New  
Delhi.**

**PRESENT**

**Dr. M. Veerappa Moily - Chairperson**

**LOK SABHA**

2. Shri T.G. Venkatesh Babu
3. Shri Bandaru Dattatreya
4. Shri Nishikant Dubey
5. Shri Gopalakrishnan Chinnaraj
6. Shri Rattan Lal Kataria
7. Shri Gopal Chinayya Shetty
8. Shri Prem Das Rai
9. Shri Prathap Simha
10. Dr. Kiritbhai Premjibhai Solanki
11. Dr. Kirit Somaiya
12. Shri Dinesh Trivedi
13. Shri Shivkumar Chanabasappa Udasi

**RAJYA SABHA**

14. Shri Rajeev Chandrasekhar
15. Shri A. Navaneethakrishnan
16. Shri C.M. Ramesh
17. Shri T.K. Rangarajan
18. Shri Digvijaya Singh
19. Dr. Manmohan Singh

**SPECIAL INVITEES**

20. R. Vaithilingum, Rajya Sabha
21. T. Rathinavel, Rajya Sabha
22. Shri A.K. Selvaraj, Rajya Sabha
23. Shri K.R. Arjunan, Rajya Sabha
24. Shri K.Parasuraman, Lok Sabha
25. Shri R. K. Bharathi Mohan, Lok Sabha
26. Shri P. R. Senthilnathan, Lok Sabha
27. Shri M. Udhayakumar, Lok Sabha
28. Shri Tiruchi Siva, Rajya Sabha
29. Shri R.S. Bharathi, Rajya Sabha
30. Shri Gokulakrishnan, Rajya Sabha
31. Shri T.K.S. Elangovan, Rajya Sabha

## **SECRETARIAT**

- |    |                              |   |                     |
|----|------------------------------|---|---------------------|
| 1. | Shri N.C. Gupta              | - | Joint Secretary     |
| 2. | Shri Rajesh Ranjan Kumar     | - | Director            |
| 3. | Shri Ramkumar Suryanarayanan | - | Additional Director |
| 4. | Shri Kulmohan Singh Arora    | - | Deputy Secretary    |

## **WITNESSES**

### **GOVERNMENT OF TAMIL NADU**

1. Dr. Girija Vaidyanathan, Chief Secretary
2. Thiru K. Shanmugam, Additional Chief Secretary, Finance Department
3. Dr. K. Satyagopal, Additional Chief Secretary / Commissioner, Revenue Administration, DM & M
4. Dr. Atulya Misra, Principal Secretary, Revenue Department & DM Department
5. Thiru Vikram Kapur, Principal Secretary / Chairman and MD TNEB / TANGEDCO
6. Thiru N Muruganandam, Principal Resident Commissioner, Tamil Nadu House
7. Thiru A Annadurai, Collector, Thanjavur District
8. Dr. S Suresh Kumar, Collector, Nagapattinam District

### **GOVERNMENT OF KARNATAKA**

1. Dr. Srinivas Reddy, Director, Disaster Management, Govt. of Karnataka
2. Shri Kadare Gowda, Joint Director, Horticulture Department
3. Shri H.M. Nagaraj, Joint Director, Horticulture Department
4. Smt. Srividya, Deputy Commissioner, Madikeri District

2. At the outset, the Chairperson welcomed the Members and special invitee M.P's from the State of Tamil Nadu alongwith the witnesses of State Government of Tamil Nadu and Karnataka. After the customary introduction, the witnesses of State Government of Tamilnadu made a power point presentation before the Committee. The major issues discussed were overall socio economic impact of cyclone Gaja and calamitous floods in the State of Tamil Nadu and Karnataka respectively, extent of damage to the coastal areas and adverse effect on fishing communities, widespread

destruction of paddy and coconut plantation, damage to electric poles and power substation, quantum of assistance requested and provided by Central Government, requirement of additional financial assistance, issues related to proper utilisation and disbursement of funds, need for a long term mitigation plan, need for assessment of psychological impact of such calamities, issues related to the compensation for damages / reconstruction, need for a comprehensive flood mitigation programme both at State and Central level, and amount of relief assistance estimated by respective State Governments. The witnesses responded to the queries raised by the Members on the subject. The Committee directed the witnesses to furnish written replies to the queries which could not be readily replied by them during the sitting within a week.

The witnesses then withdrew.

A verbatim record of the proceedings has been kept

The Committee then adjourned.

**Minutes of the Tenth sitting of the Standing Committee on Finance (2018-19)The Committee sat on Thursday, the 3 January, 2019 from 1500hrs. to 1700hrs. in Committee Room 'D', Parliament House Annexe Ext. Block A, New Delhi.**

**PRESENT**

**Dr. M. Veerappa Moily - Chairperson**

**LOK SABHA**

2. Shri Nishikant Dubey
3. Shri Bhartruhari Mahtab
4. Shri Rattan Lal Kataria
5. Shri Gopal Chinayya Shetty
6. Dr. Kiritbhai Premjibhai Solanki
7. Dr. Kirit Somaiya
8. Shri Dinesh Trivedi
9. Shri Shivkumar Chanabasappa Udasi

**RAJYA SABHA**

10. Shri Anil Desai
11. Shri Narendra Jadhav
12. Shri Mahesh Poddar
13. Shri C.M. Ramesh

**SPECIAL INVITEES**

14. Shri Ram Mohan Naidu, Lok Sabha

**SECRETARIAT**

- |    |                              |   |                     |
|----|------------------------------|---|---------------------|
| 1. | Shri N.C. Gupta              | - | Joint Secretary     |
| 2. | Shri Rajesh Ranjan Kumar     | - | Director            |
| 3. | Shri Ramkumar Suryanarayanan | - | Director            |
| 4. | Shri Kulmohan Singh Arora    | - | Additional Director |
| 5. | Shri Tenzin Gyaltsen         | - | Under Secretary     |

## WITNESSES

### GOVERNMENT OF ANDHRA PRADESH

1. Sri D. Varaprasad, Secretary to Government, Revenue (DM)
2. Sri Praveen Prakash, Resident Commissioner, Andhra Pradesh Government
3. Dr. A Mallikharjuna, Joint Collector, East Godavari District

2. At the outset, the Chairperson welcomed the Members and special invitee Shri Ram Mohan Naidu, Member of Parliament from the State of Andhra Pradesh alongwith the witnesses of State Government of Andhra Pradesh. After the customary introduction, the witnesses of State Government of Andhra Pradesh made a power point presentation before the Committee. The major issues discussed included the extent of damage caused in various districts, regions and coastal areas, large scale destruction of houses / settlements and consequent shifting of people to relief camps, severe impact on small and marginal farmers, issues related to mobilisation of requisite funds for relief and reconstruction and progress made with regard to cyclone / flood relief and reconstruction work. The Committee further deliberated upon issues related to the quantum of assistance requested by the State and provided by Central government, creating awareness and requirement of long term planning by State Government with regard to these natural calamities / disasters, need for supplementary mechanism for funding of disaster relief and mitigation, issue of road connectivity and construction of Pucca Houses in coastal areas. The witnesses responded to the queries raised by the Members on the subject. The Committee directed the witnesses to furnish written replies to the queries which could not be readily replied by them during the sitting within a week.

The witnesses then withdrew.

A verbatim record of the proceedings has been kept

The Committee then adjourned.

**Minutes of the Eleventh sitting of the Standing Committee on Finance (2018-19).  
The Committee sat on Wednesday, the 30 January, 2019 from 1100hrs. to 1145hrs.  
in Committee Room 'D', Parliament House Annexe Ext. Block A, New Delhi.**

**PRESENT**

**Dr. M. Veerappa Moily - Chairperson**

**LOK SABHA**

2. Shri Nishikant Dubey
3. Shri Rattan Lal Kataria
4. Shri Bhartruhari Mahtab
5. Prof. Saugata Roy
6. Shri Gopal Chinayya Shetty
7. Shri Dinesh Trivedi
8. Shri Shivkumar Chanabasappa Udasi

**RAJYA SABHA**

9. Shri Rajeev Chandrasekhar
10. Shri A. Navaneethakrishnan
11. Shri Mahesh Poddar
12. Dr. Mahendra Prasad
13. Shri T.K. Rangarajan
14. Dr. Manmohan Singh

**SECRETARIAT**

- |    |                              |   |                     |
|----|------------------------------|---|---------------------|
| 1. | Shri N.C. Gupta              | - | Joint Secretary     |
| 2. | Shri Rajesh Ranjan Kumar     | - | Director            |
| 3. | Shri Ramkumar Suryanarayanan | - | Director            |
| 4. | Shri Kulmohan Singh Arora    | - | Additional Director |
| 5. | Shri Tenzin Gyaltsen         | - | Under Secretary     |

**PART-I**

**(1100-1145 hrs)**

**WITNESSES**

**GOVERNMENT OF ODHISA**

1. Shri Aditya Prasad Padhi, Chief Secretary
2. Dr. Rajendra Prasad, Director General of Police
3. Shri Bijaya Kumar Sharma, Director General of Police, Fire Service, Commandant General of Home Guards & Director
4. Shri Tuhin Kanta Pandey, Principal Resident Commissioner
5. Shri Bishnupada Sethi, Special Relief Commissioner and Secretary to Government(Disaster Management)
6. Shri Hemant Sharma, Commissioner-cum-Secretary to Government, Energy Department

2. At the outset, the Chairperson welcomed the Members and the witnesses to the sitting of the Committee. After the customary introduction of the witnesses, the Chairperson initiated the discussion on the subject 'Central Assistance for Disaster Management and Relief'. The major issues discussed included maintaining a foolproof communication system during natural disasters / calamities, revising norms for central assistance under National Disaster Response Fund (NDRF), need for additional funds for permanent reduction and restoration of disaster related risk, notifying the Disaster Mitigation fund under the Disaster Management Act, 2005, providing disaster specific Impact-based forecast, extensive damage to electricity network, poles and substations, monitoring of water levels in flood prone rivers, including lightning and thunderstorm in the list of notified calamities and creating a dedicated centre for research on the phenomenon of thunderstorm and lightning. The witnesses responded to the queries raised by the Members on the subject. The Committee directed the witnesses to furnish written replies to the queries which could not be readily replied by them during the sitting within a week.

The witnesses then withdrew.

The Committee then adjourned for Tea.

**PART-II**  
(1200-1415 hrs)  
**WITNESSES**

**MINISTRY OF HOME AFFAIRS**

1. Shri B.R. Sharma, Special Secretary

**MINISTRY OF FINANCE (DEPARTMENT OF EXPENDITURE)**

1. Shri Girish Chandra Murmu, OSD
2. Shri Rajeev Ranjan, Additional Secretary

**MINISTRY OF FINANCE (DEPARTMENT OF FINANCIAL SERVICES)**

1. Shri Debasish Panda, Additional Secretary

**NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA)**

1. Shri Pradeep Kumar, , Additional Secretary

**INDIAN SPACE RESEARCH ORGANISATION (ISRO)**

1. Dr. P.G Diwakar, Scientist & Director

**NATIONAL DISASTER RESPONSE FORCE (NDRF)**

1. Shri S.N. Pradhan, Director General

**CENTRAL WATER COMMISSION (CWC)**

1. Shri S. Masood Hussain, Chairman

**INDIAN METEOROLOGICAL DEPARTMENT**

1. Shri K.J. Ramesh, DG

**GEOLOGICAL SURVEY OF INDIA**

1. Dr. Dinesh Gupta, DG

**AGRICULTURAL INSURANCE COMPANY OF INDIA LTD**

1. Ms. T.L. Alamelu, Chairman & Managing Director

**ORIENTAL INSURANCE COMPANY OF INDIA LTD**

1. Mr. A V Girijakumar, Chairman & Managing Director
2. Shri Balwant Singh, General Manager & Director

**NEW INDIA ASSURANCE COMPANY LTD**

1. Shri Renjit Gangadharan, General Manager

2. At the outset, the Chairperson welcomed the Members and the witnesses to the sitting of the Committee. After the customary introduction of the witnesses, the Chairperson initiated the discussion on the subject 'Central Assistance for Disaster Management and Relief'. The major issues discussed included revising norms for central assistance under National Disaster Response Fund (NDRF), notifying the Disaster Mitigation fund under the Disaster Management Act, 2005, need for providing disaster specific Impact-based forecast and monitoring of water levels in flood prone rivers, insurance of public property on lines of Kerala, creating a 'Risk Reduction fund' as prevalent in other countries and including lightning and thunderstorm in the list of notified calamities. The witnesses responded to the queries raised by the Members on the subject. The Committee directed the witnesses to furnish written replies to the queries which could not be readily replied by them during the sitting within a week.

The witnesses then withdrew.

(A verbatim record of the proceedings has been kept)

The Committee then adjourned.

**Minutes of the Thirteenth sitting of the Standing Committee on Finance (2018-19)The Committee sat on Monday, the 11th February, 2019 from 1500hrs. to 1600 hrs in Committee Room 'D', Parliament House Annexe, New Delhi.**

**PRESENT**

**Dr. M. Veerappa Moily - Chairperson**

**LOK SABHA**

2. Shri Nishikant Dubey
3. Shri Rattan Lal Kataria
4. Shri Chandrakant Bhaurao Khaire
5. Shri Bhartruhari Mahtab
6. Prof. Saugata Roy
7. Shri Gopal Chinnaya Shetty
8. Dr. Kirit Somaiya
9. Shri Dinesh Trivedi
10. Shri Shivkumar Chanabasappa Udasi

**RAJYA SABHA**

11. Dr. Narendra Jadhav
12. Shri A. Navaneethakrishnan
13. Shri Mahesh Poddar
14. Dr. Mahendra Prasad
15. Shri C.M. Ramesh
16. Shri Digvijaya Singh
17. Dr. Manmohan Singh

**SECRETARIAT**

- |    |                              |   |                     |
|----|------------------------------|---|---------------------|
| 1. | Shri N.C. Gupta              | - | Joint Secretary     |
| 2. | Shri Ramkumar Suryanarayanan | - | Director            |
| 3. | Shri Kulmohan Singh Arora    | - | Additional Director |
| 4. | Shri Tenzin Gyaltzen         | - | Under Secretary     |
| 5. | Kh. Ginlal Chung             | - | Under Secretary     |

2. At the outset, the Chairperson welcomed the Members to the sitting of the Committee. The Committee, thereafter, took up the following draft Reports for consideration and adoption :

- (i) Draft Report on the subject 'Central assistance for Disaster Management and Relief'.
- (ii) Draft Report on the subject 'Strengthening of the Credit Rating Framework in the country'.

After some deliberations, the Committee adopted the above draft Reports with minor modifications and authorised the Chairperson to finalise them and present the Reports to Parliament.

The Committee then adjourned.