

# Memorandum

Revised based on discussions with Inter Ministerial Central Team

## Cyclone Ockhi

**30<sup>th</sup> November 2017 to 17<sup>th</sup> January 2018**



**Submitted by  
Additional Chief Secretary, Disaster Management  
(State Relief Commissioner)  
Government of Kerala**

**17 January 2018**

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## 1. Situation Assessment

### 1.1. Introduction

On 30-11-2017, the Cyclone Ockhi passed by about 70 km away from Kerala coast. Kerala in the last 100 years had not experienced a major Cyclonic Storm impact of this magnitude. The Depression which formed on 29-11-2017 was expected to move towards the West and intensify therein as per the first estimates received. The system remained a Depression even at 1.30 am on 30-11-2017. It then suddenly shifted its course and changed towards North-North Westwards and developed into Deep Depression by 8.30 am on 30-11-2017. The system further intensified and turned into a Cyclonic Storm by 12.00 pm on 30-11-2017, just about 70 kms from the coast of Kerala, in a path which it was not expected to. This unprecedented shift and intensification put the fishermen who had already ventured into the sea, in distress and resulted in these catastrophic losses.

### 1.2. Timeline of the incident as per IMD and INCOIS bulletin

| Date       | Day       | Time      | Incident   |
|------------|-----------|-----------|--|
| 29-11-2017 | Wednesday | 14.30 hrs | <b>Depression</b> over Srilanka – no pre-cyclone watch or cyclone alert  |
| 30-11-2017 | Thursday  | 01.30 hrs | <b>Depression</b> over Comorin – no pre-cyclone watch or cyclone alert   |
| 30-11-2017 | Thursday  | 08.30 hrs | <b>Deep Depression</b> over Comorin area & Cyclone Alert for Lakshwadeep islands – no pre-cyclone watch or cyclone alert   |
| 30-11-2017 | Thursday  | 12:00 hrs | <b>Cyclonic Storm ‘Ockhi’</b> formed over Comorin area & <b>Cyclone Warning for South Kerala</b> , adjoining districts of south Tamil Nadu and Lakshadweep islands |

Had the communication was about the impending Cyclone clearly to the state and the media as stipulated in the 'Cyclone Warning in India - Standard Operating Procedure, 2013', loss of large number of life could have been avoided.

### 1.3. Action taken by the State Government on 29-11-2017 to 30-11-2017

- 1 29-11-2017, 4.00 pm – issued the bulletin received from INCOIS to print and visual media and others concerned for public attention

- 2 30-11-2017, 7.30 am – issued the bulletin received from IMD to print and visual media and others concerned for public attention
- 3 30-11-2017, 9.00 am – began preparedness works as per the SOP for Cyclone. Discussions were held with IMD on possible evolution of the system.
- 4 30-11-2017, 10.00 am – Reports of fishermen who had ventured out to the sea on previous days was received. Coast Guard was requested for assistance by District Collector, Thiruvananthapuram.
- 5 30-11-2017, 11.00 am – District Collector, Thiruvananthapuram was advised to declare holiday to all schools so that in-case of massive evacuation, schools are available to the DDMA as shelters.
- 6 30-11-2017, 12.00 pm – Cyclonic Storm Orange alert was declared in the state. Specific instructions were issued to public, fishermen, tourist destinations, Sabarimala pilgrims and District Disaster Management Authority to act as per the laid Standard Operating Procedures. Southern Kerala – Thiruvananthapuram, Kollam, Alappuzha, Pathanamthitta and Idukki were advised to trigger necessary Very Heavy to Heavy Rainfall response procedures. Thiruvananthapuram DDMA was advised to act as per the Severe Cyclonic Storm Standard Operating Procedures. The State Executive Committee met. Chief Secretary and Additional Chief Secretary, Disaster Management (State Relief Commissioner) met and decided to raise the event as L3. Coordination calls were made to Army, Navy, Airforce, NDRF and Coast Guard. Necessary liaison was ensured between the forces. DDMA Thiruvananthapuram was advised to meet urgently to discuss necessary evacuation. Discussions were held with IMD too. Field deployment of Army and Police was ensured. Due to Heavy to Very Heavy Rainfall warning, NDRF was directed to continue in position at Sabarimala so as to ensure Pilgrim safety.
- 7 30-11-2017, 3.30 pm – Chief Minister held an urgent meeting of SDMA and decided to order evacuation of Kutcha houses in the 100 m off the coast line of Thiruvananthapuram based on the available prognosis. Necessary arrangements were made for operating relief camps.

- 8 30-11-2017, 4.00 pm – DDMA, Thiruvananthapuram met and reviewed the arrangements for camp operations. Following the Incident Response System, one Responsible Officer and one local incident commander was posted per Taluk and camps were opened. Kerala Armed Police battalions and Local Police were operationalised to advice coastal community to move to shelters for the night. Coast Guard and Navy assistance was sought and their ships and aircrafts were pressed into service.
- 9 30-11-2017, 6.00 pm – Minister for Revenue and Disaster Management, Chief Secretary and Additional Chief Secretary, Disaster Management reviewed the situation
- 10 30-11-2017, 9.00 pm – Four columns of Army was moved into local areas and stationed in Police Stations to assist Police. Two columns were kept on standby at Thiruvananthapuram.
- 11 1-12-2017, 9.00 am – Chief Minister reviewed the situation. 10 ships, 3 types of aircrafts and several helicopters being used for Search and Rescue. Chief Secretary reviewed the Search and Rescue Operations. An integrated ‘Operation Synergy’ was launched and an integrated Search and Rescue Operations Centre was opened in the Technical Area of the Thiruvananthapuram Airport. Rescue works were ongoing
- 12 2-12-2017, 10.00 am – Hon’ble Chief Minister reviewed the situation in the presence of senior ministers and officials and directed to continue Search and Rescue Operations. Ex-gratia as per SDRF norms and additional assistance was declared from Chief Minister’s Distress Relief Fund. Rescue works were ongoing
- 13 2-12-2017 to 18-12-2017
  - Navy, Air Force and Coast Guard requested in full swing. Army put on stand by - 6 air crafts, 2 helicopters, 2 coast guard ships, 1 coast guard helicopter and 4 navy ships – Stage 5 weather conditions prevailed over sea delaying the progress
  - Medical treatment of rescued in all Government hospitals were declared free
  - KSDMA meeting held
  - Defence Secretary, Air Marshal, C in C, Navy, Coast Guard DIG were contacted to increase the availability of air crafts and ships for search and rescue

- State Governments of Gujarat, Maharashtra, Goa and Karnataka requested to provide assistance to fishermen from Kerala
- More ships and air crafts provided by Air Force, Navy and Coast Guard
- Union Defence Minister and Union Minister of State for Tourism (independent charge) visited Thiruvananthapuram
- A preliminary memorandum was submitted to Government of India on 2-12-2017
- Search and Rescue participating local fishermen conducted offshore Kochi
- Relief Operations constantly reviewed by Chief Minister
- Passengers to Lakshadweep from Kozhikode provide all necessary assistance
- Dead body identification procedure using DNA triggered
- ₹33.95 crores disbursed to provide ₹2000/head to all active fishermen as relief
- ₹20 lakhs declared as ex-gratia to the families of the deceased
- ₹5 lakhs declared for all seriously injured fishermen who will not be able to continue his traditional livelihood of fishing
- ₹20,000 declared for all hospitalised fishermen
- Equivalent compensation for lost boats and nets
- Free education for the children of the deceased
- Declared more recruitment to Coastal Police in which 200 will be recruited from Fishermen folk

| <b>Search and Rescue Deployment</b> |         |
|-------------------------------------|---------|
| Ships                               | 15      |
| Air crafts                          | 10      |
| Coast Guard Ships                   | 8       |
| Helicopters                         | 3 types |
| Marine Enforcement/Fisheries boats  | 9       |

**Table 1: Search and Rescue Deployment of assets**

- Indian Embassy in Oman requested to verify news regarding dead bodies washing ashore in Oman – Confirmed as fake news
- Consultation meetings held between trade unions, people’s representatives and religious leaders

## 2. Losses

### 2.1. Human Fatalities

As on date, 46 deaths of Malayalees have been confirmed to have occurred in the sea due to Cyclone Ockhi. In addition, hundreds of fishermen were seriously injured and hospitalised. As of now there are 108 Malayalees are reported as missing.

**Table 2: District wise human fatalities and ex-gratia to be paid**

| District           | Fatalities (17-1-2018)     |  |
|--------------------|----------------------------|--|
|                    | No                         | Amount to be paid (@Rs. 20 lakhs/head) |
| Thiruvananthapuram | 47 (44 in sea + 3 on land) | 9,40,00,000                            |
| Kollam             | 2                          | 40,00,000                              |
| Kannur             | 1                          | 20,00,000                              |
| Kasargode          | 1                          | 20,00,000                              |
| <b>Total</b>       | <b>51</b>                  | <b>10,20,00,000</b>                    |

| District           | Injuries (40-60%) |                   |
|--------------------|-------------------|-------------------|
|                    | No                | Amount to be paid |
| Thiruvananthapuram | 127               | 75,05,700         |
| Kollam             | 59                | 34,86,900         |
| Ernakulam          | 40                | 23,64,000         |
| Kozhikode          | 8                 | 4,72,800          |
| <b>Total</b>       | <b>234</b>        | <b>138,29,400</b> |

| District           | >1 week hospitalisation |                   |
|--------------------|-------------------------|-------------------|
|                    | No                      | Amount to be paid |
| Thiruvananthapuram | 127                     | 16,12,900         |
| Kollam             | 59                      | 74,93,000         |
| Ernakulam          | 40                      | 5,08,000          |
| Kozhikode          | 8                       | 1,01,600          |
| <b>Total</b>       | <b>234</b>              | <b>29,71,800</b>  |

| Reported missing (17-1-2018)   |
|--|
| <b>108 (Malayalees) + 81 Non Malayalees</b>                          |
| <b>Amount to be paid (claimed only for Malayalees): 21,60,00,000</b> |

Since it is more than 1 month, these missing individuals may be presumed dead. Government of Kerala has given an exgratia of Rs. 20 lakhs to each family of the deceased. The same amount will be paid to the missing persons after getting reports from police, revenue and fisheries authorities.

## 2.2. Search and Rescue Operations

The State had to incur substantial costs for conducting search and rescue as far and wide as from Gujarat, Maharashtra, Lakshadweep, Goa and Karnataka. Each Malayalee who was stranded in other states were paid Rs. 2500/head and each boat was given 700 liters of diesel. Table 3 provides the costs incurred for the same. 8 ships of Indian Navy, 5 aircrafts of Indian Navy, 10 ships of Coast Guard, 2 aircrafts of Coast Guard in addition to Fisheries and Marine Enforcement on the search and rescue. A fleet of 200 boats from the private mechanized had also conducted a search operation.

**Table 3a: Total Cost of Search and Rescue (Amount in crores)**

|                          |           |
|--------------------------|-----------|
| Search by Central Forces | 40        |
| Rescue from other states | <b>10</b> |
| Search by State Forces   | <b>10</b> |
| Total                    | <b>60</b> |

## 2.3. Relief Assistance

Relief assistance had to be extended to the entire active fishermen community as they were all affected by the cyclone preventing access to their traditional fishing grounds and due to the psycho-social trauma. Almost every alternate day since the Cyclone, IMD is issuing high wave and wind warnings and advising fishermen to be cautious. These highly generalised predictions such as “Wind Direction from East, speed 45 to 55 kmph – Kerala Coast & Lakshadweep till 14:00 hrs of 19-12-2017 and Wave Height 2.5 to 2.6 m – till 11.30 PM of 18-12-17 along Kerala Coast. Fishermen are advised to be cautious” are continuing to instil fear in the fishermen community. The cost of immediate relief assistance is enormous for the state to bear. The active fishermen families in the state are 7.9 lakhs and the Government paid Rs. 2000/family as immediate relief. Free ration was announced for two weeks for the 7.9 lakh active fishermen families. A total of about 8600 individuals were housed in 52 relief camps in the coastal districts.

**Table 3b: Total Cost of Relief (Amount in crores)**

|   |             |
|---|-------------|
| Immediate relief assistance to fishermen families | 33.8        |
| Free Ration to fishermen families                 | 10.5        |
| Relief Camps                                      | 5           |
| Total   | <b>49.3</b> |



## 2.4. Clearance of Affected Areas

The State has to pay for the rights of passage of the deceased and hence this claim of Rs. 10,000/deceased is raised.

|                                       |
|---------------------------------------|
| <b>Presumed Deceased</b>              |
| <b>220</b>                            |
| <b>Amount to be paid: 1,10,00,000</b> |

## 2.5. House damages

A large number of houses were completely or severely damaged. The actual loss to housing sector due to this is inestimable. The preliminary assessed loss of the sector is Rs. 176.3 crores. District wise details of number of houses damaged (fully and severely) with estimated loss is given in Table 4, 5 and 6:

**Table 4: District wise house damage estimates – Pucca (Amount in crores)**

| District           | Pucca houses  |              |                  |               | Total        |
|--------------------|---------------|--------------|------------------|---------------|--------------|
|                    | Fully Damaged |              | Severely Damaged |               |              |
|                    | No            | Amount       | No               | Amount        |              |
| Thiruvananthapuram | 121           | 6.05         | 1163             | 58.15         | 64.2         |
| Kollam             | 12            | 0.6          | 256              | 12.8          | 13.4         |
| Pathanamthitta     | 3             | 0.15         | 67               | 3.35          | 3.5          |
| Alappuzha          | 5             | 0.25         | 87               | 4.35          | 4.6          |
| Kottayam           | 0             | 0            | 0                | 0             | 0            |
| Idukki             | 5             | 0.25         | 109              | 5.45          | 5.7          |
| Ernakulam          | 10            | 0.5          | 464              | 23.2          | 23.7         |
| Thrissur           | 42            | 2.1          | 812              | 40.6          | 42.7         |
| Palakkad           | 2             | 0.1          | 13               | 0.65          | 0.75         |
| Malappuram         | 18            | 0.9          | 209              | 10.45         | 11.35        |
| Kozhikode          | 0             | 0            | 25               | 1.25          | 1.25         |
| Wayanad            | 0             | 0            | 0                | 0             | 0            |
| Kannur             | 0             | 0            | 44               | 2.2           | 2.2          |
| Kasargode          | 3             | 0.15         | 2                | 0.1           | 0.25         |
| <b>Total</b>       | <b>221</b>    | <b>11.05</b> | <b>3253</b>      | <b>162.55</b> | <b>173.6</b> |

**Table 5: District wise house damage estimates – Huts (Amount in Crores)**

| District           | Number | Amount |
|--------------------|--------|--------|
| Thiruvananthapuram | 100    | 1      |
| Kollam             | 35     | 0.35   |
| Pathanamthitta     | 0      | 0      |
| Alappuzha          | 12     | 0.12   |
| Kottayam           | 2      | 0.02   |
| Idukki             | 50     | 0.5    |
| Ernakulam          | 6      | 0.06   |

|              |            |            |
|--------------|------------|------------|
| Thrissur     | 17         | 0.17       |
| Palakkad     | 0          | 0          |
| Malappuram   | 16         | 0.16       |
| Kozhikode    | 18         | 0.18       |
| Wayanad      | 1          | 0.01       |
| Kannur       | 3          | 0.03       |
| Kasargode    | 10         | 0.1        |
| <b>Total</b> | <b>270</b> | <b>2.7</b> |

**Table 6: District wise house damage estimates – Total (Amount in crores)**

| District           | Total loss   |
|--------------------|--------------|
| Thiruvananthapuram | 65.2         |
| Kollam             | 13.75        |
| Pathanamthitta     | 3.5          |
| Alappuzha          | 4.72         |
| Kottayam           | 0.02         |
| Idukki             | 6.2          |
| Ernakulam          | 23.76        |
| Thrissur           | 42.87        |
| Palakkad           | 0.75         |
| Malappuram         | 11.51        |
| Kozhikode          | 1.43         |
| Wayanad            | 0.01         |
| Kannur             | 2.23         |
| Kasargode          | 0.35         |
| <b>Total</b>       | <b>176.3</b> |

## 2.6. Agriculture damages

The floods, windfall, heavy rainfall and cyclonic thunder storms have caused severe damages to crops such as banana, paddy, papaya etc. in the affected areas. The details of district wise crop losses are given in Table 7. The total claim is for Rs. 10.75 crores.

**Table 7: District wise agricultural damages**

| District           | >50% crop loss (ha) Perennial | Amount  |
|--------------------|-------------------------------|---------|
| Thiruvananthapuram | 26.97                         | 485460  |
| Kollam             | 93.83                         | 1688940 |
| Pathanamthitta     | 2.67                          | 48060   |
| Alappuzha          | 6.01                          | 108180  |
| Kottayam           | 9.13                          | 164340  |
| Idukki             | 7.97                          | 143460  |
| Ernakulam          | 74.05                         | 1332900 |
| Thrissur           | 80.00                         | 1440000 |
| Palakkad           | 13.97                         | 251460  |
| Malappuram         | 110.12                        | 1982160 |
| Kozhikode          | 5.89                          | 106020  |

|              |               |                  |
|--------------|---------------|------------------|
| Wayanad      | 0.06          | 1080             |
| Kannur       | 5.80          | 104400           |
| Kasargode    | 3.72          | 66960            |
| <b>Total</b> | <b>440.20</b> | <b>79,23,420</b> |

| District           | >50% crop loss (ha) Irrigated | Amount             |
|--------------------|-------------------------------|--------------------|
| Thiruvananthapuram | 662.69                        | 8946315            |
| Kollam             | 376.49                        | 5082615            |
| Pathanamthitta     | 130.00                        | 1755000            |
| Alappuzha          | 139.02                        | 1876770            |
| Kottayam           | 269.18                        | 3633930            |
| Idukki             | 599.68                        | 8095680            |
| Ernakulam          | 101.50                        | 1370250            |
| Thrissur           | 215.00                        | 2902500            |
| Palakkad           | 3722.62                       | 50255370           |
| Malappuram         | 983.22                        | 13273470           |
| Kozhikode          | 7.32                          | 98820              |
| Wayanad            | 143.22                        | 1933470            |
| Kannur             | 15.00                         | 202500             |
| Kasargode          | 12.24                         | 165240             |
| <b>Total</b>       | <b>7377.18</b>                | <b>9,95,91,930</b> |

## 2.7. Damages to fisheries sector

The cyclonic storm, wind and rainfall have caused severe damages to the fisheries sector of the state. The losses incurred are for boats, engines and nets. The Government has already decided to provide this amount to the fishermen. The details of district wise damages are given in Table 8:

**Table 8: District wise damages to fisheries sector (Amount INR)**

| District           | Fully damaged boats | Amount incurred | Fully damaged nets | Amount incurred |
|--------------------|---------------------|-----------------|--------------------|-----------------|
| Thiruvananthapuram | 80                  | 18000000        | 142                | 3550000         |
| Kollam             | 129                 | 29025000        | 129                | 3225000         |
| Pathanamthitta     | 0                   | 0               | 0                  | 0               |
| Alappuzha          | 14                  | 3150000         | 14                 | 350000          |
| Kottayam           | 0                   | 0               | 0                  | 0               |
| Idukki             | 0                   | 0               | 0                  | 0               |
| Ernakulam          | 106                 | 23850000        | 106                | 2650000         |
| Thrissur           | 23                  | 5175000         | 23                 | 575000          |
| Palakkad           | 0                   | 0               | 0                  | 0               |
| Malappuram         | 5                   | 1125000         | 5                  | 125000          |
| Kozhikode          | 6                   | 1350000         | 6                  | 150000          |
| Wayanad            | 0                   | 0               | 0                  | 0               |

|              |            |                 |            |                 |
|--------------|------------|-----------------|------------|-----------------|
| Kannur       | 20         | 4500000         | 20         | 500000          |
| Kasargode    | 1          | 225000          | 1          | 25000           |
| <b>Total</b> | <b>384</b> | <b>86400000</b> | <b>384</b> | <b>11150000</b> |

## 2.8. Repair and restoration of infrastructure

Losses were incurred to roads, irrigation canals, water supply schemes and community owned open wells. Many roads had to be restored to motor-able condition. The breach of canals resulted in flooding of several localities and hence the bunds had to be restored and reinforced. Open wells are the only source of drinking water in many of the rural hilly regions of the state and hence, those wells of which the walls collapsed and got silted had to be restored with immediate effect. Table 9 shows the district wise irrigation sector damages and water supply scheme damages. Table 10 shows the district wise details of power sector losses. Table 11 shows the length of PWD roads that were damaged and the cost that had to be incurred for repairing them. Table 12 shows the community owned assets such as length of village roads, number of damaged water tanks and the number of open wells that had to be repaired in each district.

**Table 9: Cost incurred/committed for repair of irrigation sector and water supply schemes**

| District           | Irrigation sector - Cost (Rs.) | Water Supply sector – Cost (Rs.) |
|--------------------|--------------------------------|----------------------------------|
| Thiruvananthapuram | 10                             | 2                                |
| Kollam             | 1                              | 0                                |
| Pathanamthitta     | 0                              | 0                                |
| Alappuzha          | 1                              | 1                                |
| Kottayam           | 0                              | 0                                |
| Idukki             | 0                              | 0                                |
| Ernakulam          | 10                             | 1                                |
| Thrissur           | 1                              | 0.5                              |
| Palakkad           | 0                              | 0                                |
| Malappuram         | 1                              | 0.6                              |
| Kozhikode          | 1                              | 0.5                              |
| Wayanad            | 0                              | 0                                |
| Kannur             | 1                              | 1                                |
| Kasargode          | 0                              | 1                                |
| <b>Total</b>       | <b>25</b>                      | <b>7.5</b>                       |

**Table 10: Cost incurred/committed for repair of power sector**

| Type of damaged item | Number | Cost in INR |
|----------------------|--------|-------------|
| LT Pole              | 8167   | 32668000    |
| LT Line              | 3182   | 159087500   |
| HT Pole              | 2275   | 9100400     |

|             |      |           |
|-------------|------|-----------|
| HT Line     | 2875 | 143749450 |
| Transformer | 1165 | 116500000 |
| Total       |      | 461105350 |

**Table 11: Loss to PWD roads in Lakhs**

| District           | Length (km) | Cost (Rs.) in crores |
|--------------------|-------------|----------------------|
| Thiruvananthapuram | 20          | 1                    |
| Kollam             | 5           | 0.25                 |
| Pathanamthitta     | 0           | 0                    |
| Alappuzha          | 2           | 0.1                  |
| Kottayam           | 0           | 0                    |
| Idukki             | 0           | 0                    |
| Ernakulam          | 10          | 0.5                  |
| Thrissur           | 1           | 0.05                 |
| Palakkad           | 0           | 0                    |
| Malappuram         | 0           | 0                    |
| Kozhikode          | 2           | 0.1                  |
| Wayanad            | 0           | 0                    |
| Kannur             | 1           | 0.05                 |
| Kasargode          | 0           | 0                    |
| <b>Total</b>       | <b>41</b>   | <b>2.05</b>          |

**Table 12: Cost incurred for immediate restoration of community owned infrastructure**

| District     | Number of open wells | Cost (Rs.)   | No. of damaged pumps | Cost (Rs)   | No. of damaged water supply tanks | Cost (Rs)   | Length of damaged village roads (Km) | Cost (Rs)  | Total        |
|--------------|----------------------|--------------|----------------------|-------------|-----------------------------------|-------------|--------------------------------------|------------|--------------|
| Tvm          | 124                  | 0.62         | 100                  | 0.75        | 250                               | 0.83        | 30                                   | 0.9        | <b>3.05</b>  |
| Klm          | 94                   | 0.47         | 60                   | 0.45        | 120                               | 0.4         | 20                                   | 0.6        | <b>1.685</b> |
| Ptn          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 0                                    | 0          | <b>0</b>     |
| Alp          | 50                   | 0.25         | 20                   | 0.15        | 60                                | 0.19        | 15                                   | 0.45       | <b>1.04</b>  |
| Ktm          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 0                                    | 0          | <b>0</b>     |
| Idu          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 0                                    | 0          | <b>0</b>     |
| Ekm          | 25                   | 0.125        | 0                    | 0           | 0                                 | 0           | 3                                    | 0.09       | <b>0.215</b> |
| Tsr          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 0                                    | 0          | <b>0</b>     |
| Pkd          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 0                                    | 0          | <b>0</b>     |
| Mal          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 0                                    | 0          | <b>0</b>     |
| Koz          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 2                                    | 0.06       | <b>0.06</b>  |
| Way          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 0                                    | 0          | <b>0</b>     |
| Kan          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 0                                    | 0          | <b>0</b>     |
| Ksg          | 0                    | 0            | 0                    | 0           | 0                                 | 0           | 0                                    | 0          | <b>0</b>     |
| <b>Total</b> | <b>293</b>           | <b>1.465</b> | <b>180</b>           | <b>1.35</b> | <b>430</b>                        | <b>1.42</b> | <b>65</b>                            | <b>2.1</b> | <b>6.05</b>  |

### Abstract

| Sl. No | Items   | Rate per unit  | Total Units | Amount as per norms (in crore) | State Demand (in crore) |
|--------|---|----------------|-------------|--------------------------------|-------------------------|
| 1      | 2   | 3              | 4           | 5                              | 6                       |
| 1.     | <b>Gratuitous Relief</b>  |                |             |                                |                         |
|        | a) Ex-Gratia payment to families of deceased persons (identified)   | <b>400000</b>  | 51          | 2.04                           | <b>31.80</b>            |
|        | Missing (presumed deceased)   | <b>400000</b>  | 108         | 4.32                           |                         |
|        | <i>a) Ex-Gratia payment to families of deceased persons.</i>  | <b>1600000</b> | 159         | 25.44                          |                         |
|        | b) Ex-Gratia payment for loss of a limb or eye(s) (when the disability is between 40% and 60%)  | <b>59100</b>   | 234         | 1.38                           | <b>4.68</b>             |
|        | when the disability is more than 60%  | <b>200000</b>  |             | 0.00                           |                         |
|        | c) Grievous injury requiring hospitalization (for more than a week)   | <b>12700</b>   | 234         | 0.30                           |                         |
|        | <i>c) Grievous injury requiring hospitalization (for more than a week)</i>  | <b>128200</b>  | 234         | 3.00                           |                         |
|        | If hospitalisation period is less than a week   | <b>4300</b>    |             | 0.00                           |                         |
|        | d) Clothing and utensils/ household goods for families whose houses have been washed away/ fully damaged/severely inundated for more than two days due to a natural calamity. | <b>1800</b>    | 0.00        | 0.00                           |                         |
|        | Utensils per family   | <b>2000</b>    | 0.00        | 0.00                           |                         |
|        | e) Gratuitous relief for families whose livelihood is seriously affected.(adult) per day upto 60 days and 90 days in case of drought /pest attack                             | <b>60</b>      | 0.00        | 0.00                           | <b>33.80</b>            |
|        | Child   | <b>45</b>      | 0.00        | 0.00                           |                         |
|        | <i>Rs.2000 per active fishermen family for a week - Active Fishermen 1.69 lakh (Enrolled in</i>   | <b>2000</b>    | 169000      | 33.80                          |                         |

|   |   |             |                  |       |              |
|---|---|-------------|------------------|-------|--------------|
|   | <b>Savings cum Relief Scheme of Fisheries Department)</b>   |             |                  |       |              |
| 2 | <b>SEARCH &amp; RESCUE OPERATIONS</b>   |             |                  | 0.00  |              |
|   | (a) Cost of search and rescue measures/ evacuation of people affected/likely to be affected (as per actual)   |             |                  | 0.00  | <b>60.00</b> |
|   | @ Rs. 4 lakhs/hour of flying. Will be claimed by Air Force about a year later   | <b>1000</b> | <b>400000</b>    | 40.00 |              |
|   | <i>Search and Resuce by State Forces (Hiring of boats, men, material, heavy equipment etc)</i>  |             |                  | 10.00 |              |
|   | (b) Hiring of boats for carrying immediate relief and saving lives (as per actual)  |             |                  | 0.00  |              |
|   | Boats resuced from other states (Gujarat, Maharashtra, Karnataka and Goa) @ 750 liters diesel (Rs. 50,000/boat) and Rs. 2500/person onboard (each boat has on an average 7 individuals) | <b>1500</b> | <b>67000</b>     | 10.05 |              |
| 3 | <b>RELIEF MEASURES</b>  |             |                  | 0.00  |              |
|   | a) Provision for temporary accommodation, food, clothing, medical care, etc. for people affected/evacuated as per assessment and need by SEC for a period of 30 days to 60 days         |             | <b>105000000</b> | 10.50 | <b>15.50</b> |
|   | <i>52 relief camps, 8900 people for 2 weeks</i>   |             | <b>50000000</b>  | 5.00  |              |
|   | b) Air dropping of essential supplies (as per actual)   |             |                  | 0.00  |              |
|   | c) Provision of emergency supply of drinking water in rural areas and urban areas (as per actual)   |             |                  | 0.00  |              |
| 4 | <b>CLEARANCE OF AFFECTED AREAS</b>  |             |                  | 0.00  |              |
|   | a) Clearance of debris in public areas as per actual within 30 days from the date of start of work (as per actual)  |             |                  | 0.00  | <b>1.10</b>  |
|   | b) Draining off flood water in affected areas as per actual within  |             |                  | 0.00  |              |



|      |  |       |         |      |       |
|------|--|-------|---------|------|-------|
|      | 30 days from the date of start of work (as per actual)   |       |         |      |       |
|      | c) Disposal of dead bodies/Carcases (as per actual)<br>(New Claim as many unidentified bodies remain in hospital)  | 220   | 50000   | 1.10 |       |
| 5    | <b>AGRICULTURE</b>   |       |         | 0.00 |       |
| (i)  | <b>Assistance farmers having landholding upto 2 ha</b>   |       |         | 0.00 |       |
| A.   | <b>Assistance for land and other loss</b>  |       |         | 0.00 |       |
|      | 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 (per hectare) | 12200 | 0.00    | 0.00 |       |
|      | b) Removal of debris on agricultural land in hilly areas   |       |         | 0.00 |       |
|      | c) De-silting/ Restoration/ Repair of fish farms   |       |         | 0.00 |       |
|      | d) Loss of substantial portion of land caused by landslide, avalanche, change of course of rivers (per hectare)  | 37500 | 0.00    | 0.00 |       |
| B.   | <b>Input subsidy (where crop loss is 33% and above)</b>  |       |         | 0.00 |       |
|      | a) For agriculture crops, horticulture crops and annual plantation crops (per ha)  | 6800  |         | 0.00 | 10.75 |
|      | Assured irrigation (per ha)  | 13500 | 7377.18 | 9.96 |       |
|      | b) Perennial crops (per ha)<br>Rubber, Banana, Coconut   | 18000 | 440.20  | 0.79 |       |
|      | c) Sericulture for Eri, Mulberry, Tussar (per ha)  | 4800  |         | 0.00 |       |
|      | For Muga silk (per ha)   | 6000  |         | 0.00 |       |
| (ii) | <b>Input subsidy to farmers having more than 2 Ha of landholding</b>   | 6800  |         | 0.00 |       |
|      | Assured irrigation (per ha)  | 13500 |         | 0.00 |       |
|      | Perennial crops (per ha)   | 18000 |         | 0.00 |       |
| 6    | <b>ANIMAL HUSBANDRY - ASSISTANCE TO SMALL AND MARGINAL FARMERS</b>   |       |         | 0.00 |       |

|          |  |               |            |      |             |
|----------|--|---------------|------------|------|-------------|
|          | i) Replacement of milch animals, draught animals or animals used for haulage   |               |            | 0.00 |             |
|          | Buffalo/ cow/ camel/ yak/ Mithun etc.  | <b>30000</b>  |            | 0.00 |             |
|          | Sheep/ Goat/ Pig   | <b>3000</b>   |            | 0.00 |             |
|          | Draught animals:   |               |            | 0.00 |             |
|          | Camel/ horse/ bullock, etc   | <b>25000</b>  |            | 0.00 |             |
|          | Calf/ Donkey/ Pony/ Mule   | <b>16000</b>  |            | 0.00 |             |
|          | <b>Poultry:-ceiling of Rs.5000 (per beneficiary household)</b>   | <b>50</b>     |            | 0.00 |             |
|          | ii) Provision of fodder / feed concentrate including water supply and medicines in cattle camps per day from 30 to 90 days (limited to 25% of SDRF) a) Large animals (per day) | <b>70</b>     |            | 0.00 |             |
|          | b) Small animals (per day)   | <b>35</b>     |            | 0.00 |             |
|          | iii) Transport of fodder to cattle outside cattle camps as per actual (limited to livestock census)  |               |            | 0.00 |             |
| <b>7</b> | <b>FISHERY</b>   |               |            | 0.00 |             |
|          | <b>i) Assistance to Fisherman for repair/replacement of boats, nets – damaged or lost (updated figure)</b>   |               |            | 0.00 | <b>9.79</b> |
|          | Boat full damage   | <b>9600</b>   | <b>384</b> | 0.37 |             |
|          | <b>Boat full damage</b>  | <b>216400</b> | <b>384</b> | 8.31 |             |
|          | Boat partial damage  | <b>4100</b>   |            | 0.00 |             |
|          | -- Dugout-Canoe  |               |            | 0.00 |             |
|          | -- Catamaran   |               |            | 0.00 |             |
|          | Net full damage  | <b>2600</b>   | <b>446</b> | 0.12 |             |
|          | <b>Net full damage</b>   | <b>22400</b>  | <b>446</b> | 1.00 |             |
|          | Net partial damage   | <b>2100</b>   |            | 0.00 |             |
|          | ii) Input subsidy for fish seed farm (per ha)  | <b>8200</b>   |            | 0.00 |             |
| <b>8</b> | <b>HANDICRAFTS/HANDLOOM – ASSISTANCE TO ARTISANS</b>   |               |            | 0.00 |             |
|          | i) For replacement of damaged tools/equipment  | <b>4100</b>   |            | 0.00 |             |
|          | ii) For loss of raw material/goods in process/finished goods   | <b>4100</b>   |            | 0.00 |             |

|    |  |                |              |        |               |
|----|--|----------------|--------------|--------|---------------|
| 9  | <b>HOUSING</b>   |                |              | 0.00   |               |
|    | <b>a) Fully damaged/ destroyed houses</b>  |                |              | 0.00   | <b>173.70</b> |
|    | i) Pucca house in plain areas  | <b>95100</b>   | <b>221</b>   | 2.10   |               |
|    | ii) Kutcha House in plain areas  | <b>95100</b>   |              | 0.00   |               |
|    | House damage - State Government @Rs. 500000  | <b>404900</b>  | <b>221</b>   | 8.95   |               |
|    | <b>b) Severely damaged houses</b>  |                |              | 0.00   |               |
|    | i) Pucca House in plain areas  | <b>95100</b>   | <b>3253</b>  | 30.94  |               |
|    | ii) Kutcha House in plain areas  | <b>95100</b>   |              | 0.00   |               |
|    | House damage - State Government @Rs. 500000  | <b>404900</b>  | <b>3253</b>  | 131.71 |               |
|    | <b>(c) Partially Damaged Houses –</b>  |                |              | 0.00   |               |
|    | (i) Pucca (other than huts)  | <b>5200</b>    |              | 0.00   |               |
|    | (ii) Kutcha (other than huts)  | <b>3200</b>    |              | 0.00   |               |
|    | <b>d) Damaged/destroyed huts:</b>  | <b>4100</b>    | <b>270</b>   | 0.11   | <b>2.70</b>   |
|    | <b>d) Damaged/destroyed huts @ Rs. 100000/hut</b>                                  | <b>95900</b>   | <b>270</b>   | 2.59   |               |
|    | <b>e) Cattle shed attached with house</b>  | <b>2100</b>    |              | 0.00   |               |
| 10 | <b>INFRASTRUCTURE</b>  |                |              | 0.00   |               |
|    | Repair/restoration (of immediate nature) of damaged infrastructure (as per actual) |                |              | 0.00   | <b>2.05</b>   |
|    | a) Roads & bridges (PWD) @ 1 lakh/km for State Highway and Major Road              | <b>100000</b>  | <b>41</b>    | 0.41   |               |
|    | Roads & bridges (PWD) @ 5 lakh/km for State Highway and Major Road - State Claim   | <b>400000</b>  | <b>41</b>    | 1.64   |               |
|    | b) Electricity ( <b>revised claim</b> )  |                |              | 0.00   | <b>46.11</b>  |
|    | Electricity Poles @ 4000/pole  | <b>4000</b>    | <b>10442</b> | 4.18   |               |
|    | Conductor @ 50,000/km  | <b>50000</b>   | <b>6057</b>  | 30.29  |               |
|    | Transformer @ 1,00,000/transformer   | <b>100000</b>  | <b>1165</b>  | 11.65  |               |
|    | c) Irrigation  |                |              | 0.00   | <b>25.00</b>  |
|    | Immeidate repair of irrigation schemes @ Rs. 1.5 lakh/scheme                       | <b>150000</b>  | <b>57</b>    | 0.86   |               |
|    | Irrigation scheme repair (State Claim) @ ~Rs. 44,00,000/scheme                     | <b>4250000</b> | <b>57</b>    | 24.23  |               |
|    | d) Drinking water supply schemes   |                |              | 0.00   | <b>7.60</b>   |

|  |                |            |            |             |
|--|----------------|------------|------------|-------------|
| Drinking water repair of drinking water supply schemes @ Rs. 1.5 lakh/scheme | <b>150000</b>  | <b>19</b>  | 0.29       |             |
| Drinking water supply scheme repair (State Claim) @ ~Rs. 40,00,000/scheme    | <b>3850000</b> | <b>19</b>  | 7.32       |             |
| e) Community Assets @ Rs. 200000/asset                                       |                |            | 0.00       | <b>6.05</b> |
| Open Wells repair (state claim)  | <b>10000</b>   | <b>293</b> | 0.29       |             |
| Pumpsets (state claim)   | <b>75000</b>   | <b>180</b> | 1.35       |             |
| Water tank (state claim)   | <b>33000</b>   | <b>430</b> | 1.42       |             |
| Panchayath road @ Rs. 60,000/km  | <b>60000</b>   | <b>65</b>  | 0.39       |             |
| Panchayath road @Rs. 4,60,000/km (State Claim)                               | <b>400000</b>  | <b>65</b>  | 2.60       |             |
|  |                |            | <b>214</b> | <b>431</b>  |

The above amount is requested as additional assistance from Government of India

Sd/-  
P.H Kurian IAS  
State Relief Commissioner

## Appendix- IX

## Status of expenditure from State Disaster Response Fund (SDRF) Account

Year : 2017-2018

State:- KERALA

(Rs. In Crore)

| SL. No. | ITEM  | Amount                                |
|---------|---|---------------------------------------|
|         | <b>(I) Receipts</b>   |                                       |
| 1       | Opening balance in SDRF account as on 01.04.2017 (of financial Year):<br>(a) SDRF<br>(b) NDRF<br>(c) Total                                  | 102.1446                              |
| 2       | SDRF Releases made during instant financial year (Central and State share):<br>(a) First Installment<br>(b) Second Installment<br>(c) Total | 102 +<br>102<br>-----<br>204<br>===== |
| 3       | NDRF releases during the instant financial year, if any   | ---                                   |
| 4       | Interest received on investments made as per the cRF Scheme   | ---                                   |
| 5       | Total funds available in the SDRF account (1+2+3+4)   | 306.1446                              |
|         | <b>(II) Expenditure</b>   |                                       |
| 6       | Expenditure incurred as per norms on approved natural calamities as per the Scheme of SDRF/NDRF (indicate calamity-wise expenditure)        | 217.8337459                           |
| 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)  | 217.8337457                           |
| 10      | Balance available in the SDRF account of the instant inancial year:-<br>(a) SDRF<br>(b) NDRF<br>(c) Total                                   | 88.3108541                            |

\* As per extant items and norms of assistance from SDRF/NDRF, expenditure on these items (collectively) is permissible upto 10% of the annual allocation.