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TSUNAMI MANAGEMENT – A SPECIAL REFERENCE TO KANYAKUMARI DISTRICT

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Abstract

'Tsunami' generated by an earthquake invaded the coast of Kanyakumari District with great force and velocity on 26-12-2004 between 8.15 AM to 11.15 AM, resulting in the loss of thousands of lives, along with the damages to properties worth crores and crores of rupees. In Kanyakumari District, 33 Coasted Villages were affected by Tsunami, which resulted in the loss of 798 lives, apart from many hundreds of people getting injured and properties worth crores of rupees destroyed. Governments of India, Tamil Nadu Government, Non-Governmental Organizations, Private Sectors and United Nations Agencies have come forward to help the people affected by Tsunami in Kanyakumari District. The specific problem of the study is to analyze whether the measures taken by the Government of India, the Government of Tamil Nadu, Non Governmental Organizations, Private Sectors and United Nations Agencies are adequate to mitigate the sufferings of the affected people of Tsunami or further improvements have to be made.

Keywords*: Earthquake, Great Force, Velocity, Damages to Properties, Help the People, Measures Taken and Affected People.*

Introduction

A natural disaster is an event with a natural, as opposed to human, cause that results in large-scale loss of life or damage to property. It could be related to weather, geology, biology or even factors outside the Earth. Examples are earthquakes, hurricanes, droughts and flooding. Disease epidemics are sometimes considered natural disasters, but may be put into a different category. In some cases, natural and human factors may combine to produce a disaster. The accumulation of global warming coincides with a rise in the concentration of green house gases in the atmosphere. More heat and infrared reactions are trapped by the gaseous mantle around the globe which accelerates the pace of global warming.

The globe system and atmosphere is a state of dynamic equilibrium with the rate of absorption of solar radiation and its emission back to space as infrared and heat waves, which balance each other. Such gases and vapours which allow free passage to radiations are of relatively shorter wave length (2900-7000 A°) onwards, play very important role in maintaining surface temperature within a range in which heat can exist. They form a blanket around the globe which checks the passage of infrared and heat wave from earth crust back to space and keep it warm. The word green house is nothing but a glass house which is constructed to grow specific tropical plants in cold areas of tropical climate.

A 'Tsunami' generated by an earthquake off Sumatra of intensity of 9.3 Richter scale invaded the Coast of the Kanyakumari District with great force and velocity between 8.15 AM to 11.15 AM, on 26-12-2004 resulting in the loss of thousands of lives, along with

the damages to properties worth thousands of rupees. In the Kanyakumari District, 33 coastal villages were affected by the Tsunami, which resulted in the loss of 798 lives, apart from many hundreds of people getting injured and properties worth crores of rupees destroyed. In this chapter an attempt has been made to explain the impact of Tsunami that occurred in the Kanyakumari District on 26.12.2004.

Objectives of the Study

The present study aims with following objectives:

1. The rescue and relief operations by the Govt. of India and Govt. of Tamil Nadu, Non-Governmental Organizations, private sectors and United Nations Agencies are satisfactory or not;
2. The rehabilitation initiatives taken by the Govt. of India and Govt. of Tamil Nadu, Non-Governmental Organizations, private sectors and United Nations Agencies are satisfactory or not;
3. The measures taken by the Govt. of India and Govt. of Tamil Nadu, Non-Governmental Organizations, private sectors and United Nations Agencies to improve infrastructure and community development are satisfactory or not;
4. The initiatives taken by the Govt. for a permanent solution to tackle the problems of Tsunami are satisfactory or improvements need to be made; and also
5. To suggest suitable measures for an effective Tsunami management and guidance

TSUNAMI

Tsunami is a Japanese word meaning high waves in a harbour causing great destruction and sufferings to the people on crossing the shore. Tsunami also known as harbour wave is caused by earthquakes, land slide and volcanism in the marine environment. In fact those deadliest Tsunamis are associated with submarine earthquakes of very high magnitude like the recent Sumatra earthquake that triggered the Asian Tsunami of December 26, 2004 that took perhaps the largest known human toll out of a natural hazard. As the Tsunami wave has very low amplitude like 1.0 m or les it is hardly noticed by the ship-crew yet cruises with a very high velocity (say 800 km/hr) in ocean. When it reaches the shallow waters of the coastal area wave crest rises to heights of a few tens of meters flooding the low coastal land eroding and depositing large quantities of sediment. The loss (of life, property and fishing crafts and gear) will run very high. The only point of comfort is that such very high magnitude submarine earthquakes are rather rate events.

Nature of Tsunami

"Tsunami", the seismically induced water wave, is produced by tectonic displacement of sea floor, accompanied by earthquakes. Very long wavelengths vary

approximately 100km and the low amplitudes ranges from 1 or even less characterize the Tsunami waves. As wave approaches the land breaks to heights of 100m or more. The highest 'tidal wave' recorded is about 278ft off coast of Japan. The Tsunami can be classified by the distance from their source to the area of impact i.e., local and remote Tsunami. Local Tsunami has shore warning times and relatively shore wave periods; remote Tsunami have longer warning times and relatively long periods. Typical periods for Tsunami range from 15 minutes for locally generated Tsunami to several hours for remote Tsunami. Typical run up height for Tsunami ranger up to 15 m at the coast, although most are much smaller the run up of Tsunami wave depends on the initial or incident amplitude and direction, the wave period, the wave interacts with the ocean and shoreline topography. Where a harbor of coastal bay resonates with a similar period to the incident wave, large amplification of the incident waves can be expected.

Formation of TSUNAMI

A Tsunami can be generated by several mechanisms. Most Tsunamis are associated with submarine seismic disturbances. It is also known that the explosion of an under-water volcano, island exploding and meteorite impacts can cause a Tsunami. An undersea earthquake, characterized by motion along a thrust or normal fault, forces many thousands of square miles of ocean floor to lurch upward or downward in terms of many feet, which pushes up or drops down the overlaying column of water, respectively. A Tsunami may also be generated indirectly by seismic vibrations, which may trigger other seafloor disturbances, such as rock falls, and submarine landslides or an explosion of gas hydrates (Gonazalez, 1999). Rock falls or meteorite impacts disturb the surface water, whereas submarine landslide, volcanic eruptions or explosion of gas hydrates disturb deep water. According to Gonzalez (1999) Tsunami evolve through three overlapping but quite distinct physical processes: generation by any force that disturbs the water column, transoceanic propagation from deepwater or shallow coastal areas near the source and finally inundation of dry land. Once a Tsunami is generated by an earthquake or other causes, it propagates and transports destructive energy thousands of kilometers away from the source through the inundation of water until it reaches shorelines, where the last stage of a Tsunami's evolution begins. Once the Tsunami runs ashore as a breaking wave, it manifests itself as a wall of water or tide like flood and inundates the dry land. Vertical run up can reach many feet. However horizontal inundation, if unimpeded by coastal or other steep topography, can penetrate hundreds of feet inland. Conceptual explanation of earthquakes and Tsunamis makes it clear that earthquakes and Tsunamis are phenomena that take a large toll of people's lives and properties. Yet it is nearly impossible to predict the exact time, date and location of a future earthquakes and Tsunamis.

Review of Literature

A Joint United Nations – India Report on "Tsunami One Year After" has examined the havoc caused by the Tsunami and the response of the Government and Civil Society, the action by United Nations Agencies during the relief phase, United Nations recovery framework in post disaster relief to recovery, restoring livelihoods and upgrading infrastructure, prospective risk reduction and policy support and coordination.

Balakrishnan, G., and Alagaraja, K. in their work titled "Regulated Mechanized and Traditional Fishing in Tamilnadu" maintains that in India, fish and fisheries have always played an important role in nutrition and livelihood. Marine fisheries in India are characterized by a great diversity of marine biota exploited by various types of fishing vessels and gears both traditional and modern. Initially, the fishery was using only traditional crafts and gears. This is true even now for a majority of the smaller fishing Villages. During the late 1970s and 1980s, FRP canoes became very popular and largely replaced the traditional wooden canoes. At present, 50% of the total Indian catch comes from trawlers, reducing the share of traditional fishers. This has led to open and severe clashes/ conflicts and over-exploitation of violence, killings and burning of boats, thus making it a serious social law and order problem in many coastal fishing areas.

Analysis Part of the Study

Village-wise Affected Persons

The details relating to village-wise affected persons in the Tsunami that occurred in the Kanyakumari District on 26.12.2004 are provided in the table 1[1]

Table 1 Village-wise Affected Persons

Sl. No.	Name of the Hamlet	Affected Families	Adult		Children		Total
			Male	Female	Male	Female	
1.	Arockiapuram	711	1015	929	523	609	3076
2.	Chinnamuttom	602	937	826	410	501	2674
3.	Kanniyakumari	2317	2609	2307	894	907	6717
4.	Puthugramam	679	1034	1116	809	869	3828
5.	Kovalam	1108	2013	1865	2257	1004	7139
6.	Keezhamankudy	699	1209	1176	1134	1049	4568
7.	Melamanakudy	1532	2204	1552	1309	1409	6474
8.	Annai Nagar	448	909	834	609	622	2974
9.	Pallam	759	1419	1346	1854	1741	6360
10.	Puthenthurai	163	192	178	349	276	995
11.	Kesavanputhenthurai	171	247	233	274	295	1049

[1] District Rural Development Agency, Nagarcoil, Kanyakumari District.

12.	Pozhikarai	218	559	424	349	284	1616
13.	Periakadu	112	259	212	169	134	774
14.	Rajakkamangalam	21	36	25	57	60	178
15.	Azhikal	1397	1804	1749	2237	1478	7268
16.	Muttom	2325	2729	2407	2909	2484	10529
17.	Kadiapattinam	1992	2507	2629	2015	2307	9458
18.	Chinnavilai	409	954	1027	653	526	3160
19.	Periavillai	615	1112	1036	807	732	3687
20.	Pudur	1107	2324	2085	1829	1406	7644
21.	Kottilpadu	910	1449	1327	1524	1317	5617
22.	Colachel and Simoncolony	3779	6054	5902	5504	5426	22886
23.	Kodimunai	1223	2837	2656	2204	2040	9737
24.	Vaniyakudy	997	1722	1535	1909	1854	7020
25.	Kurumbanai	707	1457	1382	1334	1409	5582
26.	Melakurumbanai	1208	2344	2207	2005	1936	8492
27.	Naduthurai	462	1019	974	914	878	3785
28.	Melmidalam	619	1363	1279	1129	1057	4828
29.	Enayam	1075	2052	1976	1902	1874	7804
30.	Enayam Puthenthurai	1050	2112	2057	2204	2182	8555
31.	Enayam Chinnathurai	460	1037	942	956	896	3831
32.	Ramanthurai	771	1322	1229	1304	1272	5127
33.	Mullorthurai	529	1207	1184	935	892	4218
	Total	**31,175**	**52,047**	**48,606**	**45,271**	**41,726**	**1,87,650**

The details relating to village-wise affected persons provided in the above table show that 31,175 families were affected. The number of persons affected by the Tsunami includes 52,047 adult males, 48,606 adult females, 45,271 male children, 41,726 female children totaling 1,87,650 persons in 33 Villages of the Kanyakumari District.

Temporary Shelters

The total cost for establishing the temporary shelters by the Government was Rs.2,52,05,835/-. The temporary shelters were rectified by covering with Polythene sheets when these were leakages. Later, Rs.2, 000/- per shelter was allotted by the Government for upgradation of the temporary shelters. In this regard, an additional sum of Rs.1 crore was spent. To make life comfortable for the people in the temporary shelters, the District Administration, in collaboration with Non Governmental Organizations and other Civil Society Organizations provided table fans, televisions, chairs, racks, almirahs, hygiene kits, stoves, water containers, ever silver kudams, trunk boxes, bed sheets, blankets, mats, etc.,

apart from the regular provisions needed for cooking. As the short-term rehabilitation activities were on, the role played by Non Governmental Organizations became one of supplementing and complementing the Government efforts. A few telling examples: out of the 4,088 temporary shelters established in 36 locations, 1,086 temporary shelters were established by the Non Governmental Organizations. Even when issues related to temporary shelters were raised, immediate and unconditional response came from the Non Governmental Organizations in alleviating the sufferings of the people and making the place a little more habitat. Efforts taken to provide common kitchen, community spaces, toilets and other basic amenities contributed towards rehabilitating the people.[2] The details relating to the number of temporary shelters constructed are provided in the table 2

Table 2: Number of temporary shelters constructed

Sl. No	Name of the Village	No. of Huts Constructed		
		Govt.	NGO	Total
1.	Arokiyapuram	50	-	50
2.	Kanniyakumari	103	-	103
3.	Chinnamuttom	6	-	6
4.	Vavathurai	23	-	23
5.	Kovalam	124	-	124
6.	Kezha Manakudy	222	85	307
7.	Melamanakudy	360	-	360
8.	Pallam Annainagar	48	-	48
9	Pallamthurai	41	-	41
10.	Puthalam, Verapagupathi	49	4	53
11.	Alikal	159	64	223
12.	Pillaithoppu	-	220	220
13.	Muttom	432	29	461
14.	Kadiyapattinam	37	46	53
15.	Chinnavilai	36	6	42
16.	Periyavilai	45	60	105
17.	Mandaikadu Puthoor	110	-	110
18.	Kottilpadu	358	-	358
19.	Sinkaravelan Colony	-	96	96
20.	Periyanayaki Colony	36	-	36
21.	Indira Nagar	41	-	41
22.	Maramady	-	315	315

[2] District Rural Development Agency, Nagercoil, Kanyakumari District.

23.	Neerodi	26	50	76
24.	Kalingarajapuram	52	-	52
25.	Mulluoorthurai	26	-	26
26.	Maramady East	40	-	40
27.	Sambasivamnagar	43	-	43
28.	Azad Nagar	11	-	11
29.	Pandagasalaipuram	10	-	10
30.	Benedict colony	46	-	46
31.	Simon colony	89	-	89
32.	Vaniyakudy	-	110	110
33.	Kodimunai	112	-	112
34.	Alanchi	12	-	12
35.	Kurumpanai	54	-	54
36.	Kottumangalam	35	10	45
37.	Parapattu	10	-	10
38.	Veetumadi	43	-	43
39.	Rajakkamangalam Thurai (new)	46	-	46
40.	Manallvilai (new)	-	21	21
Total		**3002**	**1086**	**4088**

Table 3: Food, Clothing and Household Things Supplied by the Non Governmental Organizations

Sl. No.	Name of the Village	Food	Clothing	Household Things	Approximate Value
1.	Arockiyapuram	2175	817	837	3823252
2.	Chinnamuttam	2671	1354	1245	2259588
3.	Vavuthurai	1073	641	573	2806431
4.	Kanyakumari	9255	4622	5881	3447390
5.	Puthukiramam	1395	625	797	1235152
6.	Siluvainagar	456	268	268	180184
7.	Kovalam	2983	1840	2615	3837528
8.	Keezhamanakudy	2456	1736	5119	16665609
9.	Melamanakudi	3057	4525	4568	4401341
10.	Veerapagupathy	40	96	415	667581
11.	Annai Nagar	8443	757	1599	2663688
12.	Pallam	1878	2130	1684	4861530
13.	Puthenthurai	632	227	510	500837
14.	Chothavilai	69	27	-	872930
15.	Kesavanputhenthurai	1077	496	889	651851

16.	Periakadu	845	38	366	253241
17.	Rajakkamangalam	3966	97	500	3314960
18.	Pozhikarai	1092	516	478	237142
19.	Azikal/Pillaithoppu/Melathurai	8894	2935	5076	20290148
20.	Muttom	2273	1705	4307	12019654
21.	Kadiapattinam	3151	927	3337	3956202
22.	Chinnavilai	1124	525	965	1518785
23.	Periyavilai	2050	665	1142	1345946
24.	Puthur/Mondaikadu	3115	1097	1115	4761730
25.	Kottilpadu	4540	1565	3989	9029815
26.	Colachel	12953	5791	13578	46195715
27.	Maramadi	1463	223	1163	8970595
28.	Periyanayagi Colony/ Singaravelan Colony	-	-	135	101250
29.	Azadnagar	544	-	718	1466555
30.	Indira Nagar	74	-	37	1080686
31.	Sambasivapuram	-	440	174	367660
32.	Simon Colony	2519	650	2096	1022627
33.	Kodimunai	2341	1930	626	3974363
34.	Vaniyakudi	3200	387	2176	11286207
35.	Kurumbanai	1815	750	3010	6630346
36.	Midalam	1674	-	-	2742716
37.	Melmidalam	1057	2359	75	1536558
38.	Enayam	1450	-	-	2727519
39.	Enayam Puthenthurai	2235	-	-	1543321
40.	Enayam Chinnathurai/ Helon Colony	1434	-	-	2115260
41.	Ramanthurai	1479	-	-	2406212
42.	Mulloorthurai	837	-	-	639220
43.	Erayanmanthurai	330	-	-	917493
44.	Poothurai	1450	-	-	1938711
45.	Thoothur	5396	-	-	2612828
46.	Chinnathurai	1490	-	-	3678271
47.	Eraviputhenthurai	1464	-	-	923656
48.	Vallavilai	2402	-	-	1523759
49.	Neerodi	2176	-	-	922927
50.	Marthandamthurai	2250	-	-	285134
51.	Other Villages	7436	-	-	6190737

Compensations Paid for Fully Damaged Catamarans and Vallams

The details relating to the compensations paid for fully damaged catamarans and vallams are provided in the table 4[3]

Table 4: Compensations Paid for Fully Damaged Catamarans and Vallams

Sl. No.	Name of the Village	Catamarans		Vallams	
		Number	Amount	Number	Amount
1.	Arokiyapuram	56	1232000	46	3244500
2.	Kanyakumari and Puthukriramam	26	572000	-	-
3.	Kezha Manakudy	-	-	21	1325000
4.	Melamanakudy	283	9056000	80	6000000
5.	Annai Nagar	72	1584000	-	-
6.	Pallam	199	4378000	-	-
7.	Kesavan Puthenthurai	12	264000	-	-
8.	Alikal	163	3586000	-	-
9.	Keezha Muttom	5	110000	-	-
10.	Mela Muttom	25	550000	3	215000
11.	Kadiyapattinam	107	2354000	-	-
12.	Chinnavilai	17	374000	-	-
13.	Puthoor	70	1540000	3	207000
14.	Colachel	-	-	2	110000
15.	Kurumpanai	-	-	10	745000
16.	Marthandamthurai	-	-	4	30000
17.	Neerodi	-	-	1	75000
Total		**1035**	**25600000**	**170**	**11951500**

Overall Responses of the Respondents about Rehabilitation Initiatives

The overall responses of the respondents of the affected people of the Tsunami about the rehabilitation initiatives of the Government, Non Governmental Organizations, Private Sectors and United Nations Agencies reveal that about 9% of the respondents felt that the rehabilitation initiatives were satisfactory and about 91% of the respondents felt that the rehabilitation initiatives were not satisfactory. The overall responses of the respondents of District level officers and contact persons of the nongovernmental organizations involved in the rehabilitation initiatives of the Government, Non Governmental Organizations, Private Sectors and United Nations Agencies for the people affected by the Tsunami reveal that about 83% of the respondents felt that the rehabilitation initiatives were satisfactory and about 17% of the respondents felt that the rehabilitation initiatives were not satisfactory. This conclusion of this chapter has

[3] Fishery Department, Nagercoil, Kanyakumari District

significant relationship with the hypothesis of the study, which reads as follows: "Rehabilitation initiatives taken by the Government of India and Government of Tamil Nadu, Non-Governmental Organizations, private sectors and United Nations Agencies from the point of view of the affected by Tsunami are not satisfactory whereas from the point of view of the District level officers and the representatives of Non-Governmental Organizations, Private Sectors and United Nations Agencies the Rehabilitation initiatives are satisfactory." The responses of the respondents about overall rehabilitation initiatives are explained through the following bar diagram.

Skill Development Programmes

The skill development programmes imitated by District Rural Development Agency for the benefit of the people affected by The Tsunami are provided in the table 5.[4]

Table 5: Skill Development Programmes

Sl.No	Trade	Number of Groups	Number of Members	Expenditure (in lakhs)
1.	Tailoring	9	90	2650
2.	Sea Weed Farming	6	122	1250
3.	Bakery	7	96	2500
4.	Masonary	1	18	550
5.	Coir Products	16	180	4200
6.	EDP Cum Skill	728	2500	12500
7.	Chappal making	5	55	850
8.	Sea Shell Products	11	120	1560
9.	Coconut Sheel Products	8	150	3450
10.	Textile Screen Printing	4	60	2200
11.	Banana Fibre Products	12	120	3250
12.	Palm Lead Products	9	90	2260
13.	Hand Embroidery	19	210	3450
Total		**835**	**3811**	**40670**

Skill Training Beneficiaries

The details relating to the skill training beneficiaries are provided in the table 6[5]

[4] District Rural Development Agency, Nagercoil, Kanyakumari District.
[5] District Rural Development Agency, Nagercoil, Kanyakumari District.

Table 6: Skill Training Beneficiaries

Sl. No	Name of the Village	Number of Beneficiaries
1.	Arockiapuram	501
2.	Chinnamuttom	471
3.	Kanyakumari (Vavuthurai)	15
4.	Kanyakumari	1282
5.	Puthukiramam	113
6.	Siluvai Nagar	16
7.	Keezhamanakudy	377
8.	Melamanakudy	763
9.	Chothavilai	20
10.	Veerapagupathy	95
11.	Annai Nagar	389
12.	Pallam	348
13.	Puthenthurai	110
14.	Kesavanputhenthurai	112
15.	Pozhikarai	106
16.	Periakadu	101
17.	Rajakkamangalamthurai	241
18.	Aruthanganvilai	3
19.	Pillaithoppu/Azikal/Melathurai	695
20.	Muttom	684
21.	Kadipattinam	509
22.	Chinnavilai	245
23.	Periyavilai	341
24.	Puthoor	261
25.	Parapatru	80
26.	Kootumangalam and Vettumadi	216
27.	Kottilpadu	605
28.	Colachel	1105
29.	Simon Colony	220
30.	Kodimunai	472
31.	Vaniyakudy	558
32.	Kurumpanai	667
33.	Midalam	235
34.	Melmidalam	220
35.	Enayam	235
36.	Enayam Puthenthurai	281
37.	Ramanthurai	205
38.	Mulloorthurai	100
39.	Other Villages	130
	Total	**13127**

Social Organizations and Reformers in Managing Tsunami

Social organizations should help children in the event of a crisis. This includes materials related to preventing and preparing for a crisis as well as responding to and help children cope with the aftermath of an event. The scale of the Tsunami disaster in Southeast Asia has made clear the potentially devastating force of this type of natural disaster, particularly when communities are unprepared. Coastal and island communities who are vulnerable to the Tsunami should be educated, and being kept prepared is important.[6]

Suggestions

1. Tsunami management has become an inevitable reality and a challenge. All over the world more and more areas are becoming vulnerable to various disasters (natural and manmade). Disasters frequency is on the increase both in severity, and intensity. The history of disasters has proved that the preparedness is inadequate which results in great loss to lives and damages to the property. Very few lessons are learnt from the past disasters.
2. For an effective Tsunami management and governance, the system of administration and the people have to be very responsive and efficient even in normal times and then only during any disasters the administration could effectively respond. Soon after the disasters there would be only destruction and disruption, which needs an effective administrative system to restore. The natural disasters, by and large, are area specific and the vulnerability is known…Disaster management is a real challenge to the developing countries and particularly like ours, which is afflicted with various disasters. By and large the poor and the migrant normally land in the vulnerable areas and become victims. The administrative system should have a very clear mechanism to people prevent from landing in these areas. The equity issue is also very critical and to be addressed. The current Tsunami (2004) had also victimized a large number of tourists in all the countries. More than the local people the tourists who are new to the area would know very less about the local vulnerability and are also least equipped, hence more vulnerable and became victims.
3. In disaster prone countries particularly in the vulnerable areas there need to be a very strong and stand alone communication system, effective information dissemination, a warning system, and also an efficient rescue and response system in place. Altering the living place of the people with right information in appropriate time and if need be adequate legal support to even forcibly evict to save the lives of the people is a critical gap. The recent Tsunami 2004 exposed the

[6] Lal Mohan, R.S., (ed.) Tsunami and Its Impact, Conservation of Nature Trust, Nagercoil, India, 2005, p.5.

inadequacy. Well-trained personnel at the grass root level and availability in large numbers at a very short notice is a pre-requisite in disaster management. The right step is to compulsorily train adequate personnel particularly (youth) and periodically do the rehearsal and update the equipments. The heavy dependency on the distance response mechanism has led to heavy casualty and damage to the property. Time is a very critical essence in disaster management.

4. A well prepared disaster management plan involving all the stakeholders and particularly the local and vulnerable people at the grass root level right from local (Panchayat) upwards is lacking/needs strengthening. For unpredictable disasters there need to be the preparedness through structural and people's knowledge level and to be supported by quality infrastructure which could stand disasters of higher magnitude. Step by step, the level of preparedness has to be enhanced at all levels. Disaster management is a continuous process. As part of the disaster management, there is a need for detailed and transparent policy document spelling out the response mechanism, relief and rehabilitation packages, procedures for Aid Agencies, etc.
5. One of the critical gaps identified is lack of a rehabilitation policy; as a result, the affected people get the relief and not the rehabilitation in terms of livelihood, permanent housing, trauma care and counseling and many of them suffer for generations. There should be an effective insurance scheme which could be made mandatory and for those who are poor the premium should be paid by Governments or local bodies, Agencies etc. Collective and consistent global efforts are needed for disaster mitigation. Environmental care, poverty reduction and equity would directly mitigate disasters. To make the development sustainable effectively and efficiently handling disaster management system should be in place. A proactive and preventive approach is warranted.
6. The District (Kanyakumari) is vulnerable to the natural disasters namely drought, flood, cyclonic wind, landslide, sea erosion and biological disasters namely water borne diseases, endemic elephantiasis belt and also to Aids etc. The District is known for higher Physical Quality Life Index and to make it a sustainable and for onward progress the disaster management system should be strengthened at all levels particularly at administration people, the Non Governmental Organizations and at Institutions level.

Conclusion

Some natural disasters result from a combination of natural and human factors. For example, the primary cause of a disease epidemic may be a natural microorganism, but its spread might be encouraged by human behavior and activities, such as living in close proximity to infected animals or rapid international travel. Human activities may also have

contributed in a major way to some famines. For example, bad agricultural policies are widely thought to have been at least partly to blame for the great famine of 1958-61 in China, during which 30 million people died. Disasters are events that have a huge impact on humans and the environment. Disasters are inevitable, we cannot do anything to prevent these but disaster preparedness is only in our hand. Disasters management requires government intervention and a proper planning as well as funding. It is not necessary that these disasters are always unpredictable. Floods take place in valleys and flood plains, droughts in areas with unstable and low rainfall, and oil spills happen in shipping lanes. This predictability provides opportunities to plan for, prevent and to lessen the impact of disasters. Disasters are inevitable although we do not always know when and where they will happen. But their worst effects can be partially or completely prevented by preparation, early warning, and swift, decisive responses.

Disaster management aims to reduce the occurrence of disasters and to reduce the impact of those that cannot be prevented. The government White paper and Act on Disaster Management define the roles of Local Authorities as well as Provincial and National government in disaster management. Disaster management forces come into action as soon as a disaster strikes and helps out in relief, rescue and rehabilitation process. These are trained individuals, and are given extensive training to perform in the event of a disaster or a natural calamity and they work as a team to reduce the loss of life and helping the locals getting back to normal life.

References

1. District Rural Development Agency, Nagercoil, Kanyakumari District.
2. Fishery Department, Nagercoil, Kanyakumari District.
3. Lal Mohan, R.S., (ed.) Tsunami and Its Impact, Conservation of Nature Trust, Nagercoil, India, 2005, p.5.
4. Agriculture Department, Nagercoil, Kanyakumari District.
5. Fishery Department, Nagercoil, Kanyakumari District.
6. Chief Educational Officer, Nagercoil, Deputy Elementary Educational Officer, Nagercoil, Respectie Head of Department, Concerned Institution.
7. Chief Minister Special Cell, Kanyakumari District.