

NARBO FOURTH TRAINING PROGRAMME

**WATER FOR ALL; LESSONS LEARNT
AND
MEETING FUTURE CHALLENGES**

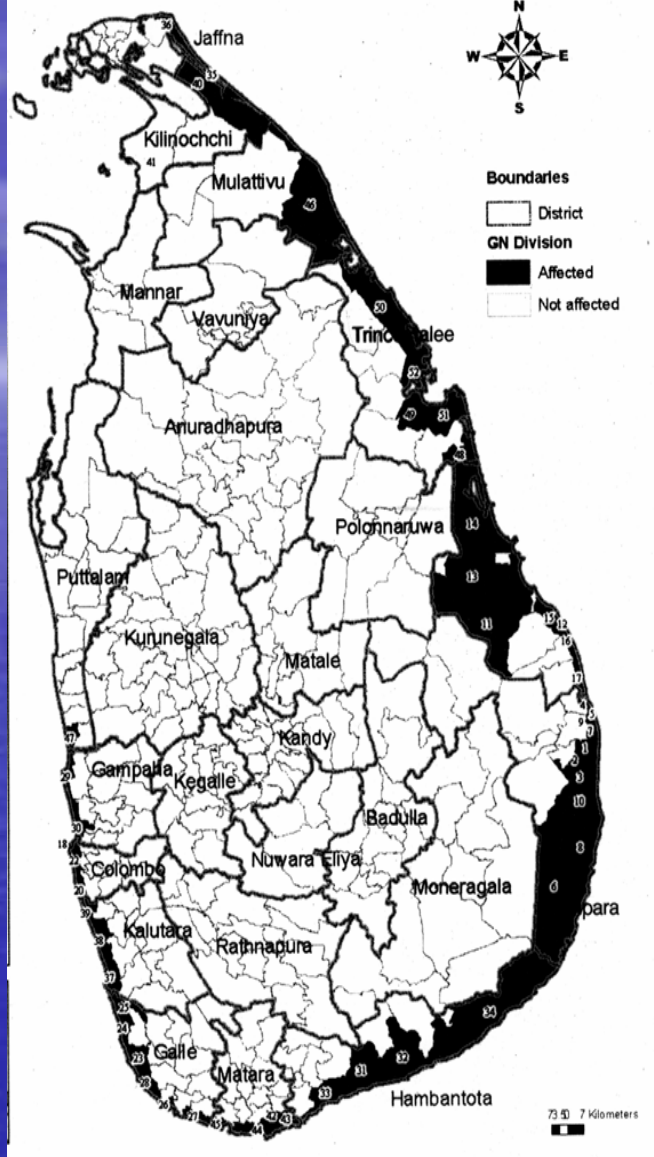
**Tsunami Disaster 2004; Lessons Learnt
From
Resettlement and Reconstruction**

Dharmasiri De Alwis

10 November 2006

Affected DS divisions

No.	District	DS Division
1	Ampara	Addalachenai
2		Akkaipattu
3		Alaya diwembu
4		Kalmunai
5		Karativu
6		Lahugala
7		Ninthavur
8		Pothuvil
9		Sainthamarathu
10		Thirukkovil
11	Batticaloa	Eravur Pattu
12		Kattankudy
13		Koralai Pattu
14		Koralai Pattu North
15		Manmunai North
16		Araipatto
17		Manmunai S. and
18	Colombo	Colombo
19		Dehiwala
20		Moratuwa
21		Rathmalana
22		Thimbirigasyaya
23	Galle	Ambalangoda
24		Balapitiya
25		Bentota
26		Galle Four Gravets
27		Habaraduwa
28		Hikkaduwa
29	Gampaha	Negombo
30		Wattala
31	Hambantota	Ambalantota
32		Hambantota
33		Tangalle
34		Tissamaharama
35	Jaffna	Maruthkerny
36		Point Pedro
37	Kalutara	Beruwala
38		Kaluthara
39		Panadura
40	Kilinochchi	Pachchilaipalli
41		Pomakary
42	Matara	Devinuwara
43		Dickwella
44		Matara Four
45		Wedigama
46	Mulattivu	Maritimepattu
47	Puttalam	Wennappuwa
48	Trincomalee	Ea chilampattai
49		Kinniya
50		Kuchaveli
51		Muttur
52		Town & Gravets



1. IMPACT

- **DEVASTATION OVER TWO THIRDS OF COASTAL BELT IN THE**
- **NORTH, EAST, SOUTH AND WEST**
- **ABOUT ONE MILLION PEOPLE AFFECTED.**
- **OVER 35,000 PEOPLE LOST THEIR LIVES**
- **ABOUT 1500 CHILDREN WITHOUT PARENTS**
- **ASSETS DESTROYED**
- **INFRASTRUCTURE FACILITIES WERE SEVERELY AFFECTED.**
- **SOME COASTAL AREAS WERE NOT ACCESSIBLE FOR SEVERAL DAYS**

Table 1. Lost lives & assets

Number of people killed	35, 322
Number of people injured	21, 441
Number of internally displaced people	516, 150
Value of lost assets	US\$ 900 million
Number of lost livelihoods	150, 000
Number of houses damaged	98,000
Proportion of fishing fleet destroyed	75%
Extent of salinated agricultural land	23, 449 acres
Damage to tourism infrastructure – Large hotels	53
Small hotels	248
Related small enterprises	210
Widowed orphaned and affected elderly & disabled	40,000
Health facilities damaged	97
Education facilities damaged	
Schools	182
Universities	4
Vocational Training Centres	15
Schools used as camps for the displaced	446
School children affected	200 000
Total cost of required relief, rehabilitation and reconstruction	US \$ 2.2 billion

2. LOSSES

- **FISHERMEN WHO LIVED BY THE SHORE WERE WORST AFFECTED.**
- **NORTH AND EAST COSTAL BELT SUFFERED SEVERE DAMAGES.**
- **LOSS OF IMPORTANT DOCUMENTS.**
- **LOSS OF SOURCES OF LIVELIHOOD.**
- **VALUE OF LOST ASSETS – US\$.900 MILLION**
- **NUMBER OF HOUSES DAMAGED 98,000**
- **EXTENT OF SALINATED AGRICULTURAL LAND -23449 ha.**
- **DAMAGE TO LARGE & SMALL HOTELS – 511**
- **HEALTH FACILITIES DAMAGED – 97**
- **EDUCATION FACILITIES DAMAGED – 201**

3. INSTITUTIONAL MECHANISMS

- **ESTIMATED COST OF RELIEF RECONSTRUCTION & REHABILITATION – US\$.2.2 BILLION**
- **PERIOD OF REBUILDING & RESTORATION – 3-5 YEARS**
- **FINANCING NEEDS, NORTH – 19%, EAST – 45%, SOUTH – 25.9%, WEST 10.1%**
- **SEVERAL TASK FORCES WERE SETUP**
- **GOVERNMENT AND LTTE COOPERATED WITH EACH OTHER WELL.**
- **DISASTER MANAGEMENT ACT PASSED BY PARLIAMENT**
- **DISTRICT SECRETARY AND DIVISIONAL SECRETARIES TO PLAY A KEY ROLE.**
- **IN LATE 2005 AN UMBRELLA AGENCY COMBINING ALL ORGANISATIONS WAS ESTABLISHED.**

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4. BUFFER ZONE AND RESERVATIONS

- **EXISTENCE OF A BUFFER ZONE BEFORE TSUNAMI DISASTER.**
- **100 M WIDE BUFFER ZONE IN SOUTH AND SOUTH WEST AND 200 M WIDE IN NORTH AND EAST.**
- **DONOR BUILT HOUSING RECONSTRUCTION PROGRAMME, HOME-OWNER DRIVEN HOUSING RECONSTRUCTION PROGRAMME.**
- **SWHRU AND NEHRU**
- **BUFFER ZONE POLICY REVIEWED AND RESERVATIONS INTRODUCED.**
- **STEERING COMMITTEE HEADED BY COAST CONSERVATION DEPT. FROM SEPTEMBER 2005.**

5. UPGRADING OF NATIONAL INFRASTRUCTURE

- **GOVERNMENT RECOGNIZED THE IMPORTANCE OF REBUILDING INFRASTRUCTURE**
- **RESTORATION OF SERVICES TO TEMPORARY AND PERMANENT SETTLEMENTS**
- **ROADS, RAILWAYS, ELECTRICITY, WATER SUPPLY AND SANITATION.**
- **INABILITY OF DONORS TO UNDERTAKE PROVISION OF INFRASTRUCTURE WITHIN TSUNAMI SETTLEMENTS.**

Table 2. Construction Status Up to 31 March 2006 – Donor Built Housing Programme

Districts	Source: District Administration	Source: Department of Census & Statistics	Source: Reconstruction and Development Agency (RADA)	No. of Units Assigned to Donors	No. of MOUs Signed	Land Details		Total Under Construction	Total Completed	Hand over to Beneficiaries
						No. of Lands	No. of Housing Sites			
Jaffna	4551	4551	3275	4337	4337	43	50	765	283	207
Kilinochchi	288	288	288	1237	1237	15	16	0	143	-
Mullaitivu	3011	3011	0	700	700	1	3	0	-	-
Trincomalee	5737	5737	3428	4506	4506	43	58	902	345	116
Batticaloa	4426	1469	1458	3378	3378	25	30	387	348	94
Ampara	12481	8435	7236	5250	5250	33	41	1395	629	381
Hambantota	1057	932	3107	4998	4998	38	53	1521	2234	1737
Matara	2316	2759	1032	2899	2899	45	57	1448	183	142
Galle	5196	4884	2213	3874	3874	66	90	1362	1311	950
Kalutara	4275	2975	2179	2458	2458	41	53	1132	384	221
Colombo	5150	5998	5112	965	965	10	12	376	41	8
Gampaha	650	643	643	406	406	5	6	152	58	58
Puttalam	95	56	23	-	-	-	-	0	-	-
Grand Total	49233	41738	29994	35008	35008	365	469	9440	5959	3914

Table 3. Estimates of Damaged Housing Units and Status of Rebuilding under Respective Programmes

District/Province	Donor Driven Housing Reconstruction Programme (Inside the Buffer Zone)				Home-Owner Driven Programme (Outside the Buffer Zone)		
	No. of Damaged Houses (From Div.Sec)	Housing Requirement Phase I	No. of MOUs Signed	No. of Units Under Construction	In Progress	Disbursed Amount (SLR)	Housing Requirement Phase II (I)
Jaffna	5,109	3,275	2,878	733	558	42,990,000	1,276
Mullaitivu	5,556	3,011	700	-	2,545	129,710,000	-
Kilinochchi	288	288	43	145	-	-	-
Northern Prov.	10,953	6,574	3,621	878	3,103	172,700,000	1,276
Batticaloa	17,948	1,458	3,540	453	16,479	1,020,300,000	11
Trincomalee	8,074	3,428	4,794	771	2,837	280,970,000	1,809
Ampara	24,438	7,236	3,874	1,018	16,103	887,520,000	1,099
Eastern prov.	50,460	12,122	12,208	2,242	35,419	2,188,790,000	2,919
Hambantota	4,084	2,343	3,618	3,155	1,192	87,505,000	549
Matara	7,464	1,032	2,951	1,130	4,705	458,520,000	1,727
Galle	12,781	2,213	3,729	1,872	7,897	445,030,000	2,671
Southern Prov.	24,329	5,588	10,298	6,157	13,794	991,055,000	4,947
Kalutara	6,124	2,179	2,357	916	3,149	250,470,000	796
Colombo	5,984	5,112	888	280	28	3,775,000	844
Gampaha	675	643	268	234	32	2,860,000	-
Western Prov.	12,783	7,934	3,513	1,430	3,209	257,105,000	1,640
Total	98,525	32,218	29,640	10,707	55,525	3,609,650,000	10,782

Table.04. STAART projects (Sri Lanka Tsunami Affected Areas Recovery & Take-off) Roads

Province	Type of Road	Length (Km)	Contract Sum without VAT	Expenditure as at 31.07.2006 (with VAT)
Southern	National	86.20	1,193,793,223.85	269,396,951.53
	Access	19.88	95,807,496.27	10,205,911.63
	Internal		50,674,016.41	46,437,552.96
Western	National		11,153,540.00	
	Access	14.17	88,779,943.31	10,530,815.54
	Internal		1,840,631.76	
Eastern	National	93.35	408,477,813.56	75,826,758.26
	Access	14.35	96,546,486.06	12,096,258.41
	Internal			
Northern	National	27.03	101,546,236.21	11,078,261.09
	Access	36.5	191,808,263.46	3,009,848.35
	Internal			
North West	National			
	Access	0.5	1,161,219.21	
	Internal			
Grand Total		<u>291.98</u>	<u>2,241,588,870.10</u>	<u>438,582,357.77</u>

Table 5. Progress under STAART project: (as at 31st July 2006)

District	Tender Calling	No. of Contracts Awarded	Construction Commenced
Kalutara	10	18	-
Batticaloa	01	03	-
Gampaha	10	03	-
Jaffna	05	03	-
Killinochchi	01	02	01
Matara	42	40	03
Hambanthota	40	39	05
Trincomalee	04	15	-
Ampara	51	06	-
Galle	13	45	02
Colombo	12	31	-
Common Item	43	30	01

6. ENVIRONMENTAL DAMAGE

- **SCOUR DAMAGE**
- **SALINITY IN FRESH WATER**
- **SALINITY IN AGRICULTURAL LANDS**
- **ELEVATION OF SALINITY LEVEL IN GROUND WATER**
- **THICK TARRY SUBSTANCE CARRIED ON TO THE LAND BY WAVES.**
- **SOLID WASTE MANAGEMENT TO ARREST DETERIORATION OF WATER QUALITY.**

7. EMERGENCY RESPONSE

- **EXTREME WEATHER**
- **HURRICANE MONITORING**
- **EARTHQUAKE MONITORING**
- **LANDSLIDE MONITORING AND RISK ASSESSMENT**
- **DAM SAFETY MONITORING AND RISK ASSESSMENT**
- **TSUNAMI MONITORING AND RISK ASSESSMENT.**

8. POLICIES AND SUBSEQUENT CHANGES.

- **REVIEW AND REVISION OF BUFFER ZONE**
- **HOUSING POLICY**
- **HOUSE FOR A HOUSE**
- **CONSTRUCTION SUPERVISION AND MONITORING**
- **TAFREN, THRU, RADA, CADREP,**
- **DONORS AND INFRASTRUCTURE DEVELOPMENT**
- **BENEFICIARIES AND MULTI STORIED BUILDING BLOCKS**

District	Transitional Shelters Programme	Donor Driven Programme			Owner Driven Programme		Private Donors Programme	Treasury Funded Programme
	No. of shelters remaining as at 25.9.06	Requirement	No of Units Under Construction	Completed	No of Units Under constructions	Completed	No of Housing Units	No of Housing Units
Ampara	4,349	2962	1215	1084	7,000	9,403	334	1000
Batticaloa	11,399	2,630	1021	436	9,392	8,095	1832	
Tricomalee	3,575	3354	1004	863	200	3,317	119	480
Eastern Prov.	19,323	8,946	3,240	2,383	16,592	20,815	2,285	1480
Jaffna	3,104	2014	1342	477	2,568	1,633	75	100
Mullativu	760		537	12	4,532	222	223	100
Kilinochchi	330	288	290	143	589	0	0	100
Nothen Prov.	4,194	2302	2169	632	7,688	1,855	298	300
Galle	620	2881	772	2336	1,428	8,929	1656	-
Matara	457	1678	569	1401	182	4,853	901	-
Hambanthota	0	3563	337	3960	297	1,249	618	-
Southern Prov.	1,077	8122	1678	7697	1,907	15,031	3175	0
Colombo	1,329		422	205	6005*	24	37	-
Kalutara	524	2114	399	1446	682	4,075	1381	-
Gampaha	50	538	0	242	17	67	1	-
Western Prov.	1,903	2652	821	1893	713	4,166	1419	0
Total	26,497	22,022	7,908	12,605	32,892	41,867	7,177	1,780

9. FINDINGS AND LESSONS

- SRI LANKA WAS QUITE UNPREPARED FOR TSUNAMI
- BUFFER ZONE AND ITS IMPLICATIONS
- RESPONSE OF PEOPLE AND GOVERNMENT ON RESCUE AND RELIEF WAS REMARKABLE
- RESETTLEMENT AND RECONSTRUCTION IN NORTH AND EAST WERE FAR FROM SATISFACTORY
- A POWERFUL ORGANIZATION SHOULD HAVE BEEN CREATED TO DIRECT OPERATIONS, INSTEAD OF TASK FORCES.
- DISTRICT LEVEL ORGANIZATION HEADED BY ADDITIONAL DISTRICT SECRETARY WAS INEFFECTIVE
- ALLOCATION OF UNSUITABLE LANDS FOR SETTLEMENTS.

9. FINDINGS AND LESSONS

- **MOU BETWEEN DONOR AND GOVERNMENT WAS WEAK.**
- **TOP DOWN APPROACH**
- **MONITORING INPUTS AND RESULTS ON GROUND UNRELIABLE DATA AND INFORMATION.**
- **WITHDRAWAL OF DONORS FROM INFRASTRUCTURE**
- **SEARCH FOR WATER SOURCES AFTER CONSTRUCTING HOUSES.**
- **GENDER ISSUE: CASH GRANTS, LAND TITLES**
- **CULTURAL AND SOCIAL ISSUES**
- **DURATION OF TRANSITIONAL SHELTERS**
- **ENVIRONMENTAL DAMAGE.**