United Nations Country Team
India

Recovery Framework in Support of Government of India for a Post-Tsunami Rehabilitation and Reconstruction Programme

March 2005

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Acronyms and Local Terms

ADB	Asian Development Bank
AWC	Anganwadi Center- Child Care Centers
CEMP	Community Environmental Management Plan
CLW	Community level Workers
CRZ	Coastal Regulation Zone
Dalits	Socially and Economically Backward Caste
DEA	Department of Economic Affairs
DRM	Disaster Risk Management
FAO	Food and Agriculture Organization
GSDP	Gross State Domestic Product
GOI	Government of India
HCS	Health Sub- Centre
HBC	Home Based Care
ICT	Information, Communication and Technology
IDSP	Integrated Disease Surveillance Programme
IEC	Information Education Communication
ILO	International Labour Organization
IOM	International Organization for Migration
ICDC	International Child Development Centre
JAM	Joint Assessment Mission
Katcha	Temporary Houses: houses in which both walls and roof are made of materials, which have to be replaced frequently.
MoEF	Ministry of Environment and Forest
NABARD	National Bank for Agriculture and Rural Development
NACP	National Aids Control Programme
NCCF	National Calamity Contingency Fund
NICD	National Institute of Communicable Diseases
NUNV	National UN Volunteer
ORS	Oral Rehydration
Panchayats	Panchayat" means an institution (by whatever name called) of self-government constituted under article 243B, for the rural areas; THE

	CONSTITUTION (SEVENTY-THIRD AMENDMENT) ACT, 1992
PLWHA	People living with HIV/AIDS
PHC's	Primary Health Centres
RCH	Reproductive and Child Health
SHG	Self Help Group
Taluka/ Taluk	A sub-district-level administrative unit
TDU	Technology Demonstration Unit
UNAIDS	United Nations Programme on HIV/AIDS
UNCT	United Nations Country Team
UNDMT	United Nations Disaster Management Team
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organizations
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNIFEM	United Nations Development Fund for Women
UNODC	United Nations Office on Drugs and Crime
USGS	United States Geological Survey
UT	Union Territory
WB	World Bank
WHO	World Health Organization
WFP	World Food Programme
WMO	World Meteorological Organization

United Nations Country Programme Team, India
Recovery Framework in Support of Government of India for a Post-Tsunami Rehabilitation and Reconstruction Programme

Executive Summary

1. Overall Objective

The overall objective of the Recovery Framework of the UN System in Support of Government of India for a Post-Tsunami Rehabilitation and Reconstruction Programme is to define the approach of the United Nations in facilitating the rapid recovery of the affected populations. This approach is designed to lead to both recovery and the expansion of opportunities for sustainable development, and the reduction of future disaster risks. Specifically, the Framework is designed to:

- Contribute to sustainable livelihood recovery.
- Help plan for the rehabilitation and rebuilding in a way that promotes livelihood recovery, the expansion of income and employment opportunities, and, at the same time, also reduces risks.
- Provide for the strengthening of institutional capacities for identifying and managing disaster risks, in a multi-hazard framework.

2. Damages & Needs

According to Government reports, 10,749 people in India lost their lives and 6,913 were injured. It is reported that 5,640[1] persons are still missing. The highest human losses were in the Andaman and Nicobar Islands and the state of Tamil Nadu.

Table1: Loss of Human Lives in India due to Tsunami

States/UTs	Death Toll	Persons Missing
Tamil Nadu	7,983	66
Andhra Pradesh	105	11
Kerala	171	NA
Pondicherry	591	75
Andaman and Nicobar Islands	1755	5554

[1] *The damage and losses presented here reflect the available official information provided by the states and union territory officials to the Joint ADB, UN and the World Bank Assessment Mission (JAM) undertaken from 1st to 15th February 2005. These figures do not include an assessment of the impact and losses sustained in the Union Territory of the Andaman and Nicobar Islands*.

Overall damages are estimated at approximately US$ 660 million and losses are estimated to be approximately US$ 410 million. The analysis undertaken highlights the crosscutting nature of the disaster's impacts, and thus the necessary multi-sectoral, inter-institutional, and multidisciplinary approach needed for the reconstruction process.

3. The Cooperation Strategy of the United Nations in the Rehabilitation/Reconstruction phase

During the relief phase, UN agencies were active through their ongoing programmes. These activities were being coordinated under the aegis of the United Nations Disaster Management Team (UNDMT). UNICEF was designated as the focal point for relief activities and other agencies supported UNICEF to carry out the relief activities. The UN cooperation was mostly concentrated in the affected areas in the mainland. However, during the relief phase, UNICEF has been active in some of the islands in the Andaman & Nicobar also, providing education, water and sanitation, and health and nutrition support.

In order to coordinate the activities that support the Government for recovery and rehabilitation, the UN has established a UN Team for Recovery Support, which operates both in New Delhi and in Chennai.

In New Delhi, this team has identified the areas in which the UN's capacities can be mobilized for tsunami recovery and rehabilitation and maintained dialogue with central government authorities on the programme. The UNDP Senior Deputy Resident Representative convenes the New Delhi team. The team reports to the Disaster Management Team, which is at Heads of Agency level, and convened by the Resident Co-ordinator. In Chennai, the UN Team for Recovery Support is responsible for detailed formulation of programmes, and for liaison and co-ordination with Government in terms of programmatic direction and NGO partners for dialogue and implementation.

At the request of the Government of India, a joint ADB, UN, and the World Bank mission undertook the assessment of the socioeconomic and environmental impact of the 26 December tsunami in the States of Andhra Pradesh, Kerala and Tamil Nadu and the territory of Pondicherry in the first half of February 2005. A group of specialists, including sectoral experts analyzed the damage and losses as well as the needs expressed by the state and local authorities as also by members of civil society and NGOs during their field visits made on a sample basis.

The present document provides a sense of the scope of the proposed work of the United Nations during the recovery and rehabilitation phases. The approaches proposed in the document reflect the values of the UN System and build on the experience that the UN Country Team (UNCT) in India has gained from the post-cyclone work in Orissa (1999) and the post-earthquake work in Gujarat (2001).

The United Nations approach moves beyond identification of requirements of financial support for physical assets and infrastructure and related technical studies that are appropriately addressed through financing by GOI with support from the WB and ADB to:

- Highlight additional and complementary areas.
- Focus on capacity building for processes and systems required for promoting livelihood recovery and diversification that could be appropriately addressed through technical assistance and grant funding channelled through the United Nations.
- Build on ongoing post-tsunami work and relationships already established with state officials and NGO partners.
- Establish systems for experience sharing and more effective implementation by the large number of partners involved in the recovery and rehabilitation phases in South India.

- Focus on immediate and long-term vulnerability reduction, both in terms of natural disaster risk and social vulnerabilities.

Affected states are currently undergoing the transition from relief to rehabilitation – although for some sectors and groups of affected people relief will last for several months more. During this transition to recovery the protection of the most vulnerable segments of the displaced population and the improvement of their living conditions in temporary shelters over the coming months deserve special attention. In this context, there is a need for designing an adaptive reconstruction process that promotes reduction of vulnerability in the medium and long term, increases resilience to the specific local multi-hazards, and inserts itself in the larger district, state and national development strategies. In this sense, this disaster is an opportunity to upscale and accelerate the development process, and reduce existing vulnerabilities and risks.

As the transition from relief to recovery takes place, several key issues emerge. The recovery and reconstruction strategy (i.e. the medium term rehabilitation framework) requires considering the longer-term scenario for the future, as perceived by the community and the local district and state governments. This will also vary according to local context, differential vulnerabilities and existing sectoral composition of regional economies.

The disaster also points out the need to undertake cross cutting interventions with a participatory, equitable, flexible, decentralized, and transparent approach beyond the livelihood restoration. Better management of the coastal environment and reinforced risk reduction is to be seen as part of the overall social and economic strategy, adopting realistic, attainable goals in the short and medium term. This is at the heart of the proposed Recovery Framework.

Guiding Principles for Sustainable Recovery and Risk Management

Key guiding principles:

- Nationally and local driven recovery
- Short-term rehabilitation must not hinge on long-term reconstruction packages.
- An adequate balance between governance and participation
- Respect for cultural diversity and specificities
- Seek greater equity in access rights and the distribution of productive assets.
- Transparent and effective monitoring of the recovery process

Cross-cutting issues:

***In moving from post-disaster relief to recovery*:**

- Protecting the most vulnerable
- Making temporary shelters more liveable

In restoration of livelihoods and upgrading of infrastructure:

- Getting people back to work
- Restoring and upgrading infrastructure and services wherever possible.
- Making recovery inclusive and broad based
- Securing livelihoods with greater value-addition
- Maximizing the use of local procurement in recovery efforts

***In prospective risk reduction*:**

- A healthy environment for long term security and sustainability
- Prospective risk management for a multi-hazard context
- Organizing communities to respond to emergency situations

- Provision of timely information on risk and early warnings that people understand

4. United Nations Collaboration in the Rehabilitation/Reconstruction Phase: the Results Matrix

The present document identifies the key programmatic thrust areas of United Nations collaboration during the recovery and rehabilitation phases. An overview of the projected results matrix together with broad estimates of resource requirements is presented in the following:

Table 2: United Nations Recovery Framework - Key Result Areas

Sector	Key Result Areas	Budget (US$)
A. Moving from post-disaster relief to recovery		
Psychosocial Support	The most affected communities identified and assisted. Community workers, Government relief workers and trainers trained in psychosocial care and support. Technical assistance provided to local agencies. Overall activities monitored and coordinated.	870,000
Social Reintegration to Address Trafficking	Enhanced public awareness to generate an integrated response to trafficking. Protection, care and support to those vulnerable to trafficking and HIV, including trafficking survivors and facilitation of overall wellbeing of communities. Empowerment and creation of community resilience through mainstreaming of anti-trafficking and HIV initiatives into disaster recovery plans at different levels.	500,000
Health & Nutrition	Provision of basic healthcare services, sanitation, vector control, water quality monitoring, surveillance for epidemic illnesses and psychosocial support to communities strengthened. A long term health sector disaster mitigation plan devised.	4,470,000
HIV/AIDS Prevention and Care	Further spread of HIV in the affected areas prevented. Enhanced AIDS awareness among the affected population AIDS awareness integrated into recovery and rehabilitation work Early warning signs identified.	1,650,000
Education	Normalcy in children's lives restored through supporting of timely re-opening of schools Activities contributing to their emotional security initiated Secure and stimulating learning environment ensured School improvement plans prepared with stakeholder involvement	1,052,000
B. Restoring livelihoods and upgrading infrastructure		
Rebuilding Livelihoods	Assets rebuilt and recovery of affected households supported. Labour markets and employment opportunities rehabilitated. New skills training provided leading to enhanced income-earning capacities. Access of poor and disadvantaged to resources and opportunities enhanced.	5,580,000
Shelter & Habitat Development	All vulnerable communities settled in culturally appropriate and multi-hazard-resistant homes and habitats. Integrated and culturally sensitive habitat plans developed in participatory manner. Multi-hazard resistant technologies promoted through enhanced awareness and training.	4,513,000
Water Supply, Sanitation & Hygiene	Access to safe water, sanitation and hygiene information improved. Coordination of water supply, sanitation and hygiene improved. The incidence of waterborne diseases kept to the lowest possible level. Vulnerable populations have an assured supply of clean, safe water. Mainstream programmes for water supply and sanitation reinforced in affected areas.	559,000

C. Prospective risk reduction		
Healthy Environment for Long Term Security and Sustainability	Series of rapid environmental assessments conducted. Environmental considerations mainstreamed into sectoral interventions and lessons learned. Comprehensive coastal zone management strategy developed.	1,550,000
Capacity Building for Disaster Risk Management	Disaster risk management incorporated in all recovery and reconstruction efforts. Comprehensive multi-hazard risk assessments conducted. Clear risk reduction guidelines established sector by sector. Emergency response capacities strengthened at all levels.	15,000,000
D. Policy Support and Coordination		
Coordination Support and Knowledge Networking	Knowledge networking and coordination among various stakeholders ensured by supporting State/District level recovery resource centres and providing the UNV facility.	3,050,000
Information and Communication Technology	Fast-tracked, equitable and transparent provision of the rehabilitation package ensured. A web based ICT solution capturing damages, needs, available resources, potential partnerships and gaps designed and deployed.	
Total		**38,789,000**

The last three digits in the figures presented in the table have been rounded-off.

5. Implementation Arrangements

The UN Country Team will follow established practices such as National, Direct, and NGO execution modalities with Government ownership. Consultative arrangements with donors to the programme will be established.

Funding would ideally be channelled directly to the United Nations through the UN Resident Co-ordinator's account to allow for immediate implementation.

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Section 1: Overview

Section 1.1
Disaster Associated with the Tsunami of December 26th, 2004

1.1.1 Characterisation of the Physical Event

A massive earthquake of magnitude 9.0 (USGS) hit Indonesia off the West Coast of Northern Sumatra on the morning of December 26th, 2004, at 06:58 AM. Another earthquake of magnitude 7.3 occurred 81 km west of Pulo Kunji (Great Nicobar, India) at 9:51 AM (IST) on the same day. About 115 aftershocks have been reported so far, of which 103 were between 5.0 - 6.0 on the Richter scale and 12 were more than 6.0.

The earthquakes set off giant tsunamis 3 to 10 meters high, which traveled 2,000 km across the Indian Ocean, the Bay of Bengal and beyond. The Andaman and Nicobar Islands were the first to be hit causing extensive damage. The tsunami then spread along a narrow strip of land on the East Coast of India and low-lying portions of Sri Lanka and to a lesser degree the west coast of India. The tidal waves hit the coastal districts of Andhra Pradesh, Kerala, Tamil Nadu and the Union Territory of Pondicherry around 9:50 AM (Indian Standard Time) and penetrated 300 meters to 3 km into the mainland causing damage to lives, property and livelihoods. The Tsunami affected a total of 2260 Kms of the coastline of India besides the entire Nicobar Islands.

On the west coast, Kerala was also hit by a wave crest travelling in a north-westerly direction as the tsunami diffracted off the southern tip of Sri Lanka and India. This explains the more concentrated damage in a few coastal districts of Kerala. Similarly, in low lying coastal areas such as Karaikal in Pondicherry or Nagapattinam in Tamil Nadu, the sea penetrated deep into the land affecting not only ports and fishing villages, but agricultural lands. Besides the Andaman and Nicobar Islands, the most critical impacts have centered on a few coastal districts of Tamil Nadu, Pondicherry and Kerala. In terms of mortality rates, *taluk*s in the Nagapattinam district in Tamil Nadu were hardest hit, followed by the Kanyakumari district. In Pondicherry, the Karaikal region was the hardest hit as were the districts of Kollam and Alappuzha in Kerala.

1.1.2 The Impact of the Tsunami

Human Toll[2]

All India: According to GoI reports, 10,749 people in India lost their lives and 6,913 were injured. It is reported that 5,640 persons are still missing.

Tamil Nadu: In Tamil Nadu over 7,983 deaths were reported. Of the 12 coastal districts[3] affected in Tamil Nadu, Nagapattinam was the worst affected, where 6,051 people died. Over 824 died in Kanyakumari and 612 were reported dead in the Cuddalore district.

Kerala: In Kerala 171 deaths were reported. The Kollam district reported 131 deaths followed Alappuzha with 35 and Ernakulam with 5.

Andhra Pradesh: In Andhra Pradesh 105 deaths were reported and 11 people were reported missing. Of the affected districts[4], Krishna and Prakasam were reported to be the worst affected in terms of human toll with 27 and 35 deaths, respectively.

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[2] *The human toll data are taken from the GOI's last situation report issued on 18 January2005.*

[3] *The affected districts in Tamil Nadu are Thiruvallur, Chennai, Kancheepuram, Viluppuram, Cuddalore, Thanjavur, Nagapattinam, Pudukkotai, Ramanathapuram, Toothukudi, Tirunelveli and Kannyakumari.*

[4] *The affected districts in Andhra Pradesh are Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur, Prakasam and Nellore.*

Union Territory of Pondicherry: In Pondicherry 591 deaths were reported and 75 were reported missing from the coastal areas of Pondicherry and Karaikal. In Karaikal, 484 persons were reported dead and 66 missing.

Union Territory of Andaman and Nicobar Islands: Out of the 37 inhabited islands in Andaman and Nicobar, 15 islands (Andaman-2; Nicobar-13) were affected by the tsunami and coastal flooding. As per official reports, 1,755 human lives were lost. About 5,542 are missing/feared dead in the Nicobar Islands. The worst hit were the Car Nicobar, Great Nicobar and Nancowrie group of islands. The total population of the affected islands is 295,959. Seven islands were fully evacuated and relief operations have focused on the remaining eight. An Integrated Relief Command (IRC) for the Andaman and Nicobar Islands is operational and continues to co-coordinate relief operations. The Port Blair airport has been repaired and is operational. Nearly all the harbours and jetties in civil and naval ports were damaged. However, the harbours at Port Blair, Car Nicobar, Nacowrje (Kamorta) and Nacowrje (Champin) are operational. In the Nicobar Islands all small harbours and jetties were damaged. Telephone lines and equipment were completely washed away. Out of the 30 lighthouses in Andaman and Nicobar Islands only 2 are functional. Access to the islands remains limited, with the Government continuing to take responsibility for the relief, recovery and rehabilitation.

Section 1.2
The Relief Effort

1.2.1 Government and Civil Society Response

Although the Government of India and the governments in Tamil Nadu, Kerala and Andhra Pradesh and the Union Territory of Pondicherry were caught unaware by the tsunami, they responded quickly to the situation.

Government of India: At the national level, a number of steps were taken. The Ministry of Home Affairs was designated as the nodal agency for co-ordinating relief in the affected states and union territories and formed a control room with a help line for the public. In addition, a National Crisis Management Committee was established under the chairmanship of the Cabinet Secretary. This reviewed relief efforts by the Cabinet Committee of Ministers under the chairmanship of the Prime Minister together with secretaries of the relevant ministries/departments and chiefs of the armed forces. It has drawn up an emergency plan for relief efforts in the affected areas, A National Crisis Management Group was formed under the chairmanship of the Secretary, Border Management and teams of representatives of various ministries led by a Joint Secretary, Ministry of Home Affairs, visited the affected states. Individual ministries also undertook ministry-specific efforts. An amount equivalent of US$112 million was allocated to the affected states and union territories from the National Calamity Contingency Fund (NCCF)[5]. Other funds have also been announced[6]. In recognition of a transition from relief to reconstruction, the GoI is now focusing mainly on preparing a comprehensive framework for rehabilitation and recovery. At the national level, the Planning Commission has the central responsibility for the recovery and rehabilitation phases. State Governments are responsible for implementation of recovery programmes. The Union Government could provide broad policy guidelines that the states could adapt and adopt.

State and UT Governments: The respective Chief Ministers directed the officials of the Revenue Department under the Relief Commissioner to coordinate search, rescue and relief efforts through the District Collectors with assistance from the police, fire and rescue services, medical and health services and other associated departments. The state Relief Commissioners opened control rooms to disseminate information to the public and state government web sites relating to tsunami rescue and relief operations were opened. Supported by the army, navy, air force and coast guard and senior civil servants deputed to affected areas, the district administrations identified and disposed off the dead, removed debris, rescued and moved people to safer locations, worked to prevent an outbreak of epidemics and restore basic services such as power and water. In addition, relief camps were opened. In Tamil Nadu 44,207 people were placed in 58 relief camps. In Kerala 24,978 people were placed in 29 relief camps. In Pondicherry 48 relief camps were opened. In Andhra Pradesh, 65 relief camps were opened. All the camps in the above states have since been closed and their inhabitants have returned home.

The State and UT Governments have also made available financial assistance and relief material to families of the deceased and the injured and announced house repair subsidies. However, resettlement issues are still under active discussion, particularly in the context of the interpretation of the provisions of the Coastal Zone Regulation with regard to settlements along the coastal line.

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5. This Tsunami related NCCF amount consists of allocations for both relief and reconstruction and recovery. Some initial state/UT specific allocations from NCCF have been made. Rs. 2.50 billion (US$ 57 million) has been allocated to Tamil Nadu, Rs. 1 billion (US$ 23 million) has been allocated to Kerala and Andhra Pradesh respectively and Rs. 350 million (US$ 8 million) has been allocated to Pondicherry. Further NCCF allocations are due to be made.

6. These include the Prime Minister's National Relief Fund (which announced an ex gratia payment of Rs. 100,000 or US$ 2.300 per fatality) and the Indira Awaas Yojana (IAY) for rural housing for FY 2004/2005.

NGO/civil society response: Community members, private individuals and non-governmental organizations (NGOs) responded to the needs of the affected states and UTs. NGOs operating in the sectors of health, psychosocial counselling, shelter, sanitation and water, education, livelihood and environment include agencies such as World Vision India, CARE (India), Catholic Relief Services (India), Project Concern International, Echo, Oxfam, Dhan Foundation, League for Education and Development, Tamil Nadu Voluntary Health Association, Jesuits in Social Action.

Private sector response: The affected areas have received corporate donations and relief material on an unprecedented scale. UNDP estimates that the corporate sector in India may have contributed more than US$ 8 million in cash, food and medicine, emergency relief supplies and other humanitarian services. Indian companies, including established business houses, banks, insurance, medical and IT companies and public sector entities, have already contributed over Rs. 400 million (US$ 9.2 million) to the Prime Minister's National Relief Fund and have also provided donations to established relief NGOs like Oxfam, CARE and the Dhan Foundation. In addition to corporate calls for employee donations, there have also been calls for corporate donations from the chambers of commerce and industry. Fundraising efforts by sports and media persons have also taken place.

1.2.2 Highlights of Actions Undertaken by United Nations Agencies During the Relief Phase

The United Nations in India has an established Disaster Management Team (DMT), composed of representatives from eight UN agencies, and charged with the task of ensuring prompt, effective and concerted country level disaster preparedness by the UN system, and the response when appropriate. The first post-tsunami meeting of the DMT took place on 27th December 2004, immediately followed by situation reports dissemination to all stakeholders, onsite rapid assessment by Agencies and sharing of UNDMT response plan and tools with neighbouring UN Country Teams. UNICEF, the designated lead agency for relief, began operations on the 26th of December in the South.

The Government did not appeal for external assistance for the relief phase; however in keeping with established practices in past disasters, the UN system expanded its existing programmes to provide immediate support. UNICEF led the humanitarian efforts with active support from WHO, UNHCR and ILO, first in South India. Also, WHO, UNODC, UNICEF, UNFPA and UNDP initiated activities in the area of psychosocial support. UNDP supported Government's coordination efforts particularly through information gathering and organization carried out by expert resources from the ongoing GoI-UNDP Disaster Risk Management (DRM) Programme. Programme personnel also travelled to Sri Lanka, Maldives and Indonesia to provide similar support in these countries.

The UN and the Government have also been discussing the best ways to support recovery and rehabilitation efforts in the Andaman and Nicobar Islands. During the relief phase, UNICEF has been active in some islands providing education, water and sanitation and health and nutrition support. WHO has been active in providing health supplies.

1.2.3 United Nations in the Reconstruction Phase

The GoI is preparing a comprehensive programme for the rehabilitation and recovery phases, co-ordinated by the Planning Commission. The UN system as well as the international finance institutions has been requested to provide assistance specifically[7] in:

I. Sustainable livelihoods;
II. Disaster management and risk reduction; and

[7] *Reference letter of DEA/MoEF/GoI dated 12 January 2005 addressed to UNDP on behalf of UN system*

III. Infrastructure, while ensuring the mainstreaming of issues pertaining to long-term risk reduction, sustainability and environmental conservation.

This document provides a sense of the scope of the proposed work of the UN during the recovery and rehabilitation phases, based on currently available information. It will be refined and adjusted as needs assessment continues. The approaches proposed in the document reflect the values of the UN system and build on the experience that the UN Country Team (UNCT) in India has gained from cyclone relief work in Orissa in 1999 and earthquake relief work in Gujarat in 2001.

The UN Country Team has identified the following critical areas of support in which it would work:

Moving from post-disaster relief to recovery

- Psychosocial Support
- Social Reintegration to Address Trafficking
- Health & Nutrition
- HIV/AIDS
- Prevention and Care
- Education

Restoring livelihoods and upgrading infrastructure

- Rebuilding Livelihoods
- Shelter & Habitat Development
- Water Supply, Sanitation & Hygiene

Prospective risk reduction

- Healthy Environment for Long Term Security and Sustainability
- Capacity Building for Disaster Risk Management

Policy support and coordination

- Coordination Support and Knowledge Networking
- Information and Communication Technology

All UN development cooperation activities consider differing interests of women and men with specific attention to the gender dimensions of safety and protection in relief and reconstruction.

An initial document was formulated by the UN Country Team once Government requested the UN system to mobilize resources for the rehabilitation and reconstruction phases of the tsunami disaster recovery. This document has now been transformed into this Recovery Framework drawing also upon the findings of the Joint ADB, UN and World Bank Assessment Mission (refer to sub-section 1.2.5 below).

The United Nations approach however, moves beyond identification of requirements of financial support for physical assets and infrastructure and related technical studies that are appropriately addressed through financing by GOI with support from the WB and ADB to:

- Highlight additional and complementary areas
- Focus on immediate and long-term vulnerability reduction, both in terms of natural disaster risk and social vulnerabilities
- Focus on capacity building for processes and systems required for promoting livelihood recovery and diversification that could be appropriately addressed through technical assistance and grant funding channelled through the United Nations
- Build on ongoing post-tsunami work and relationships established with state officials and NGO partners
- Establish systems for experience sharing and more effective implementation by the large number of partners involved in the recovery and rehabilitation phases in South India

Collaborative work by the various UN agencies in response to the tsunami has strengthened capacity within the system to work together. The implementation as indicated within this document would provide further concrete experience as to how this can proceed constructively and effectively, and thereby contribute to the process of UN reform.

1.2.4 Organizational Arrangements within the UN System

In order to coordinate the activities that support the Government for recovery and rehabilitation, the UN has established a Team for Recovery Support (UNTRS), which operates both in New Delhi and Chennai.

In New Delhi, this team has:

- Identified the areas in which the UN's capacity can be mobilized for tsunami recovery and rehabilitation
- Identified agencies that will work in each of the identified programmatic areas.
- Maintained dialogue with the Union Government on the programme

The New Delhi team is convened by the UNDP Senior Deputy Resident Representative. The team reports to the Disaster Management Team, which comprises the Heads of Agencies and is convened by the Resident Co-ordinator.

In Chennai, the UN Team for Recovery Support is responsible for the detailed formulation of programmes, and for liaison and co-ordination with the Government in terms of programmatic direction and NGO partners for dialogue and implementation. Its specific responsibilities are:

- Facilitate coordination of and synergy among the activities related to the post-tsunami rehabilitation and recovery of UN agencies
- Map the on-going and planned activities in Tamil Nadu, Pondicherry, Andhra Pradesh and Kerala of the UN Agencies
- In consultation with the state Governments and the UN Agencies, facilitate identification of areas of intervention
- Interact with the nodal departments of the State Governments to ensure linkages and establishment of partnerships with UN Agencies
- Identify emerging needs to strengthen the Government's recovery/reconstruction programmes at the planning and implementation stages
- Facilitate State Government coordination mechanisms to ensure synergy among the interventions of all partners
- Identify potential partners for implementing UN programmes that will supplement government efforts

This team is located in UNICEF offices in Chennai. It has staff from various UN agencies. UNDP has placed two full time officers in this Team -its Deputy Resident Representative for Operations who leads the team, and its Emergency Analyst. ILO and WHO have also deputed long-term staff to the team and UNODC has placed a consultant on this team. Depending on the requirement, additional staff with specific skills will be deputed to this Team by the agencies concerned.

1.2.5 Joint ADB, UN and World Bank Assessment Mission (JAM)

A Needs Assessment Report was prepared in response to a request from the Government of India (GoI) by a joint mission comprising the Asian Development Bank (ADB), United Nations (UN) and the World Bank (WB) between February 1st and 22nd, 2005. The three put together a team and organized a joint assessment mission (JAM) to the tsunami-affected areas on the Indian mainland. It was organized under the coordination of the UN Country Team (UNCT) with

the participation of several agencies such as ILO, UNDP/BCPR, UNDP/GEF, UNAIDS, WHO and UNICEF. As agreed with GoI, the Andaman and Nicobar Islands were not part of the scope of the assessment.

The JAM comprised experts and specialists from different sectors and disciplines from all three institutions in order to be able to produce a comprehensive, multi-sectoral assessment of the damage and losses as well as assessing the needs of the recovery and reconstruction process to be undertaken. The loss and damage assessment was done with technical support based on assessment methodology from the United Nations Economic Commission for Latin America and the Caribbean (UN/ECLAC).

Section 1.3
Detailed Assessment of Damages and Losses

1.3.1 Damage and Losses

The ADB, UN and World Bank Joint Assessment Mission which comprised a group of specialists and qualified experts analyzed the damage and losses[8] as well as the needs expressed by the relevant local, territory and states authorities. It also made field visits to the most affected districts, and undertook – on a sample basis - consultations with local experts, members of civil society and NGOs. The damage and losses presented here reflect the available official information provided by the states and union territory officials, compiled between February 1 and 15, 2005, and the visits undertaken by the mission to selected affected areas.

Table 1.3.1 Consolidated summary of damage and loss in India after the December 26, 2004 tsunami (USD million)

	Damage and loss			Effect on Livelihoods
	Damage	Loss	Total	
Andhra Pradesh	31.8	16.7	48.5	35.6
Kerala	68.2	57.6	125.8	82.6
Tamil Nadu	509.8	327.5	837.3	332.8
Pondicherry	48.2	8.2	56.4	30.4
Total (by sectors)	**658.0**	**410.0**	**1,068.0**	**481.4**
Fisheries	320.1	304.5	624.6	383.2
Agriculture and livestock	15.1	22.0	37.1	42.0
Micro enterprises and other	19.7	36.5	56.2	56.2
Housing	193.5	35.2	228.7	
Health and education	13.7	9.9	23.6	
Rural and municipal infrastructure	27.9	1.6	29.5	
Transportation	35.2	0.3	35.5	
Coastal protection	33.6	0.00	33.6	
Relief#		200.7	200.7	

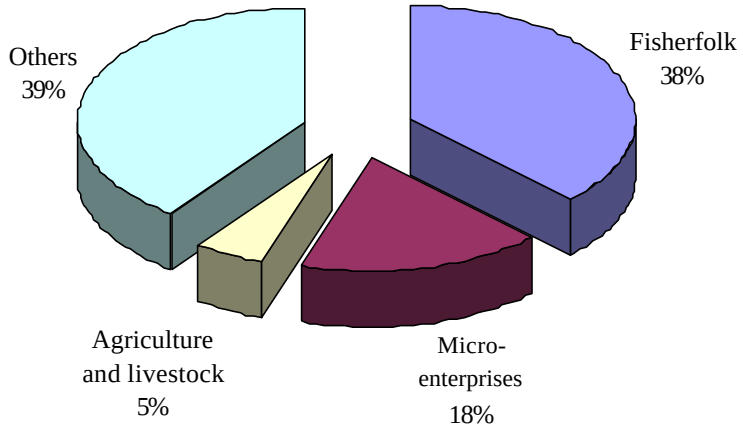
 # Relief provided by the local and national governments.
Source: Mission estimates on the basis of information made available from the states' governments and direct observation.

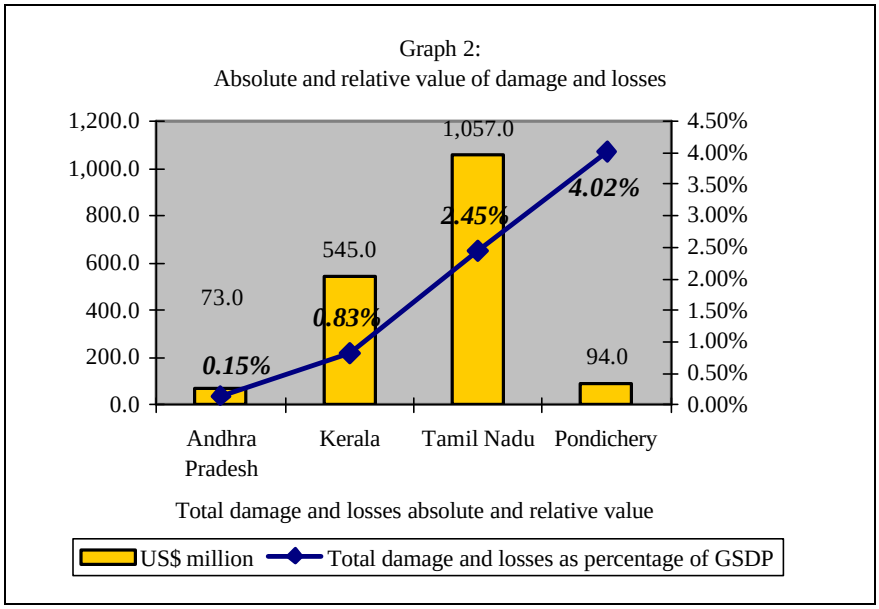
The overall damage is estimated at approximately US$ 660 million, losses are estimated at approximately US$ 410 million. The largest amount of damage is in fisheries, housing and infrastructure (see Graph 1 below). While much of the damage assessment relates to the financial valuation of the losses, loss of livelihoods do not lend themselves readily to measurement. The loss of work opportunities is estimated in terms of wage or earnings losses, but the extent would depend on how much time it takes to restore employment and earnings/wages. The losses to livelihoods are of particular significance when they affect poor, marginalized and excluded groups who do not have reserves to fall back on or the means to cope

8. *'Damage' refers to the direct loss in assets and property, while 'loss' refers to the economic opportunity cost of the damage*

with the situation. Many in this situation are engaged in casual and intermittent work. The macro-economic impact of the tsunami disaster has been limited except in the case of Pondicherry where it represented over 4% of its GSDP (see Graph 2).

Graph 1:
Affected livelihoods in tsunami-hit states, by activity
(percentage of population affected)





The tsunami disaster has had a significant impact on the livelihoods of some of the more vulnerable sections of society along the coasts of the affected states. Many were probably at or below the poverty line and about a third may are from the underprivileged and socially excluded groups such as Dalits or tribals. The environmental damage could not be quantified in the time

available and because some of the impacts of the tsunami will only become apparent in the medium- to long-term.

The affected states are currently undergoing the transition from relief to rehabilitation – although relief to some sectors and groups will continue for several months. During this phase, protection of the most vulnerable segments of the displaced population and improvement of their living conditions in temporary shelters over the coming months deserve special attention.

In this context, there is need to design an adaptive reconstruction process that promotes reduction of vulnerability in the medium and long-term, increases resilience to specific local multi-hazards and integrates with the larger district, state and national development strategies. This disaster is an opportunity to upscale, accelerate the development process, reduce existing vulnerabilities and risks and ensure that women and children are not exposed to further risks and trauma.

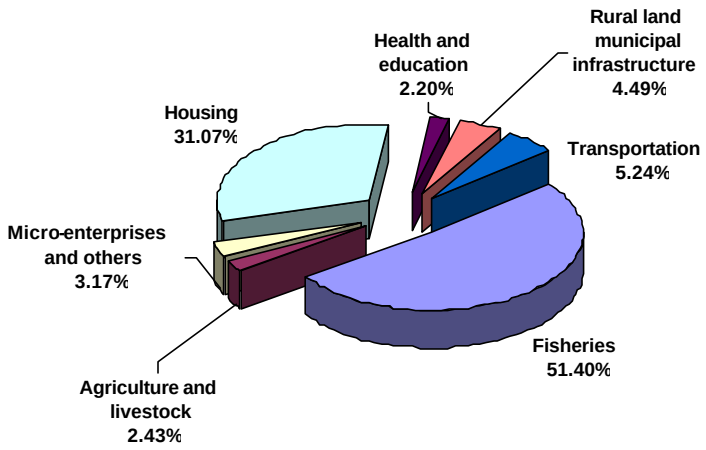
It is clear, and this is reflected in the proposed recovery framework, that the provision of permanent solutions to housing and restoration of infrastructure are an immediate priority and require commitment of resources that may not be delayed. Investments in these and the location of the new infrastructure (in terms of relocation of housing, restoration or construction of urban and rural infrastructure and resilience-increasing measures such as locally-adapted and environmentally sound coastal protection) are tied to overarching policy decisions. These decisions deal with appropriate coastal regulation and risk management, some of which have significant costs and financial implications in the districts and states affected.

The tsunami brings to the surface underlying vulnerabilities to well-known and recurrent hazards and has major negative social consequences on the livelihoods of people at the fringes of the development process. Its consequences for the most-affected productive sectors (fisheries and to a lesser extent, agriculture) affect the livelihood of the entire community beyond the directly affected areas. It also highlights systemic gender inequalities that disadvantage women in such processes.

The systemic analysis highlights the cross-cutting nature of the disaster's impacts, and thus, the necessary multi-sectoral, inter-institutional, and multi-disciplinary approach needed for the reconstruction process.

The disaster points to the need for interventions, with a participatory, equitable, flexible, decentralized and transparent approach beyond the livelihood restoration, ensuring that women play a central role in re-building communities. Better management of the coastal environment and reinforced risk reduction must be a part of the overall social and economic strategy, adopting realistic, attainable goals in the short and medium term, and are at the core of this Recovery Framework.

Graph 3:
Affected states in India: damage and losses, by sector



Section 1.4
The Recovery Framework: The Underlying Differential Impacts, Vulnerabilities and Risks

1.4.1 Differentiated Impacts

A very preliminary analysis of the tsunami impact data disaggregated up to the village level and geo-referenced at the *taluk* level provides important insights. The findings are basic, but important in highlighting differential vulnerability and (by corollary) differential capacities of the affected people to recover from the impacts. When analyzed by *taluk* of residence (rather than location of death), the number of people killed shows a wide distribution from the coastline. This appears to suggest that it is not only the location of houses that determines people's physical vulnerability but other factors such as site of vocation and access to advance information about a hazardous event. Likewise, along the affected coastline, the number of deaths when disaggregated to down to the *taluk* level shows a marked variation. A closer look at the *taluk* level indicates that the density of habitations along the coast, land use and occupational patterns determined the fatality rate.

Within each affected *taluk*a, there is significant variation in the fatality rate across different age and gender groups. In Pondicherry and Kerala, among adults the female fatality rate was two to three times that of male fatality rate. As often occurs with tsunami, children were among the hardest hit. For example, in Karaikal region, Pondicherry, 251 out of 490 total casualties were children, of which 148 were girls. In the worst affected villages of Tamil Nadu, this was much less disproportionate. This serves to reveal the differential gender- and age-based vulnerabilities.

The reason for the disproportional impact on women and children in fishing villages in Tamil Nadu and Pondicherry was because the tsunami hit around mid-morning when they were busy receiving fish on the beach. The most vulnerable groups were hit according to their exposure as well as their capacity to survive the wave and hold on to something to save themselves.

This very preliminary analysis is based only on available mortality data. Similar analysis at the local level on other variables of the disaster's impacts on housing and livelihood assets also reveals that the hardest hit were the poorer sectors of fishing communities, especially those living in thatched (*katcha*) houses closer to the beach (see previous section on damages and losses). The number of people displaced, proportional loss of livelihood assets, and community infrastructure can also be used to highlight the interaction of a range of underlying causes in producing geographies of disaster impact. In particular, those involved directly with fisheries have been by the far the worst-hit, with considerable downstream effects on livelihoods. This will help in tailoring local policy actions for reconstruction that will not only help rebuild what was lost in the tsunami disaster but also reduce future disaster risks.

1.4.2 Post-Disaster Relief and Compounded Vulnerabilities

Relief operations and displaced populations: According to the situation reports produced by the UNDMT in India, a month after the disaster the total population still in relief shelters in Kerala (24,978 in 29 camps) and Tamil Nadu (44,207 in 58 camps) was 69,185 in a total of 87 camps. Andhra Pradesh had set up 65 relief camps during the first days of the emergency and people were quickly re-settled. Pondicherry had 48 relief camps, all of which had been closed by the end of January as people had set up temporary shelters in their villages.

The Union and State Governments responded quickly and well to the emergency, providing immediate relief and medical attention to survivors. A National Crisis Management Committee

was sent up to coordinate relief efforts and provide support for setting up relief camps. The emergency relief operation lasted most of January 2005. When the JAM visited several of these temporary shelters in the Karaikal, Pondicherry, Cuddalore and Nagapattinam districts of Tamil Nadu and the Kollam and Alappuzha districts of Kerala, it became clear that the emergency phase was ending and most of the displaced people had been moved to temporary shelters. However, these shelters were hastily designed to house people only for a few weeks and not months or years. Over time, such rudimentary living quarters provide limited sanitary conditions and little privacy, particularly for women and young girls. The absence of kitchens and the widespread use of kerosene stoves inside sleeping quarters were identified as fire hazards by members of the mission and NGOs working in the relief camps. These temporary shelters will have to be upgraded, particularly in Tamil Nadu and Pondicherry, if displaced populations are to be housed for over six months.

As the transition to recovery takes place over the coming months several critical factors have to be considered, as displaced populations are often most vulnerable while in temporary shelters. Community life is disrupted, family relations are often stressed by loss of relatives, and social norms and mores are modified. Among the most vulnerable segments of displaced populations in relief camps are young women and adolescent girls, particularly to sexual abuse and sexually transmitted diseases. Orphans and children are also vulnerable in temporary shelters and measures must be taken to check child trafficking. Finally, destitute widows, households with female heads and the elderly are also among the most vulnerable, particularly where social and family ties have been weakened by loss of relatives and providers.

Loss of livelihoods and associated risks: Another set of compounded risks which emerged during the transition from relief to recovery are related to the loss of livelihoods and the disruption of the local economy. As the mission sector specialists could ascertain, the tsunami disaster affected the poorer sectors of society living along the coast. In Tamil Nadu and Pondicherry, members of fishing communities lost their relatives, houses and livelihood assets. Fishers lost their mechanized boats and small craft for traditional shoreline fishing, outboard motors, nets and other fishing implements. Other groups including small holder agriculturalists, horticulturists, pastoralists, crop-sharers and labourers, mostly from poor and socially excluded groups were affected as the tsunami damaged bunds and crops, covered their fields with sand and salt. Their financial loss is less than that of fishers, however, many shallow bore wells were also damaged and seawater increased the salinity of irrigation waters and wells, making them unusable.

JAM reports that for every person directly employed in fisheries, four other persons were dependent on downstream employment. While many of these communities will receive compensation packages from the state governments in the form of cash payments for lost relatives, houses and assets, many of those who were not registered owners of houses or boats will be left out. It is also important to stress here that many of the economically affected may not have been in the area of direct impact of the tsunami and may not have had direct loss of housing or productive assets. However, they are among the most vulnerable since they have few alternatives as the fisheries sector has been at a standstill since the disaster. It will be necessary to focus on quickly restoring their livelihoods and generating employment opportunities among those impacted in terms of loss of income and work opportunities, directly or indirectly by the disaster, regardless of their loss of assets.

1.4.3 Risks Inherent in Reconstruction and Resettlement

Reconstruction of damaged housing and wholesale resettlement of coastal villages*:* A critical post-disaster policy issue is resettlement and the siting of permanent housing to be re-built. The Coastal Regulation Zone (CRZ) Notification establishes a 500m zone in the CRZ-I areas from the High Tide Line (HTL) inland in which no new development should take place. The CRZ notification is the principal legislation governing development activities and land use along India's coasts in the area falling within 500 meters of the HTL and in the inter-tidal zone. Under the notification, all areas within this zone are to be classified as CRZ I(i), I (ii), II, III or IV based on

geomorphology and various other criteria, including ecological significance, existing developments and other features.[9] The nature and kinds of land uses permitted vary according to the specific zone within which an area falls, with greater restrictions on CRZ-I areas, fewer on CRZ-II areas and variable restrictions in CRZ-III areas where there is considerable scope for varied interpretation as well.

The enforcement of CRZ has been limited so far and the scale to which it can be applied and enforced has been the subject of intense debate in India. Immediately after the tsunami disaster, several state governments expressed that the disaster presented them with an opportunity to apply the CRZ zoning and move coastal villages out of harm's way. While the CRZ was originally seen as an environmental policy, its application on the ground has more to do with rural and urban planning. If many tens of thousands of destroyed houses are to be rebuilt along the coast, this can be an opportunity to apply the CRZ and move settlements inland. Despite this, it is vital to follow the non-negotiable principle of not further penalising the victims of the tsunami. It is very important to safeguard against any moves to convert the disaster into an opportunity to displace the local communities living along the coast. A robust and sustained process of negotiation needs to be established between all the actors and the local communities based on clearly established and fully understood rules of negotiation. This process needs to be clearly explained to the local communities so that they are well prepared for these negotiations. It is important to use all available records and sources of information to establish the pre-tsunami land tenure and ownership of property and this includes revenue, census, regular panchayat and kuppam panchayat records. An honest and comprehensive attempt is required to establish the pre-tsunami socio-economic baseline including detailed discussions with members of the local communities especially those belonging to the regular and Kuppam *panchayats*. This process will enable the determination of a more realistic socio-economic baseline and will help minimize dislocation and impoverishment of the tsunami-affected population.

On the one hand it can be argued that the resettlement of local communities beyond the 500 m limit in CRZ-I areas would reduce the environmentally damaging effects of settlements and infrastructure close to the beach and also protect them from future hazards. On the other hand, this would have impact in terms of the sheer cost of the reconstruction effort if all housing within 500 m of the sea were to be resettled, and would also have considerable impacts on community cohesion, access to livelihood assets and resources for fishing communities who will, in any case, still require access and storage for their fishing equipment. Moreover the CRZ Notification does not expressly prohibit the reconstruction of settlements that existed prior to 1991, especially those of local communities.

Similarly, one of the enduring psychological impacts of tsunami victims is the fear of the sea as a potential destructive force. This is understandable in an event of such magnitude. The mission has received requests from State and district governments about the need to build sea defences along the Tamil Nadu coast and restore and extend existing seawalls along the Kerala coast. Coastal populations in Kerala blamed a gap in the rubble mound sea wall for the concentrated damage in the Kollam district. It was also, however, reported in some places in Kerala that the rubble from the rubble mound walls was a hazard as the force of the waves dislodged and transported it onto human settlements.

Sector specialists in infrastructure and environment of the needs assessment mission have discussed the issue of coastal protection and weighed options based on information available

9. CRZ I (i) comprises 'ecologically sensitive or important' areas such as wildlife sanctuaries, national parks, government forests, mangroves, coral reefs, breeding and spawning grounds of fish and sites of historical importance. CRZ I (ii) comprises areas between the Low Tide Line and the High Tide Line. CRZ II consists of areas that are already quite developed up to or close to the shoreline, such as major coastal settlements, ports and other large infrastructure. CRZ III consists of areas that are less developed than CRZ II areas or undeveloped but which do not merit being classed as CRZ I. CRZ IV covers the coastal stretches of the Andaman and Nicobar Islands, Lakshwadeep Islands and some other islands except where these have already been classified as CRZ I, II or III.

during such a short mission. It is clear that the construction of a 600 km long seawall along the Coromandel Coast is an extremely costly measure which could generate more problems than it solves. There are a wide range of technical and management options for coastal protection which include the restoration of mangrove and other natural forests, the plantation of shelter belts and the creation of artificial reefs. These have certain advantages (lower costs, environmental and livelihood benefits) and disadvantages (longer period before providing protection). Harder structural mitigation measures include the building of groynes, beach nourishment, headland sea defences, sea walls and breakwaters. Each of these technological options also has its advantages and disadvantages. The advantages of structural mitigation measures are linked to immediate containment of wave energy and control of coastal erosion and accretion processes. They provide local protection, while deflecting sediment transport and erosion further along the coast. Among the major disadvantages are the high cost of building these structures, particularly off shore breakwaters and seawalls. Maintaining these structures is expensive. Most of these structural coastal defences also have a high impact on shoreline sediment transport, coastal ecosystems and environmental assets such as scenic beaches. Encroachment of structures on sea access by local communities can also impact livelihoods.

All these major resettlement and reconstruction issues require careful planning and feasibility studies. Systematic multi-hazard mapping would be conducted in all areas to be reconstructed and resettled and zoning regulations will be established and enforced to reduce future disaster risks. While many of these studies may take months to conduct and the rehabilitation effort could last well into 2006, the risk management and zoning mechanisms can be put into place in parallel. These measures and local planning policies also require close cooperation with local authorities and community leaders (*panchayats*). Environmental impact assessments will be needed before designing and building sea defences and the emplacement and design of new housing projects would need to take local communities' needs and requirement into account. Coastal protection would be integrated into multi-hazard mapping and research.

Section 1.5
Guiding Principles for Sustainable Recovery and Risk Reduction

1.5.1 Objectives of the Recovery Framework

The overall objective of the Recovery Framework of the UN System In Support of Government of India for a Post-tsunami Rehabilitation and Reconstruction Programme is to define the approach of the United Nations in facilitating the rapid recovery of the affected populations. This approach is designed to lead to both recovery and the expansion of opportunities for sustainable development, and the reduction of future disaster risks. Specifically, the Framework is designed to:

- Contribute to sustainable livelihood recovery.
- Help plan for the rehabilitation and rebuilding in a way that promotes livelihood recovery, the expansion of income and employment opportunities, and, at the same time, also reduces risks.
- Provide for the strengthening of institutional capacities for identifying and managing disaster risks, in a multi-hazard framework.

The United Nations approach moves beyond identification of requirements of financial support for physical assets and infrastructure and related technical studies that are appropriately addressed through financing by GoI with support from the WB and ADB to:

- Highlight additional and complementary areas.
- Focus on immediate and long-term vulnerability reduction, both in terms of natural disaster risk and social vulnerabilities.
- Focus on capacity building for processes and systems required for promoting livelihood recovery and diversification that could be appropriately addressed through technical assistance and grant funding channeled through the United Nations.
- Build on ongoing post-tsunami work and relationships established with state officials and NGO partners.
- Establish systems for experience sharing and more effective implementation by the large number of partners involved in the recovery and rehabilitation phases in South India.

Collaborative work by the various UN agencies in response to the tsunami has strengthened capacity within the system to work together. The implementation as indicated within this document would provide further concrete experience as to how this can proceed constructively and effectively, and thereby contribute to the process of UN reform.

1.5.2 Guiding Principles

As the transition from relief to recovery takes place, several key issues emerge. The recovery and reconstruction strategy (i.e. the medium term rehabilitation framework) has to take into account the longer-term scenario, as perceived by the community, both women and men, and the local (district and State) governments. This will also vary according to local context, differential vulnerabilities and existing sectoral composition of regional economies.

Several key guiding principles have been identified for the overall recovery framework, which centres on placing the post-tsunami recovery in a development framework in Andhra Pradesh, Kerala, Pondicherry and Tamil Nadu. As mentioned earlier, Andamans & Nicobar Islands are not included in the assessment or in the recovery framework.

These can be summarized as follows:

- ***Nationally and locally driven recovery****:* There is a need to empower affected communities, families and district governments to take their own recovery in their hands. Therefore, as soon as possible, efforts will be made to get people out of relief and into recovery. This will require State governments to replace relief packages for recovery assistance to enable them to jump-start livelihoods for both women and men and contribute significantly to the reconstruction effort.
- ***Gender equity:*** The recovery and reconstruction process must fully take into account the women's human rights perspective, protection, livelihood and leadership of women and women's organisations.
- ***Short-term rehabilitation must not hinge on long-term reconstruction packages****:* Local recovery efforts will begin as soon as possible and not be tied to the lengthy process of approval of international loans and the development of "master plans", etc., at the State level. In other words an incremental process of local recovery can begin in parallel with decision-making on more strategic issues linked to broader policy issues. This requires a clear strategic distinction between rehabilitation – restoring basic services and infrastructure - and reconstruction – upgrading and improving existing development assets that are gender sensitive in nature.
- ***An adequate balance between governance and participation****:* Decision-making on programme content and direction is best done by those who are most affected by them. Participatory and gender representative planning will result in plans that meet the needs and have the support of the affected community, and will, therefore, be the most effective. This is particularly important in the context of reconstruction and possible resettlement of affected households in the Coastal Regulation Zone.
- ***Respect for cultural diversity and specificities:*** Tribal groups and fishers have distinctive lifestyles which are in themselves a part of the cultural heritage of India. Efforts must be responsive to these societies' need to maintain their integrity, at the same time developing programmes that result in the improvement of the quality of their lives. Flexibility is essential in the application of general policies in terms of adaptation to specific conditions in terms of coastal related activities such as fishing, salt production, port and transport, etc., where immediate proximity to the coast is essential.
- ***Seek greater equity in access rights and the distribution of productive assets:*** The recovery and rehabilitation phases provide opportunities to increase equality within communities, more evenly distribute ownership of assets, and improve the condition and position of women and other vulnerable groups. It is also clear that the reconstruction of communities along a narrow coastal strip cannot generate privileges that those living further inland have been denied. A balancing act is needed by district authorities in order to provide to those in need without excluding those unaffected by the tsunami. This will require focusing on capacity building for providing balanced public services and strengthening institutions.
- ***Transparent and effective monitoring of the recovery process****:* For all the interventions, an engendered monitoring mechanism will be put in place to assess and advise the implementation of these interventions. In particular, there will be a clear policy for public disclosure of rehabilitation and reconstruction plans to all affected and non-affected communities. A communication and public information campaign would seek to inform public opinion on the scale and scope of the recovery effort. There is need to promote the coordination between actors (government, NGOs, international organizations, contractors) and stakeholders (beneficiaries and the local population, including those not directly affected, *Panchayat* members, habitations or districts) in the reconstruction process and avoid mechanisms that create dependency.

1.5.3 Major Cross Cutting Issues in the Recovery Framework

A. Moving From Post-Disaster Relief to Recovery

Protecting the most vulnerable: Children and in particular young and adolescent girls are the most vulnerable groups. Special measures must be taken to secure their well being and protect them from further trauma. In the immediate aftermath of disaster there is the great danger that impoverished parents may take their children out of school and put them to work at home or with employers. In particular, relief camps and temporary shelters must be designed and monitored for health and other risks to children and adolescent girls and women.

Making temporary shelters more liveable: Relief and recovery efforts will need to proceed in parallel, though the immediate priority is to prevent further loss of life through public health, food, medical and shelter programmes. Experience shows that permanent housing can take years rather than months to build and that temporary shelters for tsunami victims will need to be upgraded in order to improve living quarters, sanitation and security, keeping in mind the special needs of women.

B. Restoring Livelihoods and Upgrading Infrastructure

Getting people back to work: Employment concerns will be accorded a central place and the recovery process has to be seen as leading to improved development outcomes. Having productive work and earning a reasonable income confers dignity and a measure of social and economic security to the individual and the family. As people get back to work and begin earning and spending their income, the local economy will begin to revive and many of those who lost work opportunities due to the decline in demand following the tsunami will find new opportunities to produce and sell their products.

Restore and upgrade infrastructure and services wherever possible: Employment generation initiatives must be viewed in respect of their sustainability over the longer run, both in the economic sense of viability, with respect to the specific needs of men and women and also in the environmental sense. To this end, interventions and programmes in infrastructure, both public and private, will strive to provide employment and training to affected men and women, increase energy efficiency, provide the structures needed for supply and market chain efficiency. Increased access to credit and rural financial services are also an important step to secure sustained growth of local economies. It is best to promote community-based solutions wherever appropriate, to use locally available materials and human resources and to maximize labour-use consistent with the needs of efficiency and timeliness.

Make recovery inclusive and broad based: The post-disaster situation provides a window of opportunity to change the pre-existing situation in favour of greater gender equity and equality and social inclusion. Concerns about the welfare of orphans, households headed by women as well as such socially excluded groups, as *Dalits* and tribal people must be factored into policies and programmes. Special measures are needed to ensure that the poor, marginalized and excluded groups have opportunities to improve their lot though training, credit and market opportunities.

Secure livelihoods with greater value-addition: Likewise, livelihood interventions will seek to increase value added in the production processes, to improve returns to the producer, provide opportunities for skill up-gradation and training and reduce production and transport costs. Recovery and rehabilitation do not require the replication of previous livelihoods. Rather, traditional livelihoods will be improved and where necessary and feasible, alternative opportunities for employment and income generation will be supported. For example, educated youth (both women and men) from the fishing community and elsewhere could be trained to become entrepreneurs and manage small businesses. This could be in the processing of agricultural products and fish, improving the packaging and distribution of their products and

providing technical repair services for boats and motors. It could also relate to new areas where market opportunities exist and can be successfully accessed. Sufficient flexibility will be provided in the compensation and recovery packages to enable beneficiaries to take up new activities or to upgrade existing ones. The move to higher value-added and new activities will lead to a reduction in the dependence on fishing. It will also raise incomes and improve the ability of the poor and deprived to cope with these situations. However, these improvements will call for special measures to enable such groups to access the labour, capital and the product markets on the same terms as other groups. It will also call for the strengthening of labour market information systems and services.

Maximize the use of local procurement in recovery effort: Recovery would be done to maximize the use of locally available inputs (labour, materials and services) so that it helps the recovery of the local economy. Public employment generation programmes could be used in areas such as rebuilding of houses, boats and local infrastructure, restoration of mangroves, etc., as a way of kick-starting the local economies by men and women.

Provide safe reconstruction and employment: Construction represents one of the most hazardous sectors in terms of occupational safety and health; hence concerns for the safety and health of workers engaged in the reconstruction process will be mainstreamed in the recovery effort through awareness, training and use of safe and sound practices. Furthermore, it is to be expected that many workers will take up new occupations, associated with risks with which they will be unfamiliar. Awareness raising may be one of the means to reduce the associated risks.

C. Prospective Risk Reduction

A healthy environment for long term security and sustainability: A healthy environment of the region is desirable both as the basis for the livelihoods and a renewable source of natural resources of a substantial number of people in the affected areas. Healthy environments, where coastal ecosystems thrive and good quality water resources are available year-round are key to livelihood security. An appropriate balance between environmental rehabilitation/conservation and sustainable livelihoods is essential.

Prospective risk management for a multi-hazard context*:* This Reconstruction Framework views risks in a multi-hazard context and not exclusively in relation to the tsunami. Recovery offers an opportunity for the prospective or anticipatory reduction of future risks through a series of measures including settlement location, environmental improvements, physical mitigation measures, as well as incorporating cultural and historical values into risk assessment. At the same time, the guiding principle underlying this Framework is to reduce risk to acceptable levels rather than eliminate as maintaining a balance between the reduction of risks to natural hazards and the reduction of risks due to livelihood sustainability is imperative. Particular aspects to consider include:

- ***Safe siting of new settlements****:* Siting of settlements (particularly of affected fishing communities) at a distance of 500 m or more from the high tide line would reduce risk to both tsunamis as well as other hazards such as cyclones and storm surges. However, this may increase livelihood risk for fishers and therefore prove to be unsustainable (in other words people would return to their coastal locations over time). A flexible land use policy needs to be adopted in consultation with the local communities. Relocation of coastal settlements that were not affected by the tsunami may not be socially or economically feasible.
- ***Design acceptable housing solutions***: The design of permanent houses and settlements will maximize local participation in order to ensure cultural acceptability. At the same time, hazard resistant measures will be included: cyclone and earthquake resistance. This could be accompanied by a component of reinforcing and / or retrofitting existing coastal housing that was not destroyed by the tsunami.
- ***Restore environmental assets while providing greater shoreline protection*** The use of environmental protection measures, such as extending mangroves in estuaries and inlets,

could provide both greater protection against storm surges and tsunamis (note: greater not absolute protection) as well as increasing livelihood options (more fish and shellfish). The use of shelterbelts needs to be reviewed perhaps to move away from mono-species belts towards a more mixed species strategy.

- ***Restrict coastal protection works to densely settled areas or key ports*:** The use of physical protection measures such as sea walls and breakwaters (groynes) could be used at specific locations (ports, major settlements, etc.) but NOT along the entire coastline. This is not justified by the tsunami risk (infrequent occurrence) and could have very negative environmental and livelihood consequences.
- ***Mainstream risk reduction measures into recovery effort:*** Measures to reduce other commonly manifesting risks, associated with floods and drought, need to be factored into the recovery process. This will address, for example, the sustainability of agriculture in a context characterized by rapidly depleting ground water supplies, problems of salinity in aquifers and the impact of floods and flash floods on agriculture and livelihoods.
- ***Use market instruments and risk transfer to enforce risk management*:** Empower the community's actions (with special focus on affected women by linking calamity compensation with mitigation and prevention measures leading to risk reduction. In other words, risk transfer through relief and assistance post-disaster packages gradually to shift to self-assumed (at the individual and community level) risk transfer schemes, including physical and financial risk reduction.

Organize communities to respond to emergency situations: Recovery also offers an opportunity to strengthen compensatory risk management measures along the coastal areas – both in affected as well as non-affected communities, including improved disaster preparedness and early warning systems. Use, promote and upgrade existing community self-help schemes for risk transfer and include in them early warning system using their local network, taking examples from other schemes in the region (i.e., Bangladesh and the women's network for early warning)

***Provide timely information on risk and early warnings that people understand*:** Both anticipatory and compensatory risk management activities need to be underpinned by improvements in risk information management systems and by strengthening of institutional capacities for disaster risk management.

1.5.4 Beyond the Recovery Framework: Towards Sustainable Coastal Development

Achieving long term development goals also requires reducing vulnerabilities and exposure to hazards, particularly those that frequently impact coastal communities. The reconstruction effort must, therefore, incorporate measures to ensure that livelihoods for men and women are more diversified and resilient, that housing and infrastructure are built to the best existing structural mitigation standards and away from harms way and that environmentally sound measures are taken to protect the coastline.

Two of the hardest hit sectors by tsunami were housing and fisheries. Each sector has estimated the replacement costs at more than Rs. 100 billion (US$ 2.3 billion), particularly if there is an overtly strict application of the CRZ in resettling coastal communities. However, these needs have to be balanced with overall development objectives. Many of the needs formulated by the State governments to the mission seek to extend and upgrade existing infrastructure, improve the coverage and quality of basic services (energy, water, sanitation, health, education). Other expressed needs have to do with providing long-term livelihood security and coastal protection. Improving these basic services could go a long way to help achieve the Millennium Development Goals in these coastal districts.

United Nations Country Team
India
Recovery Framework in Support of Government of India for a Post-Tsunami Rehabilitation and Reconstruction Programme

Section 2: Recovery Interventions

Section 2.1
Psychosocial Support

2.1.1 Situation Analysis

According to the estimates, some 10,000 lives were lost as a result of the tsunami. Based on general UNICEF estimates, apportioning the number of orphaned children on the basis of the death toll would mean approximately 2,000 vulnerable children. Immediate government responses include identifying and reuniting separated children with their extended families, maintaining India's strict rules on adoption, protecting children from criminal exploitation and addressing psychological trauma.

2.1.2 Strategy

The provision of psychosocial support to people affected by the tsunami must address several different levels of concerns. Families and individuals must deal with loss of relatives. Entire communities face also the loss of livelihoods from the massive destruction of fishing boats and nets. There will be secondary trauma issues in the weeks to come, as evidenced by rumours about the re-occurrence of tsunami. Third level issues will address stress among volunteers and district officials who have worked for days in the devastated areas, have occasionally lost friends and relatives and are facing cumulative stress.

Several types of interventions will be needed on an immediate basis, to identify and assist most affected communities for urgent support and to train community volunteers and personnel of primary health centres to identify people's psychosocial needs. If need be, specialists will need to be available to receive referrals.

UNICEF initiated psycho-social support for families and children in partnership with Tamil Nadu's Department of Education in early January, in order to provide teachers and community workers and volunteers, as survivors, with tools to better understand and address their own and children's needs following the devastation. The preparatory phase of the project has been completed with an assessment of the situation of children. UNICEF has continued gathering information from community and health workers, psychiatrists, and other agencies working with children. It intends of focus on 13 affected coastal districts in Tamil Nadu: Chennai, Thiruvallur, Kanchipuram, Cuddalore, Villupuram, Nagapattinam, Thiruvarur, Tanjore, Kanyakumari, Thoothukudi, Tirunelveli, Ramanathapuram, and Pudukottai.

By the third week of January, WHO led a UN Agencies team to further assess the extent of the psychosocial problems. In collaboration with the local government and other concern agencies, the team had developed a framework to work together to strengthen the capacity for counselling in tsunami-affected districts in the states of Tamil Nadu, Kerala, Andhra Pradesh and the Union Territory of Pondicherry. This includes plan for training of community workers on psychosocial support; working with governments to provide ad hoc and/or systematic training for teachers and school-related professionals on how to work with pupils/students.

The objective is to train 3,000 community workers and government relief workers in Tamil Nadu for providing psychosocial support to communities. This will include 6 Training of Trainers programmes during which manuals and modules will be developed; and 150 training programmes with community workers. With its own budget, WHO signed contracts with six institutions specializing in the area of mental health to assist in the implementation of this plan by providing technical assistance. These institutions are: the National Institute of Mental Health and Neurosciences (NIMHANS) – Bangalore; the Vidyasagar Institute of Mental Health and Neurosciences (VIMHANS) – New Delhi; the Schizophrenia Research Foundation (SCARF) – Chennai; Medical College - Allepey; the Jawaharlal Institute of Postgraduate Medical Education

and Research (JIPMER) – Pondicherry and the State Mental Health Authority (SMHA) – Kerala. Nearly 920 persons have so far been trained.

Technical assistance includes preparation of manuals, identification of trainers, and provision of services. It is estimated that along with community-level workers, 170 professional counsellors would be needed to bridge the gap between the affected people and district mental health services in Andhra Pradesh, Kerala, Pondicherry and Tamil Nadu.

2.1.3 Budget Overview

Table 2.1.1 Summary Budget for Psychosocial Support

Planned activities and funds requirement	US$)
Training of trainers and CLWs	**99,800**
Psychosocial monitoring and coordination	**80,600**
Expenses for those requiring professional help in Districts for secondary level care	**129,000**
Honorarium to medical, psychiatric and social workers first level care	**470,500**
Project management costs (coordinator, preparation of IEC material, travel for monitoring purposes, communications etc)	**89,000**
Total	**869,000**

2.1.4 Partner UN Agencies

WHO, UNODC, UNICEF, UNFPA & UNESCO

Section 2.2
Social Re-integration to Address Trafficking

2.2.1 Situation Analysis

The tsunami has caused grave trauma and shock to the surviving population. As has been noted from past UN experiences in disaster situations, a crisis of this kind affects people in more ways than those that are visible on the surface (like lack of food, shelter and medicines). The not so apparent effect on people due to loss of livelihood and emotional shock leads them to unsafe behaviour that will create an environment conducive to violence, sexual abuse, exploitation, trafficking and HIV/AIDS.

The responses to address the vulnerabilities to trafficking pose a unique challenge considering that it is a relatively 'invisible' activity. Also, men from the community very often take on the role of traffickers in disaster situations in addition to the regular trafficking networks that converge on impacted areas

Trafficking situation in Tamil Nadu, Andhra Pradesh and Pondicherry: The challenge is even bigger in states where incidence of trafficking is already high. Andhra Pradesh is the second largest state for trafficking of women and children for sexual exploitation. It also serves as a transit and destination state for trafficking. Women and children from other states such as Karnataka, Orissa and Maharashtra are trafficked through Andhra Pradesh to cities like Delhi and Mumbai. Rural Tamil Nadu, with its high migrant population, is the source from where women and children are drawn to urban centres like Dharmapuri, Tirunelveli, North Arcot and Kanyakumari in search of jobs. Chennai, the capital of the state and a major metropolis, is a source, destination and transit point for trafficked women and children. Owing to its flourishing tourism industry and demand for sex services, Pondicherry is a key destination for women and girls trafficked from the states of Tamil Nadu and Andhra Pradesh.

Response analysis - Government response to trafficking: Andhra Pradesh is the first in the country to bring out a policy to address trafficking of women and children for sexual exploitation, highlighting the need for multi-sectoral responses. To implement this policy a state co-ordination committee has been constituted comprising secretaries of various departments including Home, Education, Law, Health and Rural development.

In Tamil Nadu a state-level action plan has been drafted to address the issue of HIV/AIDS and Trafficking in the state. A high-level coordination committee under the Chief Secretary has been formed as per the order of the Supreme Court. The government has appointed a District Advisory Committee to Combat Trafficking and Commercial Sexual Exploitation of Women and Children in Tamil Nadu.

Civil society response to trafficking: In Andhra Pradesh around 30 NGOs are consistently making an effort to address the issue of trafficking for sexual exploitation and have formed a network called Network against Trafficking for Commercial Sexual Exploitation. Survivor groups have been organized in four districts - Ananthpur, Cuddapah, Hyderabad and Nellore. At least 10 NGOs have a quarter of their staff who are survivors. In Tamil Nadu Childline is a telephone helpline for children in distress. This service was started in partnership with the Department of Social Defense and is funded by Government of India. Several NGOs in Tamil Nadu and Pondicherry work with women who have been trafficked. They also run temporary shelters for care and protection of victims.

2.2.2 Strategy

In partnership with key stakeholders the project will be implemented in select districts of Tamil Nadu, Andhra Pradesh and Pondicherry. The project will address the immediate needs of those affected, particularly women, girls and boys at risk of being trafficked and trafficking survivors. The medium to long-term needs will also be addressed through the project activities during the two years, and also by developing a follow-up plan of action using the experience and resources that the given project will accumulate. At present there is a lack of data regarding vulnerabilities to trafficking and HIV in disaster struck areas. The project will also help generate experience, resources and best practices for future strategic programming in the affected areas and provide a model for similar situations elsewhere in future.

While focusing largely on prevention of trafficking through immediate and long term recovery and sensitization processes, the project will also reach out to those who are vulnerable, particularly caused by the distress of tsunami; those who are trafficked and facilitate rescue, rehabilitation and reintegration. Special emphasis will be laid on providing Care and Support including psycho-social counseling to those impacted by the tsunami, with a focus on vulnerable women, girls and boys at risk of being trafficked as well as the trafficked survivors. To the extent possible survivors will be involved in peer counseling. A key component of the medium to long-term process is to address the livelihood needs for the local communities directly and indirectly impacted by the disaster.

The present proposal is for 2 years with activities proposed to address the most immediate as well as mid and long term issues related to the vulnerability of women and children, prevention of trafficking and rescue and rehabilitation of the survivors. The following are the expected outcomes of the project and the activities thereof:

Outcome 1: ***Advocacy and public awareness to generate an integrated and mainstreamed response to trafficking***
Activities:

- Organise custom-made training sessions for enrolling/sensitizing key government officials from multiple sectors (collectorate, revenue departments, police, education, health, etc) media, rescue and relief workers and community on the vulnerability of women, young girls and boys to sexual abuse, exploitation and trafficking, particularly within the context of gender, livelihoods and rights
- Undertake focussed advocacy with key officials and planning and co-ordination bodies to integrate anti trafficking and HIV/AIDS issues into post-disaster recovery frameworks
- Undertake large scale campaigns to raise awareness about trafficking and address issues of stigma and discrimination making sure that the information reaches decision-makers, community leaders, CSOs and relief workers at all levels
- Identify and use locally popular forms of entertainment and communication channels, including local radio and cable channels to generate broad-based awareness about gender and health issues among general community as well as specific population groups
- Lobby with state/ local government for efficient and timely implementation of income generation initiatives in project sites (eg., TRYSEM[10], PMRY[11], JRY[12], SJSRY[13] etc.) for vulnerable women and trafficked survivors
- Prepare village–wise and district-wise registers of post-tsunami missing persons and update regularly
- Bring together the multiple stakeholders including community leaders, policy makers, law enforcement personnel, rescue and relief workers, CSOs, GOs and media personnel for developing effective strategies, responses and best practices which are gender sensitive and rights-based
- Identify and document effective responses/good practices in the states and elsewhere; set up

[10] *Training of Rural Youth for Self Employment*
[11] *Prime Minister Rozgar Yojana*
[12] *Jawahar Rozgar Yojana*
[13] *Swarna Jayanthi Sahari Rozgar Yojana*

a website on trafficking and disaster situations collating and showcasing current/ latest knowledge and good practices

- Involve trafficking survivors, tsunami-affected persons and PLWHA in prevention, rescue, relief and rehabilitation programmes

Outcome 2: ***Protection, care and support to women, young girls and boys who are vulnerable to trafficking and HIV/AIDS and trafficking survivors, and facilitate the overall wellbeing of communities.***

Activities:

- Undertake rapid assessment in project locations to identify key hubs of trafficking, trafficking routes, vulnerable populations, existing community resources, etc., and develop a baseline
- Establish and operate interim shelters – and utilise existing Government /CSO infrastructure wherever possible- in identified locations for vulnerable women and children, including adolescent girls under threat of violence or trafficking, widows, victims of violence and HIV+ people
- Provide counselling on psychosocial and trauma issues to survivors of the disaster and trafficking, counselling on sexual exploitation, reproductive health issues and HIV/AIDS, in co-ordination with other health and relief activities
- Refer and link survivors at the interim shelters to other existing facilities for shelter and relief as and when they feel ready to move; develop minimum standards of care and sensitize shelter/ half-way homes to facilitate gender and rights sensitive treatment of trafficked survivors
- Enhance the capacities of anti-trafficking and PLWHA networks to provide protection, care and support to trafficking survivors, and vulnerable women and children including those who are HIV+
- Train and prepare a cadre of community workers / peer educators/ midwives, etc., to provide peer support, information and referrals as well as counselling to traumatized women and young girls including those rescued; support the network of peer educators with information, motivational visits, monthly reinforcement meetings, etc.,
- Link CBOs with the private sector to create alternative employment opportunities for communities at high risk of being exploited and trafficked, especially Dalit women and those rescued; provide training, income earning opportunities for vulnerable women and adolescent girls in the shelters and surrounding communities.

Outcome 3: ***Empowerment and creation of community resilience through mainstreaming of anti trafficking and HIV/AIDS initiatives into disaster recovery plans of state governments, civil society organisations, UN agencies and others.***

Activities:

- Develop and administer tools/manuals and training programmes for key stakeholders involved in disaster recovery programmes
- Create community surveillance systems by sensitization/training of vigilance squads, local police and relief officers to be able to identify, inform and check trafficking. Set up information kiosks at key locations such as railway stations and bus stops
- Provide technical support to CBOs/NGOs and the corporate sector to integrate trafficking issues into their work, specially those working on life skills and micro-credit programmes
- Build capacity of trafficked survivors for involvement in anti trafficking activities of governments and CSOs.

Implementation arrangements: The projects will be managed under the framework of the Joint United Nations Support to Government's Recovery and Rehabilitation Programme in India. The project components will be implemented by NGO/CBO partners who have shown long-term commitment for working with tsunami reconstruction activities. The project personnel will work closely with local counterparts, and in collaboration with other UN agencies, government and district level government institutions, NGOs, CBOs and other organization as well as the private sector.

UNDP will co-ordinate activities and provide technical assistance in implementation. There will be collaboration with other UN agency programmes in the select areas, especially UNICEF, UNIFEM, ILO and UNODC. The activities will complement and build on existing initiatives,

including the UNDP – USAID/SARIQ partnership for community empowerment and existing studies (Like the ones conducted by IOM and UNICEF).

Partnerships will be forged with Department of Women and Child Welfare, Nehru Yuvak Kendra Sangathan (Department of Sports and Youth Affairs) the *Panchayat*i Raj department, State AIDS Control Societies, law enforcement personnel and District Administrations as well as local CSOs to facilitate wide coverage and ensure sustainability.

The project will work extensively with local and state Governments as well as local and international civil society organisations, people's organizations and advocacy groups for building on existing infrastructure and resources to ensure long-term sustainability and community ownership. Partnerships will also be forged with other UN and international agencies like UNICEF, UNIFEM, ILO, IOM and UNODC to ensure a harmonised response.

2.2.3 Budget Overview

Table 2.2.1 Summary Budget for UN System Support for Social Re-integration to Address Trafficking in Tsunami-Affected Districts

Advocacy and awareness generation	**Amount in US$**
Advocacy initiatives	35,000
Awareness campaigns	45,000
Media sensitisation (tools+ training programs)	15,000
Community mobilization and sensitization	25,000
Networking & co-ordination	15,000
ICT initiatives	20,000
Sub-Total	**155,000**
Protection, Care and Support	
Rapid Assessment	25000
Interim Shelters	50000
Counseling	15000
Technical Support to existing services, shelter homes, CSOs	20000
Training and capacity building of networks and peer educators	40000
Information Kiosks	20000
Training community on income generation, vocational skills	25000
Community surveillance	20000
Sub-Total	**215,000**
Mainstreaming of anti-trafficking and HIV initiatives	
Strategy development and dissemination	20,000
Mainstreaming tools and training	35,000
Capacity Building	20,000
Sub-Total	**75,000**
Project Management	
Monitoring & Evaluation	20,000
Project coordinator	30,000
Administration and program support	5,000
Sub-Total	**55,000**
Total	**500,000**

2.3.4 Partner UN Agencies

UNDP, UNODC, ILO, UNESCO & UNICEF

Section 2.3
Health and Nutrition

2.3.1 Situation Analysis

On the whole, the health infrastructure was not severely affected, although sub-centres, primary health centres were damaged by the seawater. In Nagapattinam, a district hospital was also severely damaged including facilities for obstetric care and management of obstetric complications. Nearly 65 childcare centres (known as Anganwadi centres, or AWCs) were destroyed and 43 were partially damaged. In total, 108 centres will require replacement. Medical supplies are sufficient for the foreseeable future. Medical supplies are sufficient for the foreseeable future. The temporary living conditions of the population raises concerns about water and sanitation, as well as the maintenance of key health practices, such as maternal health including pre- and post-natal and delivery services, breast-feeding, good hygiene and ORS use. Also, the contraceptive needs of the population living in temporary arrangements have to be looked after. Their nutritional status will also require careful monitoring, as will disease surveillance. There will also be a need for strengthening workers and health volunteers in the identification and management of common conditions. A 24-hour operation room at the World Health Organization's Regional Office in New Delhi is in continuous contact with the surveillance teams at the district level.

The temporary living conditions of the population will raise concerns related to water and sanitation, as well as the maintenance of key health practices, such as maternal health including pre- and post-natal and delivery services, breast-feeding, good hygiene and ORS use. Also the contraceptive needs of the population living in temporary shelters are to be catered to. Their nutritional status will also require careful monitoring, as will disease surveillance. There will also be a need for strengthening the skill of health workers and health volunteers in the identification and management of common conditions.

In an emergency situation, the surveillance of communicable diseases is one of the most important activities. An Operations Room at the World Health Organization's India Country Office in New Delhi is in continuous contact with the surveillance teams at the district level in the affected states. WHO has established disease surveillance units in the four most-affected districts in Tamil Nadu to keep a close watch on the disease pattern. In addition, another eight disease surveillance units are being established at district level in Andhra Pradesh, Pondicherry and Kerala. WHO, in collaboration with the National Institute of Communicable Diseases (NICD), GOI, is providing supportive supervision and training to medical officers and paramedical workers to sensitize them on disease surveillance. More than 630 medical professionals have been trained so far. Manuals on the integrated disease surveillance programme (IDSP) have been adapted for this training. WHO is receiving weekly reports on disease surveillance from 14 districts in Tamil Nadu which are analysed and follow-up taken where necessary. Medical officers and paramedical staff from affected districts are being trained by WHO/NICD on the steps to be taken to strengthen disease surveillance. WHO has also signed contracts with five medical colleges to assist selected districts in strengthening their disease surveillance.

2.3.2 Strategy

Tamil Nadu : *The short, medium and long term needs for health sector rehabilitation as indicated by the state are stated below*

Short-term needs*:* The following have been identified as short-term needs to be addressed on a priority basis:

- Since the timeline for the reconstruction of damaged houses is uncertain, the affected population will be residing in temporary shelters for an extended period. The need therefore is to strengthen the provision of basic health care services, including the package of Reproductive and Child Health (RCH) services, to the communities. This will be provided through the regular health system and by restarting outreach services. Provision of basic sanitation, vector control, water quality monitoring, surveillance for epidemic-prone illnesses and psychosocial support are also crucial.
- The state is renovating the damaged district hospital, PHCs and HSCs, and is replacing lost equipment and other amenities with support from the National Calamity Relief Fund, Health System Development Project, RCH II program, UNFPA and UNICEF. WHO has provided 10 surgical kits and 24 emergency health kits to the health facilities in Tamil Nadu, Kerala and Andhra Pradesh. Renovation of other damaged sub-district hospitals has been planned at a later stage. With the loss of livelihood, patients will not be able to seek health care from private providers. This will increase the patient turnover in government facilities. There is therefore a need to renovate the sub-district hospitals (Sirkali and Tharangampadi hospitals in Nagapattinam; Cuddalore, Chidambaram and Parangipettai hospitals in Cuddalore; and Kanniyakumari and Kollachal hospitals in Kanniyakumari) and upgrade existing PHCs. This issue is also noted in the long-term needs below.
- As an interim arrangement, WHO will assist the government of Tamil Nadu by providing human resources (specialists and nurses) for ensuring maternal, newborn and child health services through collaboration with professional organizations. WHO has plans to collaborate with the Indian Nursing Council and the Tamil Nadu Nursing Council to strengthen nursing services in affected areas, including training them for providing psychosocial support
- An in-depth assessment of the needs and priorities of the health sector needs to be conducted on a priority basis.
- Addressing the needs of the vulnerable population: IEC for prevention of HIV/AIDS, malnutrition and anaemia.

Medium-term needs*:* The following medium-term needs have been identified: A long term health sector disaster mitigation plan, including specific training for health staff at all levels in disaster prone districts, is required as part of the community-based disaster and risk management program being envisaged for the state. (Funds to be allocated in the proposed state disaster risk mitigation plan.)

- The state has planned a phased renovation and upgrading of rural and urban hospitals and centres through the Health System Development Project, RCH II project and National Bank for Agriculture and Rural Development (NABARD) project. Hospitals and centres in the tsunami-affected districts need to be taken up on a priority basis. It has been envisaged that these upgraded facilities will have provision of quality reproductive health and family planning services. (Funds for these will come from the state budget)
- Strengthening the health system in the affected districts:
  - Human resource issues in the health sector in the affected districts need to addressed, including capacity building of staff, filling of vacancies and mobility support – only 50% of PHCs have vehicles, and fresh loans to village health nurses for two-wheelers will be considered
  - Improving communication facilities (phones, fax machines, etc.) at all levels in the affected districts
  - Building public-private partnerships so that the private health sector, civil societies and NGOs complement government healthcare services
  - Health financing: Provision of financial protection (such as health insurance schemes) to the affected communities against catastrophic illness and augmentation of health financing by the state for a disaster mitigation program. (Funds from the state budget)
  - Newer initiatives like accreditation of health facilities for standardization of the quality of healthcare services

- Provision of equipment and instruments for the facilities to operationalise RH services, including family planning at facilities identified for upgradation.

***Kerala** : The short, medium and long term needs for health sector rehabilitation as indicated by the state are stated below.*

Short-term needs in the three affected districts are:

- Reconstruction and refurbishing of damaged health institutions
- Control of vector and water borne diseases
- Disease surveillance
- Provision of psychosocial support
- Drugs and supplies
- Information and education (IEC) campaign for prevention of communicable diseases, including HIV/AIDS

Medium term needs are:

- Integrated coastal health projects in all the other districts
- Trauma care and accident management project in all nine coastal district.

2.3.3 Budget Overview

The total resource requirement for this programmatic area is US$ 4,466,000. The detailed budget break-up Tamil Nadu and Kerala are provided below.

Table: 2.3.1 Summary Budgets for Health Sector Resource Needs in Tamil Nadu

Item	Costs (US$)
Short-term needs	
District and government hospitals	-
Primary Health Centres and Health Sub Centres	46,000
Equipment and commodities (including drugs, equipment and patient amenities)	-
Provision of basic health care	2,500,000
Renovation of damaged hospitals and health centres	450,000
Health system assessment	50,000
Addressing the needs of the vulnerable population: IEC for prevention of HIV/AIDS, malnutrition and anaemia.	50,000
Medium-term needs	
Development of health sector disaster mitigation plan**	--
Human resource development	600,000
Improving communication facilities	150,000
Building public private partnerships	50,000
Equipments and instruments for the facilities for operationalisation of RH services including family planning at facilities identified for upgradation	200,000
Total	**4,096,000**

*** Cross-sectoral issue. Budget included in Disaster Risk Mitigation plan*

Table 2.3.2 Summary Budget of Health Sector Resource Needs in Kerala

Item	Costs (US$)

Short term needs	
Control of vector and water borne diseases	67,000
Disease surveillance	34,000
Provision of psycho-social support	134,000
Drugs and supplies	112,000
IEC for prevention of communicable disease including HIV/AIDS	23,000
Sub-Total	**370.000**

***** *Costs for the three affected districts have been included in the short-term needs*

2.3.4 Partner UN Agencies

WHO, UNFPA and UNICEF

Section 2.4
HIV/AIDS Prevention and Care

2.4.1 Situation Analysis

The present HIV/AIDS prevalence in the tsunami affected states is considered by the National AIDS Control Program (NACP) as being among the highest in India, with districts in Tamil Nadu and Andhra Pradesh identified as high prevalence districts. The prevalence rates are ranking from 0.13% in Pondicherry to 1.25 % in Andhra Pradesh among the general population as extrapolated from antenatal consultations data in sentinel surveillance sites (2003). It is generally considered that a rate above 1% indicates a generalised epidemic.

Presently, males account for 73.5 % of AIDS cases and the majority of new infections are in the age group of 15-44 years. HIV is spreading quickly in rural areas, is reaching all strata of society and is having an increasing impact on women. The prevalence among Sexually Transmitted diseases patients and Female Sex Workers is very high, ranking from 1.6% to 19.6%. The prevalence is estimated at 63.8% among Injecting drug users in Tamil Nadu.

Table 2.4.1: HIV Prevalence Rates

HIV Prevalence rate % 2003 - NACO	General Population (Antenatal Consultations)	STD Patients Consultations	Female Sex Workers (FSW)	Injecting drug users (IDUs)
Tamil Nadu	0.75	9.2	8.8	63.8
Pondicherry	0.13	2.6	n/a	n/a
Andhra Pradesh	1.25	19.6	19.4	n/a
Kerala	0.33	4.0	2.2	n/a
Andaman & Nicobar Islands	0.50	1.6	n/a	n/a

Many of the conditions that facilitate the spread of HIV are worsened in post-disaster contexts such as overstressed health services, increased poverty due to loss of income and properties, powerlessness and social instability. Experience from other emergency situations shows that increased vulnerabilities increase the incidence of STI/HIV.

NGOs and the PHC systems have been overwhelmed by the relief response. They are the government channels for AIDS interventions at community level and focused interventions on tsunami-affected populations have consequently reduced their AIDS-related interventions. Safe blood transfusion systems may also have been disrupted.

Mental trauma has increased despair and disruption of social fabric which in turn can lead to risky sexual behaviour; the sales of alcohol are said having drastically increased after the disaster and there is a limited AIDS awareness among the poorest while the stigmatisation is reported by NGOs as being high.

The number of destitute women was already high before the tsunami disaster and their number has possibly increased. There are gender issues common to all groups and communities. There are over 16,000 female sex workers in Tamil Nadu alone. Existing protection measures regarding young girls and children may not be sufficient and would need to be developed. Children having lost one parent and orphans in temporary camps are not perfectly registered – the missing children issue - increasing the risk of child trafficking. Orphans in the care of relatives could also find themselves without support when relief ceases and could face risks of trafficking/exploitation.

(As adoption is not a solution accepted by many, governmental and non-government organisations, orphanages may be created through NGOs within the community.)

The present provisory shelters provided to affected populations could also represent a risk of promiscuity which can become a problem if this situation is maintained for a longer period of time. Inter-alia, water-sanitation planning will include AIDS considerations to vulnerability of women and girls. It should also be noted that the most vulnerable to HIV may not be the most/directly affected by the tsunami. Other communities than fishers are secondarily affected in rural areas as well as in urban areas (people living from fish production: cleaning, reselling of fish, shops, shell collectors, workshops). Access to relief supplies and services as well as recovery assets may be limited to fishers identified through a system of social "ration cards" said having been distributed months before the tsunami. This also could increase the vulnerability of the non-registered individuals and families. Some may have already moved to slums in Chennai where poverty sometimes leads to risky sexual behaviour. There were no NGOs working specifically with fishing communities before the tsunami and AIDS awareness could be limited.

There is a risk that some communities' would lose their equilibrium and consequently cultural values and behaviour, with an afflux of funds which can be captured by some and utilised for local political purposes. This can also lead to discrimination and even conflict based on religious beliefs and other ethnic patterns. Recognised community leaders have to be identified and their capacity strengthened in regard to AIDS issues.

The long term impact of the disaster might be an exodus of people unable to rebuild their lives, trafficking of girls, false marriages, change in the migratory patterns of those who earlier came to the coastal areas for their livelihoods (for example, Tamil Nadu migrants in Kerala), etc. All are factors that can lead to an increased vulnerability to HIV-infection. A vulnerability assessment at a later stage could identify specific population groups at higher risk of HIV transmission and targeted programmes could be put in place.

2.4.2 Strategy

The priority is to prevent further spread of HIV in the tsunami-affected areas. To this end it is crucial to strengthen AIDS awareness among the affected populations. The UN would, therefore, propose to integrate AIDS awareness into the recovery and rehabilitation work outlined in this Recovery Framework. Furthermore, it is crucial to ensure provision of condoms, safe blood transfusions, basic health care (including treatment for sexual transmitted diseases), universal precautions and safe deliveries (including provision of Nevirapine in case of an HIV-positive mother delivering). Particular interventions will be needed to identify early warning signs, such as the increased use of intravenous drugs, trafficking or sexual exploitation of women.

Assuring access to post-trauma and psychosocial support, education and livelihood opportunities as well as early rehabilitation will also reduce the transmission of HIV among the affected populations. Since the affected areas are among the high prevalence states, it is equally important that needs of people living with HIV/AIDS are taken care of especially in terms of treatment, care and support, nutrition and food security as well as early reestablishment of livelihood.

The approach in the implementation would be to involve the affected communities, NGOs, CBOs, local government, private sector actors and their organizations, workers' organizations as well as PLWHA in the detailed planning of the response. [Other activities will be implemented under health, livelihood, shelter, trafficking, education and psychosocial support.]

- Conduct in-depth analysis to assess vulnerabilities
- Mainstream AIDS in all parts of the recovery and rehabilitation programmes

- Prepare / review a BCC/IEC strategy for the affected populations Conduct large-scale communication campaigns exclusively on AIDS awareness campaigns targeting the affected communities and specifically the youth (including in the temporary shelters)
- Conduct awareness campaigns targeting population groups at higher risk of HIV infection, provide access to treatment for STIs, condoms and Post Exposure Prophylaxis (PEP) Kits
- Train NGOs/CBOs working on recovery and rehabilitation to mainstream HIV prevention/counselling issues. Ensure preparedness of the government system to respond to the occupational risk of exposure of staff to HIV
- Review and develop personnel policies and implement AIDS workplace programmes in line with the National HIV/AIDS policy and the ILO Code Of Practice on HIV/AIDS and the World of Work
- Undertake livelihood support programmes for PLWHA and their families living in affected areas.

2.4.3 Budget Overview

Table 2.4.2: Summary Budget for HIV/AIDS

Sector	Priorities	Short Term (Within six months) US$	Mid-Long term US$
Coordination	In-depth situation analysis and vulnerability assessments Development of strategic plans and implementation	40,000	80,000
Sectoral plans	Mainstream HIV/AIDS into all sectoral plans and implementation	150,000	150,000
Partnerships	Development of Partnerships and support to partners for Prevention, Care and Support (incl. HBC) and livelihoods support programmes	200,000	400,000
Information Education Communication / Behaviour Change Communication	Behaviour Change Communication Development and implementation of strategies	80,000	140,000
	Information Education Communication Development and implementation of strategies	80,000	140,000
Advocacy and capacity building	Integration of HIV/AIDS concerns in ongoing policy formulation and recovery and reconstruction initiatives by government, NGOs and CBOs	50,000	100,000
Workplace policies	Review and development if personnel policies and implementation of AIDS work place policies and programmes	30,000	30,000
Monitoring	Data collection, management and monitoring	40,000	80,000
Total		**670,000**	**980,000**
			= US$ 1,650,000

2.4.4 UN Partner Agencies

The Joint UN Programme on HIV/AIDS (Secretariat + cosponsors)

Section 2.5
Education

2.5.1 Situation Analysis

According to the rapid assessment of physical damage to schools in the affected areas conducted by the Tamil Nadu Department of Education, there are 252 schools needing complete reconstruction, 19 need major repairs and 49 need minor repairs. Formally, in Tamil Nadu, any school which has students from the affected habitations has been deemed as an affected school by the Department of Education. This definition focuses largely on the social fabric of the school. By this definition a total of 270,000 students have been affected in 567 schools (from primary to higher secondary) in 13 districts including Chennai City. Students in higher education are not included in this number.

Most students from the affected habitations have returned to their educational institutions. However, in urban centres where temporary shelters are been situated far from the primary schools, parents have kept their younger children with them. Until late January, there were also widespread rumours about possible recurrence of the tsunami, which caused concern among both parents and children. Another reason cited for lower attendance in latter half of January, especially in Tamil Nadu, was the delivery of relief measures in the camps and temporary housing sites by NGOs and other private donors. This was related to the fact that children's presence was felt to be necessary for parents to receive this assistance. In Tamil Nadu, even the children who do attend classes often play truant in the afternoon and the teachers feel reluctant to be stern with these students considering the circumstances.

In both Kerala and Tamil Nadu, the status of students in institutions of higher education is equally bad: their needs are being taken care of by a combination of government aid and NGO help. There is no report of any institution of higher education being physically damaged.

Reconstruction and recovery needs: In both Kerala and Tamil Nadu, the district and state administrations have acted promptly in terms of addressing the needs of students. both states have replaced lost text books, school uniforms and notebooks. both have organized urgent minor repairs and have made alternate arrangements for classes to be held. these arrangements include a temporary shed where classes are held; or buildings of nearby schools being used, while students are given free rides by the government buses to access these schools.

One area of concern in both states continues to be availability of potable drinking water in schools. Most schools have organized for boiling water. However, fuel shortage is beginning especially in Nagapattinam. Water from other areas may need to be delivered to all affected schools for the remainder of the academic year.

One major area of concern is for the girls, especially in families who have lost an adult female. Care for the younger siblings and the elderly is likely to fall on the shoulders of girls, who may drop out of school. If temporary camps have a shortage of water this possibility becomes even more real as the effort to access drinking water demands more time and energy on the part of women and girls in rural areas.

In the short term, psychosocial counselling for students needs to be organized very systematically with attention to local conditions. Equally important is the sensitivity to the age group and gender of students to be counselled. A psychiatrist working in Nagapattinam reported that of all the cohorts, adolescent girls between the ages of 14-21 were more traumatized than any other group. Generalized training modules, therefore, need to be modified for each cohort.

Similarly, training and easy access to materials needed for personal hygiene for children living in temporary shelters needs to be given. Children may be vulnerable to possible abuse in these camps and therefore need to be trained in how to take care of themselves.

Another important need in social terms is the training for teachers: apart of psychosocial aspects, all teachers need to know basic facts about the tsunami phenomenon: how it is different from other oceanic phenomena and its frequencies in Indian Ocean. Teachers are under pressure from their families to ask for transfers away from coastal areas in Tamil Nadu. Information regarding tsunami will help them deal with this pressure.

Many NGOs express their concern over adoption out of the community. Institutional care for orphans too needs to be made available only if the community requests it, according to many NGOs in the field. This is an area which does cause uncertainty in the minds of children who have lost either both or one parent.

NGO-Government collaboration and inter-departmental cohesion within governments have achieved prompt and appropriate delivery of services and relief measures. In the medium term, such efforts need to be continued for the recovery phase.

Another issue which the governments and NGOs need to address is the question of out-of-school children, especially in Tamil Nadu. A number of boys in the age group of 10 to 16 have dropped out in coastal areas to work on the fishing boats in the past few years. This group is now at a loose end. They want to return to school to prepare themselves for alternate vocations. Many NGOs plan to hold youth leadership and empowerment programmes. Out-of-school children need to be included in these programmes.

2.5.2 Strategy

Reconstruction efforts need to look beyond mere replacement of what was damaged. When and if schools are to be reconstructed in new locations, the Education Department of Tamil Nadu plans improved facilities. For example, high schools which have been damaged need to be built with a laboratory and a library in order to deliver better quality of instruction. These facilities need to be incorporated into new school designs as essential features, rather than as "extras." Hence, the initial rapid assessment of physical damage and evaluation of costs of rebuilding may be re-examined. Such improved measures go a long way in retaining children in school and in building the community's confidence in education. Along with facilities the Education Department needs to create an atmosphere of excellence in these schools in terms of human resources as well. These schools can be turned into model schools in terms of quality of instruction and facilities.

All temporary shelters/schools need to be close to an ICDS centre where pre-school children can stay. These ICDS centres need to be open as long as the schools in order to enable childcare when older siblings are in school. This is an extremely important measure for girls. Tamil Nadu had proved in the past that such a measure is successfully made by a coordinated strategy between Education and Social Welfare Departments.

In order to retain students whose community-life has been shattered, the school as a social institution must become the site of child-friendly activities beyond school hours. Schools may be safe havens for many children, young and adolescent. School buildings may be kept open with the informed consent of teachers and community youth, with material for sports and other recreational activities made available.

The NGO-Government partnership may be institutionalized in order to carry out recovery efforts in the social sector. In Nagapattinam, this happened in the emergency phase. This is likely to be a good model for recovery and reconstruction phase as well. A commitment for long term involvement is essential on every one's part in social sectors. Children need to see volunteers

returning on a regular basis in order to rebuild their lives. This partnership is very essential in the summer vacation when schools are officially closed and children are not likely to have a safe space of their own. Social Welfare, Youth Affairs and Education Departments can formalize a network of NGOs and activities they will organize in the summer.

An information-sharing system for Education and Child welfare sectors with the NGOs, community members and other agencies involved in recovery efforts is imperative. This system needs to be transparent, easily accessible and available in local languages.

Over the next 24 months, UNICEF, in collaboration with UNESCO, will focus on restoring normalcy to children's lives through the timely opening and well functioning schools and preschools. Phase 2 offers an opportunity to raise the quality of education for children in tsunami areas and introduce hygiene and sanitation awareness in the curriculum, along with appropriate facilities (e.g., separate toilets for girls and boys, drinking water) that may not have been available prior to the disaster. The hiring and placement of extenders and consultants includes experts in education as well as in psychosocial interventions in schools. Specific activities are detailed in the financial requirements below.

Expected impacts:

- All primary school-aged children back in school and children's lives begin regaining a sense of normalcy.
- Quality packages introduced in primary schools and increased community involvement and ownership in schools to ensure all children complete their primary school years.

2.5.3 Budget Overview

Table 2.5.1: Summary Budget for Education

ACTIVITY	Tamil Nadu	Kerala	Andhra Pradesh	TOTAL
Assessments and situation analyses				
Rapid assessment of damage to infrastructure and system; documentation	10,000			10,000
Support to teachers and schools and preschools				
Providing child-friendly spaces (e.g., tents) Teacher and student kits Teacher orientation, resource books Classroom supplies, furniture	201,000	25,300	300,000	526,300
Support to children in schools and relief centres				
Games, sports and play equipment, musical reading material, text books, midday meal utensils Initiating activities for children through NGOs Mobility support	388,300	74,700		463,000
Support to communities				
Planning, development, management and monitoring of quality education in schools Engaging communities in the	22,000			22,000
Curriculum development				
Developing and implementing hygiene curriculum	5,000			5,000
Project implementation and support				
Recruitment of extenders and technical expertise education, psychosocial school interventions Establishing monitoring and tracking systems	25,000			25,000

ACTIVITY	Tamil Nadu	Kerala	Andhra Pradesh	TOTAL
Total	**651,300**	**100,000**	**300,000**	**1,051,300**

2.5.4 Partner UN Agencies

UNICEF & UNESCO

Section 2.6
Restoring Livelihoods and Upgrading Infrastructure

2. 6.1 Situation Analysis

The tsunami affected 645 thousand families in Andhra Pradesh, Tamil Nadu, Kerala and Pondicherry. Of this, about one-third are directly linked to fishing, about one-fourth in micro-enterprises and remaining two-fifths are wage earners with seasonal employment or are engaged in intermittent activities. If we assume two workers per family, this would imply that 1.3 million work opportunities (or "jobs") were lost. A more conservative figure would be about 900,000.

The tsunami has caused extensive damage to fishing craft, gear and nets. According to preliminary assessments by government and NGOs, about 5,000 mechanised boats have been damaged or lost and 60,000 traditional boats (motorized or non-motorized, both fibre-reinforced and wooden catamarans) have been damaged. Nearly 150,000 fishing nets and gear have been damaged or lost and 37 fish landing centres / harbours have also been damaged.

About 4,300 ha of agriculture land was inundated by sea water resulting in crop loss and salinity. In addition about 10,000 head of cattle and unknown numbers of small livestock were lost. Drinking water sources have also become saline. Preliminary studies to assess the damage to soil and water have already been initiated by some state governments.

The major livelihoods in coastal areas are fishing, agriculture, livestock and other non-agricultural activities. While fishing is the most obvious activity along the coast, all other employment put together may equal, or even exceed, fishing in terms of the numbers involved. Direct and indirect impacts need to be distinguished. The former relates to loss of employment due to the destruction or damage of assets, including equipment, work sites and inventory. The latter relates to employment losses due to breakdown in the supply of raw materials and semi-finished goods and services as well as markets for the products. The former occurs in the zone of physical impact of the tsunami; the latter occurs in the larger economic zone that includes the physical impact zone, but extends beyond it to the sources of supply and the markets for the products. The same family could, of course be hit both directly and indirectly. It could lose some of its assets and also be unable to obtain inputs or find markets for its products.

The impact of the tsunami in terms of loss of employment would be on:

- Boat operators and the labourers who work for them due to the loss or damage to their boats and nets, which makes it impossible for them to fish
- Fishing households where both men and women are involved at different stages of fishing, net preparation, processing and marketing
- Agriculturalists due to loss of the standing crop as well as loss of work opportunities for them and their workers until the silt and sand on their land are cleared
- Livestock workers, mainly women, due to loss of animals
- Factory managers and workers in ice factories, boat repair workshops, trading and other commercial establishments, and other small scale and micro enterprises engaged in trade and commerce, transport and other services, due to loss of equipment, work sites and inventory
- Members of self-help groups and others in household-based activities due to the loss of their productive assets, work sites and inventories
- Informal and small businesses servicing the community at large
- Casual/ day labourers who depended on one or a combination of the above activities for a daily wage

Looking at the workers other than the boat owner-operators, many are likely to have been around or below the poverty line, and about a third may have been from the underprivileged and socially excluded groups such as Dalits and tribal communities.

For many households, the tsunami has disrupted the balance between income earning and care giving roles. With rising poverty levels and the incidence of single parent households, more children may have been taken out of school and drawn into work inside and outside the home.

Detailed village-wise micro-level assessments to capture the different socio-economic dimensions of the affected communities for rehabilitation planning are not yet available. A quick appraisal conducted at the request of the Tamil Nadu government in 3 villages in Nagapattinam district has elucidated the differential impact of the damage caused to the families. The key issues, albeit from a very small sample thus far, are given in the table below.

Table 2.6.1 Key Issues in the Livelihoods Sector

Sector	Sub-sector	Key Issues	
		Men	**Women**
Fisheries	Mechanised Boat owners	Repair infrastructure and expertise inadequate Transporting to repair yards a major problem High total investment Lack of insurance Some boat owners themselves not fishers	Involved only in sorting, cleaning etc after landing of catch. Local marketing of catch. First order level of processing using only traditional methods Expressed needs include adequate transportation facilities and preservation facilities for catch and better fish cleaning and sorting infrastructure Low levels of skills for other livelihood activities Women SHGs though present have utilized micro-credit only in fishing related activities of their families Some women are however willing to try alternate livelihood options Traditional boats used for fishing in creeks/ backwaters though damaged have not received attention for interim relief
	Fibre reinforced plastic boat (with or without motor) owners	Most damaged boats need to be replaced Repair infrastructure and expertise inadequate Transporting to repair yards difficult Lack of insurance Significant investment in nets and gears High levels of indebtedness to money lenders with high interest rates	
	Motorized Catamaran	Boats need to be replaced Local expertise for motor repair/overhauling inadequate Adequate quantity of wood needed not available locally Lack of insurance Significant investment in nets and gears High levels of indebtedness to money lenders with high interest rates	
	Catamaran	Boats need to be replaced Adequate quantity of wood needed not available locally Lack of insurance Significant investment in nets and gears 5. High levels of indebtedness to money lenders with high interest rates	

Sector	Sub-sector	Key Issues	
		Men	Women
	Fishers	Dependant on the sub-sectors above for daily earning Lack of livelihood assets other than physical labour Low levels of skill and reluctance to explore alternate livelihood options Share of income from tourism insignificant	
Agriculture		Loss of standing crop Pre-existing damages due to drought or flood Soil salination Non-availability of known saline tolerant crops / varieties to diversify existing cropping patterns / systems	
Small and micro enterprise (other than fishing/ Agriculture)		Loss of assets and dependency on fisher population for income generation	

While broad categories of occupations and productive assets affected by tsunami have been largely identified, there is a need to further identify the more vulnerable groups among them as well as assess the vulnerability of different members within an affected household such as women-headed households, disabled, severely injured, orphans and the aged. The rehabilitation packages being designed by government and livelihood restoration interventions by the government and other agencies will need to take this aspect into account.

2.6.2 Strategy

Recovery and reconstruction is an opportunity to improve living and livelihood conditions, to increase equality within communities and improve the condition of women. In this context, the strategy for recovery in the livelihood sector will focus on rebuilding of the assets and infrastructure through loans and grants and supporting the recovery of affected households including existing SHGs and other community-based organisations through fresh borrowing and through technical support in identifying new and more remunerative activities. Equally important are the measures needed to provide training and support for new skills including business skills, and measures to improve labour market information systems, and the access of poor and other disadvantaged groups to resources and opportunities. This would involve helping them to organize or revive SHGs/community-based organisations, making them aware of their rights, starting income generation activities, and linking them to the supply chain of larger enterprises. It would also require measures to protect children from being put to work, and developing welfare systems for the different groups living in coastal areas.

Since the process of rebuilding the damaged equipment and physical infrastructure is likely to take a considerable time, support to implementing an employment intensive approach in the reconstruction of physical assets is envisaged. This will ensure involvement of as many as possible of the affected workers and provide productive and decent jobs as quickly as possible. The technical assistance envisaged is based on the assumption that all direct costs of infrastructure rehabilitation/rebuilding will be made available separately.

The government, NGOs and *panchayats* will be the key players in working with local communities for restoring livelihoods where feasible and exploring alternative livelihood options where necessary. The willingness of the private sector to support livelihoods in the affected areas needs to be pursued. Interventions in this area will also need to take into account assessments and interventions planned for environment and habitat recovery and rehabilitation.

The issue of sustainability is critical, and in this context there would be focus on strengthening and/or re-building institutions that are vital for fisheries and related services. Similarly, designated programmes for vulnerable sections such as women and youth would be designed.

Interventions/Activities:

These interventions proposed are intended to complement those likely to be undertaken by the ADB and WB. Both will be focusing on providing resources to enable the replacement of damaged or destroyed infrastructure or assets. They may also provide lend though the banking system and assist SHGs to become operational again and take up a new and wider range of activities. The UN interventions would focus on:

- Providing training in required skills in construction and repair, using government, private and NGO training providers
- Providing facilities, training and support for the development of small businesses, including small scale contracting of construction work
- Strengthening labour market information systems through the setting up of well equipped modern Job Centres in selected locations
- Working with the governments, employers' and workers' organizations to develop administrative and legislative measures for the welfare and social security of workers
- Preventing the emergence of child labour in the aftermath of the disaster
- Strengthening the capacity of NGOs to coordinate their resources and manage their activities relating to livelihood promotion.
- Promoting economic expansion and diversification as a conscious risk reduction strategy by :

    - Working through employers' organizations to help SHGs and other affected persons to secure required training and find ready markets for their products;
    - Supporting, through workers' organizations, the formation or revival of SHGs among the poor and excluded groups and enabling them to know their rights and to take advantage of economic opportunities.

In the case of fisheries, the focus will be on providing what is needed directly for fishers to get back to fishing and for their supporting partners and suppliers to assist them, as well as allowing the processing and marketing of fish to revive the industry. Furthermore, the fisheries recovery effort must be undertaken in a responsible manner that increases rather than decreases the sustainability of the fishery to expand rather than jeopardise the incomes and long-term livelihood opportunities for the coastal communities. This will require changes in fisheries management and safety measures, including modernised systems of registration, licensing and vessel marking and monitoring; communications infrastructure for sea safety and equipment, training and supporting infrastructure. Some of these may be covered in the funding provided by the GoI, the WB or ADB but others will need to be addressed and developed in conjunction with the immediate damage repair and rehabilitation in order to ensure the continued and even improved viability of the fishing industry.

In addition, UNCT will work closely with the government and NGOs and provide the following support in order to set the context for effective livelihood activities:

- Designing comprehensive livelihood assessments at village level that look at both primary and secondary sources of income and subsistence and identifying vulnerable and socially and economically excluded groups
- Identifying appropriate, gender disaggregated tools and methodologies for such assessments
- Designing livelihood rehabilitation and employment promotion packages aimed for an improvement of livelihoods, with necessary linkages with environment and habitat recovery and rehabilitation
- Reviewing government programmes and schemes that need to be reoriented to meet emerging livelihood priorities especially for vulnerable groups such as women and youth
- Identifying training areas for government, NGOs and *panchayats* for effective delivery of services and allocation of resources
- Collating and disseminating documents related to assessments, rehabilitation packages, relevant schemes and programmes, sources of funds, database of technical resource agencies
- Creating partnerships and networks for sharing information and experience gained from assessments and subsequently during implementation
- Mobilising resources for implementation

2.6.3 Budget Overview

Table 2.6.2: Summary Budget for Rebuilding Livelihoods

Sector	Amount in US$
Fisheries : Sea safety system implementation, vessel monitoring system, database, harbours and landing sites safety and health	2, 000, 000
Technical assistance for fish processing	500,000
Business development services to support the development of micro and small enterprises ($ 1 m)	1, 000, 000
Short cycle skills training for self employment through the use of labour intensive / labour based methodologies in public works (advisory service to government) ($50, 000)	50,000
Protecting children from exploitation ($ 1 m)	1,000,000
Expanding affected household's access to employment through the support and efforts of employers groups (100, 000)	100, 000
Expanding vulnerable people's (women, youth, *dalits*, disabled) access to employment through the support and efforts of trade unions ($300, 000)	300, 000
Action –research, issue –based studies, impact assessments, information and knowledge sharing	100,000
Baseline surveys, monitoring and evaluation	30,000
Total	**5,580,000**

2.6.4 Partner UN Agencies

ILO, UNIDO, FAO, UNESCO & UNDP

Section 2.7
Shelter and Habitat Development

2.7.1 Situation Analysis

The tsunami affected 927 villages and rendered about 158,000 families homeless, devastating several habitats and bringing about changes in eco-morphology. Table 11. below indicates the state by state status.

Table 2.7.1 Shelter-related Damage (state-wise)

	Andhra Pradesh	Kerala	Tamil Nadu	Pondicherry	Total
No. of Districts affected	7	3	13	2	25
No. of villages affected	301	187	376	33	927
No. of dwelling units damaged and to be reconstructed	1,557	17,381	128,394	10,061	157,393

The primary cause for the high damage is related to the destruction of natural features of the coastal environment like sand dunes and the location of the settlements on the coastline of India. Many of the damaged settlements have existed prior to the promulgation of the CRZ. In the aftermath of the tsunami and devastation to these entire coastal habitats, the Government of Tamil Nadu is now considering relocation of some of these communities. In this context it is vital to follow the non-negotiable principle of not further victimizing the victims of the tsunami. It is very important to safeguard against any moves to convert the disaster into an opportunity to displace the local communities living along the coast.

Substantial resources have become available for reconstruction from a variety of sources. Gaps still exist however in technical expertise for designing effective habitats that are culturally sensitive, that respect the pattern of the past settlements evolved over time and at the same time integrate technically sound disaster mitigation measures. There is also a need for an effective coordination mechanism linking all stakeholders and all levels of government concerned in habitat reconstruction, which ensures a participatory approach, building from the concerns of the dwellers themselves.

The UNCT will be able to draw upon its experience in Orissa after the super cyclone of Oct, 1999 and in Gujarat after the earthquake of Jan, 2001 towards promotion of appropriate disaster-resistant technologies for habitat development and shelter reconstruction using intense community involvement and a participatory approach.

2.7.2 Strategy

The key elements in the strategy are:

- Advocating and supporting the government to develop integrated habitat plans in a participatory manner that is culturally sensitive, respects the way of living of fishing communities, enables economic and livelihood opportunities and protects the entire habitats against future natural disasters. The new habitats will integrate water and sanitation measures, renewable energy technology and construction of multi-hazard resistant multi-purpose shelters. Based on the extent of damage to housing and the willingness of some of the communities to resettle, three situations have arisen:

- Complete relocation of the entire village and resettlement of the entire community, while ensuring continued access to the coastal areas for fishing and fish processing
- Partial resettlement of the communities whose houses have been washed away or totally collapsed or who are willing to resettle, while redevelopment and retrofitting for possible dwelling units in the existing settlement itself
- Complete in-situ redevelopment of the existing settlement and reconstruction/ retrofitting of houses therein

- Reducing the vulnerabilities of the habitat by offering technical guidance not only to the habitat as a whole but also to the built environment, i.e., community infrastructure and dwelling units (houses). The above can be brought about by promotion of multi-hazard resistant technologies and evolving the designs of houses with active participation of the community, designs that are culturally appropriate, and enables scope for future expansion.

- Assist the government in ensuring that the relocated communities have adequate right to economically productive land. In the case of fishers, they must be able to retain rights to the land on the shore where they have been living as workspace for their boats, fish processing equipment and nets.

The ultimate goal is that all these vulnerable communities be settled in habitats and homes that are designed to be safe and culturally appropriate and where all built infrastructure are multi hazard-resistant.

Activities

- Facilitation of development of proper habitat plans for all affected villages using a participatory approach involving the community, civil society organizations and local Governments, including measures for retaining of usufructory rights of the land on the shore for economic activities by the fishing communities.
- Evolving design options for houses and community infrastructure – multi-purpose cyclone shelters, schools, health centres, community information centres, etc., with participation of the community, i.e., the end-user and ensuring that the designs, while respecting the activity pattern of a typical fisher household, incorporate multi-hazard resistant technical features. Finally facilitating the selection of a design option by each household.
- Support to the Government in identification and mapping of available local resources – building materials, technologies practiced, local skills and expertise, etc. Assessing the gaps in the same and adopting effective measures towards bridging the gaps, e.g., through skill upgradation and capacity building programmes of various stakeholders, strengthening existing construction artisan guilds and formation of new ones, promotion and strengthening of existing building centres and material banks, creation of community groups for management of shelter and habitats, etc. The training activities for local masons and engineers may be integrated with construction of a critical number of Technology Demonstration Units (TDUs).
- Capacity building of selected women self-help groups (SHGs) to take up construction-related income-generation activities, including skill upgradation of women construction labourers to masons and setting up of small micro-enterprises.
- Providing technical and programme management support to the government at state, district and *taluk*/ block levels for effective delivery of habitat development and shelter reconstruction package. Supporting the government in developing an effective monitoring mechanism for the same, ensuring that the entire process takes into account community participation and adheres to the standards of cost, time and quality for reducing vulnerabilities and facilitates insurance of housing and common properties against fires and natural perils.

- Providing technical support to NGOs involved in Shelter and Habitat Planning and development.

2.7.3 Budget Overview

Table 2.7.2: Summary Budget for Shelter & Habitat Development

Activities	in US$
Capacity building programmes	
Training of trainers - CSOs and Local Engineers @ 10 persons per batch	139,535
Training of construction artisans @ 25 persons per batch	372,093
Facilitating artisan and women SHGs to take up works related to the construction sector	69,767
Construction of TDUs - to function as multipurpose centres as part of hands-on training exercises	436,047
Awareness generation and IEC activities, documentation of lessons learnt and best practices	209,302
Networking knowledge on effective approaches, methods and tools, consultations and workshops, developing and promoting policy framework	209,302
Technology and programme management support	2,324,651
Project Administration and Operational Support	752,140
Total	**4,512,837**

2.7.4 Partner UN Agencies

UNDP & UNIDO

Section 2.8
Water Supply, Sanitation, Hygiene

2.8.1 Situation Analysis

The most severely affected districts in Tamil Nadu are Nagapattinam, Cuddalore and Kanyakumari, where hand pumps have been damaged by the impact of debris from the tsunami, with many broken off at the base. Most of the inhabitants depended on open wells. Water in most of the wells in the affected areas needs to be bailed out before these can be used again. However, seawater ingress and damage to tube well water sources has not been as severe as initially feared and subsurface water is saline only in a few instances. Piped water supplies were disrupted due to damage to power supplies, but have since been restored. Some damage to shallow pipes and stand pipes has also been reported.

The main challenges are:

- To ensure safe water supply and sanitation in the temporary housing areas near the destroyed settlements
- Improving of access to water and ensuring that the remaining relief centres and interim shelters have adequate provision for sanitation and hygiene
- Ensuring water quality near the temporary shelters and in schools/ICDS centres
- Further support to sanitation and hygiene awareness in relief centres during the rehabilitation and resettlement phase
- In the medium to long term, there is a need to support education and ICDS with sanitation and hygiene education

2.8.2 Strategy

In terms of water supply the strategy proposes to cover nearly all the 900 villages (376 in Tamil Nadu, 301 in Andhra Pradesh, 187 in Kerala and 33 in Pondicherry) that were affected to some degree by the tsunami and which relied mostly on shallow wells for their water supply, with more permanent water sources from deep bore wells located inland away from the shore and the annual salination problem. This approach has helped protect the water supply systems in Pondicherry and, thus, it is the best approach.

While conventional piped sewerage is not envisaged in the medium term, it is proposed to expand basic pit latrines to more dwellings through awareness campaigns. Also, many new public toilet facilities need to be constructed to serve slum, commercial and tourist areas. Concurrently the drainage will be improved to properly dispose of sewage and storm water. Internal village roads and interconnecting roads will be rebuilt with double carriageways, rather than the single lane now prevalent. Many of these will also have improved drainage to extend their life and be raised to provide all-weather access, even during storm surges. Each village will have a community building along with children's playgrounds and basic sport facilities. Electrification will be expanded to connect the hundreds of new colonies arising from the resettlement programme.

While all the states and Pondicherry provided the JAM with longer term plans for all sub-sectors, these are more developmental in nature than directly related to the tsunami. In terms of water supply these included long-term regional systems, from surface water supplies, to eventually replace the reliance on groundwater. In Tamil Nadu and Pondicherry, this included major desalination plants for the larger towns like Karaikal, Cuddalore and Nagapattinam. Similarly, the long-term plans call for piped sewerage systems with full treatment in the major urban centres. Tamil Nadu and Kerala also presented plans for major expansion of inter-town and village connectivity, mostly consisting of a new road paralleling the coastline. Kerala also proposed

upgrading of the rural electrical distribution system. While these proposed works are all justified within the longer-term developmental strategy of the states, the joint assessment team felt that, they were beyond the scope of the tsunami reconstruction. However, as indicated above, the reconstruction will be planned to smoothly fit into these longer-term plans.

Needs Assessment

Based on the above strategy, and the basic information provided by the states, as confirmed through site visits to dozens of damaged villages, hamlets and communities and discussions with hundreds of affected persons during the joint assessment exercise, the reconstruction cost for the municipal and rural infrastructure across the three states and Pondicherry for the immediate and medium term needs would be Rs. 4240.4 million ($98.6 million). The state-by-state summary is:

Tamil Nadu Rs.1, 653.4 million ($38.5 million),

Andhra Pradesh Rs.1, 226.1 million ($28.5 million),

Kerala Rs.1, 136.4 million ($26.4 million),

Pondicherry Rs. 224.5 million ($5.2 million)

Not surprisingly, the need for improved and expanded water supply is by far the most urgent, running from 30% of the total in Tamil Nadu, 45% in Andhra and 65% in Kerala. As indicated, Pondicherry already is using safe water sources, and therefore has little need for new supply. Internal roads were the next highest component averaging 25% in Tamil Nadu, Andhra and Pondicherry, though only 6% in Kerala. Sanitation was a major reported need in Kerala at 30%, though was comparatively low in the other states. These varying needs do to some extent reflect ongoing programmes in the states, underway before the tsunami, which may have influenced what the states requested in the medium and long-term categories.

The following activities in selected villages affected by the tsunami in Nagapattinam, Kanyakumari and Karaikal districts. The activities would include:

- Provision of facilities for people to excrete safely and hygienically
- Protection of water supplies from contamination
- Ensuring that people have enough water containers to collect and store water cleanly
- Ensuring food safety
- Introduction of IEC activities to ensure that people have the knowledge and understanding that they need to avoid disease by using sanitary facilities
- Monitoring water, faecal and vector-borne diseases
- Providing information and education in feeding in relief centres
- Counselling for a healthy lifestyle

In Tamil Nadu and Pondicherry, WHO will focus on providing technical support to the local bodies for a water and sanitation plan in the relief/temporary shelters. This will include provision of facilities for household sanitation, solid waste management, ensuring provision of clean water and monitoring of drinking-water quality, ensuring food safety, IEC and counselling for a healthy lifestyle in the relief shelters. Different toilet designs suitable in the high water table areas have been provided to relevant agencies for adaptation. Water testing kits such as chloroscopes have already provided in selected areas to test the residual chlorine. WHO is supporting the state government to assess the drinking-water quality in its coastal belt.

In Tamil Nadu, UNICEF will focus on affected villages, relief centres, schools, and ICDC centres in Nagapattinam and Cuddalore Districts where it is working in collaboration with the state

government. UNICEF will also continue to coordinate the sector, working with NGOs including AFPRO, CARE, Oxfam and World Vision International. In both Naggapattinam and Cuddalore, UNICEF will review and improve water use and distribution systems. Working with WHO India, UNICEF will support the government to establish an effective water quality surveillance system. UNICEF will also continue to improve hygiene awareness and sanitary conditions, with emphasis shifting from unplanned relief centres to planned shelters and finally to villages as and when people return. UNICEF will also focus on activities within schools and early child-care centres.

In Andhra Pradesh, activities will focus in Prakasam, Nellore and East Godavari districts. A major emphasis will be water quality, with the testing, and where necessary, the rehabilitation of an estimated 4,000 water sources affected by saline intrusion. Sanitation and hygiene awareness will also be emphasized as damaged structures are repaired. This includes schools and *anganwadi* centres. Interventions will be linked to the ongoing Total Sanitation Campaign (TSC) and Swajaldhara programme and planned accordingly.

In Andaman and Nicobar , UNICEF will support water supply and sanitation initiatives, initially focusing on the 169 relief centres. As in Tamil Nadu, support will continue as the affected population moves into semi-permanent shelters before the monsoons in April, and then into permanent homes which are being planned in the longer term.

Expected impact

- The incidence of water borne diseases, particularly diarrhoea among young children is kept to the lowest possible level.
- Families in relief centres and communities and children in school are aware of and practice good hygiene.
- Vulnerable populations will have an assured supply of clean, safe water.
- Mainstream programmes for water supply and sanitation reinforced in affected areas

2.8.3 Budget Overview

Table 2.8.1 Summary Budget for Water Supply, Sanitation & Hygiene

ACTIVITY	Tamil Nadu	Andhra Pradesh	TOTAL
Assessments and situation analyses			
Assessments of water supply, quality, sanitation and hygiene Evaluation of project activities	10,000	5,000	15,000
Water Supply / Water Quality			
Water quality testing Rehabilitation of handpumps Review, monitoring supply and use	10,000	205,000	215,000
Hygiene and Sanitation (Excludes Schools / Child Care Centres)			
Promoting key hygiene practices, IEC materials, extenders, Reinforcing solid waste disposal systems Constructing toilets	70,000	60,000	130,000
Interventions in schools and child care centres			
Orientation of teachers, child care workers and children, IEC materials Improving water and sanitation facilities Chappals (flip flops) for children	85,000	10,000	95,000
Stakeholder support, capacity building and coordination			

Capacity building of government, NGO and community partners Coordination and knowledge sharing with stakeholders	15,000	19,000	34,000
Project implementation and technical support			
Recruitment, placement and mobility of extenders	60,000	10,000	70,000
Total	**250,000**	**309,000**	**559,000**

2.8.4. Partner UN Agencies:

WHO, UNESCO & UNICEF

Section 2.9
Healthy Environment for Long Term Security and Sustainability

2.9.1 Situation Analysis

Key Principles for an Environmentally Sustainable Recovery Strategy

This section proposes key principles to be considered in the design and implementation of an environmentally sustainable rehabilitation and reconstruction program for tsunami-affected areas. These principles propose a framework for considering issues and options associated with the many decisions that must be made as part of the reconstruction process, which offers many opportunities to enhance both environmental management and environmental outcomes associated with man-made and natural systems.

Mainstreaming environmental considerations into sectoral interventions*:* There are environmental dimensions to practically every sector affected by the tsunami. This requires the consideration of environmental issues in all sectoral reconstruction planning and action, particularly the siting of temporary and permanent settlements. Actions related to reconstruction and recovery seek to ensure that the sustainability of coastal and marine ecosystems is not compromised, and is ideally enhanced as the goods and services they provide underpin the livelihoods and immediate welfare of large coastal populations. Wherever possible, 'soft' options with fewer adverse environmental impacts will be favoured over 'hard' options that may involve high capital and recurring costs and cause major changes to coastal hydrology and other natural processes.

Learning lessons from the tsunami event*:* Tsunamis occur relatively infrequently in the Indian Ocean. The present situation offers an opportunity to assess and monitor the resilience of natural and modified ecosystems to such extreme events, which in turn will help plan mitigation of the potential impacts of a range of natural risks and hazards which affect coastal areas periodically. Such monitoring can also help plan against the anticipated adverse impacts of climate change. In the short-term, such monitoring is key to identifying environmental damage and prioritizing environmental restoration[14].

Need for a comprehensive coastal zone management strategy: Such a strategy would reflect the dynamic nature of the coastal and marine environment and support multiple-use objectives, without compromising the sustainable supply of environmental goods and services. These objectives would reflect livelihoods, reduce vulnerability to natural hazards, and the conservation of biodiversity and ecological services. Additionally, there is an opportunity and a need to restore degraded coastal areas, whether tsunami-impacted or not, through interventions that will provide multiple benefits to different stakeholder groups guided by the coastal zone management strategy.

Focus on localized site-specific solutions*:* The extent of the damage along the coastline and the fear of a tsunami recurring must not lead to uniform strategies being applied across the board without full consideration of the different variables such as climatic factors, bathymetry and coastal topography associated with vulnerability to natural hazards. Economic, environmental, social and cultural factors must all be taken into account when developing disaster risk mitigation strategies and solutions must be anchored in the prevailing circumstances of local situations.

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[14] *Such assessments and monitoring will be linked with the comprehensive vulnerability mapping and analysis proposed in the chapter on disaster risk management.*

2.9.2 Strategy

Emergency relief operations are largely over and attention is shifting to short and medium term recovery actions and strategies. The most pressing issues are likely to be linked to the relocation of a large number of affected people from temporary shelters to permanent housing sites and the need to re-establish the productivity of affected areas. It is likely, however, that a significant number of people may be using temporary shelters beyond six months. Careful planning and management are required to mitigate adverse environmental impacts, particularly in relation to waste management and natural resource use for energy, water and other household needs

Equally important, because of long-term implications for local livelihoods and human welfare is the need to initiate a series of systematic rapid environmental assessments and to develop environmental and sustainability strategies that can be integrated into the varied activities proposed under the reconstruction and recovery phase. Short-term priority actions include the following:

Development of guidelines for rubble, debris and other waste removal and disposal*:* As there will be significant amounts of debris both in the water (boats, fishing equipment, household articles) and on land (rubble from houses and buildings, equipment, boats and many other waste materials), a concerted debris management strategy and management plan is required. The plan will include guidance on the proper management of reconstruction related debris and waste materials. This would reduce the risks associated with strewn debris to people, livestock, equipment and the environment. Debris management must be supported by a concerted effort to clean up affected areas.

Temporary-shelter Community Environmental Management Plans (CEMPs)*:* A generic CEMP will be developed and then adapted to each relief shelter site to provide basic guidance on the proper management and maintenance of sanitary infrastructure, including the management of household waste. It must include guidelines on access and use of natural resources. Regular monitoring of drinking water quality may be required if water is sourced from shallow tube wells in aquifers impacted by the tsunami.

Assessment of impacts on drainage and increased risk of flooding: There is an immediate need to assess whether the risk of flooding, or severity of usual floods, may increase as a result of changes in coastal geomorphology and heavy sedimentation in estuaries, canals and other waterways along the coast[15].

Relocation site selection criteria: In case of relocation of affected or at-risk villages to alternate permanent resettlement sites, the populations will be supported by site selection criteria that incorporate appropriate environmental and social provisions.

Development of environmental and social criteria for reconstruction efforts: As a priority environmental and social criteria for reconstruction work will be developed.

Rapid environmental assessments*:* A number of assessments will be carried out to better guide the reconstruction strategy and ensure long-term sustainability. These will include the following:

- ***Non-field based assessments of the damage and impacts:*** An assessment of the physical damage caused by the earthquakes and tsunami to the coastline by comparing satellite imagery before and after the event. Ecologically significant sites need to be given particular attention.

[15] *This was mentioned as a particular concern in Kerala in relation to the coming south-west monsoon by the Centre for Earth Science Studies (CESS) in Thiruvananthapuram.*

- ***Field-based assessments:*** Based on the results of the initial non-field-based techniques, an intensive field-based rapid assessment needs to be conducted. In addition to assessing the direct environmental impacts on ecosystems and habitats, impacts on ecological goods and services that underpin local livelihoods and human welfare will be assessed. These would include natural resource related direct production changes, such as impacts on fishing grounds and fish catch as well as losses relating to decline in tourism which can be attributed to the tsunami.

It should be noted that various assessments are already planned or underway under the aegis of different central and state government departments and by NGOs and research organizations. Such efforts need to be coordinated and consolidated.

Medium-term Priorities (1-3 years)

***Community Environmental Management Plans (CEMPs*)**: A generic CEMP will be developed and then adapted to each new permanent relocation site. CEMPs will provide basic guidance on the proper management and maintenance of sanitary infrastructure, including the proper management of household waste.

More effective integration of environmental considerations in coastal zone planning and development: Coastal zone management practices in general need to be upgraded on a priority basis, and environmental dimensions associated with development, natural resource use, protection of environmental services and conservation of biodiversity need to be explicitly factored into these plans.

On-going monitoring and detailed studies: The rapid assessment phase will help identify locations and communities that require the most attention, and determine key issues that require addressing during the recovery phase. A range of experts from various sectors, including disaster management and ecological restoration, will be consulted at this stage.

During the second phase, ecologically sensitive areas and other severely affected regions will to be revisited to establish the full extent of the damage with more comprehensive studies. Where required, baselines will be established for sustained monitoring of ecological recovery and mitigation measures will be devised for ecosystems that may not recover to their former state without management intervention. Remotely sensed data will be used for a temporal tracking of further decline or recovery over time, and this data will be fed directly to on the ground rehabilitation efforts. The results of these more detailed assessments and systematic monitoring will provide invaluable inputs for an adaptive approach to integrated coastal zone planning and management.

Opportunities for ecosystem restoration and management for better coastal zone protection and biodiversity conservation: The rapid and longer term environmental assessments proposed here will lead to the identification of priorities and opportunities for environmental restoration and improved management of coastal and marine ecosystems to generate multiple benefits for different natural resource user groups. However, two clear opportunities for ecosystem restoration have been identified:

- The first relates to the opportunities for mangrove restoration along both the east and west coast. Kerala, for example, has over 40 major estuaries and numerous coastal lagoons. Improved management of its existing mangroves which cover some 1,700 ha and the establishment of new mangroves over 200 ha can be considered. The latter is already taking place in Pichavaram and other parts of Tamil Nadu. It is apparently possible to establish plants up to 100 ha over one or two months with a workforce of 60 people. Thus, there may be income generating opportunities as well.

- The second opportunity is the possibility of restoring the tropical dry evergreen forest, which is indigenous to the eastern coast from south of Andhra Pradesh to just north of the Gulf of Mannar. From a biodiversity perspective, this forest type has been identified as both globally significant and highly endangered. Restoration of this forest is already being undertaken in one area of Tamil Nadu. There is need to assess the potential for restoring this forest in other areas along the coast and to evaluate its potential for reducing vulnerability to cyclones, flooding and other natural hazards.

2.9.3. Budget Overview

Table 2.9.1: Summary Budget for the Environment Sector

Activities	Timeline	Budget US$
Collation of information of all the environmental assessments and filling in gaps in information by rapid assessments to prepare a comprehensive baseline.	6 months	100,000
Longer term study on socio-ecological resilience of the affected region and the establishment of a more robust and functional monitoring and management system including capacity building, especially for management of fishery stocks and their key near-shore habitats. Strengthening of local and community-based institutions and tenure systems.	3 years	250,000
Building capacities for a better understanding of the CRZ notifications, better and more holistic coastal planning including mapping and regular monitoring of the coast in terms of the CRZ. This will include working with local fishing groups.	3 years	500,000
Development of guidelines for rubble, debris and other waste removal and their disposal and development of community environmental management plans, for both the interim shelters and also the permanent shelters. This will include a few demonstrations.	3 years	100,000
Mainstreaming environmental and sustainability concerns in all the recovery and rehabilitation work. This will largely be technical and policy advice.	3 years	100,000
Capacity building of the local communities and the forest department for better management, restoration and where appropriate plantation of mangrove species.	3 years	200,000
Restoration of wetlands, including assessments of changes in coastal geomorphology in estuaries and canals, which could increase the risk of flooding.	3 years	200,000
Restoration of the highly endangered Tropical Dry Evergreen Forest on the east coast. This will include capacity building.	3 years	100,000
Total		**US$ 1,550,000**

All these activities will be implemented through partnerships involving the local communities (CBOs), NGOs, concerned government departments, research organisations, universities and experts. The objective will be to build on existing initiatives and to work with people and organisations located in the region and to bring the best available knowledge and expertise and the global experience to enable the most sustainable, effective and efficient implementation.

2.9.4 Partner UN Agencies:

UNDP & UNESCO

Section 2.10
Capacity Building for Disaster Risk Management

2.9.1 Situation Analysis

Disaster Risk Exposure in the Affected States

All the tsunami-affected states are vulnerable to a range of hydro-meteorological hazards such as floods, cyclones and drought and geophysical hazards like earthquakes, landslides and tsunamis. Depending on the location, the risk of hydro-meteorological hazards ranges from moderate to high and that of geophysical hazards from low to moderate. Combined with a growing population, a large section of which remains dependent on primary climate-dependent sectors like agriculture and fishing, and other vulnerability factors, this part of the country is categorized as moderate to high disaster risk.

Tamil Nadu: Cyclone data over the Bay of Bengal since 1891 indicates that on average, a moderate to severe cyclone hits the Tamil Nadu coast every two years. A number of the state's river basins are prone to floods during the northeast monsoon. Some parts of the state fall in Zone III of the seismic map of India indicating a moderate level of seismicity. The state's hill districts (Nilgiri and Dindugal) are prone to landslides. The high population density in the coastal belt, dependence of a large proportion on primary sectors and inappropriate environmental management in the coastal areas and river deltas make Tamil Nadu a high disaster risk state.

Pondicherry: The Pondicherry and Karaikal regions of the union territory of Pondicherry are exposed to cyclones and floods. Climate fluctuations and over-exploitation of ground water resources have exacerbated drought. Although two-thirds of the population is urban, the dependence on agriculture and fisheries remains high and so climate fluctuations and extreme events have the potential to cause great damage.

Kerala: More than 22% of the state is prone to floods and more than 8% to landslides. Increasingly, despite significant annual rainfall, parts of Kerala are becoming vulnerable to drought. In addition, coastal hazards such as erosion, accretion and a possible rise in sea levels from local environment management practices as well as global changes put a large part of Kerala's coastal population at risk.

Andhra Pradesh: Andhra Pradesh is exposed to cyclones, storm surges, floods and droughts. A moderate to severe intensity cyclone can be expected to hit the state every two or three years. About 44% of the state is vulnerable to tropical storms and related hazards. Along the coast, the section between Nizampatnam and Machhilipatnam is the most prone to storm surges. Traditionally, floods have been confined to smaller rivers but the drainage problem in the coastal delta zones has worsened, multiplying the destructive potential of cyclones and increasing flood hazards. A critical factor is the maintenance of irrigation systems. On several occasions, people died as a result of breaches in tanks and canals and flooding caused by silting and growth of weeds.

Existing Institutional Arrangements and Capacity Building Efforts

Tamil Nadu: The government constituted a state disaster management authority headed by the chief secretary in 2003. The Special Commissioner & Commissioner of Revenue Administration, Disaster Management & Mitigation Department, acts as the Relief Commissioner. In the districts, the district collector heads disaster response operations, drawing upon the human and technical resources of the revenue, police, fire service and health departments. Although a comprehensive

"anti-disaster plan" was prepared in 1978, its implementation needs to be strengthened. Emergency response mechanisms at the block and *panchayat* levels need boosting, and there is an urgent need for integrating disaster reduction in development planning.

Six districts are covered in the ongoing GoI-UNDP Disaster Risk Management (DRM) programme whose main objective is to establish sustainable mechanisms for community-based disaster preparedness. The GoI-UNDP Urban Earthquake Vulnerability Reduction Programme (UEVRP) focuses on two seismic zone III (moderate risk) cities of Tamil Nadu, Chennai and Coimbatore. The state has several academic and research institutions focusing on disciplines relevant to disaster risk management, as well as an active civil society.

Pondicherry: The Development Commissioner acts as the Relief and Rehabilitation Commissioner. At the district and *taluka* levels, the arrangements mirror those of Tamil Nadu. The fire service is currently upgrading its communications infrastructure and personnel skills.

Kerala: The state has recently created a disaster management department headed by a secretary-level officer and is considering introducing legislation to establish a state disaster management authority. In 2001, it appointed five sub-committees to develop state disaster management plans. The reports of those on water and climate related hazards and on geological disasters have brought together very useful research material. Some districts have prepared district-level disaster management plans.

Under UEVRP, three seismic zone III cities with populations of over half a million – Kozhikode, Kochi and Thiruvananthapuram – are undertaking earthquake vulnerability reduction activities. The natural disaster management faculty at the Institute of Land Management conducts regular training programmes for government officials and the state has several academic and research institutions that work on coastal environmental management and development issues.

Kerala has been a leader in devolving powers and resources to local self-government institutions. Nearly 40% of development funds are spent through village, block and district *panchayats*, municipalities and corporations. This is an opportunity to integrate risk management with local development.

Andhra Pradesh: Systematic efforts to build disaster risk management capacities in the state go back to the early 1980s when the state finalized its first Cyclone Contingency Plan and developed manuals, coordination procedures and training programs, which helped reduce fatalities in subsequent cyclones. In the last decade, the state has undertaken a number of projects and steadily worked towards building disaster risk management capacities in the state.

Critical Issues

Short-term

Incorporating disaster risk management in recovery and reconstruction efforts: The tsunami was a rare but high-impact phenomenon which has also exposed the vulnerability of coastal populations to other natural hazards. The recovery and reconstruction programme is an opportunity to rebuild at higher standards of safety. Disaster risk emanates not only from natural hazards but also from a range of underlying factors – physical, social, economic and cultural – that contribute to people's vulnerability. In order to enable speedy recovery while reducing future risk, the following may be considered:

- ***Comprehensive multi-hazard risk assessment***: The affected areas are exposed to a range of frequent natural hazards whose cumulative impact exceeds that of the recent tsunami. A comprehensive multi-hazard risk assessment that identifies the exposed

population and physical, economic and cultural assets must form an essential basis for reconstruction planning. A state-wise multi-hazard risk assessment, with tsunami-affected areas being the first priority and corroborated with local assessments, will inform reconstruction decisions and underpin future development plans, and can link with environmental and coastal zone management plans. The affected states possess the technical and human resources to conduct such assessments. A number of institutions are already undertaking this exercise; there is need to establish clear institutional arrangements and mainstream these efforts into the reconstruction planning and implementation process.

- ***Sector guidelines*:** While a multi-hazard risk assessment will guide the overall reconstruction plan, sector-by-sector guidelines are required for risk reduction. Tamil Nadu has already initiated the process of setting design and safety guidelines for the housing sector. Similar guidelines need to be developed for settlement planning, infrastructure, health and education facilities, water and sanitation, and livelihoods.
- ***Community involvement*:** Appropriate reconstruction decisions will reduce future disaster risks and meet the daily social, economic, environmental and cultural needs of the affected communities. Mechanisms must be developed at the local level to enable the people to articulate their concerns and actively participate in decision-making. In Tamil Nadu, the government has already begun collecting primary information on community preferences about resettlement. As the reconstruction programme proceeds, there will be need for much more intensive dialogue at the habitation level. Partnerships between civil society organizations and local governments could facilitate this process.
- ***Building synergies among different sectors to achieve risk reduction*:** The scale of the recovery and reconstruction effort necessitates a sectoral approach to reconstruction planning and implementation, but it is important that synergies between different sectors are explored to reduce future disaster risk. An integrated multi-sector and where possible, area-based approach can help in addressing different dimensions of vulnerability. For example, a community-based approach to shelter reconstruction can help create jobs and diversify livelihood options in the short and medium term. At the same time, it can help propagate disaster resistant building technologies and build local capacities for it, which is very critical to ensure use of such technologies in future construction/expansion of houses. The reconstruction programme also presents an opportunity to raise awareness of other natural hazards and promote appropriate disaster risk management practices.

Medium-term Issues

***Early Warning Systems**:* Efforts are underway at the national and regional levels to establish effective tsunami warning systems. But all the tsunami-affected states are prone to a range of hazards that occur with much greater frequency than tsunamis. It is important, therefore, that at the local level the development of early warning systems be looked at in a multi-hazard context. The efforts to generate improved forecasts and warning need to be matched with equal (if not greater) emphasis on effective communication systems, public awareness and social infrastructure at the community level so that the warnings can be acted on.

***Community-based disaster risk management*:** Experience with natural disasters indicates that some of the most effective risk management actions – both anticipatory (reducing future risks) and compensatory (preparedness to respond) – need to be taken at the local level. The reconstruction program presents an opportunity to provide greater impetus to local-level risk management and to enhance the emergency response preparedness of the communities.

- ***Cyclone shelters*:** Some cyclone shelters in Tamil Nadu were damaged by the tsunami while most were in a dilapidated condition anyway. A snapshot of Cuddalore district revealed that all 21cyclone shelters there require significant repair. The total cost of such work in Cuddalore district is estimated to be Rs. 42.8 million. The recovery effort is an

opportunity to repair existing shelters, assess the need for additional ones and create a community-based system to maintain them.

Disaster risk information systems: There is a need to continuously track existing and emerging patterns of disaster risk to help formulate development and disaster risk management policies.

Strengthening emergency response capacities at all levels: Fire and rescue services at the district level expressed a need for investment in improving the basic emergency infrastructure, response equipment and skills of personnel. The recovery and reconstruction effort provides an opportunity to systematically assess the current capacities of emergency services, establish minimum standards based on local hazard risks, and upgrade accordingly.

The India Disaster Resource Network (IDRN), a federal database that provides an inventory of disaster response resources available in every district, proved to be of limited use at the district level. The system needs to be re-assessed and in high-risk areas, the possibility of devolving it down to the block level may be explored.

Linkages with environment management issues: Comprehensive environmental, multi-hazard, coastal zone management and water management assessment and monitoring systems and strategies need to be developed in tandem. Coastal zone regulations and multi-hazard risk assessments form a basis for higher scale planning and implementation, while sound environment and disaster risk management requires local actions. The capacities of local governments must be built so that they can play an effective role in this.

***Risk Transfer Mechanisms*:** The reconstruction and recovery effort is an opportunity to explore the benefits of risk transfer and financing mechanisms to enable the affected states and individuals recover quickly from a disaster.

Long-term Issues

Strengthening institutional, techno-legal and techno-financial arrangements for disaster risk management systems in the affected states: The reconstruction and recovery effort is an opportunity to strengthen existing or establish new institutional, legislative and financial arrangements for comprehensive disaster risk management building on the progress made in India and especially in the affected states in the last 5 years.

Integrated climate risk management: Analyzing the risks of negative outcomes of natural fluctuations in the climate and weather systems over a variety of time scales will allow a linkage to be made between present-day concerns over the alarming increase in climate-related losses and more nebulous but real concerns about potential losses in the future when climatic averages are expected to have shifted. Strengthening national and local capacities to manage existing climate risks is key to developing capacities for adapting to future climate change.

2.10.2 Strategy

A three-pronged strategy is suggested to address the critical issues described:

- Risk management must be integrated into the rehabilitation and reconstruction effort
- Where possible, build on ongoing state level initiatives and link up with national and regional efforts. A number of disaster risk management capacity building efforts have been underway in the affected areas. The recovery efforts provide an opportunity to expand these initiatives to other areas
- Mainstream disaster risk management in the development process through appropriate institutional, legal and financial mechanisms in each state

2.10.3 Budget Overview

Table 2.10:1 Summary Budget for DRM

Components/ Projects	Tamil Nadu	Pondicherry	Kerala	Costs ($)
Short term (less than six months)				
Multi-hazard risk assessment in the affected areas in the coastal areas with priority on affected *talukas*	1,650,000	200,000	300,000	2,150,000
Preparation of sectoral risk reduction guidelines (technical guidelines, suggested techno-legal arrangements, process guidance)				800,000
Information, communication and public awareness	1,300,000	200,000	400,000	1,900,000
Mechanisms for dissemination of Early Warning Systems in the coastal districts	520,000	80,000	400,000	1,000,000
Sub-Total	**3,470,000**	**480,000**	**1,100,000**	**5,850,000**
Medium term (six months to two years)				
Multi-hazard risk assessment in unaffected but vulnerable areas	850,000	100,000	650,000	1,600,000
Capacity Building at the village, block and district levels for Early Warning Systems in the coastal districts	680,000		120,000	800,000
Community based disaster risk management programs	1,500,000	100,000	650,000	2,250,000
Disaster risk information systems	1,500,000	100,000	650,000	2,250,000
Studies/ pilots on state specific studies on risk transfer mechanisms	1,500,000	100,000	650,000	2,250,000
Sub-Total	**6,030,000**	**400,000**	**2,720,000**	**9,150,000**
Total				**15,000,000**

2.10.4 Partner UN Agencies

UNDP, UNESCO, WMO & UNESCO

Section 2.11
Policy Support, Coordination and Knowledge Networking

2.11.1 Situation Analysis

Besides Government and UN Agencies, around 400 national and international NGOs are currently active in responding to the needs of tsunami affected communities. Good coordination is imperative if the assistance is to be of a high standard. It has been noted that streamlined coordination mechanisms have been lacking across all sectors amongst the civil society organizations and the links of all stakeholders to Government coordination is unclear.

Given the level of resources required for recovery activities and the likely participation of several partners, the coordination system needs to be strengthened to ensure adequate attention to all areas (sectoral as well as geographical) and to avoid duplicity of efforts.

Moreover there is a need for knowledge networking and partnership building to support policy making and recovery planning. Access to knowledge resources and updated information is indeed crucial for effective long-term planning. UN can add tremendous value to the recovery process as it would be centrally positioned to enhance linkages between Government and civil society.

2.11.2 Strategy

UN was requested by various NGOs to take on the responsibility to facilitate coordination among stakeholders. Discussions are being held with the government for UNDP to support the establishment of coordination mechanisms/tools and facilitate the entire process. It is expected that the establishment of appropriate knowledge networks and related partnerships will enhance recovery planning and support policy making process by giving access to know-how, expertise, best practices, etc.

An important feature of coordination is setting up a recovery resource centre in Chennai to centrally support coordination and planning of post-tsunami recovery. Such a centre will have information on research, legislation, codes of conduct, training on minimum standards, updated government/NGO/multilateral and bilateral agency activity maps, data collection, needs assessments, organization of events/workshops for dissemination of technology/best practices/recommended approaches, HIV/AIDS and Gender mainstreaming. This centre would act as a forum for exchanging information among the government, NGOs and the UN. A website, newsletters, physical and virtual libraries will be offered to all, including communities. Information collection will have to take place from all relevant sources like the government rehabilitation agencies and the ICT system (see below), NGO networks, bilateral donors, etc. This centre will be directly connected to district resource centres (e.g., Nagappattinam, Cuddalore, Kanyakumari) that would have to be similarly supported for their establishment and functioning. The centre would be linked to national and international networks in order to capture and disseminate relevant information.

UNDP is currently facilitating consultations to outline the action plan and to launch the process. Partnerships between the UN and NGOs are being built to create a pool fund to ensure sustainability of the resource centre and self-governance.

2.11.3 Budget Overview

A total of US$ 3,050,000 is projected for policy support, coordination, and knowledge management including ICT support. (Please refer to table 2.12.1)

Graph 4: Chennai Recovery Resource Centre

Objective: Facilitate coordination and planning of post-tsunami recovery

Key features

- Knowledge network (experts, institutions, documentation).
- Information collection from all relevant sources (diversity enhances objectivity).
- Inclusiveness of clients/participants (INGOs, NNGOs, Bilateral Agencies, UN, Govt Rehabilitation Agencies)
- Neutrality = credibility
- Capacity development

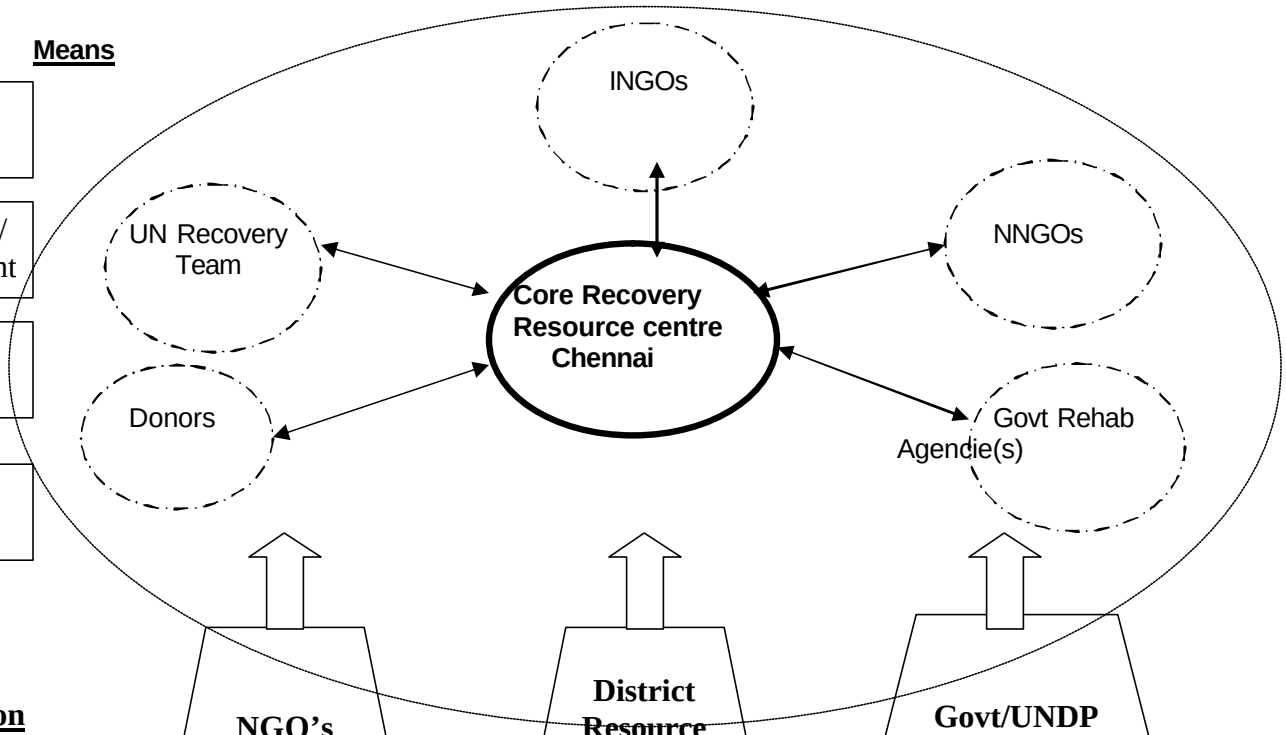
Means

Funds

Premises/ Equipment

Staff

Website



Information providers

NGO's Networks

District Resource Centres

Govt/UNDP ICT system

Outputs

Documentation:
- Website
- Library
- Newsletter
- Best practices

Coordination:
- Mapping and planning
- Links to sites
- Interactions encouraged

Connect people:
- CSO to Govt
- CSO to CSO
- Donors to organizations

- New initiatives for recovery;
- Joint actions.

Section 2.12
Information and Communication Technology

2.12.1 Situation Analysis

In the past, the states such as Orissa and Gujarat have used Information and Communication Technology (ICT) tools and solutions for management of recovery and rehabilitation efforts. The nodal administrative authorities at state and district level have developed diverse information management solutions of varied sophistication with the help of support personnel from the UN System and others. The need for comprehensive ICT solutions that not only address the current needs in the recovery phase but which also encompass the long term needs of the community for disaster risk reduction and development have been clearly acknowledged by the governments of the affected states. The support provided by the UN agencies so far in this sphere has been appreciated and they have been requested to develop and implement comprehensive ICT solutions addressing the disaster-development continuum in partnership with the government, knowledge institutions, civil society agencies and local communities.

2.12.2 Strategy

Design and deploy a web-based ICT solution that captures the damages, needs, resources available, potential partnerships and the gaps that need to be addressed for fast-tracked, equitable and transparent provision of the variety of rehabilitation package for affected individuals, households, specific vulnerable groups and community units. Ownership of the solution would reside with the Department of Revenue Administration and Disaster Management & Mitigation, which would ensure effective partnership with the other departments at the state, district and block level; institutions of local governance such as the *panchayats* and municipalities; and non-governmental agencies collaborating the recovery efforts. The UN recovery team would facilitate the interaction between these various sectors in this initiative by supporting the district level resource centres run by the civil society agencies and through the NUNV District Recovery Support Officers placed in each district under the supervision of the District Collector.

By augmenting internet access that is required to access this web enabled solution throughout the affected region, this solution would also serve to extend existing and soon-to-be developed citizen applications. Citizens would be able to access information and transact business bundled with the ICT solution through ICT kiosks / Community Information/Knowledge centres with internet connectivity situated at clusters of villages to be owned and managed by the community using an entrepreneurship model. The local manager-entrepreneurs required for running the centres would be identified and trained by the District and Block level NUNV ICT facilitators who would be deployed by the UN Team for Recovery Support. The NUNV ICT facilitators would strive to encourage women SHGs to manage as many centres as possible. The ICT kiosks would function as multifunctional community information, communication, training and activity centres that are integrated to the various livelihood extensions, IEC and BCC services of the government; and the existing as well as proposed disaster early warning systems.

The ICT solution / system would use open source technology to minimize the total cost of ownership and replicability. Existing solutions – modular or comprehensive, if available, would be incorporated after necessary modifications or enhancements provided total cost and time of deployment could be reduced. Use of local language interfaces would be ensured and if necessary voice aided and /or touch screen interfaces would be deployed for ease of use by all sections of the society.

Sequential Activities:

- Creation of database profiling the Civil Society Organizations and their interventions (undertaken and proposed) in the relief and recovery phases, using information already collected at state and district levels by temporary personnel deployed by the UN team for recovery support, followed by invitation to the CSOs to update details.
- Collection of NGOs/CSOs/bilateral and multilateral agencies' existing activities and plans for rehabilitation - geographical and sector wise. Regular online updating by these organizations and/or by the district collector's office with support from the NUNV District Recovery Support Officers. Online access of consolidated information (including GIS mapping, tabular and graphical MIS reports) provided to these organizations for coordination purposes.
- Developing analysis and reporting tools for the household and community infrastructure damages (multi-sectoral) database assembled by the government through an extensive survey of all habitations within 1 km of the shore line in Tamil Nadu. Temporary ICT personnel deployed by the UN Recovery Support Team at key districts assisted the district authorities in rapidly entering the data and in quality control.
- Linkages of this damage databases with population databases including family card data and panchayat level house hold data and GIS tools to corroborate the information obtained from the survey and identify patterns at various levels of aggregation.
- Reports from the above damage databases consolidated up to village level could directly feed into the DesInventar system for analysing patterns of damages and vulnerabilities at the disaggregated level and exploring the possible causes of differential vulnerabilities. If this system is appreciated by the state government(s), advocate for utilizing the full potential of this system to capture the characteristics and impacts of all scales of different types of disasters at disaggregated levels retrospectively for a sufficient length of time to delineate the past vulnerability profile of the affected state(s) and also to use the system prospective inventorisation of disasters.
- Creation of database on special category of beneficiaries (orphaned children and adolescents, physically challenged persons, destitute older persons etc.). Link to relevant special schemes and household level loses.
- Identification of the rehabilitation requirements of individuals and households in areas such as shelter and livelihood ⇔ Link to Government rehabilitation packages for shelter and livelihood.
- Mapping of community infrastructure requirement with linkages to findings of community level surveys and /or PRA exercises ⇔ Link to Government reconstruction packages for community infrastructure.
- Online tracking of approval status of proposals submitted by NGOs/CSOs/bilateral and multilateral agencies to Government for partnership in recovery schemes for shelter, livelihood and community infrastructure reconstruction.
- Mapping of existing/planned resources and identification of overlaps/gaps in the relevant geographical and sectoral areas; consultations; preparation of plans of action to bridge the gaps and redeploy resources overlapping in order to meet the previously identified needs.
- Enable the civil society partners, bilateral agencies, and government agencies to carry out online updating of the implementation progress of the projects. Monitoring of progress and reporting requirement activities using the online software tool / MIS.
- Provide linkages with other ICT tools addressing other sectoral (health, water & sanitation, Psychosocial support etc.) rehabilitation needs.
- Online grievance mechanisms for beneficiaries as well as facilitating/implementing partners and online forum for civil society partners and government implementing agencies, for the beneficiaries, and for other interested/concerned citizens.
- Plan and roll out community access kiosks at Panchayat/village level in partnership with PRIs and facilitated by NGOs / CSOs.

2.12.3 Budget Overview

Table 2.12.1: Summary Budget for ICT including Policy Support & Coordination

Activities	Budget (US$)
ICT	
Provision of necessary technical expertise for the development and deployment of the ICT solution	500,000
Hardware, software, connectivity and initial maintenance cost	1,000,000
Capacity building for government personnel, civil society partners and community volunteers and local ICT entrepreneurs	250,000
Provision of infrastructure for about 100 community ICT kiosks	500,000
Promotion of community radio to create awareness about government protection against trafficking etc	50,000
Policy Support & Coordination	
Enhancing coordination and planning of recovery through knowledge networking	750,000
Partnerships and networks, including Recovery Resource Centres	
Total	**3,050,000**

2.12.4 Partner UN Agencies

UNDP & UNESCO

Section 2.13
Implementation Arrangements

The UN Country Team will follow established implementation practices such as National, Direct, and NGO execution modalities, with Government ownership. Consultative arrangements with donors to the programme will be established.

Government's decision as to whether to establish a Trust Fund for Rehabilitation and Reconstruction has not yet been determined. At this time, funding of UN-supported activities are best channelled to the United Nations through the UN Resident Co-ordinator's account in New Delhi, to allow for joint programming among concerned agencies and immediate implementation.

Table 2.13.1: United Nations Recovery Framework - Key Result Areas

Sector	Key Result Areas	Budget (US$)
A. Moving from post-disaster relief to recovery		
Psychosocial Support	The most affected communities identified and assisted. Community workers, Government relief workers and trainers trained in psychosocial care and support. Technical assistance provided to local agencies. Overall activities monitored and coordinated.	870,000
Social Reintegration to Address Trafficking	Enhanced public awareness to generate an integrated response to trafficking Protection, care and support to those vulnerable to trafficking and HIV, including trafficking survivors and facilitation of overall wellbeing of communities Empowerment and creation of community resilience through mainstreaming of anti-trafficking and HIV initiatives into disaster recovery plans at different levels	500,000
Health & Nutrition	Provision of basic healthcare services, sanitation, vector control, water quality monitoring, surveillance for epidemic illnesses and psychosocial support to communities strengthened A long term health sector disaster mitigation plan devised	4,470,000
HIV/AIDS Prevention and Care	Further spread of HIV in the affected areas prevented Enhanced AIDS awareness among the affected populations AIDS awareness integrated into recovery and rehabilitation work Early warning signs identified	1,650,000
Education	Normalcy in children's lives restored through supporting of timely re-opening of schools Activities contributing to their emotional security initiated Secure and stimulating learning environment ensured School improvement plans prepared with stakeholder involvement	1,052,000
B. Restoring livelihoods and upgrading infrastructure		
Rebuilding Livelihoods	Assets rebuilt and recovery of affected households supported Labour markets and employment opportunities rehabilitated New skills training provided leading to enhanced income-earning capacities	

	Access of poor and disadvantaged to resources and opportunities enhanced	5,580,000
Shelter & Habitat Development	All vulnerable communities settled in culturally appropriate and multi-hazard-resistant homes and habitats Integrated and culturally sensitive habitat plans developed in participatory manner Multi-hazard resistant technologies promoted through enhanced awareness and training	4,513,000
Water Supply, Sanitation & Hygiene	Access to safe water, sanitation and hygiene information improved Coordination of water supply, sanitation and hygiene improved The incidence of waterborne diseases kept to the lowest possible level Vulnerable populations have an assured supply of clean, safe water Mainstream programmes for water supply and sanitation reinforced in affected areas	559,000
C. Prospective risk reduction		
Healthy Environment for Long Term Security and Sustainability	Series of rapid environmental assessments conducted Environmental considerations mainstreamed into sectoral interventions and lessons learned Comprehensive coastal zone management strategy developed	1,550,000
Capacity Building for Disaster Risk Management	Disaster risk management incorporated in all recovery and reconstruction efforts Comprehensive multi-hazard risk assessments conducted Clear risk reduction guidelines established sector by sector Emergency response capacities strengthened at all levels	15,000,000
D. Policy Support and Coordination		
Coordination Support and Knowledge Networking	Knowledge networking and coordination among various stakeholders ensured by supporting State/District level recovery resource centres and providing the UNV facility	3,050,000
Information and Communication Technology	Fast-tracked, equitable and transparent provision of the rehabilitation package ensured A web based ICT solution capturing damages, needs, available resources, potential partnerships and gaps designed and deployed.	
	Total	**38,789,000**

The last three digits in the figures presented in the table have been rounded-off.