

Government of Odisha

MEMORANDUM

On the Very Severe Cyclonic Storm

HUDHUD 2014

SPECIAL RELIEF COMMISSIONER

REVENUE & DISASTER MANAGEMENT DEPARTMENT Government of Odisha

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Chapter-I

Introduction

Odisha is situated in the East Coast of India between the parallels of 17.49'N and 22.34'N latitudes and meridians of 81.27'E and 87.29'E longitudes. It has 480 km of coastline along the Bay of Bengal. Besides, the State is intercepted by peninsular 11 river systems like Subarnarekha, Budhabalang, Brahmani, Baitarani, Mahanadi, Rushikulya, Vansadhara, Nagabali, Indravati, Kolab and Bahuda apart from a number of tributaries and distributaries. The geo-climatic conditions of the State make it acutely vulnerable to regular natural disasters like flood and cyclone.

During the last decade, the State has faced one or more major disasters like flood, cyclone and drought almost every year. As many as 100 cyclones/ severe cyclones crossed the Odisha coast during 1891 - 2014. In the recent past, the State experienced major cyclones in 1971, 1999 and 2013. The Cyclone in 1971 with storm surge had caused large scale death and destruction. In 1999, two cyclones consecutively struck Odisha coast in the month of October. Four districts were badly affected by the severe cyclone occurred on 17-18 October 1999. The district of Ganjam was worst affected by the said disaster. Eleven days after this sever cyclone, a Super Cyclone had its landfall on 29th October 1999 close to Paradip in Jagatsinghpur district. Accompanied with high storm surge, it devastated the entire coastal Odisha and the adjoining areas affecting as many as 14 districts cumulatively. Last year, the Very Severe Cyclonic Storm (VSCS) "PHAILIN" hit Odisha coast on 12.10.2013 at Gopalpur in Ganjam District followed by severe floods in two spells. While the people affected by these very severe disasters were still trying to recover from its effects, the State faced yet another Very Severe Cyclonic Storm "Hudhud" which has affected 15 districts namely Gajapati, Ganjam, Jagatsinghpur, Kalahandi, Kandhamal, Kendrapara, Keonjhar, Khordha, Koraput, Malkangiri, Mayurbhanj, Nabaranghpur, Puri, Rayagada and Dhenkanal. Two cyclones in quick succession have put the state administrative machinery and the affected people to severe strain.

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Basic information of the State

Geographical Area

SI. No.	Name of the District	Area (in Sq. Kms.)
1	2	3
1	Angul	6375
2	Balasore	3806
3	Baragarh	5837
4	Bhadrak	2505
5	Bolangir	6575
6	Boudh	3098
7	Cuttack	3932
8	Deogarh	2940
9	Dhenkanal	4452
10	Gajapati	4325
11	Ganjam	8206
12	Jagatsinghpur	1668
13	Jajpur	2899
14	Jharsuguda	2114
15	Kalahandi	7920
16	Kandhamal	8021
17	Kendrapara	2644
18	Keonjhar	8303
19	Khordha	2813
20	Koraput	8807
21	Malkangiri	5791
22	Mayurbhanj	10418
23	Nabarangpur	5291
24	Nayagarh	3890
25	Nuapada	3852
26	Puri	3479
27	Rayagada	7073
28	Sambalpur	6624
29	Subarnapur	2337
30	Sundargarh	9712
	Total	155707

ADMINISTRATIVE MAP OF ODISHA



SI.	Name of the	No. of	Popula	tion (in '00	0 Nos.)	Distrib	ution of	Sex	Population	Literacy		Houses		
No.	District	Villages				Popu	lation	Ratio	Density	rate				
			Male	Female	Total	Rural	Urban				No. of	No. of	No. of	Total
					(4+5)	Population	Population				pucca	Kuchha	Huts	(12+13+14)
					()						houses	Houses		· · · ·
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Angul	1910	656	618	1274	1067	207	943	200	77.5	87373	207753	796	295922
2	Balasore	2952	1186	1135	2321	2067	253	957	610	79.8	128848	397047	3512	529407
3	Baragarh	1207	749	732	1481	1331	150	977	254	74.6	84095	288456	840	373391
4	Bhadrak	1311	760	746	1506	1320	186	981	601	82.8	67088	241583	856	309527
5	Bolangir	1794	830	819	1649	1452	197	987	251	64.7	59677	371065	1339	432081
6	Boudh	1186	222	220	442	421	20	991	142	71.6	16074	91499	154	107727
7	Cuttack	1950	1353	1272	2625	1888	736	940	667	85.5	308666	256575	1590	566831
8	Deogarh	875	158	154	312	290	22	975	106	72.6	4856	70902	184	75942
9	Dhenkanal	1215	613	580	1193	1075	118	947	268	78.8	95438	182571	361	278370
10	Gajapati	1619	283	295	578	507	71	1043	134	53.5	46013	82197	608	128818
11	Ganjam	3212	1779	1750	3529	2761	768	983	430	71.1	498010	257520	1364	756894
12	Jagatsinghpur	1288	578	559	1137	1021	116	968	682	86.6	143020	121497	1071	265588
13	Jajpur	1778	926	901	1827	1692	135	973	630	80.1	159865	246618	1089	407572
14	Jharsuguda	348	297	283	580	348	231	953	274	78.9	42783	91388	453	134624
15	Kalahandi	2236	787	790	1577	1455	122	1003	199	59.2	27903	375592	1319	404814
16	Kandhamal	2546	360	373	733	661	72	1037	91	64.1	55323	115742	959	172024
17	Kendrapara	1640	718	723	1441	1357	84	1007	545	85.2	109096	217424	885	327405
18	Keonjhar	2122	906	895	1801	1549	253	988	517	68.2	64289	341366	974	406629
19	Khordha	1551	1167	1085	2252	1167	1084	929	800	86.9	286267	200624	2745	489636
20	Koraput	2028	679	701	1380	1153	226	1032	157	49.2	97842	239783	580	338205
21	Malkangiri	1045	304	310	614	564	50	1020	106	48.5	25506	111564	380	137450
22	Mayurbhanj	3950	1256	1264	2520	2327	193	1006	242	63.2	63513	522305	1830	587648
23	Nabarangpur	901	605	616	1221	1133	88	1019	231	46.4	34876	237470	1317	273663
24	Nayagarh	1695	503	460	963	883	80	915	248	80.4	78007	152379	582	230968
25	Nuapada	663	302	308	610	576	34	1021	158	57.3	9747	149880	320	159947
26	Puri	1715	865	833	1698	1434	265	963	488	84.7	169676	198778	1028	369482
27	Rayagada	2567	472	496	968	821	147	1051	137	49.8	70961	153918	1085	225964
28	Sambalpur	1322	527	514	1041	733	308	976	157	76.2	64601	183465	763	248829
29	Subarnapur	959	311	299	610	560	50	960	261	74.4	28125	123945	364	152434
30	Sundargarh	1764	1061	1032	2093	1355	738	973	216	73.3	137528	334481	1284	473293
	Total:	51352	21217	20768	41982	34975	7012	29527	9812	2136.1	3065078	6565400	30646	9661100

Population and Number of Houses

Source : Census 2011

SI.	Name of the		Agricultu	re Sector		Road (in Kms)				
No.	District	Cultivated	Total No.	No. of	No. of	NH	State PWD	Rural Road	Urban Road	Total
		area	of farmers	SMF	landless		Roads			
		(in 000's			agriculture					
		ha)			labourers					
					140041010					
1	Angul	216	151450	142546	57414	227.93	64.00	7017.04	517.7	7826.67
2	Balasore	250	285759	277410	165636	119.41	31.20	6834.2	516.36	7501.17
3	Baragarh	349	193336	166267	152438	97.60	100.20	7138.4	289.44	7625.64
4	Bhadrak	176	190915	178980	75320	40.46	113.10	6394.56	257.85	6805.97
5	Bolangir	346	249605	228871	107920	159.00	133.10	2413.42	626.68	3332.2
6	Boudh	89	75922	66698	35244	109.39	63.58	5182	100.91	5455.88
7	Cuttack	188	264983	158912	132637	63.55	118.00	5647.64	532.12	6361.31
8	Deogarh	67	43051	38336	24462	190.16	110.07	4127.7	43.9	4471.83
9	Dhenkanal	186	111572	106865	66856	159.11	12.00	4637.44	395.1	5203.65
10	Gajapati	76	69343	64466	68824	-	249.30	5936.01	125.09	6310.4
11	Ganjam	406	295389	276010	185015	210.10	418.85	11578.8	966.58	13174.33
12	Jagatsinghpur	104	122869	119473	56051	10.40	133.00	3114.04	266.9	3524.34
13	Jajpur	145	125411	114855	106247	153.57	1.60	5373.28	572.93	6101.38
14	Jharsuguda	88	63146	56805	21048	105.60	43.44	4317.83	72.17	4539.04
15	Kalahandi	378	184310	157862	143873	183.12	55.50	13621.15	432.48	14292.25
16	Kandhamal	128	91512	81983	42795	114.00	290.97	8194.5	320.36	8919.83
17	Kendrapara	152	162140	151150	70136	45.00	70.20	4257.48	376.54	4749.22
18	Keonjhar	298	256477	244409	84638	287.29	65.04	5244	495.36	6091.69
19	Khordha	129	119392	114387	64072	165.80	17.33	5146.42	833.77	6163.32
20	Koraput	304	166734	138814	89164	173.54	92.63	7904.42	651.01	8821.6
21	Malkangiri	142	96535	79516	23913	-	241.92	4831.99	110.3	5184.21
22	Mayurbhanj	437	389981	369293	145285	193.45	216.50	11888.36	718.6	13016.91
23	Nabarangpur	186	146456	128832	72307	42.00	67.50	5724.06	259.81	6093.37
24	Nayagarh	134	112064	107799	59247	98.93	13.00	4204.92	405.23	4722.08
25	Nuapada	189	98750	88308	37130	93.42	30.90	5828.92	286.74	6239.98
26	Puri	189	163660	156384	79505	132.12	9.00	10344.93	443.58	10929.63
27	Rayagada	193	129614	110593	67059	-	393.40	7165.16	198.8	7757.36
28	Sambalpur	194	101129	86126	73078	204.63	164.97	9483.64	261.75	10114.99
29	Subarnapur	128	95721	84882	53939	45.70	40.00	3682.73	170.03	3938.46
30	Sundargarh	313	210240	190111	59287	168.01	207.78	11993.7	656.9	13026.39
	Total:	6180	4767466	4286943	2420540	418.34	3568.08	199228.74	11904.99	218295.1

Agriculture and Road Sectors

Source : Odisha Agriculture Statistics, 2012-13, Published by Directorate of Agriculture and Food Production, Odisha

Chapter-II

Forecast, Occurrence and Intensity

India Meteorological Department continuously tracked the cyclonic system "Hudhud" and alerted the Government from time to time. As per the message received from India Meteorological Department on **06.10.2014**, a low pressure area was formed over Tenasserim Coast and adjoining Andaman Sea at 08.30 hours IST which was predicted to concentrate into a Well Marked Low Pressure Area during the next 24 hours and further concentrate into a depression during the subsequent 24 hours. The date-wise development of the cyclonic system as intimated by the India Meteorological Department is indicated below:

07.10.2014, Time- 1230 EF

Yesterday's low pressure area over Tenasserim Coast and adjoining Andaman Sea has concentrated into a Depression and lay centred at 0830 hours IST today, the 7th October,2014 over North Andaman Sea and Neighbourhood about 1380 Km Southeast of Gopalpur. It would move in a West-Northwesterly direction and intensify into a Deep Depression within 24 hours and further intensify into a **Cyclonic Storm** thereafter.

08.10.2014, Time- 1230 EF

The deep depression over north Andaman Sea intensified into a Cyclonic Storm 'Hudhud' and lay centred at 8.30 hrs over north Andaman Sea close to Long Island. After crossing the Long Island, the system would continue to move west-northwestwards, intensify further into a severe cyclonic storm during next 24 hours and subsequently into a very severe cyclonic storm during subsequent 36 hours. The system would cross north coastal Andhra Pradesh and South Odisha coast between Visakhapatnam and Goplapur around noon of 12th October 2014.

09.102014, Time- 1730 EF

The severe cyclonic storm 'Hudhud' over East-central Bay of Bengal moved west-northwestward and lay centred at 1430 hrs IST near latitude 14.0°N and longitude 88.6°E about 700 km southeast of Gopalpur. The system would continue to

move west-northwestwards, and intensify further into a very severe cyclonic storm during next 24 hours. The system would cross north Andhra Pradesh coast around Visakhapatnam by the forenoon of 12th October 2014.

10.10.2014, Time- 1230 EF

The severe cyclonic storm "Hudhud" lay centred about 57 km southsoutheast of Gopalpur at 08.30 hrs today (10.10.14). The system is likely to intensify into a very severe cyclonic storm during next 12 hours and make landfall around Visakhapatnam in Andhra Pradesh by forenoon of 12th October, 2014.

11.10.2014, Time- 0900 EF

Information on Very Severe Cyclone Storm "Hudhud" Cyclone Warning-Seven (ORANGE MESSAGE) for South Odisha Coast

The Very Severe Cyclonic Storm "Hudhud" over westcentral Bay of Bengal moved westwards during past six hours and lay centered at 0830 hrs IST of 11th October 2014 near latitude 15.9°N and longitude 85.4°E, about 380 km south-southeast of Gopalpur. The system would move west-northwestwards for some more time. It would then move northwestwards and cross north Andhra Pradesh coast around Visakhapatnam by the forenoon of 12th October 2014.

11.10.2014, Time- 2100 EF

Information on Very Severe Cyclonic Storm "Hudhud" Cyclone Warning-Ten

(RED MESSAGE) for south Odisha Coast

According to latest observations, the Very Severe Cyclonic Storm 'Hudhud' over westcentral Bay of Bengal moved west-northwestwards during past six hours and lay centered at 1730 hrs IST of 11th October 2014 near latitude 16.2°N and longitude 84.8°E, about 230 km southeast of Visakhapatnam and 340 km south-southeast of Gopalpur. The system would move northwestwards and cross north Andhra Pradesh coast close to Visakhapatnam around noon of 12th October 2014.

12.10.2014, Time- 0500 EF

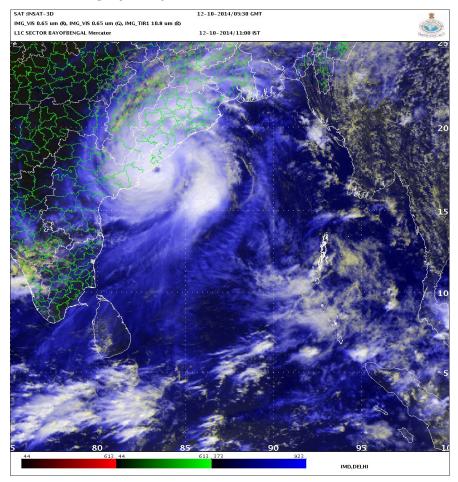
Information on Very Severe Cyclonic Storm "Hudhud": Cyclone Warning-TWELVE (RED MESSAGE) for South Odisha Coast:- According to latest observations, the Very Severe Cyclonic Storm "Hudhud" over west central Bay of Bengal moved slightly north-westwards with aj speed of about 6 kmph during the last 06 hours and lay centered at 2330 hrs IST of 11th October 2014 near latitude 16.4^oN and longitude 84.7^oE, about 210 km southeast of Visakhapatnam and 320 km south of Gopalpur. The system would move northwestwards and cross north Andhra Pradesh coast close to Visakhapatnam around noon of today, the 12th October 2014.

12.10.2014, Time- 0630 IST

Very Severe Cyclonic Storm, "Hudhud" over west central Bay of Bengal, Cyclone Warning for north Andhra Pradesh & south Odisha coasts (Red Message) and post landfall outlook.

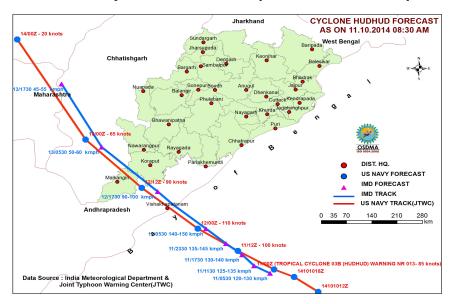
The Very Severe Cyclonic Storm "Hudhud" over west central Bay of Bengal moved northwestwards with a speed of about 15 kmph during the last 06 hours and lay centered at 0530 hours IST of 12th October 2014 near latitude 17.2°N and longitude 84.2°E, about 100 km southeast of Visakhapatnam and 240 km southsouthwest of Gopalpur. The system would move northwestwards and cross north Andhra Pradesh coast close to Visakhapatnam around noon of today, the 12th October 2014.

Date	Time	Watch/Observation				
08.10.2014	9.00AM	1170 Km South East of Gopalpur				
	12.30 AM	1150 Km South East of Gopalpur				
	6.00AM	1010 Km South East of Gopalpur				
09.102014	5.00AM	890 Km South East of Gopalpur				
	12.00 Noon	750 Km South East of Gopalpur				
	11.30 PM	670 Km South East of Gopalpur				
10.10.2014	9.00AM	610 Km South South East of Gopalpur				
	12.30PM	570 Km South South East of Gopalpur				
	4.30PM	520 Km South South East of Gopalpur				
11.102014	12.00 Noon	380 Km South South East of Gopalpur				
	9.00PM	340 Km South South East of Gopalpur				
12.10.2014	5.00AM	320 Km South of Gopalpur				
	11.30AM	Close to Visakhapatnam & system is crossing the coast				
	1.00PM	270 Km South East of Gopalpur				
	6.00PM	260 Km South East of Gopalpur				



Satellite imagery of Cyclone "Hudhud" at 11 AM on 12/10/2014

Track of Cyclone "Hudhud" depicted on Odisha Map



Wind Speed

The very severe cyclonic storm "Hudhud" passed through the district of Malkangiri adjoining Koraput district in the evening of 12th October 2014. Under its impact the Southern districts of Odisha reportedly experienced wind speed of 80-100 kmph.

Rainfall

Due to the effect of cyclonic storm, heavy rainfall occurred in many parts of the affected districts from 11^h to 14th October 2014. The cumulative amount of rainfall during this spell was as high as 319.9 mm in Gajapati district. The average rainfall of the affected districts recorded on 12th and 13th of October 2014 are indicated below:

SI.	District	12 th	13 th
1	Gajapati	32.0	209.7
2	Ganjam	44.2	82.6
3	Jagatsinghpur	52.9	41.1
4	Kalahandi	12.3	25.6
5	Kandhamal	12.3	109.1
6	Kendrapara	59.3	17.1
7	Keonjhar	18.1	64.1
8	Khordha	30.4	58.5
9	Koraput	12.2	154.4
10	Malkangiri	0.0	123.2
11	Mayurbhanj	18.6	41.8
12	Nabaranghpur	8.7	68.0
13	Puri	22.4	17.7
14	Rayagada	8.9	94.7
15	Dhenkanal	25.4	53.3

(Rainfall in mm)

The following blocks received rainfall more than 200 MM on a single day due to the effects of the cyclone.

SI. No	District	Block	Rainfall received (in MM) Dt.13.102014
1	Koraput	Narayanpatna	290.0
2		Laxmipur	270.0
3		Pottangi	244.2
4		Similiguda	211.0
5	Gajapati	R.Udayagiri	257.6
6		Rayagada	243.0
7		Mohana	240.0
8		Gosani	226.0
9		Gumma	213.0

Flood

Due to heavy rainfall from 11th to 13th October 2014, besides flash floods in hilly areas and small rivers, the river Vansadhara witnessed flash flood affecting the downstream areas of Gajapati and Rayagada districts. The water levels of the river recorded on 11th to 13th of October 2014 are indicated below:

River	Forecast	Danger	5		Water Level in Meter		
	Station	Level	Level	11 th	12 th	13 th	
Vansadhara	Kashinagar	54.60	53.60	54.35	54.48	55.28	

Chapter – III

Preparedness and Response

The State Government received the first message from the India Meteorological Department on 6th October, 2014 regarding formation of a low pressure area over Tenasserim Coast and adjoining Andaman Sea and kept close watch over the situation.

On 7th of October 2014, upon receipt of the forecast of the India Meteorological Department regarding the concentration of the low pressure into a depression which was likely to further intensify into a cyclonic storm by the 8.10.2014, the same was instantly circulated among the Collectors of 16 districts namely Balasore, Bhadrak, Kendrapada, Jagatsinghpur, Puri, Ganjam, Mayurbhanj, Jajpur, Cuttack, Khordha, Nayagarh, Gajapati, Dhenkanal, Keonjhar, Malkangiri and Koraput, which were likely to be affected, with instructions to remain in full preparedness to meet any eventuality. They were further instructed to ensure the attendance of all the officials in their respective positions and to recall those on leave.

Instructions were also given to immediately activate the District Emergency Operation Centre (DEOC) to function round the clock with adequate manpower, essential equipment and other logistics. It was stressed upon to scrupulously follow the weather bulletins sent by the IMD to keep themselves updated about the movement and location of the cyclonic storm for undertaking all the required preparedness measures.

On 8th October 2014, the Chief Secretary, who is the Chairman of the State Executive Committee (SEC), took a meeting of the Secretaries of all the related Departments to review the preparedness measures. Hon'ble Chief Minister also took stock of the situation in a meeting of all the Secretaries of the key Departments and gave direction for ensuring all the required preparedness measures to encounter the impending disaster and to ensure Zero Casualty. The Chief Secretary issued detailed instructions to all Departments of the Government, all Revenue Divisional Commissioners, all Collectors and the Managing Director, OSDMA with regard to preparedness measures to be taken for effectively combating the disaster taking into account the District Disaster Management Plan.

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On 9th October, forecast of heavy to very heavy rainfall in southern districts of Odisha was received from the IMD with the prediction of flash floods. Keeping the forecast in view, Collectors of 8 districts of southern Odisha were cautioned about the flash floods due to possible heavy to very heavy rainfall from 11th evening onwards. In view of the possible wind and flash flood, instructions were issued to start evacuation of people living in kutcha houses and other vulnerable conditions in the areas likely to be affected to cyclone / flood shelters and other pucca buildings identified as shelters. Specific instruction was given to take special care to shift the old, infirm, physically challenged, women and children to safer places and cyclone shelters much before the occurrence of the disaster. Besides, evacuation of the livestock and domesticated animals to safer places was also insisted.

Instructions were given to ensure restoration of road communication within 12 – 24 hours by cutting the fallen trees along with restoration of electricity and water supply within 12 – 48 hours. The Odisha Disaster Rapid Action Force (ODRAF), Fire Service Units and the National Disaster Response Force (NDRF) stationed in Odisha were kept on alert for their eventual deployment on short notice for evacuation, search and rescue operations.

In response to the instructions -

- Control rooms in different departments and district offices were immediately activated and started functioning round the clock. The Departments ensured their Field Officers remained in their respective positions.
- With a Mission to achieve ZERO CASUALTY, Collectors of the district likely to be affected prepared the evacuation plan in respect of their districts giving highest priority to most vulnerable villages/ habitations.
- All cyclone and flood shelters were kept in readiness for the evacuees. The water supply, lighting and sanitation arrangements in the shelters were checked and curative measures taken.
- Required arrangements (especially food, water, light, medicine) were made at the shelter places for the evacuees.
- As flood is always associated with cyclone, necessary boat arrangements were made in advance to take up rescue and relief operations for the likely flood.
- Water level of Dams and MIPs was carefully monitored.

- Arrangements were made for pre-positioning adequate food materials including baby food for the affected people.
- Availability of sufficient food stuff in hostels of all residential schools of ST & SC Development Department and other Departments in the cyclone prone areas were ensured by the Collectors and the Departments concerned.
- Adequate stock of POL was ensured by FS&CW Department in the districts likely to be affected by the cyclone.
- Advance arrangements for supply of safe drinking water were made. Concerned departments made arrangements to run the pumps with generators in absence of electricity and for supply of adequate portable water through tankers and in pouches in affected areas including the shelter places.
- Stocking of required medicines and arrangements for deployment of mobile medical teams was ensured.
- Advance arrangements for cattle health care and supply of cattle feed was made for the affected cattle population.
- Works, Rural Development, Panchayati Raj and Housing & Urban Departments made necessary advance arrangements for immediate restoration of road communication to facilitate movement of relief materials to the affected areas. Similar advance arrangements were made for restoration of power supply in case of breakdown.
- The Fishermen were called back from the sea.
- Police arrangement was made for maintenance of law and order to check stealing/ loot of public properties and relief materials which are usually on rise in the immediate aftermath of a disaster.

On 10th of October, 2014, after detailed assessment of the situation, 15 units of National Disaster Response Force (NDRF), 10 teams of Odisha Disaster Rapid Action Force (ODRAF) & Fire Service units were deployed in districts likely to be affected by the cyclone and associated flood for search, rescue and evacuation operations. One team of NDRF was kept on standby for reinforcement wherever necessary. 14 satellite phones were obtained from the Government of India and provided to the Collectors of different districts and key officers at State level. Mock drill was conducted on

10.10.2014 in all the 323 Multi-purpose Flood / Cyclone Shelters in the State with active participation of community members. Various emergency equipments provided to the cyclone shelters including Generators, Water Pumps, Inflatable Tower Lights and Mechanized Tree Cutters, etc. was test-checked in course of the drill. Hon'ble Chief Minister reviewed the situation through video Conferencing with the Collectors of 7 districts namely Malkangiri, Koraput, Rayagada, Nabarngpur, Gajapati, Ganjam and Kalahandi at 6.15 PM. Holidays on 11.10.2014 (2nd Saturday) and 12.10.2014 (Sunday) were cancelled and all offices of the State Government including that of the PSUs remained open.

The evacuation of vulnerable population was carried out from 11th of October, 2014. The evacuees were housed in multi-purpose cyclone / flood shelters as well as other identified safe buildings. As many as 255043 people were evacuated and kept in 2143 shelters in 11 districts. The district wise evacuation position is mentioned below:

SI. No	District Name	Population	No. of Shelters
1	Gajapati	76396	655
2	Ganjam	26258	294
3	Koraput	66494	426
4	Malkangiri	41985	222
5	Puri	6300	13
6	Rayagada	7217	37
7	Nabarangpur	14624	103
8	Kendrapara	396	1
9	Kandhamal	1370	6
10	Kalahandi	11851	381
11	Khordha	2152	5
	Total	255043	2143

Free kitchen

People evacuated and placed in cyclone shelters & other relief camps were provided with adequate quantities of dry food and cooked food through 2143 free kitchen centres opened at such shelters/ relief camps. Even as all required preparedness measures had been undertaken by various Departments and the officers in the districts, the status of preparedness was constantly reviewed and monitored at the level of Chief Secretary and the Hon'ble Chief Minister. On 12th October 2014, Hon'ble Chief Minister personally visited the State Emergency Operations Centre and reviewed the situation.

The very severe cyclonic storm "Hudhud" after it made landfall around noon on the 12th October 2014 close to Visakhapatnam in north Andhra Pradesh coast, it passed through the district of Malkangiri adjoining Koraput district of Odisha in the evening of the same day affecting the Southern districts of Odisha. Due to the effects of high wind and heavy rainfall, lives and properties were severely affected in Southern districts. Roads were blocked due to uprooting of huge number of trees and electric poles. Other infrastructure and individual dwelling houses were also damaged.

Clearance of Roads

Soon after the cyclone subsided, the Departments of Works, Rural Development, Panchayati Raj and Housing & Urban Development Department took immediate steps for cutting of the fallen trees and clear the roads to restore road connectivity. JCB and other heavy earth moving equipments were used to clear the roads. The Police, ODRAF, NDRF and Fire Service units helped them in the work. Most of the roads up to Block level were cleared within 2 days.

Restoration of electricity

The energy infrastructure was the worst affected among all public properties. Due to high wind speed the distribution infrastructure particularly 11Kv, 33Kv and LT lines and Distribution Transformers suffered heavy damage in most of the southern districts by "Hudhud" and heavy rains. A huge 7, 73, 691 numbers of electrical consumers were affected with 239.95 km of 33 KV lines, 2155.99 km of 11 KV lines and 1088.75 km of LT Lines, 1754 nos. of distribution transformers and 8 nos. of power transformers were damaged. Since adequate manpower and materials were mobilized by the DISCOMs and District Administration, power supply was restored expeditiously.

Emergent Relief

Emergent relief was sanctioned for a period of 1 to 4 days for the affected people of the cyclone affected Districts. Emergent relief in shape of chuda & gud and rice was distributed to the people in dire need of sustenance in the cyclone affected villages. In addition to dry food, candles, matchboxes, kerosene and other essential materials were distributed.

SI.	District	ed(in Qtl.)	Beneficiary			
No.		days provided	Rice	Chuda	Gud	covered
1	Gajapati	03	4398.86	451.00	86.00	167576
2	Ganjam	03	63.12	250.00	19.99	26258
3	Kalahandi	02	56.41	61.59	9.31	11851
4	Kandhamal	01	0.00	2.10	0.50	1370
5	Kendrapara	03	0.00	09.00	1.05	3065
6	Khordha	01	0.00	3.00	0.55	2152
7	Koraput	04	446.00	16.00	13.00	66894
8	Malkangiri	01	110.41	103.30	25.02	41985
9	Nabaranghpur	02	61.52	81.75	12.00	20155
10	Puri	01	0.00	25.10	2.51	2455
11	Rayagada	02	02.00	02.00	0.50	2500
	Total		5138.32	1004.84	170.43	346261

Drinking Water

Anticipating the problem in piped water supply due to disruption of power supply on the impact of cyclone, as many as 606 DG sets were hired to run the water supply systems. Steps were taken to provide safe drinking water in the cyclone affected areas deploying 760 water tankers. 1790 mobile vans were deployed for disinfection of tube wells and restoration of damaged tube wells and piped water supply projects. Besides, 562000 water pouches were distributed.

SI. No	Name of the RWSS Division	Water pouches distributed	DG Set hired	Bleaching powder distributed (25 Kg.bag)	Water tanker deployed	Mobile Van deployed
1	Berhampur	200000	110	220	0	220
2	Bhanjanagar	137000	70	236	30	220
3	Gajapati	75000	120	67	170	180

4	Bhawanipatna	35000	11	300	150	170
5	Kandhamal	55000	80	140	140	250
6	Koraput	15000	50	146	100	130
7	Malkangiri	30000	123	255	140	140
8	Nabarangpur	10000	30	205	0	200
9	Rayagada	5000	12	100	30	280
	Total	562000	606	1669	760	1790

Disinfection of Drinking Water Sources

The cyclonic storm and the resultant heavy rainfall affected badly all the drinking water sources like tube wells, open wells, ponds etc. As many as 31,266 tube wells have been disinfected. 1669 bags of bleaching powder each of 25 kg have been distributed.

SI. No.	District	No. of wells disinfected	No. of tube wells disinfected by RWSS
1	Gajapati	161	3252
2	Ganjam	1125	4437
3	Kalahandi	0	8583
4	Kandhamal	0	4860
5	Koraput	0	5650
6	Malkangiri	25	2269
7	Nabaranghpur	62	2200
8	Rayagada	985	15
	Total	2358	31266

Health & Sanitation

In order to restore the health services in the affected areas, 268 medical teams and 406 medical relief centres were opened. 7,60,121 ORS packets, 40,98,496 Halogen tablets were supplied.

SI. No.	District	No. of medical centers opened	No. of Medical Team deployed	No. of ORS pkts. distributed	Halogen Tabs distributed
1	Gajapati	8	8	71100	1250000
2	Ganjam	94	94	328900	1760000

3	Kendrapara	01	01	0	0
4	Khordha	2	10	0	0
5	Koraput	225	86	96200	780000
6	Malkangiri	26	16	3821	19496
7	Nabaranghpur	30	30	260000	289000
8	Puri	11	11	0	0
9	Rayagada	09	12	100	0
	Total	406	268	760121	4098496

Animal Care

22,297 animals were shifted to safer places. 106 veterinary doctors & 680 Para-Veterinary teams were deployed in the cyclone affected areas. 13140 livestock have been treated and 26950 cattle vaccinated. 159 MT of cattle feed of high quality has been distributed.

SI. No.	District	No. of veterinary surgeons engaged	No. of animals treated	Quantity of cattle feed distributed (in Qtl)
1	Gajapati	09	1514	20
2	Ganjam	53	0	30
3	Koraput	17	7960	41
4	Malkangiri	06	3203	14
5	Mayurbhanj	05	0	0
6	Nabaranghpur	14	0	7
7	Rayagada	02	463	21
8	Puri	0	0	26
	Total	106	13140	159

Chapter-IV

Impact and Damages

Under the impacts of the cyclone, large part of the State has been affected and huge damages have occurred in various sectors due heavy cyclonic wind, torrential rainfall and consequent flooding. Further, large areas were inundated in Kendrapada and Puri districts due to storm surge.

As per report received from Collectors, 33.44 lakh people in 9657 villages under 1276 GPs of 99 Blocks and 508 wards of 37 Urban Local Bodies in 15 Districts have been affected due to the disaster. Three persons have lost their lives due to cyclone. The district-wise details of administrative units and population affected are given below.

SI.	Name of the districts	Blocks affected (Nos.)	GPs affected (Nos)	Villages affected (Nos.)	ULB affected (Nos.)	Wards affected	Population affected (Nos.)	Human Causa- lity
1	Gajapati	07	129	1528	02	30	578000	0
2	Ganjam	22	475	3115	18	280	1200000	0
3	Jagatsinghpur	01	06	08	0	0	565	0
4	Kalahandi	11	84	622	0	0	106795	0
5	Kandhamal	07	50	142	0	0	12000	0
6	Kendrapara	01	01	05	0	0	3065	02
7	Keonjhar	01	01	05	0	0	1197	0
8	Khordha	01	01	02	01	03	2152	0
9	Koraput	14	174	1204	04	27	393290	0
10	Malkangiri	07	81	663	02	34	127537	0
11	Mayurbhanj	01	01	01	0	0	215	0
12	Nabarangpur	10	109	328	02	10	62350	0
13	Puri	04	07	07	01	03	6300	01
14	Rayagada	09	148	2009	03	52	850000	0
15	Dhenkanal	03	09	18	04	69	500	0
	Total	99	1276	9657	37	508	3343966	3

House Damage

As many as 8 pucca houses and 883 kutcha houses have been fully damaged due to the cyclone and 9 pucca houses and 2,749 kutcha houses have been severely damaged. Similarly, 343 pucca houses & 40,244 kutcha houses have been partially damaged. These apart, 120 huts and 57 cowshed attached to houses have been damaged. The district-wise details are given below.

		Fu	Ily Dama	ge		Severely Partially Damage Damaged		Hut	Cattle shed	Total	
SI	District	Pucca in plain area	Pucca in hilly area	Kutcha	Pucca	Kutcha	Pucca	Kutcha			
1	Gajapati	0	0	201	01	950	21	18146	0	0	19319
2	Ganjam	0	0	0	0	0	02	145	38	0	185
3	Jagatsinghpur	0	0	0	0	0	0	113	0	0	113
4	Kalahandi	03	0	01	03	37	0	298	0	0	342
5	Kandhamal	0	0	24	0	128	0	2060	0	0	2212
6	Keonjhar	0	0	0	0	04	0	262	0	0	266
7	Koraput	0	05	308	05	815	149	8799	76	01	10158
8	Malkangiri	0	0	214	0	349	171	2661	05	50	3450
9	Mayurbhanj	0	0	08	0	30	0	05	0	0	43
10	Nabarangpur	0	0	16	0	49	0	1127	01	06	1199
11	Rayagada	0	0	110	0	378	0	6574	0	0	7062
12	Dhenkanal	0	0	1	0	9	0	54	0	0	64
	Total	3	5	883	9	2749	343	40244	120	57	44413

Crop Damage

About 2,47,557 hectare of agriculture area affected out of which an area of 40,484.50 hectare have sustained crop-loss of more than 50% due to cyclonic storms. The details are given under **Appendix-IV & V**.

SI. No.	Name of affected district	Total Agricultural Area affected [in hectare]	Total Agricultural Area where crop loss is > 50% [in hectare.]
1	Gajapati	67865	30083.0
2	Ganjam	83645	286.0
3	Kalahandi	6101	82.0
4	Kandhmal	566	0.0
5	Koraput	41246	9666.0
6	Malkangiri	3130	325.0
7	Nabarangpur	24111	0.0
8	Rayagada	20893	42.5
	Total	247557	40484.5

Livestock Affected

Due to cyclone, 198 large animals and 472 small animals were lost and 39350 more livestock and poultry were affected.

Loss of livelihood

Damage to Sericulture Crops:

Due to cyclone, Standing mulberry crop in 210.8 hectare and Eri crop in 40.6 hectare of land belonging to 747 sericulture farmers have sustained loss to the extent of 50% and above.

Loss of Equipment and Materials of Traditional Artisans:

718 traditional craftsmen of Koraput & Malkangiri districts have been affected with damage of their equipments and raw/ finished materials.

Damage to Nets and Boats of Fishermen:

Due to the cyclone, 30 boats, 171 fishing nets, 145 fish ponds with an area of 53.15 hectare and 101 nos. of fish seed farms involving an area of 40.5 hectare have been damaged. Fish farms to the extent of 53.15 hectare have also been silted.

Damage to public properties

Massive damage has been caused to public properties like electrical installations, water supply works, roads, bridges, culverts, embankments, drains, tube wells, Lift Irrigation points, telecommunications infrastructure, Government buildings, etc.

The damages to public properties are given under Appendix-VIII.

Chapter-V

Assistance sought for

Ex-gratia Payment to the families of deceased persons: [Item -1(a) of SDRF Norms].

3 Persons have lost their lives due to cyclone & floods in the State. Ex-gratia assistance @ Rs.1.50 lakh as per SDRF Norms has been disbursed to the families of deceased persons. The requirement of funds for the purpose comes to **Rs 4.50 lakh.**

Clothing and utensils for families: [Item -1 (d) of SDRF Norms]

About **3640** families, whose houses have been fully or severely damaged, have been provided with assistance for clothing and utensils/ household goods. An amount of **Rs.98.28 lakh** is required for the purpose.

SI.	Name of the affected districts	No. of houses damaged [Fully & Severely]	Asst. for Clothing @ Rs.1300	Asst. for Utensils @Rs.1400	Total amount [Clothing & Utensils]
1	Gajapati	1152	1497600	1612800	3110400
2	Kalahandi	44	57200	61600	118800
3	Kandhamal	152	197600	212800	410400
4	Keonjhar	4	5200	5600	10800
5	Koraput	1133	1472900	1586200	3059100
6	Malkangiri	563	731900	788200	1520100
7	Mayurbhanj	38	49400	53200	102600
8	Nabaranghpur	65	84500	91000	175500
9	Rayagada	488	634400	683200	1317600
10	Dhenkanal	1	1300	1400	2700
	Total	3640	4732000	5096000	9828000

Gratuitous Relief for families in dire need of immediate sustenance after a calamity: [Item -1 (e) of SDRF Norms]

The affected persons of who were in dire need of immediate sustenance after the disaster were provided with **5138.32** qntls. of rice, **1004.84** qntls. of Chuda and **170.43** qntls. of Gud. Besides the above, matchbox, candle and other necessities were also provided. The total expenditure incurred towards providing gratuitous relief till date comes to **Rs 249.31 lakh**.

Cost of Search and Rescue measures: - [Item 2(a) of revised SDRF norms]

All 10 units of ODRAF, 15 Units of NDRF, Fire service Units were prepositioned at strategic and vulnerable places for search & rescue operation. As many as **2,55,043** persons were evacuated by means of hired vehicles/ boats to safer places. An amount of **Rs.126.00 lakh** has been spent for the purpose.

Provision for temporary accommodation, food, clothing and medical care

[Item -3(a) of revised SDRF Norms]

a) 2143 nos. relief camps were also opened to accommodate 2.55 lakh people for an average of two days. An amount of Rs.539.13 lakh was spent towards cost of providing temporary accommodation, food, clothing and medical care in the relief camps. The district-wise detail is given in Appendix- III.

Emergency supply of drinking water in rural areas and urban areas [Item -3 (c) of SDRF Norms]

Rural Areas

For immediate provision of drinking water to the people in the cyclone affected areas, 760 water tankers were pressed into service and 1,790 mobile vans were deployed for immediate restoration/ disinfection of affected tube wells. As many as 606 DG sets were hired to run the water supply systems. Besides, 5,62,000 water pouches were distributed. An amount of **Rs.94.12 lakh** have been spent for the purpose.

Urban Areas

Mobile tankers were also deployed in the affected urban areas and hired Diesel Generator sets were deployed to run the pumps in absence of electricity. Water pouches were also distributed in the affected areas. An amount of **Rs.22.00 lakh** have been spent for the purpose.

A total amount of **Rs.116.12 lakh** has been spent towards providing drinking water in rural and urban areas.

Clearance of Debris in the public areas: (Item 4(a) of SDRF norm)

An amount of **Rs.7.92 lakh** has been spent for clearance of debris from the cyclone affected areas.

SI. No.	District	Amount spent for clearance of debris (Rs. in lakh)
1	Ganjam	1.17
2	Kandhamal	1.78
3	Koraput	3.79
4	Malkangiri	1.15
5	Nabarangpur	0.03
	Total	7.92

Disposal of Carcasses: (Item 4(c) of SDRF norm)

An amount of **Rs.5.35 lakh** has been spent for disposal of carcasses from the cyclone affected areas.

De-silting of Fish Farms [Item 5(i)(A)(c) of SDRF norm]

Fish farms to the extent of **53.15** hectare have been silted. An amount of **Rs.4.31** lakh is required for clearance of the silt.

Agriculture input subsidy to SMF farmers where crop loss is 50% and above: [Item -5(i)B of SDRF Norms]

Out of **2,47,557** hectares of affected arable land, **40,484.5** hectares of cropped area have sustained crop loss of more than 50%. Crops in 13,374 hectares of irrigated land, 25,170 hectares of non-irrigated land and 346.5 hectares of perennial crops belonging to small and marginal farmers have sustained crop loss of more than 50% An amount of **Rs.2377.89 lakh** is required for providing agriculture input subsidy to the affected small and marginal farmers.

The District wise requirement of funds is at Appendix- IV.

Input subsidy to farmers other than small & marginal farmers: [Item -5(ii) of Revised **SDRF** Norms]

Crops in **502** hectares of irrigated land, **1072** hectares of non-irrigated land and **20** hectares of perennial crops of farmers other than small and marginal farmers have sustained crop loss of more than 50% due to the cyclone. An amount of **Rs.71.97 lakh** is required for providing input subsidy to affected farmers.

The District wise requirement of funds is at Appendix-V

Assistance to Small & Marginal Sericulture farmers: [Item -5(i)B(c) of Revised SDRF Norms]

747 nos. of sericulture farmers have been severely affected by this cyclone. **40.6** hectare of Eri and **210.8** hectare of Mulberry crops have sustained crop loss more than 50%. An amount of **Rs.8.05 lakh** is required for providing input subsidy to the affected beneficiaries.

Replacement of milch/ draught animals: [Item -6(i) of Revised SDRF Norms]

198 nos. of large animals and **472** small animals have lost lives due to Cyclone. The total expenditure for replacement of these animals comes to **Rs.41.78 lakh.** The detailed calculation is given in **Appendix-VI.**

Provisions of fodder / feed concentrate in the cattle camps: [Item -6 (ii) of Revised SDRF Norms]

An amount of **Rs.30.69 lakh** has been spent towards providing fodder / feed concentrate to the cattle in the cattle camp. **159 MT** cattle feed has been used for the purpose.

Assistance to fishermen: [Item -7(i) of Revised SDRF Norms]

23 nos. of boats, 151 nos. of nets have been fully damaged and 7 nos. of boats,20 nos. of nets have been partially damaged due to cyclone. An amount of Rs.4.91lakh is required for providing assistance to the affected fishermen.

Input subsidy for fish seed farms: *[Item -7(ii) of SDRF Norms]*

40.5 Hectares of fish seed farms have been damaged due to this cyclone. The requirement for providing input subsidy @Rs 6000/- per hectare comes to **Rs.2.43 lakh**.

Assistance to Artisans in handicrafts sector by way of subsidy for repair / replacement of damaged equipments: [Item -8 of SDRF Norms]

a) Traditional Crafts

718 Artisans have been affected due to cyclone/floods. Extensive damages have been caused to their equipment and their raw materials. An amount of **Rs.55.31 lakh** is required for providing subsidy to them as per the SDRF Norms.

Assistance for repair / restoration of damaged houses: [Item -9 of revised SDRF Norms]

Due to cyclone, **8** pucca houses and **883** kutcha houses have been fully damaged and **9** pucca houses and **2749** kutcha houses have been severely damaged. Besides, **343** pucca houses & **40244** kutcha houses have been partially damaged. These apart, **120** huts and **57** cowshed attached to houses have been damaged. An amount of **Rs.1210.01** lakh is required for providing assistance for repair / restoration of the damaged houses of affected people. The detail expenditure as per revised SDRF Norms is given in **Appendix- VII.**

Repair / restoration of immediate nature of the damaged infrastructure in eligible sectors : - [Item -10 of revised SDRF Norms]

A sum of **Rs.72758.215 lakh** is required for repair / restoration of immediate nature of the damaged infrastructure in eligible sectors.

Roads and bridges

917.50 km of PWD Road, **175** nos. of CDs in PWD road, **1922.95** km of GP/PS road, **362** nos. of culverts & bridges of GP/PS road, **1375.86** km of rural road and **115** nos. of CDs in the rural areas, **560** km of urban roads have been damaged due to the flash flood and the cyclone. An amount of **Rs.37431.18 lakh** is required for immediate repair and restoration of the above damage. No fund is available in the related schemes / programme / other sources for above repair / restoration work.

Rural Water Supply / Urban Water Supply: (Repair/restoration of drinking water supply works)

587 nos. of Rural Pipe Water Supply System and 68 nos. of Tube Wells have been damaged in the rural areas due to the cyclone & flash flood. An amount of **Rs.981.74 lakh** is required for immediate repair of the same.

Damage has also occurred to the Urban Pipe Water Supply Works and Tube Wells in urban area. An amount of **Rs.7583.50 lakh** is required for immediate repair and restoration of tube wells and urban piped water supply systems.

The total requirement of fund for repair / restoration of drinking water system come to **Rs.8565.24 lakh**.

Irrigation

82.11 km of saline embankment and 62.25 km of canal embankment have been damaged by the cyclone and tidal surge. So also, 515 nos. of lift irrigation projects have been extensively damaged. An amount of **Rs.5889.435 lakh** is required for immediate restoration of above infrastructure.

252 kms of storm water drains in urban areas have been extensively damaged by the cyclone and heavy rain. An amount of **Rs.2121.00 lakh** is required for immediate restoration of the same.

A total amount of **Rs.8010.435 lakh** is required for the above purpose.

Community Assets owned by Panchayat

As many as **261** nos. of Community Asset belonging to Gram Panchayats/ Panchayat Samities have been severely damaged due to cyclone. An amount of **Rs.877.61 lakh** is required for immediate repair of the said buildings.

Besides, extensive damage has been caused to **360** Anganwadi centres, **39** urban rest sheds, tourism buildings, public buildings in rural areas, public sheds in forest areas, etc. An amount of **Rs.3582.54 lakh** is required for immediate repair of these buildings.

A total amount of **Rs.4460.15 lakh** is required for repair of above community assets.

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Primary Health Centres

39 nos. of PHC have been damaged by cyclone & flash floods. **Rs.60.80 lakh** is required for immediate repair and restoration of the PHC buildings.

Primary School Buildings

As many as **1521** nos. of primary school buildings have been damaged by cyclone & flash flood. **Rs.2815.16 lakh** is required for immediate repair of the above primary school buildings. Besides, 280 nos. of primary school buildings in tribal areas have been damaged. An amount of **Rs.980.25 lakh** is required for repair of above school buildings in tribal areas.

A total amount of **Rs. 3795.41 lakh** is required for repairs and restoration of the damaged primary school buildings.

Repair and restoration of power supply

2155.99 km of conductor of 11KV feeders and **239.95** km of conductor 33KV feeders, **8** nos. power transformers, **1754** distribution transformers and **1088.75** km of conductor LT Lines have been damaged and **Rs.10435.00** lakh is required for immediate restoration of power supply in the affected areas.

ABSTRACT OF ASSISTANCE SOUGHT FOR

<u></u>	(Rs. in lakh						
SI. No.	Item	Amount required/spent					
1	Ex-gratia for loss of life	4.50					
2	Clothing & utensils	98.28					
3	GR in kind for dire need of sustenance	249.31					
4	Cost of search & rescue measure	126.00					
5	Temporary accommodation	539.13					
6	Emergency supply of drinking water	116.12					
7	Clearance of debris	7.92					
8	Disposal of dead bodies/Carcasses	5.35					
9	De-silting/ restoration of fish farms	4.31					
10	Agriculture input subsidy-SMF	2377.89					
11	Agriculture input subsidy-other than SMF	71.97					
12	Input subsidy-sericulture farmers	8.05					
13	Replacement of milch/ draught animals	41.78					
14	Provision of fodder	30.69					
15	Assistance to fisherman for repair/ replacement of boats & nets –damaged or lost	4.91					
16	Input subsidy for fish seed farms	2.43					
17	Assistance for handicraft artisans	55.31					
18	House Building assistance	1210.01					
19	Repair of roads & bridges	37431.18					
20	Repair of rural/ urban drinking water supply system works	8565.24					
21	Repair of Irrigation works	8010.44					
22	Repair of community assets owned by panchayat	4460.15					
23	Repair of PHC/ CHC	60.80					
24	Repair of primary school buildings	3795.41					
25	Restoration of power supply	10435.00					
	Grand Total	77712.18					

or say Rs. 777.12 crore

Chapter-VI

State Disaster Response Fund (SDRF)

As per recommendations of the 13th Finance Commission, the corpus of State Disaster Response Fund of Odisha for the year 2014-15 is **Rs.475.98 crore**. Out of the above, **Rs.106.663 crore** was released in advance and spent during the year 2013-14 for management of Phailin & subsequent floods of 2013. The balance corpus for the year 2014-15 is as follows:

(Rs. in crore)

Share	Corpus of 2014-15	Advance released and spent during 2013-14	Balance corpus
Central	356.990	80.010	276.980
State	118.990	26.653	92.337
Total	475.98	106.663	369.317

Besides above, an amount of **Rs.54.590 crore** was available in the fund as opening balance (unspent balance of the year 2013-14). So, the total amount which was available in the fund for expenditure during the year 2014-15 is **Rs.423.907 crore**. However, the above amount has been fully utilized on meeting the pending liabilities of cyclone "Phailin" and admissible expenditure for other calamities occurred during the current year.

In this context, it is mentioned that after necessary examination of the state Government's proposal, Government of India vide Ministry of Home Affairs (Disaster Management Division) letter No. F. No.20-3/2014-NDM-I dtd.11 September 2014 has allowed the State Government to incur expenditure to the tune of **Rs.399.83 crore** from SDRF account for the year 2014-15 & 2015-16 towards expenditure on Gratuitous Relief & Input Subsidy for crop loss on account of Phailin & subsequent flood-2013. Accordingly, in addition to the relief necessitates of the year 2014-15, expenditure on Gratuitous Relief & Input Subsidy for crop loss on account of Phailin & subsequent flood -2013 have been met out of the corpus of the SDRF for the year 2014-15. The details of fund available in SDRF for the year 2014-15 and expenditure made therefrom are as follows.

[Rs. in crore]

SI. No.	Item	Amount
	(i) receipts	
1	Opening balance in SDRF account as on 01.04.2014 (a)SDRF (b)NDRF (c)Total	54.590
2	SDRF releases during the year 2014-15(Central & State share)	
	# 1st Installment of current year [State + Central]	131.327
	# 2nd Installment of current year, if any[State + Central]	237.990
3	Interest accrued on investment made out of SDRF	nil
4	NDRF releases during the year 2013-14 if any	nil
5	Total funds available in SDRF Account (1+2+3)	423.907
6	Expenditure incurred as per norms on approved natural calamities as per the scheme of SDRF/NDRF on calamities during 2014-15	
	# Avalanches	0.00
	# Cloud Burst	0.00
	# Drought	1.09
	# Earthquake / Tsunami	0.00
	# Fire	2.55
	# Hailstorm	0.00
	# Landslides	0.00
	# Pest Attacks	0.00
	# For Gratuitous Relief & Input Subsidy on crop loss on account of Phailin & subsequent flood -2013	310.23
	# Flood-2014 (July to August) prior to Hudhud	97.22
	Sub-total	411.09
7	Expenditure incurred on training during 2014-2015	0.00
8	Expenditure incurred up to 10% on procurement of search and rescue equipments etc. during 2014-2015	12.81
9	Expenditure incurred on instant cyclone Hudhud/ flash floods of October 2014.	0.00
10	Total expenditure incurred on all calamities (6+7+8 +9)	423.90
11	Balance available in SDRF account (5-10)	Nil

Besides above, an amount of **Rs.10.79 crore** has been spent for immediate relief necessitates on account of very severe cyclonic storm Hudhud out of the State's own resources which needs to be recouped out of assistance from NDRF for the instant calamity.

Chapter-VII

Appendix-I

District-wise rainfall data

SI. No	Affected District	DA ⁻	
	District	(Month of Oc 12 th	13 th
1	Gajapati	32.0	209.7
2	Ganjam	44.2	82.6
3	Jagatsinghpur	52.9	41.1
4	Kalahandi	12.3	25.6
5	Kandhamal	12.3	109.1
6	Kendrapara	59.3	17.1
7	Keonjhar	18.1	64.1
8	Khordha	30.4	58.5
9	Koraput	12.2	154.4
10	Malkangiri	0.0	123.2
11	Mayurbhanj	18.6	41.8
12	Nabaranghpur	8.7	68.0
13	Puri	22.4	17.7
14	Rayagada	8.9	94.7
15	Dhenkanal	25.4	53.3

Appendix-II

Extent of damage due to natural calamites State-Odisha

Nature and period of natural calamity

SI. No.	Item	Details
1	Total number of Districts in the State	30
2	Number and names of Districts affected	15 [Gajapati, Ganjam, Jagatsinghpur, Kalahandi, Kandhamal, Kendrapara, Keonjhar, Khordha, Koraput, Malkangiri, Mayurbhanj, Nabaranghpur, Puri, Rayagada and Dhenkanal]
3	Number of villages affected	9657
4	Population affected (in lakh)	33.44
5	Total land area affected (in lakh ha)	
6	Cropped are affected in ha	
	(i) Total cropped area affected	2.48 lakh ha.
	(ii) Estimated loss to crops	Rs.582.07 cr.
	(iii) Area in ha. where crop damage was more than 50 %	40,484.5 ha.
7	Percentage of area held by SMF :	
	(i) In the State as a whole	
	(ii) In the affected Districts	
8	Houses damaged :-	
	(a) No. of house damaged :-	44,413
	(i) Fully damaged pucca houses	8
	(ii) Fully damaged kutcha houses	883
	(iii) Severely damaged pucca houses	9
	(iv) Severely damaged kutcha house	2,749
	(v) Partially damaged pucca houses (other than huts) where the damage is at least 15%	343
	 (vi) Partially damaged kutcha houses (other than huts) where the damage is at least 15% 	40,244
	(vii) No. of huts damaged / destroyed	120
	(viii) No. of cattle shed attached with house	57
	(b) Estimated value of damage to houses (Rs.in lakh)	Rs.155.32 cr.
9	No. of human lives lost	3
10 11	No. of persons with grievous injuries No. of persons with minor injuries	2
12	Animals lost:-	10 670
12	(a) No. of big animals lost	198
	(b) No. of small animals lost	472
	(c) No. poultry (birds) lost	
L		

13.	Damage to public proprieties:- (a) In physical terms (sector wise details	 Repair of PWD ROADS (917.50 Km, 175 nos. of CD)
	should be given - e.g. length of State	Repair of Rural roads(1375.86 km,
	roads damaged, length of district roads damaged, length of village roads	 115 nos. of CD) Repair of GP/PS roads (1922.95
	damaged, No. of bridges damaged, No. of	Km), Culverts & Bridges (362 nos.)
	culverts damaged, No. of school buildings	 Repair of Urban road and bridges (560 km)
	damaged etc.)	Repair of tube wells and water
		supply systemRepair of TWs and Rural pipe
		water system
		 Repair of saline and canal embankment (143.25 km), and
		closing of 15 breachesRepair of 515 nos. of irrigation
		project (lift)
		 Repair of storm water drains (252 km) - Urban
		Restoration of power supply (repair
		of 8 power transformer, 1754 distribution transformer, 1088.75
		km of conductor LT lines, 2155.99
		km of 11 KV feeders and 239.95 km. of 33 KV feeders
		Repair of Primary School Building /
		High School Building (1521 nos.)Repair of Tribal School Building
		(Primary & High School)
		 Repair of PHC / CHC Repair of 316 Anganabadi centre
		 Repair of rest shed of Urban areas (39 nos.)
		 Repair of GP/PS buildings(261 nos.)
		 Repair of College / University building
		 Repair of community buildings for
		animal resources in rural areas (23 nos.)
		Repair of infrastructure of fish farm
		 Repair of community buildings at tourism spots
		Repair of rural public buildings (375
		nos.)Repair of community sheds in
		forest areas (114 nos.)
	(b) Estimated value of the domage to	Repair of rest shed in bus stands Rs.4212 cr.
	(b) Estimated value of the damage to public properties.	KS.4212 Cr.
14.	Estimated total damage to houses, crops	4949.39 crore
	and public properties.	

Appendix-III Assistance for provision of temporary accommodation, food, clothing, medical care etc. of people affected/ evacuated. (Operation of relief camps)

	(Operation of relief camps)													
SI.	Name of the	Average No.	Average	Average No. of		Expenditure	incurred (Rs. In Lkah)						
No.	affected district	(in a day) of	duration of	people accommodated										
		relief camps	operation of relief camps	per day in the	Temporary	Food	Clothing	Medical	Other					
				relief camps	accommod ation			care	essential items (to be specified)					
1	Gajapati	655	3	76396	58.50	79.03	0	0	8.00					
2	Ganjam	294	2	26258	0.45	17.47	0	0	0					
3	Kalahandi	381	2	11851	0.00	7.88	0	0	0					
4	Kandhamal	6	1	1370	33.18	0.46	0	0	0.02					
5	Kendrapara	1	3	396	0.00	0.40	0	0	0					
6	Khordha	5	2	2152	0.00	1.43	0	0	1.07					
7	Koraput	426	4	66494	156.75	88.46	0	0	0					
8	Malkangiri	222	2	41985	33.44	27.93	0	0	1.42					
9	Nabaranghpur	103	2	14624	0.19	9.73	0	0	2.67					
10	Puri	13	1	6300	0.00	2.10	0	0	0					
11	Rayagada	37	2	7217	3.75	4.80	0	0	0					
	Total	2143		255043	286.26	239.69	0	0	13.18					

Appendix-IV

Calculation of assistance for agricultural Input subsidy- SMF

SI. No.	Name of affected	Total Agricultural	Total Agricultural	out of (4) area belo	ng to SMF	Assistance s	ought for differ crops	ent categories of	Total assistance
	district	Area affected [in Hect.]	Area where croploss is > 50% [in Hect.]	Rainfed	Irrigated	Perennial	Rainfed @Rs.4500/- per hectare	Irrigated @Rs.9000/- per hectare	Perennial @Rs.12000/- per hectare	sought (Rs. In lakh)
1	2	3	4	5A	5B	5C	6A	6B	6C	7 (6A+6B+6C)
1	Gajapati	67865	30083.0	18807	9635	242	84631500	86715000	2904000	1742.51
2	Ganjam	83645	286.0	20	182	0	90000	1638000	0	17.28
3	Kalahandi	6101	82.0	54	0	17	243000	0	204000	4.47
4	Kandhmal	566	0.0	0	0	0	0	0	0	0.00
5	Koraput	41246	9666.0	5991	3557	32	26959500	32013000	384000	593.57
6	Malkangiri	3130	325.0	298	0	13	1341000	0	156000	14.97
7	Nabarangpur	24111	0.0	0	0	0	0	0	0	0.00
8	Rayagada	20893	42.5	0	0	42.5	0	0	510000	5.10
	Total	247557	40484.5	25170	13374	346.5	113265000	120366000	4158000	2377.89

Appendix - V Agricultural Input Subsidy - farmers other than SMF

SI. No.	Name of affected district	Total agricultural area where		rea belonging ther than SM		No. of farmers other than SMF affected by the instant calamity (only)			
		crop loss is >50% (in ha.)	Rainfed	Irrigated	Perennial	Rainfed	Irrigated	Perennial	
1	2	3	4A	4B	4C	5A	5B	5C	
1	Gajapati	30083	978	421	0	558	378	0	
2	Ganjam	286	14	70	0	18	94	0	
3	Kalahandi	82	0	0	11	0	0	19	
4	Kandhmal	0	0	0	0	0	0	0	
5	Koraput	9666	73	9	4	59	17	9	
6	Malkangiri	325	7	2	5	13	4	11	
7	Nabarangpur	0	0	0	0	0	0	0	
8	Rayagada	42.50	0	0	0	0	0	0	
	Total	40484.5	1072	502	20	648	493	39	

SI. No.	Name of affected district		farmers ot ected by s calamities	uccessive	Ass	Assistance sought for different categories of crops							
		Rainfed	Irrigated	Perennial	Affe	ected first ti	ne	Affect	ed for suc calamities		lakh)		
					Rainfed	Irrigated	Perennial	Rainfed	Irrigated	Perennial			
1	2	6A	6B	6C	7A	7B	7C	8A	8B	8C	9 (7A + B + C) + 8 (A+B+C)		
1	Gajapati	0	0	0	2511000	3402000	0	0	0	0	59.13		
2	Ganjam	0	0	0	63000	630000	0	0	0	0	6.93		
3	Kalahandi	0	0	0	0	0	132000	0	0	0	1.32		
4	Kandhmal	0	0	0	0	0	0	0	0	0	0.00		
5	Koraput	0	0	0	220500	81000	48000	0	0	0	3.50		
6	Malkangiri	0	0	0	31500	18000	60000	0	0	0	1.10		
7	Nabarangpur	0	0	0	0	0	0	0	0	0	0.00		
8	Rayagada	0	0	0	0	0	0	0	0	0	0.00		
	Total 0 0 0 282				2826000	4131000	240000	0	0	0	71.97		

<u>Appendix – VI</u> Animal Husbandry (Replacement of Animals)

SI.	SI. Name of affected No. District		Cattle lost		No. of animals qualifying for relief grant (i.e. subject to ceiling of 1 large milch animal or 4 small milch animals or 1 large draught animal or 2 small draught animal per household)				Assistance sought (Milch animals @ Rs. 16400/ Buffalo / cow / camel / yak etc and Rs. 1650/ Sheep / Goal & Draghat Animals @ Rs. 15000/- Camle/horse/bullock etc & Rs. 10,000/- Calf / Donkey / poney / Mule				Total Assistance sought (11	
No.		Milch A	Animal	Draught	t Animal	Milch A	nimal	Draught	t Animal	Milch A	Animal	Draught	Animal	+
		Buffalo / Cow / Camel	Sheep / Goat	Camel / Horse / Bullock	Calf Donkey & Pony	Buffalo / Cow / Camel	Sheep / Goat	Camel / Horse / Bullock	Calf Donkey & Pony	Buffalo / Cow / Camel	Sheep / Goat	Camel / Horse / Bullock	Calf Donkey & Pony	12+13+14
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Gajapati	01	10	0	06	01	10	0	06	16400	16500	0	60000	92900
2	Kandhamal	0	0	0	2	0	0	0	2	0	0	0	20000	20000
3	Koraput	111	409	75	19	111	409	75	19	1820400	674850	1125000	190000	3810250
4	Malkangiri	5	13	5	4	4	8	5	2	65600	13200	75000	20000	173800
5	Rayagada	1	3	0	6	1	3	0	6	16400	4950	0	60000	81350
	Total 118 435 80 37		37	117	430	80	35	1918800	709500	1200000	350000	4178300		

Appendix- VII Assistance sought for repair /restoration of damaged houses

SI. No.	Name of the affected districts	Fully dama houses @ per house in	Řs. 70000	houses @ per house including Action P	aged pucca Rs. 75000 in hilly area Integrated Ian (IAP) ricts	houses @	aged kutcha 9 Rs. 17600 house	pucca hou	Severely damaged pucca houses @ Rs. 12600 per house		Severely damaged kutcha houses @ Rs. 3800 per house		
		No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount		
1	2	3	4	5	6	7	8	9	10	11	12		
1	Gajapati	0	0	0	0	201	3537600	1	12600	950	3610000		
2	Ganjam	0	0	0	0	0	0	0	0	0	0		
3	Jagatsinghpur	0	0	0	0	0	0	0	0	0	0		
4	Kalahandi	3	210000	0	0	1	17600	3	37800	37	140600		
5	Kandhamal	0	0	0	0	24	422400	0	0	128	486400		
6	Kendrapara	0	0	0	0	0	0	0	0	0	0		
7	Keonjhar	0	0	0	0	0	0	0	0	4	15200		
8	Khordha	0	0	0	0	0	0	0	0	0	0		
9	Koraput	0	0	5	375000	308	5420800	5	63000	815	3097000		
10	Malkangiri	0	0	0	0	214	3766400	0	0	349	1326200		
11	Mayurbhanj	0	0	0	0	8	140800	0	0	30	114000		
12	Nabaranghpur	0	0	0	0	16	281600	0	0	49	186200		
13	Puri	0	0	0	0	0	0	0	0	0	0		
14	Rayagada	0	0	0	0	110	1936000	0	0	378	1436400		
15	Dhenkanal	0	0	0	0	1	17600	0	0	9	34200		
	Total	3	210000	5	375000	883	15540800	9	113400	2749	10446200		

Contd..

Name of the affected districts	Partially damaged pucca (other than huts) @ Rs. 3800 per house where the damaged is atleast 15%		Partially damaged Kutcha (other than huts) @ Rs. 2300 per house where the damaged is atleast 15%		Huts @ R	Damaged/ destroyed Huts @ Rs. 3000 per hut		hed attached se @1500 per shed	Total House Damage	Total Amount
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
2	13	14	15	16	17	18	19	20	21	22
Gajapati	21	79800	18146	41735800	0	0	0	0	19319	48975800
Ganjam	2	7600	145	333500	38	114000	0	0	185	455100
Jagatsinghpur	0	0	113	259900	0	0	0	0	113	259900
Kalahandi	0	0	298	685400	0	0	0	0	342	1091400
Kandhamal	0	0	2060	4738000	0	0	0	0	2212	5646800
Kendrapara	0	0	0	0	0	0	0	0	0	0
Keonjhar	0	0	262	602600	0	0	0	0	266	617800
Khordha	0	0	0	0	0	0	0	0	0	0
Koraput	149	566200	8799	20237700	76	228000	1	1500	10158	29989200
Malkangiri	171	649800	2661	6120300	5	15000	50	75000	3450	11952700
Mayurbhanj	0	0	5	11500	0	0	0	0	43	266300
Nabaranghpur	0	0	1127	2592100	1	3000	6	9000	1199	3071900
Puri	0	0	0	0	0	0	0	0	0	0
Rayagada	0	0	6574	15120200	0	0	0	0	7062	18492600
Dhenkanal	0	0	54	129300	0	0	0	0	64	181800
Total	343	343 1303400		92566300	120	360000	57	85500	44413	121001300

or say 1210.013 lakh

Appendix-VIII

Format for working out the requirements under the head of repair of damaged infrastructure of immediate nature. (Rs.in Lakh)

Sector		Damage in physical terms	Requirement	Out of (2)	Out of (2)	Out of (3), amount
Sector		Damage in physical terms	of funds for repair of immediate nature	Out of (3), amount available from available from related Schemes/ programmes / Other sources	Out of (3), amount available from related Schemes/ programmes / other sources	proposed to be met from SDRF/ NDRF in accordance with list of works indicated in the Appendix to the revised items and norms
1		2	3	4	5	6
Roads & Bridges		Repair of PWD roads (917.50 Km, 175 nos. of CD)	15001.00	0	0	15001.00
		Repair of Rural roads(1375.86 Km, 115 nos. of CD)	13025.00	0	0	13025.00
		Repair of GP/PS roads (1922.95 Km), Culverts & Bridges (362 nos.)	7486.18	0	0	7486.18
		Repair of Urban road and bridges (560 kms)	1919.00	0	0	1919.00
Drinking water Supply works	Urban	Repair of tube wells and water supply system	7583.50	0	0	7583.50
	Rural	Repair of tube wells and Rural piped water supply system	981.74	0	0	981.74
		Repair of saline and canal embankment (143.25 km.), and closing of 15 breaches	5611.95	0	0	5611.95
Irrigation		Repair of 515 nos. of irrigation project (lift)	277.485	0	0	277.485
		Repair of storm water drains (252 km.) - Urban	2121.0	0	0	2121.0

Power	Restoration of power supply (repair of 8 power transformer, 1754 distribution transformer, 1088.75 kms. of conductor LT lines, 2155.99 kms of 11 KV feeders and 239.95 km. of 33 KV feeders	10435.00	0	0	10435.00
Drimon Education	Repair of Primary School Building / High School Building (1521 nos.)	2815.16	0	0	2815.16
Primary Education	Repair of Tribal School Building (Primary & High School)	980.25	0	0	980.25
Primary health Centres	Repair of PHC / CHC	60.80	0	0	60.80
	Repair of 316 Anganabadi centre	473.00	0	0	473.00
	Repair of rest shed of Urban areas (39 ns.)	372.50	0	0	372.50
	Repair of GP/PS buildings(261 nos)	877.61	0	0	877.61
	Repair of College / University building	1039.70	0	0	1039.70
Community assets	Repair of community buildings for animal resources in rural areas.	130.10	0	10.60	119.50
in social sector owned by	Repair of infrastructure of fish farm	7.50	0	0	7.50
Panchayats	Repair of community buildings at tourism spots	142.34	0	0	142.34
	Repair of rural public buildings (375 nos.)	1240.00	0	0	1240.00
	Repair of community sheds in forest areas (114 nos)	115.00	0	0	115.00
	Repair of rest shed in bus stands	73.00	0	0	73.00
Total		72768.815	0	10.6	72758.215

Chapter- VIII

Conclusion

State Government by this Memorandum seeks the following assistance from the Government of India:

- A total financial assistance of **Rs. 777.12 crore** out of NDRF may be provided immediately to complete the process of relief and restoration measures caused due to cyclone.
- An Inter Ministerial Central Team may be deputed immediately to the State for assessment of damage.

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