INDIAN OCEAN TSUNAMI: A DOSSIER

REPORTS ON DAMAGE ASSESSMENT AND REHABILITATION

VOLUME I

Produced for
SAAPE –ICSF Regional Meeting on

A People's Process for Post-Tsunami Rebuilding

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Colombo, Sri Lanka

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Reports on Damage Assessment and Rehabilitation

VOLUME I

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Overview of Damages and Rehabilitation

INTRODUCTION

This dossier is a compilation of various reports produced by multilateral and national agencies on rehabilitation in the aftermath of the tsunami in the Indian Ocean region on 26 December 2004. It includes summary reports of the United Nations Office for the Co-ordination of Humanitarian Affairs (OCHA), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the United Nations Children's Fund (UNICEF), the Food and Agriculture Organization of the United Nations (FAO), the International Labour Organization (ILO), the World Bank and the Asian Development Bank (ADB).

The dossier is in two volumes. Volume I of the dossier has three parts: Part A provides an overview of damages at the regional level, especially to agriculture, fisheries and the coastal and marine environment; Part B looks at rehabilitation initiatives proposed at the regional level by multilateral agencies and Part C details the rehabilitation and reconstruction policies and programmes of tsunami-affected countries in the region, such as India, Sri Lanka, Indonesia, Thailand and Maldives. Volume II of the dossier provides information on the financial assistance plans of multilateral agencies for relief and rehabilitation.

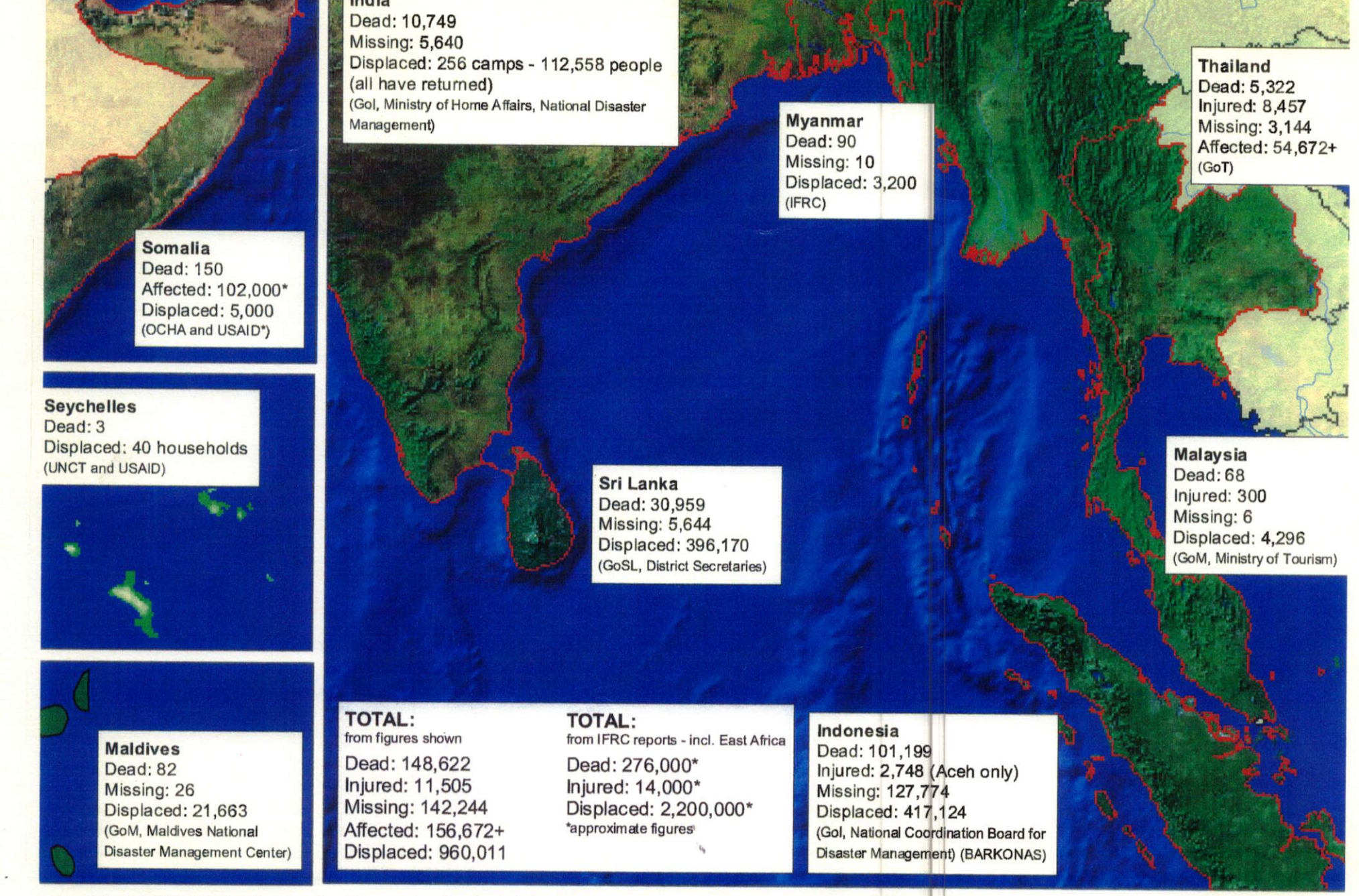
This dossier has been produced by the International Collective in Support of Fishworkers (ICSF) for the regional meeting on "A People's Process for Post-Tsunami Rebuilding" organized jointly by the South Asia Alliance for Poverty Eradication (SAAPE) and ICSF, from 24 to 26 April 2005 at Colombo, Sri Lanka, to facilitate a comprehensive understanding of the impact of the 2004 Indian Ocean tsunami and proposed rehabilitation measures, particularly in the most affected countries. It includes summaries of important documents produced up to 24 March 2005. (Full reports are available on the CD-ROM *Indian Ocean Tsunami*, also produced for the same meeting.) An overview of all the documents in the dossier is presented in a tabular form at the end.

INDIAN OCEAN TSUNAMI: A DOSSIER
Reports on Damage Assessment and Rehabilitation

PART A

REPORTS ON DAMAGE ASSESSMENT

REGIONAL



e names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

ReliefWeb Map Cen
01 February 20

Indonesia, Sri Lanka, Maldives, Somalia: Earthquake and Tsunami OCHA Situation Report No. 36

Main Highlights

In Indonesia, another earthquake and two volcanic eruptions have taken place this week.

In Sri Lanka, heavy rain flooded tents and campsites due to a lack of appropriate drainage.

In Maldives, work is beginning on the UN Recovery Strategy, which will fit into the National Recovery and Reconstruction Programme.

In Seychelles, according to an FAO assessment, the livelihoods of at least 1,500 families in the fishery and agricultural sectors are in jeopardy due to damage inflicted by the tsunami.

In Somalia, the OCHA/UNEP Joint Environmental Unit is working to verify reports of toxic waste sites and to determine specific areas of potential risk.

FINANCIAL HIGHLIGHTS

The Flash Appeal originally requested USD 977 million. Following the revisions in the Mid-Term Review, the total requested has risen to USD1.087 billion. The Appeal stands 79% funded, counting commitments and paid contributions. Donors have pledged a further USD 90 million specifically for the Flash Appeal, but this is not yet committed.

OCHA has worked with UN Country Teams to distribute the relatively small amount of un-earmarked funds received, so as to best fill funding gaps for priority activities.

For the tsunami overall (including outside the Flash Appeal), the total amount pledged, committed or contributed is USD 6.7 billion. (95 governments and inter-governmental organisations – US$ 5.8 billion; private individuals and institutions – at least US$ 883 million.)

INDONESIA

I. SITUATION

In the last week, there has been another earthquake in Indonesia, followed by two volcanic eruptions. This also follows the Earthquake of 28 March. Further information is available from the separate daily Field Reports covering the earthquake of 28 March.

Tangkuban Prahu (Java) – Volcanic Activity, 13 April

Tangkuban Prahu Mountain near the city of Bandung on Java Island began volcanic activities during the night of 12 April. At 8:25 am on 13 April, the status of the volcano was raised to alert. The mountain is in a popular tourist attraction with an access road leading almost all the way to its crater.

MountTalang (West Sumatra) - Volcanic Eruption, 12 April

Mt. Talang, a 2,575 m high volcano, some 60 km from the provincial capital of Padang, erupted on 12 April, spewing volcanic ash on nearby areas, prompting the evacuation of some 26,000 people living on five villages around the volcano. The volcanic activity reportedly deteriorated after belching out smoke and ash. The Indonesian Red Cross deployed teams to assist in the evacuation process. The Department of Social Affairs is providing 15,000 people for 7 days with logistic support, food, drinking water, medical supplies, sarongs, rubber boats tents and generators. District and provincial government authorities have set up temporary shelters in tents, school buildings, market places and government offices. Urgent needs include facemasks and tents. However, no request for international assistance has been made so far.

Padang (West Sumatra) Earthquake, 10 April

A strong 6.7 aftershock was felt in Padang, on 10 April, triggering the evacuation of approximately 1,000 people. The epicentre was in the Indian Ocean, close to the Mentawai Islands off the coast of West Sumatra. The affected areas include Padan City, Padang Pariaman, West Pasaman, and Mentawasi. No significant damage was reported. The provincial government provided food items and medicine. Another 5.3 tremor hit the city on 13 April.

26 December – Earthquake, Tsunami

On 26 March, BAKORNAS, the national coordination body for natural disasters, ceased issuing updates on the numbers of reported dead and missing as a result of the tsunami on 26 December. The total number of dead and buried, at 30 March, stands at 126,602 in Nanggroe Aceh Darussalam Province (NAD) and 130 in North Sumatra. 37,063 people are missing and 533,770 are displaced in 20 districts/cities.

II. OVERVIEW OF ACTIVITIES

WFP's total planned beneficiary caseload for April is 720,000, including IDPs, host families and other vulnerable groups in Aceh and North Sumatra. To date, WFP has dispatched approximately 38,000 MT of food, of which some 1,000 MT have been sent to Nias and Simeulue. The agency has also chartered a new landing craft to access remote areas of Nias and Simeulue.

The school feeding programme that commenced in early April for an initial 16,000 beneficiaries is slowly being expanded and plans to reach 340,000 people by August 2005. On 13 April, a School Feeding Introduction Workshop will be attended by school feeding coordinators from the District Education Departments of Aceh Besar, Banda Aceh, and Pidie, as well as three implementing partners: Al Ami, Muhammadiyyah, and Keumang. School feeding and general food distribution is planned to continue up to the end of December 2005.

The Draft Blueprint or Master Plan for Rehabilitation and Reconstruction of Aceh, Nias and North Sumatra outlines plans for the construction of permanent housing for IDPs and affected communities. In the meantime temporary shelter is being provided in the form of Temporary Living Centres (TLCs). IOM is in the process of constructing earthquake resistant housing in Tingkeum, Aceh Besar and has completed site preparation for 188 housing units in Cot Paya, NAD, and for 350 housing units in Lambada Lhok. Seven additional sites have been identified in the vicinity of Tingkeum and site assessments are planned.

III. MAIN CHALLENGES AND RESPONSE

The Head of the Provincial Education Office in NAD has outlined the government's immediate priorities for the education sector, as follows:

1) the physical reconstruction and rehabilitation of the education system,

2) the need to increase the quality of teaching as a foundation for quality education, and

3) increasing the capacity of education administrative and management systems.

UNICEF has signed an MoU with the National Ministry of Education to construct 300 schools in tsunami-affected areas, with total project costs estimated at USD90 million. The first session of joint teacher-training activities were completed on 9 April.

Water and sanitation assessments of TLCs and IDP camps have been conducted in Aceh Besar, Pidie and Beuren districts. Assessment of water tankering, de-sludging trucks and waste collection activities indicate that service levels are increasing but have not yet reached 100% coverage. UNICEF has also prepared tender documents for the construction of an interim landfill facility in Banda Aceh, which would receive solid waste collected from the city and temporary shelter sites. Interim and longer-term plans are being developed to restore the latrine/septic tank sludge disposal facility in Banda Aceh, which is critical to public health.

Education regarding natural disaster preparedness and response has been identified as a key need in NAD and North Sumatra. The coordination groups focusing on psychosocial issues in Banda Aceh and Meulaboh are preparing a leaflet on earthquake and tsunami information, preparedness and response, and will facilitate orientation activities for religious leaders to facilitate accurate distribution of natural disaster information to the community.

IV. LINK BETWEEN EMERGENCY ACTIVITIES AND LIVELIHOOD RECOVERY

The employment services maintain a gender focus with two on-going classes (computer skills and sewing) holding high female participation rates. Women now make up some 25% of the total number of people registered with the employment service. Starting from 14 April, a Train the Trainers session on the production of building materials will be held for women. Women in NAD traditionally make clay bricks within family businesses, with the extra skills training they

will be in a position to supply building materials for the reconstruction effort and secure an income.

V. USEFUL WEBSITES

Government:

www.bakornaspbp.go.id (National Coordination Board for Natural Disaster Management)

www.depsos.go.id (Department of Social Affairs)

www.depkes.go.id (Department of Health)

www.lin.go.id (National Information Board-Ministry of Information and Communication)

www.info-ri.com (Information-Republic Indonesia)

Other:

www. coe-dmha.org/tsunami.htm (daily chronology of key events)

www.apan-info.net - tsunami page (Pacific Command)

www.humanitarianinfo.org - Humanitarian Information Centre (HIC)

www.unjlc.org

SRI LANKA

I. SITUATION

UN-HABITAT signed a private sector partnership agreement for USD500,000 to help strengthen local authorities, the community and NGOs in the areas of health, poverty eradication, human rights, social integration and infrastructure.

II. OVERVIEW OF ACTIVITIES

On 7 April UNHCR handed over a pilot project of 42 temporary houses to displaced families in Ampara District. The project is a precursor to the construction of 2,500 more shelters in Ampara District, to be erected at a rate of 500 per month. A further 1,500 temporary houses have been pledged by UNHCR if required. In Batticaloa District, 11,092 semi-permanent shelters are scheduled for construction with a total of 2,460 completed as of 6 April 2005.

In Kilinochchi, 75% of the displaced population now lives in transitional accommodation centres (TACs). Approximately 80% of the TAC shelters are completed in Vadamarachchi East, with 60% completed in Mullaitivu. However progress is slower in the rest of Jaffna District. The

German NGO Malteser Hilfsdienst and UNICEF have made available at least 1,000 rain harvesting systems for use in permanent houses for tsunami survivors across the south.

The Business-for-Peace Alliance (BPA) -- a project supported by the United Nations Development Programme (UNDP) -- organized a meeting in Batticaloa last week of private sector representatives and public sector officials to inform and guide member businesses that were among the worst affected by the tsunami. UNDP officials used the occasion to launch a Small and Medium Enterprise Credit Facilitation Project, initially among four of the regional chambers, to be extended island-wide in the future.

The renovation of a blood bank and an operation theatre at the District Hospital in Kilinochchi has begun. The hospital provided medical care to many tsunami-affected patients in December. ICRC is supporting the clinic with medical staff and UNICEF is providing equipment.

The Protection Task Force in Batticaloa has highlighted concern over the lack of cell phone and landline coverage in Vaharai, one of the most severely affected divisions in the district. This restricts communication with local authorities and beneficiaries and hampers the coordination of aid activities.

With increased fears of another tsunami, the NGO Solidar organized a seminar in Kilinochchi on the subject. The seminar targeted national and international staff working in Transitional TACs. An expert on early warning systems and tsunamis briefed the group.

III. MAIN CHALLENGES AND RESPONSE

In Trincomalee, unexpected rains during the past week resulted in poor conditions in tented camps. Rains flooded tents and campsites due to a lack of appropriate drainage. A few hundred families moved back into schools and further movements are expected if the rains continue. OXFAM and World Vision have begun distributing plastic sheeting, tinned foods, and water carriers. UN agencies and NGOs are meeting to discuss the distribution of non-food items given the possible increase in population movement if the rains continue.

Concern is being raised about the possibility of dengue fever given the wet conditions around camps. Action is being taken by the Deputy Provincial Director for Health Services in Galle to prevent dengue transmission.

The Batticaloa Shelter Task Force discussed the impact of recent rains and reported that many shelters were not waterproof. Community Habitat is continuing to upgrade and improve drainage for tent shelters in the worst affected camps from Hikkaduwa southward. Their quick impact 'Cash for Work' programme is currently employing 50 to 100 camp workers. Reports have also been received of transitional shelters being vandalized in Batticaloa. This is allegedly due to dissatisfied tsunami-affected people who feel that they should have been given priority for such housing.

IV. LINK BETWEEN EMERGENCY ACTIVITIES AND LIVELIHOOD RECOVERY

A lack of adequate land is hampering efforts to construct temporary shelters in Trincomalee District. There are allegations that the same plot of land has been assigned to different NGOs, and furthermore may have previously been allocated for other public services such as play grounds, schools and hospitals. UNHCR is working with the Divisional Secretariat Agent to find solutions to such land problems.

The Livelihoods Taskforce, comprised of government, UN agency and NGO representatives, established a working group on boat repair to identify agencies involved in boat and engine repair and bottlenecks, such as a lack of raw materials and skilled labour. The Taskforce will also design a system to ensure registration of all repaired boats with the Department of Fisheries, which is in the process of publishing a detailed list of damaged and destroyed fishing craft and fishing gear. Concerns have been raised that boat replacements are being constructed to pre-tsunami standards, which in most cases do not comply with international boat safety standards and may pose great safety risks.

V. USEFUL WEBSITES

Humanitarian Information Centre: www.humanitarianinfo.org/srilanka

UN Office for the Coordination of Humanitarian Affairs (OCHA): www.ochaonline.org

Sri Lankan Department of Census and Statistics: www.statistics.gov.lk/Tsunami/index.htm

Government of Sri Lanka: www.priu.gov.lk

Recoverlanka: www.recoverlanka.net

Geolanka: www.geolanka.net

Sir Lankan Taskforce for Rebuilding the Nation (TAFREN): www.tafren.gov.lk

For access to additional informative web links:

http://www.humanitarianinfo.org/srilanka/infocentre/links/links.asp

MALDIVES

I. SITUATION

The Minister of Planning informed that work was underway to ensure that all displaced and homeless people would be provided with permanent housing within the next two years. Currently, outside assistance has been secured to rebuild 2,455 homes. Approximately 13,000 people were left homeless as a result of the tsunami.

The Ministry of Fisheries has installed new Fish Aggregating Devices in 9 parts of the country to replace devices that were severely damaged.

II. OVERVIEW OF ACTIVITIES

In the past week and-a-half, UNDP has consolidated the Adopt-An-Island initiative and expanded its outreach to prospective donors. Eleven adoptions can be confirmed to date.

Seventy-three water tanks will be delivered to households in the Baa Atoll to harvest rainwater from the coming monsoon.

UNICEF and UNOPS representatives met with the Minister of Education last week to discuss a proposal for the reconstruction of 35 primary schools, 21 pre-schools and a number of health centres. The expected kick-off of the project is end April or early May.

Participants from 5 islands completed the first training session for the operation and maintenance of desalination units. The second training session will take place towards the end of the week in Laamu atoll. Ten units provide water to approximately 18,000 beneficiaries. Nirosoft mobile boat mounted units have been deployed to provide water to several islands in Laamu and Thaa atolls where the breakdown of a desalination plant resulted in extreme water shortages.

III. MAIN CHALLENGES

Following allegations and reports of child abuse, gender-based violence and discrimination, representatives of UNICEF, UNFPA and OCHA discussed the incorporation of these issues into a training programme for managers of IDP camps and island office staff. Strategies will be further developed over the coming weeks.

IV. LINK BETWEEN EMERGENCY ACTIVITIES AND LIVELIHOOD RECOVERY

The UN Country Team has begun drafting a UN Recovery Strategy, which will fit into the National Recovery and Reconstruction Programme. An Infrastructure Specialist joined the Recovery Team on 10 April as part on ongoing efforts to strengthen capacity for prompt programme delivery.

At Oxfam's request OCHA took part in a meeting on 11 April to discuss irregularities in cash-for-work programmes. Lessons learned will be passed on to relevant UN agencies.

USEFUL WEBSITES

United Nations Maldives Disaster Relief Taskforce: http: /202.1.199.67

Maldives National Disaster Management Centre: http://www.tsunamimaldives.mv

SEYCHELLES

I. SITUATION

According to the Ministry of Local Government, 952 families were displaced from their homes as a result of the tsunami. The majority of those displaced returned to their homes within days after the disaster. By the end of March 2005, 39 families whose dwellings were totally destroyed or partially damaged had not yet returned to their homes; many have temporarily resettled among relatives or are living in a community centre.

According to an FAO assessment, the livelihoods of at least 1,500 families in the fishery and agricultural sectors are in jeopardy due to damage inflicted by the tsunami. Public infrastructure and facilities were also significantly damaged. Priorities for reconstruction and rehabilitation include two road bridges, 30 kilometres of roads, five electrical sub-stations, five schools, as well as water and sewer pipes.

II. OVERVIEW OF ACTIVITIES

In the districts affected by the disaster, authorities are still involved in small-scale rehabilitation activities with support from community-based emergency brigades. Such activities include cleaning drains and repairing retaining walls.

Based on assessments conducted during January and February, FAO and UNDP have revised their projects on livelihood support and rehabilitation and reconstruction of infrastructure, including roads and bridges, housing, public facilities and infrastructure presented in the Flash Appeal. These projects will complement government plans.

III. LINK BETWEEN EMERGENCY ACTIVITIES AND LIVELIHOOD RECOVERY

The Seychelles National Meteorological Service (SNMS) is finalising the preparation of a national action plan for establishing a national early warning system. The plan is based on a multi-hazard approach and is consistent with international strategies to develop a regional early warning system. During recent months, the National Disaster Management Committee has taken steps to improve disaster preparedness and coordination. A Disaster Planning and Response Sub-Committee has been established to work on the preparation of a national disaster response plan (NDRP) over the course of the next four months. The work builds on findings from a support mission conducted by OCHA/UNEP.

As part of UN efforts to support national disaster management, UNDP/BCPR and OCHA conducted a joint mission from 21 and 24 March. The aim of this mission was to provide technical advice and recommendations on the process of establishing relevant early warning systems in the country and developing appropriate institutions for disaster risk management. A major output from this mission was the finalisation of a document to establish an early warning and disaster management project to be funded by UNDP.

SOMALIA

I. OVERVIEW OF ACTIVITIES

As of 10 April, UNHCR has distributed 4,760 blankets, 2,380 plastic sheets, 2,380 kitchen sets, 2,380 jerry cans, and 4,760 sleeping mats to 2,380 families in the settlements of Hafun, Hurdia, Garaan, Foar, Barmadow, Bender Beyla, Eyl, Arris, Garacad and Kulub.

II. MAIN CHALLENGES

The Joint UNEP/OCHA Environment Unit (Joint Unit) in Geneva continues to look into reported hazardous waste dumped along the Somalia coastline, which may have been negatively affected by the impact of the tsunami. The Joint Unit has worked closely with colleagues from UNDP, UNEP, WHO and other agencies to verify reports of toxic waste sites and try to determine specific areas of potential risk. To date, no government or other source has been able to provide any information to confirm published reports or verify the presence of any specific waste risks. The Joint Unit remains on standby to deploy experts to Somalia in the event that sites are clearly identified, where specialized assessments and sampling could be carried out.

III. LINK BETWEEN EMERGENCY ACTIVITIES AND LIVELIHOOD RECOVERY

A joint technical assessment commenced on 30 March with two engineers from WFP and the government in Hafun to rehabilitate some 50 km between Fuar village and Hafun town. The project will be funded by WFP through the food-for-work programme.

Save the Children-UK (SC-UK) has started the implementation of its health and shelter programmes in Hafun.

Updates on contributions to this disaster may be found on the Financial Tracking Service (http://www.reliefweb.int/fts; or, click "Financial Tracking" at the top of the ReliefWeb page for this disaster). Donors are requested to verify this table and inform OCHA Geneva of corrections/additions/values. Donors are encouraged to notify OCHA Geneva of their contributions to this disaster using the OCHA Standardized Contributions Recording Format, available electronically on the above-mentioned FTS website.

Together with further information on other ongoing emergencies, this situation report is also available on the OCHA Internet Website at http://www.reliefweb.int.

Aid agencies are encouraged to use the Virtual On-Site Operations Coordination Centre (OSOCC) at http://www.reliefweb.int to share information on assistance and coordinate activities.

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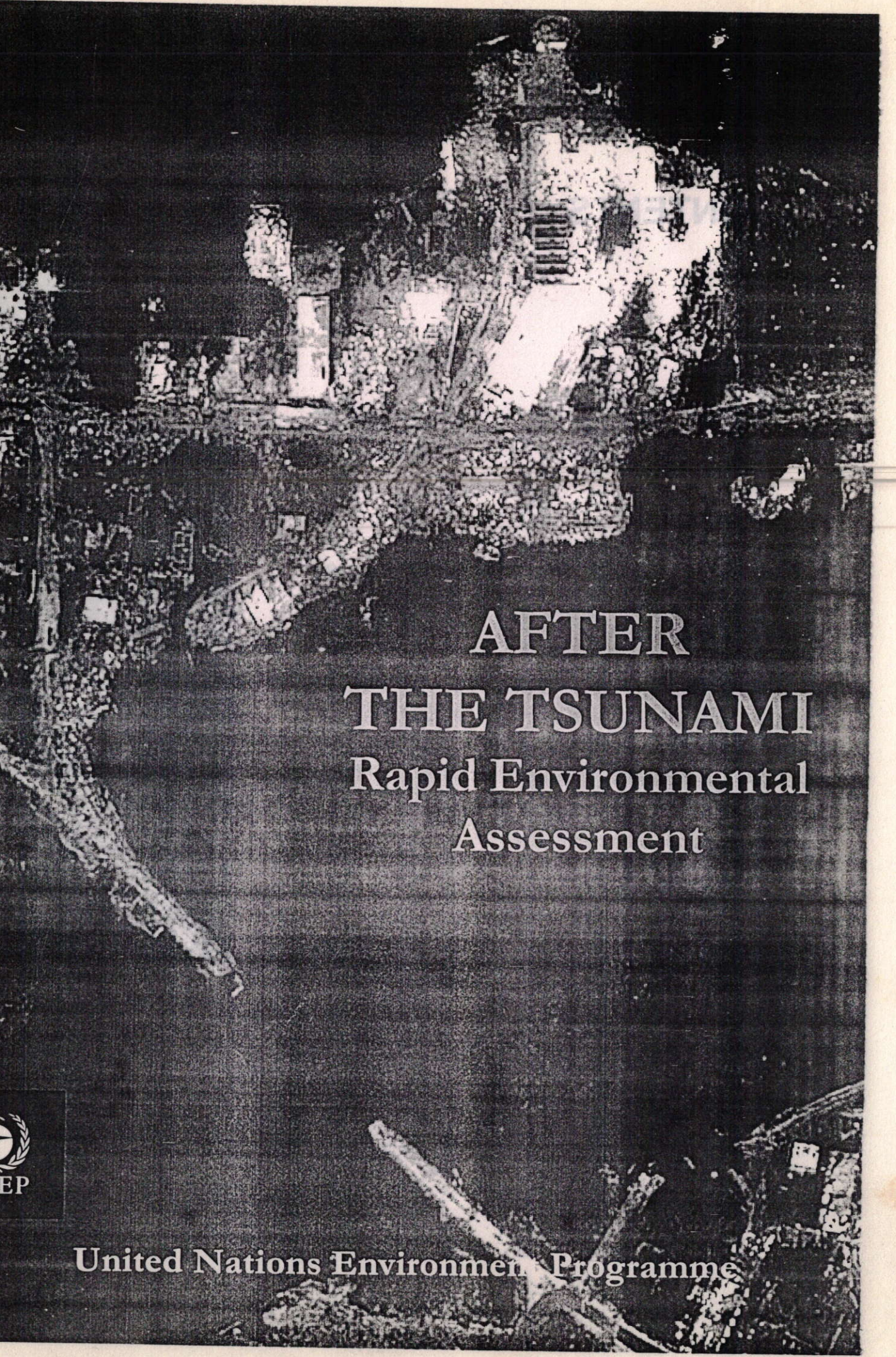

AFTER THE TSUNAMI

Rapid Environmental Assessment

United Nations Environment Programme

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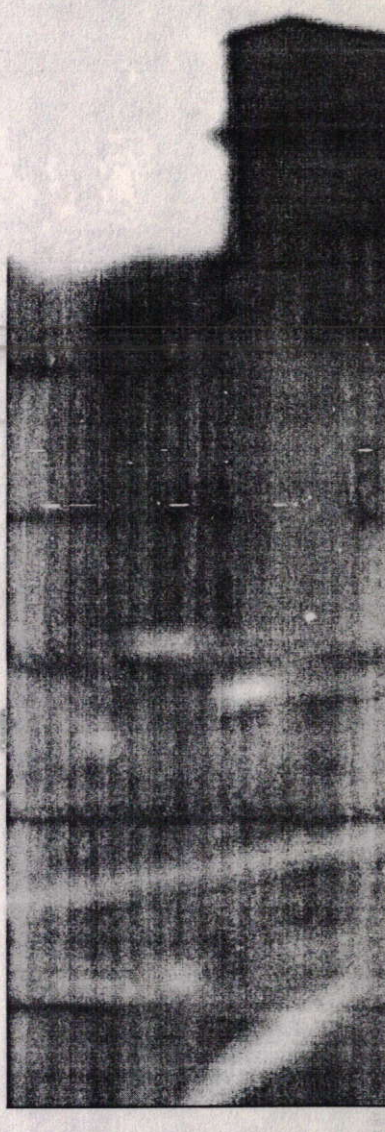
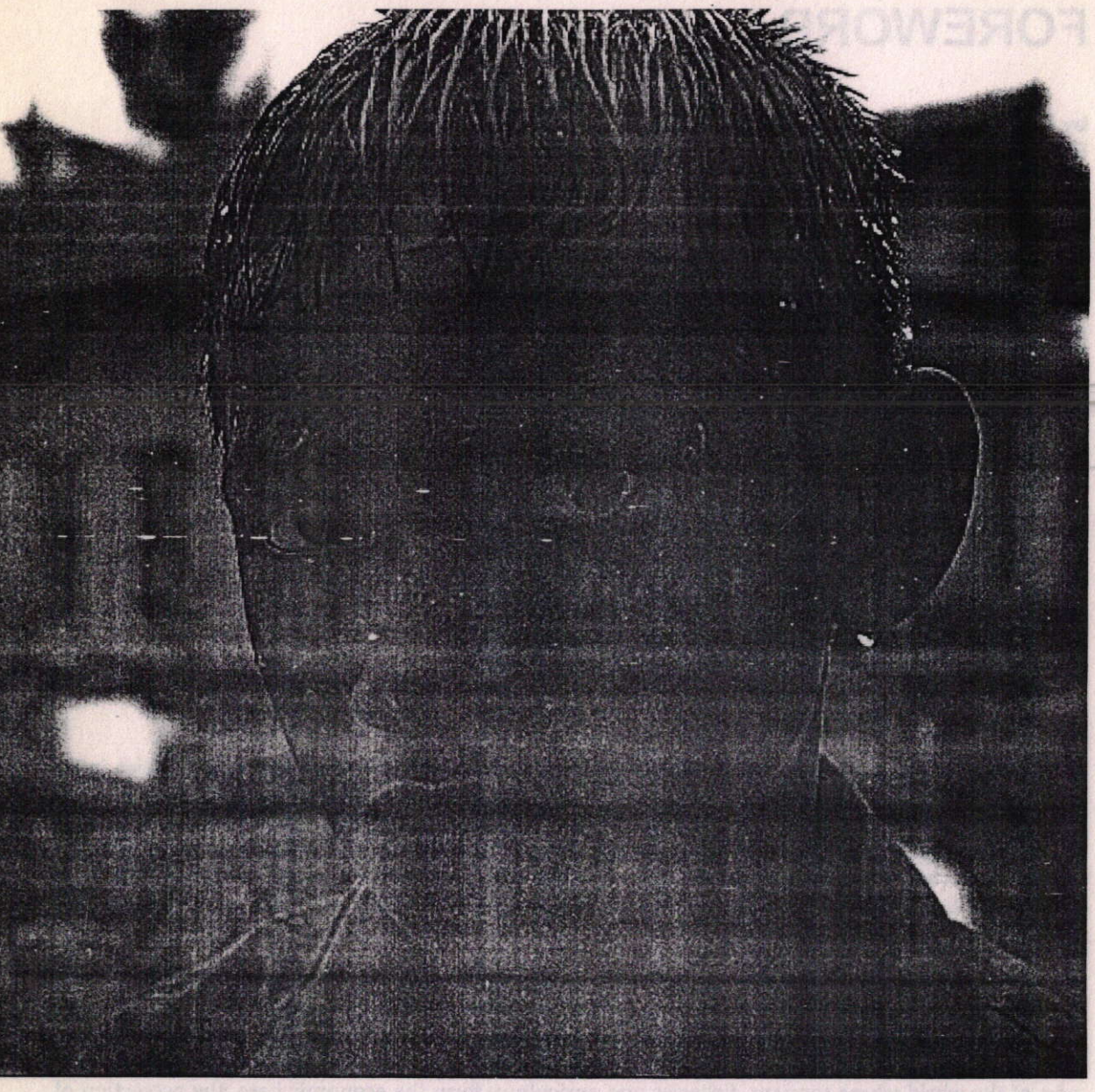




Maruthamunai, Sri Lanka. Minhaz Haque, aged 15, stands in the rain near his destroyed house in Maruthamunai village, eastern Sri Lanka. He says there is nothing left, not even the foundation, as if the house was never there. © Shehzad Noorani/Still Pictures

"...there is nothing left,
not even the foundation,
as if the house was never there..."

FOREWORD

by Klaus Toepfer
Executive Director UNEP

Although several weeks have passed since the Asian tsunami devastated coastal communities in 12 countries around the Indian Ocean, we are still struggling to comprehend the magnitude of the human losses. The suffering and destruction that was left in the tsunami's wake have prompted an unprecedented global response. Determined and resilient local communities, with help from national and international organizations and governments, have mobilized relief and started recovery. Now, as attention turns to reconstruction, the focus has changed to look at the underlying issues and plan for sustainable re-development.

UNEP's mission in this context is clear: to provide and coordinate environmental expertise that can rapidly assess the extent of damage to ecosystems and environmental infrastructure; to identify, and bring to the international community's immediate attention, urgent environmental risks; and to ensure that the environment is fully integrated into the region's reconstruction and development agenda. In a part of the world where tourism, fisheries and agriculture form the economic base, the protection of ecosystems and the sound management of natural resources are crucial to the region's development. With care for the environment, reconstruction efforts can reduce future risks from natural disasters and provide lasting benefit to the people of the region.

To carry out this mission and to harness UNEP's technical resource base, UNEP created the Asian Tsunami Disaster Task Force, which began operations on 28 December 2004. The Task Force has particularly benefited from the support of the UNEP Regional Office for Asia Pacific. UNEP has fielded experts to Indonesia, Thailand, Sri Lanka, Maldives, Yemen and Seychelles to assess the tsunami's impact on the environment. We are also aware that India, Malaysia and Myanmar are conducting their own assessments, and we are grateful to the Government of India for already sharing their results with us.

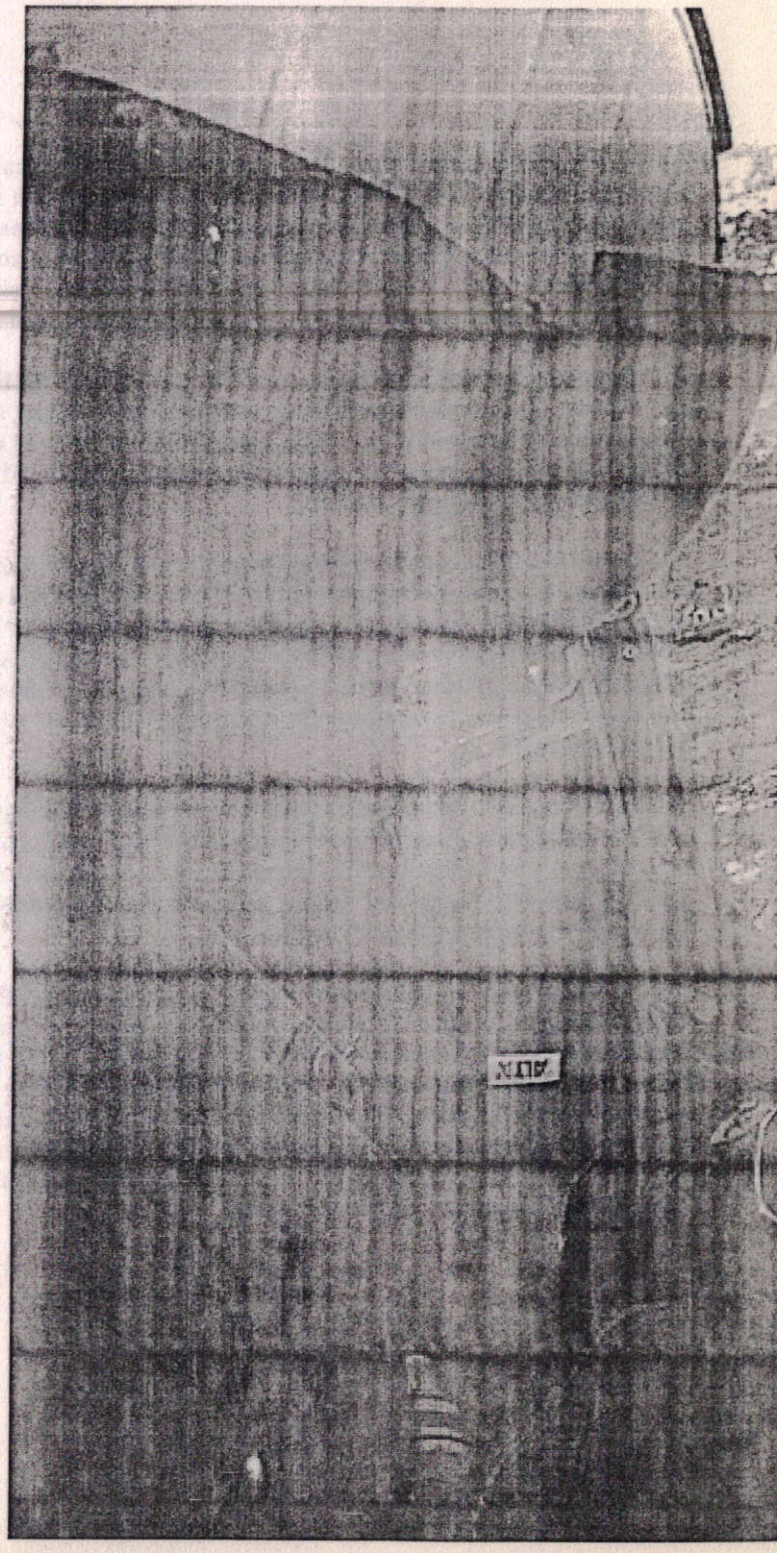
This report is the product of close cooperation between UNEP and national environmental authorities and experts. It provides a preliminary ground-level look at the tsunami's impact on various sectors of the region's environment. It highlights problems in need of immediate attention, underscoring the strong link between environment and sustainable livelihood and the need for improved early warning and disaster preparedness systems.

The report benefits from and complements the work and findings of numerous needs assessments and other assessments by individuals, international and national organizations and specialized institutions. IUCN and WWF have provided valuable support to the UNEP Task Force, and United Nations colleagues in the affected countries—including representatives of OCHA, UNDP, HABITAT, WHO, UNICEF, FAO, IMO, UNESCO and other agencies—have been supportive, sharing information and findings with UNEP. The support of the Governments of Finland and Norway has been indispensable to the ongoing assessment work.

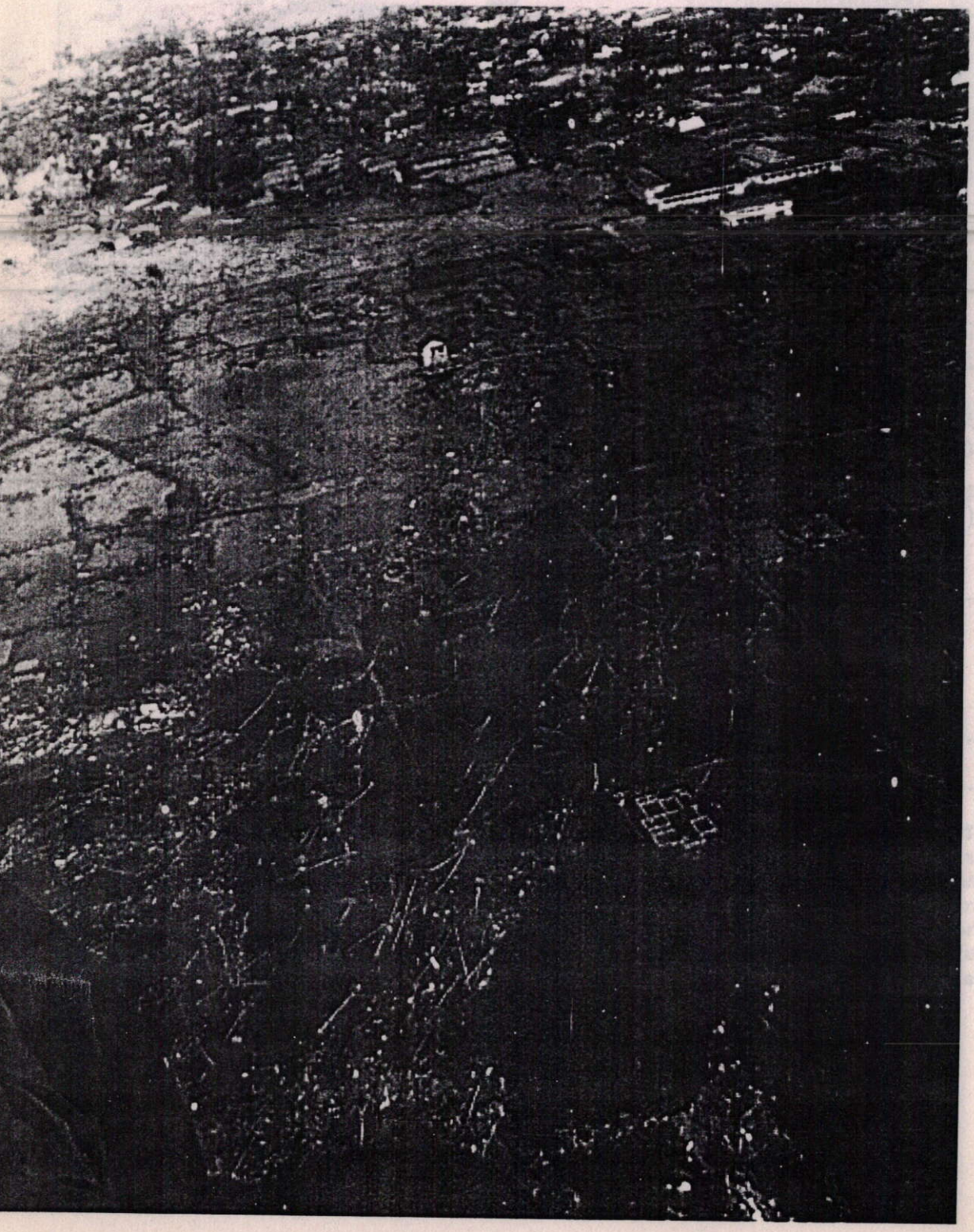
The Task Force's work builds on UNEP's experience in rapid assessments and response. Working closely with UN colleagues, international organizations and counterpart national authorities, UNEP teams have been able to provide policy and technical advice to address pressing environmental needs—such as cleaning up waste to prevent further degradation of groundwater supplies—and have helped to guide the overall environmental recovery process.

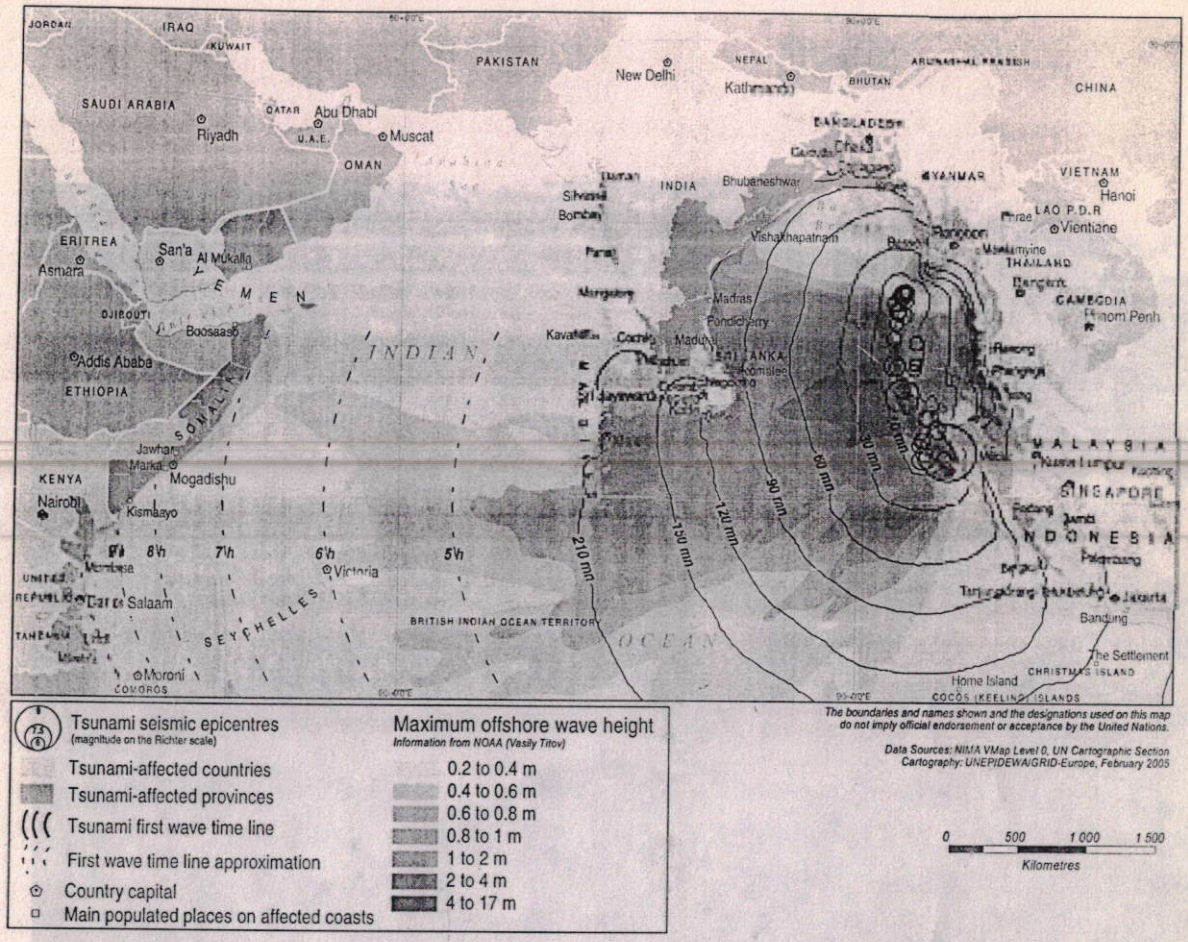
UNEP's experience in the region to date has shown that the tsunami-affected countries are firmly committed to addressing the environmental challenges before them. I strongly believe that this terrible event has provided the countries and communities around the Indian Ocean with an opportunity to focus on the important role the environment plays in their development. I sincerely hope that the extraordinary expressions of support from the global community can be sustained and translated into action that will reduce risks and build a pathway to more a sustainable future for the region's people. For its part, UNEP will continue to respond to any requests from the affected countries for help in the challenging reconstruction process ahead.

EXECUTIVE SUMMARY



Banda Aceh, Sumatra, Indonesia (1 January 2005). A US Navy helicopter flies over Banda Aceh after dropping aid supplies. The 26 December tsunami triggered an unprecedented wave of international support. UN member states and private donors had, by February 10, pledged $4 billion in assistance.





1. EXECUTIVE SUMMARY

1.1 Introduction

The earthquake and tsunami of 26 December 2004, and the events that followed, will be remembered as among the worst human tragedies in history. The loss and devastation caused by this disaster brought incalculable suffering to millions of people around the Indian Ocean. Their grief is shared around the world, and their experience is a humbling reminder that we are all vulnerable to the powerful forces of the natural world that sustains us. From Banda Aceh, to the tourist resorts of south Thailand, to the fishing villages of Sri Lanka, and onward to the coasts of Africa, communities were overwhelmed by the damage and loss.

If counted in sheer numbers, the challenge of recovering from the earthquake and tsunami appears nearly insurmountable. Approximately 250,000 lives have been lost. Millions of people have been displaced and are struggling to restore their homes and regain their livelihoods. The UN Humanitarian Flash appeal estimated immediate needs at $1 billion, but the overall damage is thought to exceed $10 billion.

A snapshot of the region, however, shows a more complex and more hopeful picture. In the weeks since 26 December, the people and the governments of the impacted countries have demonstrated remarkable resilience and determination. Their efforts to alleviate the suffering of affected communities and to put their countries on the road to recovery have been heartening. Even in areas affected by decades-long conflicts, positive signs of cooperation could be observed. At the same time, there has been a remarkable outpouring of concern and assistance from the world community. Together, these efforts have begun to replace despair with a sense of possibility. So far, international public and private pledges of assistance total more than $4 billion.

In response to requests from tsunami-impacted governments, the United Nations system, under the leadership of Secretary-General Kofi Annan and the Under-Secretary-General for Humanitarian Affairs, Jan Egeland, has swiftly mobilized emergency humanitarian assistance. Housing, health care, education, transportation, water and sanitation services have all been rapidly deployed to the region. In all of these efforts, the UN has worked side by side with scores of public and private international relief agencies to address the urgent daily needs of the tsunami victims.

The United Nations Environment Programme (UNEP) has played a vital role in this process. The tsunami was an unprecedented natural disaster with enormous consequences for the region's environment. In the immediate aftermath of the tsunami, on 28 December, UNEP Executive Director Klaus Toepfer created the Asian Tsunami Disaster Task Force, which was charged with responsibility for assisting governments to assess and respond to the environmental impacts of the tsunami.

In response to requests from governments, UNEP immediately deployed experts to Indonesia, Sri Lanka, Thailand and the Maldives, and later to the Seychelles and Yemen. These teams have remained in the region to conduct and facilitate rapid assessments and help coordinate environmental recovery programmes in partnership with national authorities, UN colleagues and the international community.

No government could have been prepared for the events of 26 December 2004. Overburdened environment ministries now have to cope with innumerable urgent tasks. UNEP is supporting government efforts in every way possible: conducting spot assessments of urgent issues; providing specific technical advice; training national counterparts; and identifying priority concerns for international attention.

Working together with governments and other partners, UNEP included a number of priority environmental concerns in the UN Humanitarian Flash Appeal, and has contributed environmental inputs to a number of short-term assessments. At the same time, UNEP has begun preparations for more thorough cross-sectoral assessments of the tsunami's impacts on the environment in the region. UNEP's goal in all of this work is to extract meaningful lessons from the tsunami experience so that governments, donors and international agencies will be able to implement environmentally sound reconstruction programmes in the affected countries.

Banda Aceh, Sumatra, Indonesia (1 January 2005). An Acehnese man walks through rubble left behind by the 26 December 2004 tsunami that devastated coastal communities round the Indian Ocean. Aceh Province, closest to the earthquake's epicentre, was by far the hardest hit. Official figures, as of 9 February 2005, were 242,322 buried or missing, and 412,438 people rendered homeless in Nanggroe Aceh Darussalam Province. The total estimate of damages and losses is $4.45 billion, nearly 97 per cent of Aceh's Gross Domestic Product. © Yusuf Ahmad/Reuters

1.2 Key findings

This report is produced by the UNEP Asian Tsunami Task Force in close partnership with national environmental authorities in the affected countries. It summarizes the interim findings from ongoing environmental assessments in Indonesia, the Maldives, the Seychelles, Somalia, Sri Lanka, Thailand and Yemen, which are the countries that specifically requested cooperation and assistance from UNEP. In Somalia, the report is based on desk study only, as security restrictions did not allow an assessment mission to be fielded. The Government of India did not request assistance, but has shared with UNEP the initial findings of its own environmental assessment.

The assessments give evidence of environmental concerns that require serious attention and immediate action. The short-term clean-up programme must be coupled with policy development and strengthened institutions. The recovery agenda requires an 'environmental reconstruction programme', which will immediately clean up contamination hotspots, start rehabilitation of critical livelihoods and ecosystems and strengthen environmental policies and institutions.

Healthy coastal ecosystems protected people and property. The preliminary environmental assessment has shown extensive, but uneven, damage to the natural resources that acted as the first line of defence from the tsunami, such as coral reefs, mangroves, sand dunes and other coastal ecosystems.

Anecdotal evidence and satellite photography before and after the tsunami event seem to corroborate claims that coral reefs, mangrove forests and other coastal vegetation, as well as peat swamps, provided protection from the impacts of the tsunami. Vegetated sand dunes appear to have provided an excellent first line of defence. The damage to coastal ecosystems is highly variable, and the damage to coral reefs is mostly due to the impact of debris from the land. Coastlines have been eroded, with much of the sediment deposited on healthy reefs, agricultural land, in rivers, or even creating new islands. Shallow soils were stripped from some low-lying atolls.

Sri Lanka offers some of the best evidence that intact coastal ecosystems, such as coral reefs and healthy sand dunes, helped buffer aggressive waves. For example, most of Yala and Bundala National Parks were spared because, vegetated coastal sand dunes completely stopped the tsunami, which was only able to enter where the dune line was broken by river outlets. Some of the severest damage to Sri Lanka's coast was where mining and damage of coral reefs had been heavy in the past. Similar observations were found in the province of Phang Nga in Thailand, where mangrove forests and sea grass beds significantly mitigated the affect of tsunami.

Water and soil have been contaminated. Inland waters, wetlands and agricultural land fundamental to people's livelihoods were salinated. Agriculture yields will be affected in the immediate future. Shallow wells and groundwater supplies, especially in small islands, are now contaminated with saltwater. In some cases, faecal bacteria from damaged or destroyed septic tanks and pit toilets has infiltrated water supply systems.

All 28,000 hectares of coastal irrigation schemes in Aceh were severely impacted. Up to 90 per cent of toilets on some badly affected islands in the Maldives may have been lost. Meanwhile, groundwater in more than 30 islands in the Maldives may have been contaminated by sewage, with tests indicating that many of these supplies now exceed international health limits. In Somalia there is evidence that hazardous waste from coastal dump sites have contaminated groundwater. In the affected areas of Sri Lanka, all of the 62,000 freshwater wells are now believed to be contaminated with salt water and, in some cases, sewage. A survey of wells in the six tsunami-affected provinces of Thailand has found that in Phanga Nga Province nearly 190 out of 530 wells are unsafe due to sewage-related contamination. Villagers on the southeast coast of Yemen report increased salinity of groundwater wells as a problem.

Hazardous debris threatens public health and safety. Much of the debris contains a mix of relatively inert materials plus toxic and hazardous materials. There is an ongoing potential danger to those involved in disposing or recycling such mixed materials. Rapid clean up activities may have resulted in inappropriate disposal methods, including open-air burning and open dumping of asbestos, leading to unnecessary secondary impacts on natural resources.

Reportedly, Somalia's coastline has been used as a dumping ground for other countries' nuclear and hazardous wastes for many years as a result of the long civil war and the consequent inability of the authorities to police shipments or handle the wastes. The impact of the tsunami stirred up hazardous waste deposits on beaches around North Hobyo and Warsheik, south of Benadir. Contamination from these waste deposits has thus caused health and environmental problems to the surrounding local fishing communities. Many people in Somalia's impacted areas are complaining of unusual health problems including acute respiratory infections, mouth bleeds and skin conditions. In the Maldives, solid waste, such as asbestos, fuel drums and large amounts of rubble have been pin pointed as a key issue, along with healthcare, human and animal wastes and oil leaks from damaged generators.

Environmental infrastructure, buildings and industrial sites were damaged. Much of the environmental infrastructure, such as water and sanitation systems, solid waste disposal sites and waste treatment centres, was damaged, particularly in urban areas. There was minimal damage to industrial areas, except in Aceh, Indonesia, but port facilities have been widely damaged. Oil storage facilities, toxic and hazardous materials stored in factories, and oil and bilge water on ships have released dangerous

materials to the environment. Recycling and re-use potential, which would have benefited livelihoods of the affected people, has not been fully exploited during clean-up.

In the affected areas of Indonesia, rural water systems have been badly impacted, with an estimated 60,000 wells and 15,000 hand pumps contaminated, damaged or destroyed. Many people in the Maldives rely on community or individual rain water storage tanks for their drinking water supplies. According to the Maldives Water and Sanitation Authority, more than 90 per cent have been damaged.

Health and environment are intrinsically linked. The potential for high mortality due to water-borne and vector-spread diseases was recognized very early in the disaster. Due to the enormous humanitarian response that was mobilized quickly, appropriate mitigation measures were put in place. As the disaster moves off the front pages of the media, however, there will be a continuing need to protect the survivors from such disease outbreaks.

People's livelihoods were heavily impacted. Disproportionately many of the victims of this disaster were poor people who depended on ecosystem services and natural resources for their livelihoods. Where such sources of income and food were unsustainable prior to the tsunami, it would be regrettable if the opportunity is not taken to find sustainable alternatives. Many victims were involved in fisheries for a living. Particular attention needs to be paid to improved management of coastal fisheries, including control of blast fishing, destructive fishing gear, cyanide fishing, and physical destruction of coral reefs. The sustainable balance between mangrove forests and aquaculture in the coastal areas must be re-established, and small-scale operators mining coral sand or making cement from coral reefs will need to be helped to find alternatives.

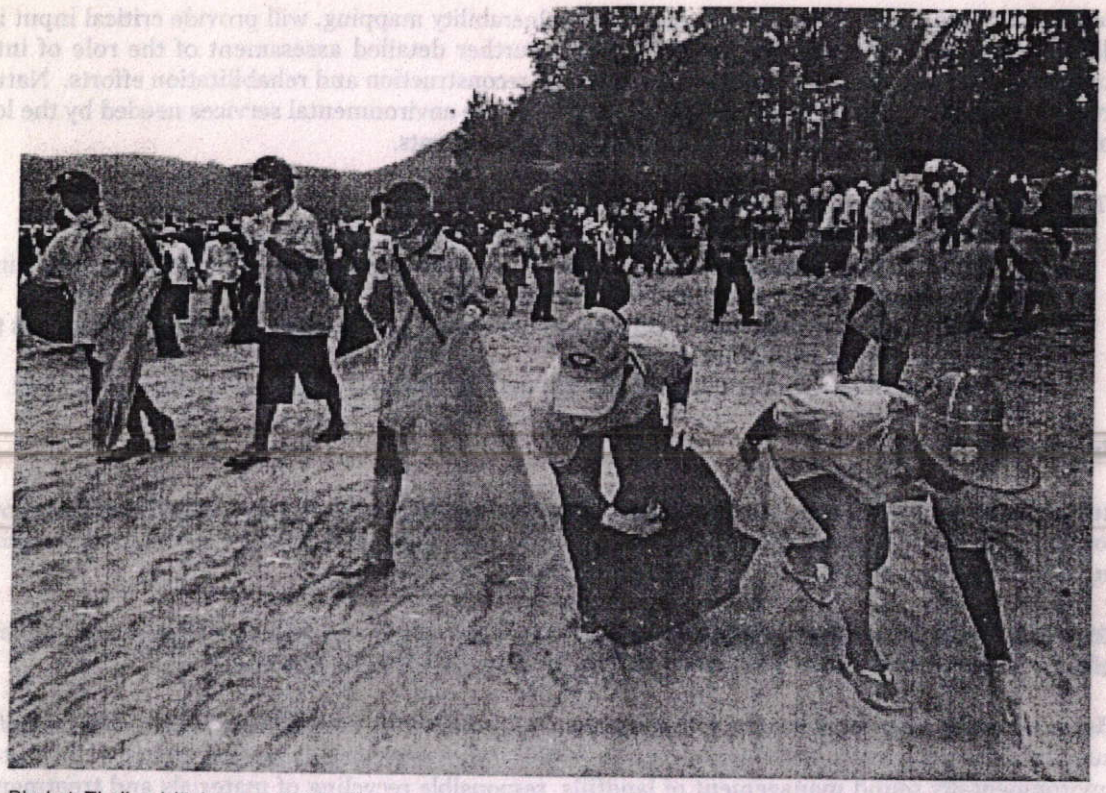
Rice crops in the western islands of Indonesia were seen to be yellowing in the fields within three weeks of the disaster. In the Seychelles, soils around Victoria still have a high salt content, which is double the amount most plants in the islands can tolerate. In Sri Lanka, several thousands of fruit and rice farms in areas such as Trincomalee and Batticola Districts have been affected by salt contamination. The agriculture sector in the Maldives was one of the worst hit. Sea water damaged an estimated 1,200 farms and smallholder plots. Over 840,000 timber trees were also damaged on the inhabited islands. More than 20,000 hectares were inundated by sea water in Thailand, with an estimated 1,500 hectares of agricultural land severely impacted.

About two-thirds of Sri Lanka's 29,700 fishing boats were damaged, along with gear and nets. In the Maldives, 120 fishing vessels were destroyed and 50 partially damaged. In addition, 374 fish processors lost equipment and 2 fisheries institutes were damaged. In Yemen, nearly 150 boats were damaged or destroyed. Over 10,000 nets and traps were lost to the sea.

In the Maldives, the tsunami had severe effects on the tourism sector. Eighty-seven resorts sustained damage totalling more than $100 million. In Thailand 315 hotels and 234 restaurants were totally or partially destroyed.

Wildlife avoided harm. Wildlife was rarely directly adversely affected by the tsunami. There is some evidence that birds and larger mammals sensed or perceived the incoming tsunami in time to escape to higher ground. Nevertheless, damage to endangered turtle nesting beaches and breeding projects on the coasts of India, Sri Lanka, Thailand, and Tanzania has been reported.

Excessive demands have been placed on environmental capacity. The capacity of already burdened environmental agencies has been severely overstretched by the added responsibilities of relief and recovery planning and assessments. Many environmental agencies and environmental NGOs have, in some cases, lost staff, facilities and equipment. Capacity building for all environmental agencies was noted as a requirement in all affected countries, covering, for example, integrated coastal zone management, strategic environmental assessment, and integrated economic and environmental planning.



Phuket, Thailand (5 January 2005). Hundreds of volunteers clean Patong beach in Phuket a week after the tsunami. With continued strong cooperation, the countries of the Indian Ocean can establish a course towards recovery that benefits people and the environment. © Pornchai Kittiwongsakul/AFP/Getty Images

1.3 Recommendations

Reconstruction and restoration begins now. Mainstreaming environmental concerns is a prerequisite for sustainable reconstruction. Environmental management should always take as its point of departure the need to involve and engage the affected population. It is fundamental to listen to and understand the feelings and aspirations of people. The rehabilitation and reconstruction of the environment should be people-centred, gender-sensitive and participatory in nature. It is particularly important to focus this effort on the poorest segments of the society, which are at the greatest disadvantage when it comes to adapting to the changes in physical environment and habitat.

The job and income creation potential of the rehabilitation and reconstruction of the damaged environment must be fully exploited. Priority should be given to near-shore forest development, as trees will help absorb the energy of future tsunamis, prevent coastal erosion due to rising sea levels, and meet national objectives for reforestation and job creation. A key feature of the rehabilitation and reconstruction must be to ensure the sustained livelihoods of the people in the areas affected by the disaster and to empower civil society to engage in and respond to the rehabilitation and reconstruction.

Major projects are needed in all affected countries to restore ecosystem goods and services, for example by planting coastal greenbelt forests, reconstructing sand dunes or installing other "soft" defences. International support will likely be needed. Capacity building in techniques for rapid rehabilitation of natural areas is urgently needed. Rehabilitation should use indigenous species rather than risk the negative impacts that could result from the use of alien species. The need for increased attention to "hard" structures, such as emergency centres or seawalls, also requires further study.

Detailed environmental assessments, including vulnerability mapping, will provide critical input into planning for reconstruction and rehabilitation. Further detailed assessment of the role of intact ecosystems is warranted as a fundamental input for reconstruction and rehabilitation efforts. Natural areas that urgently need to be rehabilitated to provide the environmental services needed by the local communities should be highlighted in forthcoming assessments.

UNEP's rapid assessments have identified gaps including:

(i) the lack of vulnerability mapping and comprehensive risk assessment;
(ii) minimal field assessments to date, mainly restricted to areas of high population density;
(iii) the historic lack of environmental baseline data;
(iv) the lack of environmental quality assessments and data on toxic and hazardous wastes that may be mixed with other debris;
(v) the lack of environmental guidelines in national disaster plans, where they exist at all.

Urgent Measures:

Rehabilitate ecosystems. Lost and degraded protective ecosystems must be rehabilitated as soon as possible with adequate coastal zone management processes. Many reefs are now covered with sediment and debris and may suffer more damage unless cleaned.

Repair the infrastructure. The highest priority is to clean, repair and replace damaged environmental infrastructure, such as water wells, sewage lines or water distribution systems.

Clean up solid wastes. The huge volume of debris piled up in the coastal zone by the backwash of the tsunami is a major cause for concern, as some of the material is hazardous (e.g. asbestos). Environmentally sound management of landfills, responsible recycling of materials and treatment of hazardous materials are all urgent needs.

All these efforts should utilize labour-intensive work programmes to provide maximum benefit to re-establishing people's livelihoods and be gender, sensitive and focused on the special needs of the poorest.

Measures to ensure long-term sustainability:

Carry out detailed environmental assessments. Implementation of clean-up and rehabilitation projects, as well as early warning systems, requires a solid body of knowledge on the environmental situation. The assessments should also include vulnerability mapping, which would provide critical input into planning for reconstruction and rehabilitation.

Better coastal zone management land-use planning will reduce vulnerability and environmental stress. The coastal zone will remain a vulnerable area. Community-based Integrated Coastal Zone Management and Planning must be fundamental principles in the reconstruction and rehabilitation.

The rehabilitation and reconstruction effort may cost more than $10 billion, and take possibly a decade to implement. The time and effort required also offers an opportunity to apply concepts of integrated coastal management, including public engagement in local decision making, employ rapid assessment and zoning and planning processes that will promote (i) safe housing, (ii) enhanced ability of natural systems to act as bioshield to protect people and livelihoods, (iii) cost-effective and innovative engineering solutions to control coastal erosion and (iv) the use of best practices in placement of critical public and private infrastructure.

Laws and regulations specifying minimum distances from the shoreline for housing development are important means of protecting against tsunamis, storm surges and sea level rise. Governments, donors

and other concerned stakeholders should be encouraged to implement community-based integrated coastal zone planning and management, enact tougher setback provisions in domestic legislation and enforce the law. Those who lose the rights to use their land as a result of changes in the law may need to be compensated, and donor assistance may be essential for this purpose. Strategic environmental assessment for resettlement projects, as proposed in Sri Lanka, may be worthwhile in other countries also considering relocating people.

Environmental impact assessments are critical. Rehabilitation and reconstruction must be done with due recognition of environmental impact assessments (EIA) of projects and strategic environmental assessments (SEA) of overall plans and programmes. For example, there is a potential threat to natural forest ecosystems from the increased demand for timber products for reconstruction. The capacity of relevant authorities to undertake their role in EIA and SEA processes must be enhanced.

Early warning systems must be put in place. There has been considerable concern that much loss of life and portable property could have been avoided if there had been an adequate early warning system in place. All the affected countries have identified an improved early warning system as a priority. As such systems are expensive to install and maintain for a relatively rare event such as a tsunami, it makes better sense to consider a multi-hazard warning system, as well as a network of national and regional early warning systems as proposed under the Global Earth Observation System of Systems. Development of the early warning systems must be well rooted in national and regional capacity, and it is essential that environmental aspects must be taken into account in the Early Warning System developed by the UN for the region.

Environmental disaster management and emergency plans will improve preparedness. Environmental standards and monitoring, sound management of natural resources together with strong environmental institutions will help to recognize and address environmental vulnerability and lead to stronger disaster preparedness. Environmental disaster management strategies should be coupled with platforms to assess environmental needs and coordinate environmental relief in case of emergencies.

Basic education and environmental awareness could make a huge difference in preparedness. Ordinary people need to know that when the sea retreats more than normal, they need to run for the hills. Indigenous people, who are closer to their natural environment, had this knowledge in their folklore. The same awareness needs to be built into the school curriculum, on beaches (through posted signs), and in tourist literature. The apparent sensitivity of certain animals to the approaching tsunami suggests that observations of animal behaviour may also need to be documented.

Communities need to have agreed emergency and evacuation plans, documented and widely distributed, which are frequently reviewed and updated, based on science-based comprehensive vulnerability and hazard assessment. Each household needs to know what to do in the case of an earthquake, fire or tsunami, or other environmental disasters. They need to have a mental map of their evacuation route as well as a deeply ingrained willingness to leave their property behind and protect their lives. Tourist operators need to have similar emergency plans, and in all vulnerable areas make sure that their guests have standard information available in a range of different languages.

Strengthen environmental institutions. The ongoing efforts of authorities and organizations in affected countries to address the urgent environmental challenges posed by the tsunami demonstrate their strong commitment to environmentally sound reconstruction. This spirit should be joined and fully supported by the international community. With continued strong cooperation between national and international actors, the region can establish a course toward recovery and protection of its extraordinary natural heritage and the restoration of livelihoods. Institutions often need direct technical assistance. However, assistance should be combined with capacity building activities in the priority areas of integrated waste management, environmental impact assessment, coastal zone management and environmental disaster management and early warning.

A	Country	Indonesia 8 March 2005
B	Agency	FAO
C	Lead agency sectors	**Rehabilitation of agricultural production and fishery, food security**
D	Overall situation/ assessment	• Over 450,000 persons are internally displaced and in urgent need of having their livelihoods rehabilitated. • An estimated 40,000 ha of irrigated lands have been devastated (i.e. less than 10 percent of irrigated lands). • 30 981 ha of the rice production is reported to be damaged. In the districts of Aceh Utara, Bireun, Pidie, Aceh Besar, Aceh Java, Aceh Barat and Nagan Raya a total of 90, 350 ha have been destroyed (47, 955 ha fish ponds and 30 981 ha paddy fields). • Immediate crop losses are estimated at 80 000 tonnes of unhusked rice and 160 000 tonnes of other crops. • Mud deposits, erosion, soil salinity and irrigation damage is estimated to cause permanent loss to 2 900 hectares of agricultural land. Some 17 500 ha are classified as having suffered severe damage, while 10 000 ha are listed as having sustained moderate damage and 7 100 ha suffered limited damage. • The damage was particularly heavy along unprotected sections of the coastline and is there through the river systems extended as far as six kilometres inland. • Current estimates indicate that as many as 92 000 farms and small agricultural enterprises have been partially or wholly destroyed. • Aerial surveys of damages to coastal aquaculture ponds along the coast indicate serious damages, ranging from 40 – 60 percent of the ponds in the various districts (worst hit is Bireuen). • The total damage to the irrigation infrastructure is estimated to US$ 37.9 million in Aceh Province. • In addition to damages caused by the tsunami, flash floods in January have reportedly destroyed 21 793 ha of rice fields and 3 686 ha of maize crops in Lampung. 16 678 ha of rice fields were likewise destroyed in South Sumatra. • Scattered and unattended cattle, several of unknown ownership, since many of their owners also lost their life. The unattended livestock are presenting an increased health risk • It is estimated that 80 000 wells have been damaged, requiring repair or replacement. • Seawalls, flood ways and jetties have been severely damaged. Damages on flood control and sea wall systems are estimated at US$ 72.1 million in Aceh and at US$ 4.2 million to amend damages on flood control structures in North Sumatra. • 25 000 ha of mangroves have been affected at a total net loss of US$ 118 million and an additional 48 925 ha of other forests have been affected at a net value loss of US$ 21.9 million. Cleared away mangroves left the coastline vulnerable to the tsunami. • So far the quite impressive forest cover of the Aceh province seems to have suffered limited damage, though while logging is being re-allowed for the overall re-construction effort, it is important to find means to control it. • Large amount of wood waste poses risk of pest outbreaks and some of it also needs to be salvaged. • Damages to coral reefs, land, water bodies and coastal lines are estimated as US$ 448.9 million. • Small scale fisheries were the main economic activity in affected areas, and some 42,000-58,000 fishers

		and their families make their living from aquatic resources. • Estimates suggest that about 65-70 percent of the small scale fishing fleet and associated gear was destroyed in Aceh Province, representing around 9,500 units, of which 40 percent canoes, 25 percent with outboard motor, 35 percent with diesel inboard motor. In Nias Island preliminary estimates vary greatly and range from 240 to 800 destroyed fishing canoes. • 55 percent of the fishing harbours damaged (but none in Sabang) and 15-20 percent of fishers are estimated to have died in the 18 affected *kabupatens*. However, in the northern part of the Aceh province (Kota Banda Aceh and Aceh Besar) a total of 8 500 fishers lost their lives, 64 percent of the pre-tsunami number. Around 45 government fisheries staff lost their lives. • In Aceh, almost all fish landing facilities were destroyed or damaged, among them 47 community landing centres. • Of the marine fish culture plants in Northern Sumatra, 1,000 cage farms have probably been destroyed. In Aceh, between 36 000 and 48 000 ha of brackish water aquaculture ponds that mainly produced shrimp and milkfish were seriously damaged. The Regional Centre for Brakish Water Development (BBAP) in Ujung Natee, reported that 80 percent of the ponds are destroyed and 17 shrimp hatcheries damaged. • Total damage to the capture fisheries sector is estimated at Rrp 478 billion (US$ 52 million). Direct financial damage to brackish water culture pond production is estimated at Rrp 466 billion (US$ 51 million), and around US$ 8 million from damage to hatcheries and government facilities.
E	**Response activities ongoing**	• Preliminary assessments in crop and fishery sector for the preparation of FAO component to Flash Appeal completed. More detailed assessments to Aceh and Nias Island are underway. • A Memorandum of Understanding (MOU) between fisheries administration on province level has been drafted and is under review by local government fisheries and other concerned parties. • An in-depth assessment/formulation/implementation process has been initiated along the east coast of Northern Sumatra and a similar process will soon start on the west coast. • Project TSU-IND-05/A03-INDONESIA will provide sector specific technical expertise for damage/needs assessments and emergency planning to optimize effectiveness of aid for agriculture and fisheries. Detailed technical assessments are ongoing. Agriculture, fisheries and forestry sector working groups meet regularly with all major stakeholders in Banda Aceh, Meulaboh, Medan and Jakarta. • Projects TSU-IND-05/AO1, TSU-IND-05/A02 and TSU-IND-05/A03 will increase disrupted local productive capacity in agriculture and fisheries through emergency provision of material inputs, support services and training. Urgent material inputs (tools to measure contamination of soils) have been procured and delivered. Seeds, fertilizers, hand tractors, fishing gear, boats and engines are under procurement. Initial deliveries will take place during coming weeks. Training regarding the decreasing of soil salinity is ongoing in several districts. Repairs of boats, clearing of fields, as well as drainage of canals and irrigation systems have been initiated. • TSU-IND-05/AO3 also intends to develop sustainable and broadly accepted rehabilitation and reconstruction plans. Facilitation of a broad public consultation process through thematic workshops has been initiated in Aceh and North Sumatra. FAO offers support to MMAF/MOA and other stakeholders to

		ensure that sector inputs are technically sound and in line with Government strategies.
F	**Response activities completed**	• On February 5, FAO sponsored a meeting in Medan of the working group on Agriculture, Fisheries and Forestry. More than 70 delegates from ministries, international agencies and NGOs participated. The meeting was followed by a two-day workshop and one-day session of the working group on fisheries and agriculture, resulting in a draft for an overall strategy on recovery and rehabilitation. FAO was reconfirmed as the lead agency for fisheries and agriculture. • A procurement plan for provision of inputs for the fisheries sector (tools and marine engines) for US$ 1.1 million has been developed. • A procurement plan for agricultural inputs for the emergency phase of rehabilitation efforts has been completed, including a spending plan for US$ 432 000 of inputs and US$ 110 000 of contracts and training. Procurement items will include rice and vegetable seed, fertilizers, hand tools, hand tractors and threshers.
G	**Planned activities**	• Formulation, within an integrated land and coastal ecosystem management plan, of a comprehensive plan for the rehabilitation of affected forests and mangroves. • Technical assistance to the Indonesian authorities to facilitate the provision of agricultural/fishery extension services to 60 000 disaster affected households. • The next generation, children survivors of the Tsunami should be given specific educational materials in coastal ecology, tsunami response, sustainable fisheries and aquaculture.
H	**Major constraints**	• The west coast of Sumatra is extremely hard hit. Entire communities have been devastated so immediate rehabilitation of livelihoods is presently not a realistic option. Furthermore, access to and mobility within these areas is extremely difficult. • The east coast has full road access from Banda Aceh and Medan, while most of the west coast is accessible only by boat or air. • The main access road to the Western districts runs along the coastal line and has been cut off at a number of locations due to coastal erosion and fallen bridges. The mode of access is still limited to helicopters or boats. • The provincial animal husbandry and veterinary services have been almost totally destroyed. In Banda Aceh a high percentage of staff seems to have lost their lives, many of the survivors are too deeply traumatized to be operational. • A substantial part of the population in the afflicted areas keeps moving around, making it hard to provide water and sanitation for them, as well as initiating rehabilitation of fisheries and agriculture. • The high number of internationals in Sumatra is not sustainable and could lead to tensions in the local communities. A streamlined strategy/work plan must be presented to the authorities on behalf of all international actors on the ground.
I	**Funding requirements**	US$ 10 million are needed of which • US$ 5 million to provide 25 000 of the most affected families and additional 25 000 families hosting displaced persons with seeds, tools and other agricultural inputs for rapid rehabilitation of food crop production;

		• US$ 4 million to provide 25 000 fishers with inputs to restart fishing activities and support initial repair works on fish ponds; • US$ 1 million for technical assistance to facilitate coordination and provision of extension services. US$ 3 508 288 have been received.
J	**Key partners/ coordination**	• The Ministry of Marine Affairs and Fisheries and the Ministry of Agriculture
K	**Staff presence**	René Suter, Tsunami Liaison and Coordination Officer (Jakarta), reneernst.suter@fao.org, Jean Michel Arnoult, Tsunami Assessment and Project Formulation Officer (Jakarta and field missions), arnoult fao@yahoo.com • Two master fishermen, one fisheries advisor, one boat builder, one ice/cold room specialist, two aquaculture experts and one harbour expert have been fielded. • An emergency coordination office is being established in Aceh • Two emergency coordinators and one agronomist have been fielded • A second boat builder is under recruitment.

A	Country	Maldives 8 March 2005
B	Agency	FAO
C	Lead agency sectors	Rehabilitation of agricultural production and fisheries, food security
D	Overall situation/ assessment	• 12 000 persons (5 percent of the population) have been displaced from their islands and another 8 500 people are temporarily relocated to other places on their own islands. All are in urgent need to re-establish their livelihoods. • The fisheries sector (that contributed to 9.3 percent of GDP) is seriously affected. A third of the annual catch is consumed domestically, fish products account for almost half of the exports. About 20 percent of the total population is dependent on fisheries as the major income earning activity. • Economic losses will be most severe for artisan, small-scale fishers and processors. Many have temporarily left their islands after loosing not only boats and gear, but also houses and savings (most kept all assets in their homes, rarely using banking facilities). The peak of the fishing season is January – April. • Direct losses to fisheries are 120 fully damaged and lost fishing vessels, 50 partially damaged vessels (22 are out of operation), lost equipment of 337 cottage fish processors and 37 commercial processors. • Estimated total cost for repair and rehabilitation for damages to fisheries industry amounts to about US$ 25 million. Direct losses (vessels gear and infrastructure) estimated at US$ 13.13 million. Indirect losses (mainly livelihoods and productive assets for artisan fishers) estimated to US$ 11.87 million. Damages to the fisheries sector, including business losses, have been assessed as US$ 25 million (US$ 11.5 million for fishing vessels and US$ 12 million business interruption) while the cost of rehabilitation has been assessed as US$ 15.3 million. • 30 percent of the field plots have been completely destroyed. Field crops in 2 103 farms have been damaged, as well as backyard crops and agricultural tools in 11 678 homesteads. • Severely affected atolls and islands (Thaa, Hhaalu, Vaavu, Gaafu, Alifu and Laamu) report contamination of water and/or salinity of water. • 50 percent of the field plots have been destroyed due to saline water flood, causing loss of perennial plants and crop failure. Saltwater intruded into fresh water lenses on almost all of the 1 200 islands, resulting in vegetation browning and dieback. • Perennial trees such as coconuts, breadfruits, mango etc. have been uprooted and/or are suffering from salt toxicity. Particularly bananas have been severely damaged. 700 000 fruit trees and 840 000 timber trees have been damaged in the inhabited islands. These losses affect 11 678 households. • High demand for wood for reconstruction of infrastructure poses risk of triggering unsustainable harvesting of forests. • Large amount of wood waste poses risk of pest outbreaks and some of it also needs to be salvaged. • Perturbation of water aquifers, sea salt sediments, and salt logging constitute big threats to agriculture and water supply. Saline water intrusion has affected 112 inhabited islands and damage to groundwater resources is severe in 35 agricultural islands. • Recovery needs for the agricultural sector (improvement of soil, forestry and water resources, import of plant

		material and provision of extension services) are estimated at US$ 11.1 million.
E	**Response activities completed**	• Thirteen varieties of vegetable seeds sufficient for ten islands have been procured • FAO's Sri Lanka office is in regular contact with the Government of Maldives. FAO staff has participated in a UN assessment. • Based on the joint donor's assessment the Government will seek assistance through a Donor Conference tentatively scheduled in March 2005. FAO, AusAid, Kuwait Fund and Asian Development Bank have shown keen interest in participating in the recovery programme. • A FAO consultant mission for fisheries and agriculture has carried out a damage and needs assessment. The reports have been used to launch an appeal for financial support to 13 islands categorized as the most affected (categories 1-2). • Project proposals have been submitted to donors. US$ 1 million has been secured for the two sectors. • 1 February, FAO fielded a representative (a. i.) to establish an FAO presence in the Maldives. • A programme/operations officer has been fielded to assist the FAO representative (a. i.) in the implementation of four emergency projects and to identify needs for further FAO interventions. • Damage assessment of 65 Fishing boats has been completed • Estimates and plans for building 88 *bokkura* (small fishing boats) are completed. • Evaluation of bids for the construction of 85 feet fishing boats is completed and submitted and is presently being considered by Government procurement system. • A post harvest plan has been designed and provided to the Ministry of Fisheries by the expert in fish processing. Needs have been identified and quantified.
F	**Response activities ongoing**	• A boat building expert is fielded to assist the government in repairing damaged boats and in the construction of small boats. • The bidding for construction of 88 *bokkura* (small boats) is under way. • An international fisheries advisor arrived to co-ordinate and supervise emergency and rehabilitation assessments for coastal fisheries and aquaculture, as well as to offer support to the structuring and planning for the recovery phase has undertaken the fields trips and is assisting to Ministry to design a fully work plan for the post-tsunami recovery programme • An expert has developed a technical and financial information matrix on projects and project proposals (short and medium), identifying funding gaps. • Repair of 100 damaged boats scattered in the 13 most affected areas has commenced. • Soil salinity and water resources experts have accomplished assessment mission; made presentation to the Minister. An expert in soil salinity control has offered assistance in desalination and reclamation of agricultural soil. He has also addressed issues related to the appropriate way of dealing with salinity, such as salinity monitoring and has designed a capacity building programme to strengthen the skills of the staffs within the Ministry • An expert in water salinity has been fielded to the tsunami afflicted areas to conduct damage assessment of

		the water table. Since water is a cross cutting issue, FAO has initiated a United Nations Country Team (UNCT) wrap up to inform the other organizations of issues related to the salinity • Training on the use of salinity meters and interpretation of results has been provided to senior officers and staff in the agricultural research centre. Specifications for agriculture inputs have been provided to the procurement mission and bidding has been launched. • Bidding for fishing gear launched. • 10 salinity meters have been provided to the Ministry of Agriculture. • Bidding for the procurement of agricultural inputs has been initiated and launched. • Purchase orders are in process for US$ 1 182 worth of plants and seeds, while purchase requests for US$ 43 818 worth of plants and seeds are being processed. • Purchase requests for US$ 10 000 worth of agricultural hand tools are being processed. • Purchase requests for US$ 222 000 worth of fishery supplies are also being processed.
G	**Planned activities**	• Emergency provision of seeds, tools and other agricultural inputs. Reclamation of affected agricultural land • Repair and replacement of assets within the fisheries sector (boats, fishing gear and onshore supporting facilities). • Rehabilitation of the fish processing sector, especially relating to the processing of Maldives fish (dried skipjack). • Replacement of boats will incorporate designs for better onboard fish preservation. • An international Naval Architect will arrive to assist the Fisheries sector on designing and construction of boats. • Formulation, within an integrated land and coastal ecosystem management plan, of a comprehensive plan for the rehabilitation of affected forests and mangroves. • Reef damage assessment • A FAO expert in agriculture will be fielded to assist the agriculture sector on preparation of agricultural calendar and use of tsunami inputs.
H	**Major constraints**	• Popular dispersion over 200 islands scattered over 900 km complicates assessment and rehabilitation efforts. The Ministry of Planning and National development organisations have identified the 69 most affected islands. • The extension services of the Ministry of Agriculture needs to be drastically reinforced during a transitory period in order to cope with the needs for rebuilding agriculture and home gardening in the numerous disseminated islands • High cost for the handling and distribution of inputs is a major constraint which need to be addressed

		• It has been estimated that there is a need of US$ 115.000 for the distribution of agriculture inputs to the affected islands. • Lack of sufficient and well trained staff within the different ministries. • Difficulty to get the qualified national consultants to fulfil the consultants positions • Absence of clear criteria for differentiation of vulnerable groups.
I	**Funding requirements**	• US$ 2 million are needed to start rehabilitation of the marine fisheries sector by replacing or repairing small fishing boats and gear. • US$ 1.100.601 have been received.
J	**Key partners/ coordination**	The Ministry of Fisheries, Agriculture and Marine Resources (MFAMR)
K	Staff presence	• An FAO office has been set up in the Maldives • Since the end of January an FAO representative (ad interim) is present • An emergency programme and operations officer has been fielded. • One ice plant/cold room specialist, one fisheries advisor (economist) and one master boat builder have been fielded. A collaborating fisheries expert is on a UNDP mission. • One soil salinity expert has been fielded • One water salinity and waste management is in the field • One expert on reef assessment in under recruitment.

A	Country	Myanmar 8 March 2005
B	Agency	FAO
C	Lead agency sectors	**Rehabilitation of agricultural production and fisheries, food security**
D	Overall situation/ assessment	• Some 200 villages spread over the southern coast and relying on fishery have been hard hit by losses due to damage on vessels, fishing gears, infrastructure, etc. Government figures suggest that there were 61 deaths and 3,205 people from 638 households displaced. • A total of 144 small vessels have been damaged. 99 boats were lost. • Seasonal fishing villages and so called sea gypsies are communities of particular concern. • Hard hit was the Laputta Township in the Ayeyawaddy Division, and Pyinsalu Subtownship, about 40km south of Laputta with more than 900 fishermen impacted. • Laputta was worst hit, with 25 dead and 240 affected households (1563 persons). • The effects of the tsunami are apparently not as grave as initially feared. The tsunami hit during low tide and was apparently mitigated by a large number of reefs and island, before it reached the shoreline, furthermore it was a full-moon day meaning that many fishermen were not out at sea. • The livelihood of the affected people was mainly fishing (95 percent). The fishers do fishing in the open season and farming in the rainy season. • In the most affected areas the wave did not go more than 200 metres inland. 770 livestock (18 buffalos and 19 cattle) were lost. • Direct financial damage is estimated at USD180,000 - 250,000
E	Response activities completed	• FAO participated in a nine-member inter-agency assessment mission, carrying emergency needs assessment just after the event. • FAO also fielded a mission to Kawthaung Township to assess losses in the agriculture and fisheries sectors, since previous missions have not covered these sectors. • FAO, including a fisheries consultant, has participated in the preparation of a country profile for mid- and long term donor assistance.
F	Response activities ongoing	• FAO has designed a project to assist (in close collaboration with UNDP) the affected fishing communities (fishers cum farmers and homestead gardeners) with a package of improved and adaptable technology; fishing boats and gear, technical guidance, training and supervision, as well as agricultural inputs such as seeds, seedlings, fertilizers and hand tools. • The project would be carried out during March - August 2005 and the estimated cost is US$ 404 000.
G	Planned Activities	• FAO will participate in medium- and long-term recovery and rehabilitation activities in agriculture and fisheries. • A national consultant, one assistant and one driver will be recruited to work in close collaboration with

		UNDP personnel and it is also envisaged that an NGO will be contracted to assist in the service delivery.
H	Key partners/ coordination	Ministry of Livestock and Fisheries and Ministry of Agriculture and Irrigation
I	Major constraints	
J	Funding requirements	• US$ 404 000 are needed for provision fishing boats and gear, technical guidance, training and supervision, as well as agricultural inputs such as seeds, seedlings, fertilizers and hand tools. • So far no funds have been received.
K	Staff presence	

A	Country	Somalia 8 March 2005
B	Agency	FAO
C	Lead agency sectors	**Rehabilitation of agricultural production and fisheries, food security**
D	Overall situation/ assessment	• Based on the Tsunami Interagency Mission, an estimated 50 percent of the assessed population (i.e. 22 000 people) will require sustained resource transfer in the form of food and/or cash assistance until the next fishing season in October 2005, in order to access basic food needs and alleviate severe financial pressures due to reduced fishing income. This is based on the contingence that fishers have access to fishing equipment for the October season. • Main findings of the mission indicate that about 2 000 concrete structures, of which 1 400 houses, were destroyed or severely damaged. Hafun stands out as being the most devastated village, with the majority of its infrastructure destroyed. Nearly 300 Somalis are known to have died. • An estimated number of just over 600 boats were lost or destroyed. An estimated 75 percent of the fishing gear has been lost or damaged beyond repair. • 5 percent of the total population from Hafun to Gara'ad (around 2 300 persons) have been classified as finding themselves in a "Humanitarian Emergency" situation and 40 percent of the total population (17 000 persons) are encountering a "Livelihood Crisis". These classifications are based on a Food and Livelihood Security Classification developed for the Tsunami context. • Existing emergency responses in the form of health, water, shelter, non-food items and food have largely met the immediate humanitarian needs. • Contextually, the Northeast region as a whole has been affected by six different shocks over the past years (drought, floods, freezing temperatures, continued livestock ban, civil tension, and the tsunami), straining social support mechanisms and damping the regional economy.
E	Response activities completed	• Assessment teams have been mobilized and are on the ground in northeast Somalia
F	Response activities ongoing	• FAO is participating through the FAO Food Security Assessment Unit (FSAU), which conducted a "deyr" post-season assessment. The report has been released 2 March, 2005. • A FAO fisheries team is assisting the Government with detailed damage assessments in remote areas and relief programmes for the fisheries sector.
G	Planned activities	• Support to fishers in six southern provinces by providing essential fisheries inputs and the rehabilitation of damaged vessels. • 2000 fishers will be targeted through the provision of cash, boats, equipment and training on improved fishing techniques and boatbuilding
H	Key partners/ coordination	

A	Country	Seychelles 8 March 2005
B	Agency	FAO
C	Lead agency sectors	Rehabilitation of agricultural production and fisheries, food security
D	Overall situation/ assessment	• Severe damage to fishing ports, roads, bridges and public utilities, to an estimated US$ 30 million. Although small in comparative terms with other tsunami struck countries, the calamity has been disastrous for the small and vulnerable economy of the Seychelles. • Coastal farms and the artisanal fishing sector suffered extensively. 92 fishing vessels (27 percent of the artisanal fleet) were damaged and at least 15 vessels sunk. The total cost of the damages and losses to fishing fleet is estimated to be between US$ 909 000. The two fish processing plants and cold storage facilities located in the Fishing Port in Victoria were also affected. • Damages to the entire fisheries sector (including harbour infrastructure and port services) are estimated to over US$ 6 million. The fisheries sector is the major source of foreign exchange for the country. • 8 percent of the agricultural sector (31 farms out of a total of 400) has been put out of production. • Mud streams affected badly the coral reefs of three of the most protected Marine ecosystems (St Anne Marine Park, Curieuse Marine Park and Silhouette Marine Park). • Total costs of the environmental rehabilitation programme are estimated a US$ 1.5 million, of which US$ 808 000 for coastal rehabilitation.
E	Response activities completed	
F	Response activities ongoing	FAO is monitoring the situation through a national correspondent reporting to FAO's office in Antananarivo, Madagascar.
G	Planned activities	• Rehabilitation and restoration of sustainable livelihoods in the agriculture and fishery sectors • Repair and replacement of fishing vessels and landing facilities
H	Key partners/ coordination	
I	Major constraints	
J	Funding requirements	• US$ 2.5 million are needed to start rehabilitation of the marine fisheries sector by repairing or replacing small fishing boats and gear. • US$ 25 000 have been received.
K	Staff presence	National experts are being recruited for further in-depth damage assessment

A	Country	Sri Lanka 8 March 2005
B	Agency	FAO
C	Lead agency sectors	**Rehabilitation of agricultural production and fisheries, food security**
D	**Overall situation/ assessment**	• About 450 000 persons are internally displaced and in urgent need of having their livelihoods rehabilitated. 91 749 houses are destroyed. • Waves penetrated on average 0.5 km, impacting only downstream parts of the main agricultural areas. However, recent assessments in the Galle district indicate that damage can be worse than initially thought. Salt water moved more than three kilometres inland, among other damages causing the deaths of a large number of mango- and jackfruit trees. • About 5 938 ha crops were completely damaged. Worst affected districts are Hambantota, Ampara, Batticola, Trincomalee (where 400 ha high value onion and other vegetable crops were destroyed), Maullaitivu and Jaffna. • An additional 5 000 ha of agricultural land made ready for cultivation was affected by sea water intrusion. The harvest period for rice is January to March and other field crops are planted October to November, with a growth duration ranging from 70 – 115 • Droughts occurred in 2004 and a big grain deficit is expected in 2005. • 15210 units of home gardens were destroyed. Meaning that almost all garden crops perished in affected areas, a considerable threat to the nutrition of a vast number of poor families living along the coast. • Direct loss of food production is estimated at US$ 10 million, while the resuscitation of damaged crop land will cost considerably more. • The Government estimates funding needs to be 13 650 bushels of different varieties of paddy (some of which have to be resistant to salinity), more than thousand tonnes of fertiliser worth around US$ 250.000 and relatively small amounts of vegetable seeds. • Coastal agro wells in the East and natural streams have been infected by salt water • Government reports estimate up to 6 000 livestock (cattle and buffalos) dead due to ingestions of salt-water and volcanic ash in the North-East province. These losses are presently assessed by FAO staff. • The government estimates that 11 556 goats and 74 724 poultry have drowned. • Milk production in the North-East region is down from 6 000 litres per day to 600. Pasteurizing machines and marketing centres were washed away by the tsunami. • Livestock losses are relatively modest, but there are concerns that the cattle population will be used to supply protein no longer provided by fishery. A drop from 18 kg to 13.5 kg is calculated for per capita consumption of fish. • Total fish production loss is estimated at 81 000 tonnes, or 28 percent. • The mangroves, costal lagoons and coral reefs acted as protection/buffer zones, lessening tsunami impacts. • The fishermen population suffered 7 573 deaths. Nearly 71,000 persons in fishing households have been directly affected through death, or displacement due to damage to their dwellings.

I	**Major constraints**	Remoteness of many coastal communities and poor communication infra structure, combined with limited presence of implementing partners' increases difficulties in providing assistance to affected areas.
J	**Funding requirements**	• US$ 2 million are needed to assist 2 000 fishers through the provision/repair of fishing boats and equipment and for training in improved fishing techniques and boat construction. • So far no funds have been received.
K	**Staff presence**	A FAO Food Security Assessment Unit (FSAU) has established a tsunami task force consisting of international and national experts in the crop and fishery sector.

		• A new preliminary assessment found that a total of 54 percent of the fishing fleet of 31 663 boats was affected by the tsunami. 39 percent, or 12 438 boats, was totally destroyed, while 13 percent were severely damaged. This number is less than previously reported due to initial overestimates from fishers. • The cost of boat repair and replacement in the short-term is now estimated to amount to approximately US$ 18 million (LKR 1815 million). The total immediate need for replacement and repair of damaged fishing craft and gear is something in the order of US$ 19 million (LKR 2900 million). • High demand for wood for reconstruction of infrastructure poses risk of triggering unsustainable harvesting of forests. • Large amount of wood waste poses risk of pest outbreaks and some of it also needs to be salvaged. • Repair, rehabilitation and improvements related to environmental damages are estimated at US$ 75 million.
E	**Response activities completed**	• FAO has been selected by the Government and by the WB/ADB/JBIC/JICA Needs Assessment Group to be the official coordinator of fisheries in Sri Lanka. • FAO has taken steps to institute regular NGO/Donor Coordination Meetings. • A joint FAO – Ministry of fisheries working group on fisheries sector rehabilitation has been established. • To restore agricultural livelihoods destroyed by the tsunami, short-, medium- and long term activities have been identified by FAO at an estimated cost of US$ 2 630 000. • A FAO mission on land tenure has been completed and a preliminary report is due in the next few days. • FAO and the government boat-building and repairs agency Cey-Nor have now repaired 971 different kinds of boats and **87** outboard motors. The repairs have been carried out in 65 new boat repair centres in the regions of Gampaha, Colombo, Kalutara, Calle, Matara, Hambantota, Ampara, Batticaloa and Trincomalee. The types of boats repaired range from small lagoon canoes to larger multi-day boats. • On February 8 deliveries were made to the value of US$ 30,000 of boat repair equipment including US$ 21,000 worth of fibreglass, polyester and resin materials in the south of the country, part of programme OSRO/SRL/GER. • Tenders for procurement of fishing gears have been issued with a closing date of February 22. Total estimated value of this tender is US$ 6 million. • In order to ensure that all external aid is appropriately used for the entire benefit of the affected communities with proper accountability and transparency and to avoid duplication of efforts by the different agencies involved, FAO and the Sri Lankan fisheries ministry has established a joint working group to co-ordinate relief efforts for the fisheries industry. An action plan has been drawn up to keep track on what is being purchased and imported. • A local assessment mission has returned from the North-East province and Ampara and is now compiling a report establishing the amount and quality of seeds to be planted before the next rainy season. • Final data has been received on damage to crops in the south and US$ 2.4 million is be reserved for desalinization and provision of seeds and tools.
F	**Response activities ongoing**	• The procurement process has been initiated and so far materials have been purchased locally, among them 65 irrigation pumps, 270 knapsack sprayers and 9000 mammoties (a spade like instrument used for digging).

		• Efforts estimated at US$ 2.4 million are presently being prepared for desalinization and provision of seeds and tools. • On 2 February, the first of a US$ 380 000 consignment of boat repair kits to help restore the livelihoods of thousands of Sri Lankan fishermen was delivered to the Ministry of Fisheries. The repair kits will go to boat yards set up around the country by the Sri Lankan government to repair those vessels salvaged by the surviving fishermen. • The FAO package drafted with Coy-Nor is a first tranche of US$ 500 000 and would cover government costs for rolling out repairs for up to 15 000 boats. • Training programmes in Vavunia in the North-East province has been initiated for four of the ten pH metres and four of the ten electrical conductivity metres. PH metres are used to detect changes in the alkalinity and acidity of the soil whilst electrical conductivity indicates the level of salinity. • 18 tenders have been prepared and issued. Ten tenders are in the final stages of preparation. • Guidelines and a local plan for fisheries rehabilitation are being prepared. • Purchase requests for US$ 25 000 worth of plants and seeds are being processed. • Purchase orders for US$ 71 343 and purchase requests for US$ 303 657 worth of fishery supplies are being processed.
G	**Planned Activities**	• Establishment of a technical coordinating unit for the agriculture sector • Rehabilitation of fishery harbours, anchorages and production related infrastructure. • Formulation, within an integrated land and coastal ecosystem management plan, of a comprehensive plan for the rehabilitation of affected forests and mangroves.
H	**Major constraints**	FAO will finance the labour and spare parts costs of engine repair. FAO is soon to make an order for 2 000 new outboard engines but delivery time will take at least five months due to over demand in the market.
I	**Key partners/ coordination**	• Department of Agriculture and Department of Animal Husbandry and Livestock • Department of Fisheries and Ceylon Fishery Harbours Cooperation and Ceylon Fisheries Corporation • Local CBOs and NGOs, relevant state agencies and provincial councils
J	**Funding requirements**	US$ 10 million are needed of which • US$ 5 million to replace or repair boats, engines and fishing gear; • US$ 3 for repair and rehabilitation of fishing harbours and other production related infrastructure; • US$ 1.4 million are targeted at 28 000 persons for basic farming inputs and to support the reclamation of damaged agricultural land; • US$ 0.3 million for technical assistance to facilitate coordination and provision of extension services. US$ 3 883 731 have been received.
K	**Staff presence**	Mona Chaya, Emergency Coordinator mona.chaya@fao.org • Recruited staff includes a fisheries advisor, a naval architect, a master fisherman, a boat builder, and an expert in vessel construction standards, an ice plant / cold store specialist, a harbour specialist, an agricultural advisor and an international information/communications officer.

		• 7 national agronomists have been mobilised from ongoing projects. • In the fisheries sector local staff include one aquaculture specialist, one fishery sector expert, one development planner, one institutional expert, one marine biologist, one master fisherman, one marketing/post-harvest expert, one boat repair unit coordinator, one coast conservation specialist, a communication specialist and an information systems specialist.

A	Country	Thailand 8 March 2005
B	Agency	FAO
C	Lead agency sectors	Rehabilitation of agricultural production and fisheries, food security
D	Overall situation/ assessment	• Estimates indicate that 2 923 fisheries households were affected and damages on fisheries alone would amount to US$ 16.6 million • Some 5 397 fishing boats were either damaged or totally wrecked, with 75 percent being small-scale fishing boats. • Damage to aquaculture floating cages has been estimated as probably less than US$ 32.7 million, with a total of about 1.1 million square metres (or 41,439 cages) for marine fish culture, 179 rai (approximately 30 ha) of shrimp farms and 434 rai (approximately 70 ha) of shellfish area being damaged. The damage is expected to drive Thai shrimp exports down by 75 000 – 80 000 MT this year. • Minor damages to crops. Some 1 300 hectares of land became covered by sea water, of which 900 hectares were damaged. • It is reported that there were 74 affected sub-districts and a total of 386 villages lost for fisheries and/or aquaculture. Several households have also lost heads of families. Many farmers have lost much of their tools, equipments and livestock. 4 889 farmers have lost or had damage to their animals. • 8 harbours are severely damaged. • At least 5.9 sq km of coral reef and 3.9 sq km of mangroves have been damaged. • 1300 ha of land became covered by sea water, of which 900 ha were damaged. Wells and streams have been infected by dead bodies and saltwater, but no information is yet available on water quality in wells and natural streams.
E	Response Activities completed	• A joint Ministry of Agriculture and Cooperatives (MOAC)/FAO Detailed Technical Damage and Needs Assessment Mission in fisheries and agriculture/livestock sector were fielded from 11 to 24 January and the report is being finalized. • Regional consortium on fisheries sector has been established in collaboration with other regional organizations for the coordination of fisheries and livelihood recovery programme.
F	Response Activities ongoing	• As part of the UN country team, FAO is assisting the Government in the assessment and coordination of its relief efforts. • A fisheries expert assists the Government with damage assessments. • TCP/THA/3004 (E) "Emergency Assistance to Support the Rehabilitation in Earthquake /tsunami-affected Areas" (US$ 400,000) is approved and cleared, procurement action is in process. Inputs have been procured and will be delivered shortly, pending identification and certification of beneficiaries. • Japanese Trust Fund project, OSRO/THA/501/JPN (US$ 162,000) and OSRO/THA/502/JPN (US$ 77,000), approved and cleared, procurement action is in process. • A FAO sponsored regional workshop is planned in Thailand, 7 – 8 March: "Rehabilitation of Tsunami-Affected Forest Ecosystems: Strategies and New Directions". The workshop intends to be a forum for the exchange of information and knowledge, as well as a means to strengthen coordination and collaboration between national, regional and international agencies. A regional strategic framework will be developed for directing future

		activities relating to rehabilitation of tsunami-affected forest ecosystems. • Collaboration with the NGO network is in the process of being arranged to identify and certify beneficiaries, as well as to provide training and distribute of inputs. • Purchase requests for US$ 141 750 worth of plants and seeds are being processed. • Purchase requests for US$ 321 000 worth of fishery supplies are being processed.
G	**Planned Activities**	• Under TCP/THA/3004 (E), OSRO/THA/501/JPN and OSRO/THA/502/JPN, fisheries inputs as well as agriculture/livestock inputs will be delivered to beneficiaries in March along with technical advisory services and training. • The Italian Trust Fund project and the Chinese Trust Fund project will be prepared. • A regional workshop on rehabilitation of fisheries and aquaculture in coastal countries has been organized 28 February - 1 March 2005.
H	**Key partners/ coordination**	• Ministry of Agriculture and Cooperatives (MOAC) • Department of Agricultural Extension • Department of Fisheries • Department of Livestock Development • Regional organizations based in Bangkok such as SEAFDEC, NACA, APDC and BOBP. • Local CBOs and NGOs, relevant state agencies, other UN agencies and provincial governments.
I	**Major constraints**	• For several reasons, estimates indicated in FAO reports tend to differ from those presented in government sources. For example, the fact that several aquaculture installations have not been reported to the authorities (and thus are illegal) may have led to under-reporting of damages, on the other hand - unfounded claims for compensation may have led to over-reporting of damages.
J	**Funding requirements**	• US$ in partnership with UNDP and UNEP, US$ 2.5 million are needed by FAO to assist farmers and fishers, as well as to assess environmental damage and needs for rehabilitation of natural resources. • US$ 636 601 have been received.
K	**Staff presence**	• One regional coordinator • One officer in charge of monitoring and evaluation. • One national consultant in charge of coordination of TCP, as well as Trust Fund projects. • Three national consultants (one team leader, one fisheries expert and one agronomist) are being recruited (under TCP/THA/3004)

INDIAN OCEAN TSUNAMI: A DOSSIER
Reports on Damage Assessment and Rehabilitation

PART B

REHABILITATION REPORTS

REGIONAL

Earthquake-Tsunami Response

ILO PROPOSALS for RECONSTRUCTION, REHABILITATION AND RECOVERY

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ILO STRATEGY FOR THE RECONSTRUCTION, REHABILITATION AND RECOVERY OF THE EARTHQUAKE AND TSUNAMI-AFFECTED COUNTRIES IN ASIA

THE BACKGROUND

The UN Secretary-General described the December 26, 2004 catastrophe as "the largest natural disaster the Organization has had to respond to on behalf of the world community, in the 66 years of our existence". Twelve countries in Asia and Africa were affected. The figures as of 14th January 2005 are as follows:

Countries	Dead	Missing	Displaced
India	10,672	5,711	NA
Indonesia	110,229	12,132	703,518
Malaysia	68	6	8,000
Maldives	81	21	21,663
Myanmar	59	3	3,205
Sri Lanka	30,899	6,034	425,620
Thailand	5,303	3,396	NA
Somalia	150	NA	5,000
Seychelles	3	NA	NA
TOTAL	157,464	27,303	1,167,006

(Source: OCHA Situation report, No.18. The figures quoted are official government figures).

The tsunamis flooded coastal areas, wiped away homes and buildings, roads and bridges, water and electricity supplies, crops, irrigation and fishery infrastructure, productive assets and small businesses. The disaster affected poor communities where people mainly lived off the sea and marginal land, as well as destroying or badly damaging a number of towns. Their livelihoods have been destroyed and they have been stripped of their meagre possessions.

INITIAL ASSESSMENT

Very rough, rapid initial estimates of the effects of the disaster on employment and livelihoods indicate that for:

Indonesia:

- Around 600,000 people in the most affected regions in Indonesia (Aceh province and the island of Nias) may have lost their main or sole source of livelihood. The majority of job losses are in fishing, small scale and plantation agriculture and unregistered small businesses.
- The unemployment rate in the affected Indonesian provinces could be 30% or higher, up dramatically from the 6.8% rate in the provinces prior to the disaster.
- Before the Tsunami, around 9.7 million individuals were unemployed in all of Indonesia, which means that the country's total number of unemployed may have temporarily risen by as much as 6 % as a result of the crisis.

Sri Lanka:

- Over 400,000 workers in the affected districts in the eastern, southern and western coasts have lost their jobs and sources of income. The majority of job losses in Sri

Lanka have occurred in the fisheries, hotel and tourism industry (including eco-tourism, which was starting to expand) and informal economy.

- The unemployment rate in the affected provinces probably rose from 9.2% prior to the disaster to more than 20%.
- Before the Tsunami, around 725,000 individuals were unemployed in all of Sri Lanka, which means that the country's total number of unemployed may have temporarily risen by 55% or more as a result of the crisis.

If adequate aid and support could be rapidly mobilized for the reconstruction, repair and replacement of physical infrastructure, including workplaces, and equipment and for livelihood and job recovery and (re)establishment of social protection systems, the ILO estimates that between 50 to 60% of the affected individuals could be able to earn a living for themselves and their families by the end of 2005 and that around 85% of the jobs could be restored within 24 months.

THE ILO RESPONSE STRATEGY

The Immediate Response

The ILO has set up a task force in the Bangkok Regional Office which is supported by a task force at Headquarters, in constant communication with the Sub-Regional Offices in New Delhi, Manila and Bangkok and in particular the Offices in Colombo and Jakarta. Through this mechanism, the ILO has been both active and pro-active to respond to the disaster, concentrating its efforts on the most badly affected countries and areas of Indonesia and Sri Lanka. It has reinforced the technical staff capacity and support facilities of its offices in Jakarta and Colombo to provide the immediate responses required, namely to participate in needs assessment missions, prepare project proposals, dialogue and partner with other agencies and workers' and employers' organizations and initiate rapid action programmes focusing on employment creation and the protection of vulnerable groups.

The ILO has been working with the UN Country Teams (UNCTs) in Indonesia, Sri Lanka, Thailand and India, particularly on rapid damage and needs assessments. Partnership has been strengthened with key agencies such as UNDP, UNHCR, UNICEF, WFP, FAO for coordinating response and joint action. For Indonesia and Sri Lanka, the ILO submitted proposals for inclusion in the Flash Appeals (US$7 million for Aceh and US$8.4 million for Sri Lanka), which took place in Jakarta on 6 January and in Geneva on 11 January 2005. The ILO has also been working closely with the World Bank and the Asian Development Bank on the country strategies for the recovery and development phase. In Indonesia, for example, the ILO provided inputs to the Damage Assessment undertaken by the Planning Ministry together with the World Bank. In India and Thailand, which did not participate in the Flash Appeals, the ILO has been working with the UNCTs, the government and workers' and employers' organizations to see how the ILO can support their initiatives, including helping to identify and respond to labour market, employment and social protection needs.

At the same time as the ILO is putting efforts into mobilizing donor resources, it has also redirected its own regular budget resources to support immediate action. It is also redirecting its existing and relevant ongoing technical cooperation projects to focus on the affected areas and groups (for example: US DOL has already approved US$1.5 million for Indonesia and US$500,000 for Sri Lanka under the Time-Bound Programmes of these two countries to address the problem of vulnerable children).

The Operational Strategy

Even during the early emergency relief period, the affected countries have emphasized the importance of early planning and action for socio-economic recovery towards employment and livelihoods generation. Employment is core at all stages of disaster management and response. It is an immediate as well as a development need, thus requiring that job creation be an integral part of both humanitarian and reconstruction response.

This is where the ILO has a specific role and comparative advantage – to promote employment-intensive recovery, giving special attention to the needs of the most vulnerable groups and the (re)establishment of social protection mechanisms. Of course, the ILO role would be coordinated as part and parcel of the wider government and multilateral efforts.

The main elements of the ILO integrated response strategy are: employment-intensive infrastructure reconstruction; livelihood programmes through local economic development; recovery of the labour market including through public emergency employment services; protection of vulnerable groups, especially children, young people and women who have lost their immediate families; and social safety nets and social protection. In all these areas, the ILO has an extensive knowledge base and tools, technical expertise for delivery of action programmes and policy advice, and a long record of practical experience and lessons learned. The key aspects of the general ILO strategy are briefly explained below, more specific country strategies for Indonesia and Sri Lanka are available on request.

Employment-intensive infrastructure reconstruction:

The ILO is leading in the area of local resource-based infrastructure development. It has over 25 years of experience in promoting an Employment Intensive Investment Programme in Asia and the Pacific, based on four basic, integrated components of labour-based technology, local level planning, small-scale contracting and infrastructure maintenance systems.

Labour-based reconstruction can generate jobs and income quickly while rebuilding basic infrastructure. It is also an important bridge between those immediate needs and long-term reconstruction and development. Maintenance is easier, cheaper and creates further jobs. Moreover, labour-based methods develop a variety of technical and other skills, including in planning, negotiation and decision-making, thus empowering individuals and communities. Finally, working together to achieve a common goal creates social cohesion and stability. The leading principles for employment-intensive infrastructure reconstruction are:

- Local level planning and prioritising of works;
- Sound, international engineering standards: avoid "make work" projects that neglect quality and cost for the sake of quick distribution of cash or food. Among others, while labour is the principal resource, other resources such as basic equipment can also be used in appropriate measures to ensure competitive and quality results;
- Quality employment: ensure respect of basic working conditions and standards, including a healthy and safe work environment, non-discrimination against women, prohibition of child and forced labour and workers' participation;
- Local ownership: require commitment from central and local authorities and use a community-based approach to ensure maintenance, further development and replication;
- National policies supporting employment-intensive investment: are a prerequisite for sustainable job creation. There should be careful designation of target groups, commitment to use local workers and resources, decentralization of implementation responsibility and participation of communities in investment and maintenance;
- Day-to-day monitoring and regular reviews: involving all key stakeholders for efficiency, effectiveness and impact.

Livelihood programmes through local economic development

Natural disasters inflict tremendous losses to physical and human resource assets of localities. Damage to establishments, infrastructure, machinery, energy supplies and financial and marketing services disrupt production. Loss of part of the local labour force leads to gaps in production-sale chains, technical knowledge, entrepreneurial know-how and networking. Individuals and communities are weakened and divided. Local economic

development (LED) seeks to rebuild and "re-engineer" the local economy and society by means of consensus-based action involving public and private agents, seeks to promote local business capacity, stimulates innovative aptitudes and achieves that by using indigenous resources in a well integrated approach.

The ILO has used LED strategies in disaster management since early 1990s to promote rehabilitation and recovery and boost employment opportunities. Its approach combines different ILO tools and methodologies in areas such as:

- business promotion,
- employability enhancement,
- social finance schemes,
- promotion of employment-friendly investments,
- social dialogue principles and techniques.

All elements are refined and repackaged to adapt them to the fragile post-crisis scenarios, stimulate a local socio-economic dialogue and revival process, and incorporate active networking and partnership practices.

Recovery of the labour market and emergency public employment services

The disaster has weakened or destroyed labour market institutions or hampered their functioning. For instance many public and private education and training institutions and employment offices have ceased to exist or function or need considerable change to match the post-disaster needs. The ILO has a number of tools that could be used to do quick first assessment on the adverse impact on the labour market. Labour market information can be set up and oriented to meet the post-disaster needs, including evaluating the volume and types of job seekers and the skills needs for humanitarian, reconstruction and recovery operations. The results of such a labour market assessment will underpin identification of training needs and opportunities for income generation and employment creation.

Emergency public employment services (PES) are crucial in the aftermath of a national disaster when changes in labour supply and labour demand are larger, occur faster, in less predictable directions and employment needs are pressing. The ILO has been piloting the introduction of temporary/emergency employment service centres, sometimes consisting of a tent, where a small group of staff perform basic job matching operations, which can be gradually transformed into more solid, larger and more permanent centres. The emergency PES can focus on the following tasks:

- Registering job seekers;
- Advocacy with employers (local, national and international agencies) and obtaining vacancies;
- Matching jobs and job seekers;
- Collecting and disseminating labour market information;
- Meeting the needs of special categories of job seekers;
- Planning and managing special training and employment measures.

The ILO strategy for emergency PES emphasizes:

- Emergency PES must be flexible and respond swiftly to emerging needs, including ad hoc servicing arrangements, such as deploying staff to temporary/mobile registration centres, visiting groups of job seekers in camps and other locations, registering and compiling the skill and occupational profiles of youth, unemployed women and men,

displaced persons, etc., providing special information to disadvantaged groups and visiting employers on new, large project sites;

- Emergency PES needs to be particularly proactive and inventive to market their services via the appropriate media, publicity materials, special events, visits to large project sites and agencies;
- PES should complement and collaborate with private employment service agencies operating in sectors of the labour market.

Protecting vulnerable groups

An important component is the protection of vulnerable groups, including children who have lost parents and who are exposed to the risk of being trafficked or exploited; young people who were already experiencing high levels of unemployment and under-employment prior to the disaster; women especially widows and heads of households who may be even more exposed to gender-based violence, discrimination and abuse; and migrant workers, in particular those who are undocumented, who tend to be left out of social support and assistance programmes.

The ILO strategy emphasizes the need to give specific attention to the protection of these vulnerable groups in mainstream programmes and also has target-specific action programmes. In addition to the ILO Conventions and Recommendations prohibiting discrimination and promoting equality of treatment, the ILO has also developed specific guidelines for dealing with, for example, gender issues in crisis, protecting children.

Social protection and income replacement transfers

The ILO strategy emphasizes that safety nets and social protection mechanisms catering to people in both the formal and informal economy are vital for a balanced and successful reconstruction process and for ensuring social stability and better prospects for recovery. A major problem, however, is that even before the disaster, social security schemes have been limited and those in the informal economy largely have not been covered. To extend social protection to those not included in formal social security systems, the ILO has many examples of micro insurance schemes run by community groups and women organizations. However, focused government action is also required to help people in the informal economy replace their means of income. Such government action has to combine the transitional replacement of income loss through transfers (welfare payments) while assets are rebuilt and people are retrained (*inter alia*, to replace the primary income providers lost in the disaster). The ILO believes the existing social transfer schemes and the existing micro finance networks can be used – possibly after some re-engineering – as a conduit to deliver such combined transfer and reinvestment efforts. The ILO Financial, Actuarial and Statistical Services Branch of the Social Protection Department has assisted governments to identify income replacement schemes through social assistance and to estimate the social transfer cost of such schemes.

SOME GUIDING PRINCIPLES

In providing its technical assistance, the ILO pays particular attention to the following principles:

- There should be a concerted attempt to maximum local benefit and make maximum use of local human and physical resources;
- Jobs, in particular those generated in the post-rehabilitation phase, should be sustainable and lead to further inclusive economic and social development;
- Rehabilitation and reconstruction programmes should comply with fundamental principles and rights at work, national labour regulations and occupational health and safety standards;
- There should be mechanisms for social equity and gender mainstreaming;

- Special attention should be paid to the needs of those who have the most vulnerable positions in the labour market, and who are likely to face greater exploitation in the post-disaster situation (women, youth, children, elderly, displaced, homeless, disabled, very poor households, women-headed households);
- Mechanisms should be in place for the participation of local stakeholders in programme formulation and implementation, ensuring equal representation by traditionally underrepresented population groups;
- Specific efforts should be made to enhance the capabilities of local planners, business associations, trade unions, civil society organizations, youth networks, gender groups and community organizations to participate in decisions about their livelihood and the future of their community;
- Finally, policies and programmes should have a positive, ameliorating impact on armed conflict in the countries.

18 January 2005

FAO Basic Framework for Medium and Long Term Fisheries/Aquaculture Rehabilitation and Reconstruction Activities in relation to the Tsunami Disaster

The Tsunami tidal waves that recently struck the South-East Asian region and some African countries have destroyed the livelihoods and the economic basis of many coastal communities in terms of death, injury, unemployment, loss of assets and equipment. Fisheries and aquaculture are the sectors most seriously hit by the disaster with a devastating effect on many millions of mostly small-scale fishers who are dependent on a daily fish catch for food and sale. In addition to the human tragedy, fishers have lost their boats, fishing gear, support industries, and aquaculture installations have been damaged or lost. The need for emergency rehabilitation of fisheries and aquaculture in the region is enormous and assessment teams are currently out in the region to obtain a clear picture of the damage. The needs for medium and long term rehabilitation and reconstruction will be considerable higher. While much involved in providing immediate assistance, FAO is also preparing to contribute to the considerable undertaking of rebuilding livelihoods in fisheries and aquaculture communities.

The present document outlines FAO's Strategic Framework for Medium and Long Term Fisheries/Aquaculture Rehabilitation and Reconstruction Activities in relation to the Tsunami disaster. This general framework was developed to serve as a guide for actions to be undertaken by the Fisheries Department of FAO under the overall leadership of the Governments concerned and in close collaboration with other partners.

FAO has developed a three-level response to the Tsunami crisis, as outlined below (with the indicated timeframes defined from the date of the disaster):

- **Immediate** (up 6 months) with emphasis on relief and damage assessments;
- **Medium-term** (up to 12-18 months), through the joint needs assessment and strategic framework for rehabilitation, which will be presented to donors in the spring of 2005; and,
- **Long-term** (over 18 months and for up to 5 years) through reconstruction projects and programmes that should include elements of longer-term planning.

The Basic Strategic Framework of the Fisheries Department presented in this document does not explicitly distinguish medium to long-term responses at this early stage of programming. A more specific document will be elaborated in due course.

Key guiding principles to be adhered to in responding to the Tsunami disaster in the months and years ahead are elicited in Section 1 of the document. These are common or compatible with the principles adopted by other international fisheries organizations, with which the FAO Fisheries Department cooperates under a Consortium for concerted and collaborative actions.[1]

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[1] *Consortium to Restore Shattered Livelihoods in Tsunami-Devastated Nations.* Core partners of the Consortium are The Food and Agriculture Organization of the UN through its Regional Office for Asia and the Pacific (FAO RAP); the Bay of Bengal Programme – Intergovernmental organization (BOBP-IGO); the Network of

The envisaged scope of actions to be undertaken by the FAO Fisheries Department as part of the immediate response is presented in Section 2. Those actions to be carried out as part of the medium- to long-term-response are described in Section 3. A more specific programme of action will be elaborated subsequently on the basis of the elements contained in the aforementioned section. Section 3 of the present document also outlines areas for which co-ordinated expert guidance would be needed. These relate in particular to analysing and advising on the scope of the reforms that could be envisaged in the context of fisheries/aquaculture rehabilitation and reconstruction efforts.

1. Key Guiding Principles for FAO assistance

FAO proposes that the following principles in planning and contributing to fisheries and aquaculture rehabilitation and reconstruction be applied:

- Ensure that relief and rehabilitation efforts are perceived by local people as a right and addressed in a compassionate manner - bringing in stakeholders; building their capacity to respond; developing a common vision for rebuilding their livelihoods; and focussing on finding the best ways to deliver rehabilitation outcomes in partnership with target groups.

- Adopt a livelihood approach. This approach recognizes, *inter alia*, the need to consider that people livelihoods are based on a number of dimensions (physical, human, social, natural and financial), and that stakeholders are linked by policies, institutions and processes. Key principles of a sustainable livelihood approach (people-centred, responsive and participatory, multi-level, conducted in partnership, sustainable, adaptive) should be emphasized.

- Couple rehabilitation and reconstruction with reforms in order to avoid the re-institutionalization and repetition of factors of vulnerability or unsustainability formally identified as affecting the livelihoods and living conditions of fishing communities. Similarly avoid the appearance of new factors or related risk. The type of reforms that could be considered and the need for guidance on this matter are discussed in Section 3.2.

- Adopt a collaborative approach with international development partners. Under the overall coordination framework of concerned governments, this implies strengthening existing cooperation with donors as well as with specific regional institutions (such as BOBP, FAO, NACA, SEAFDEC and WFC) and developing new linkages as needed for the planning and implementation of fisheries/aquaculture rehabilitation programmes as well as for improved coordination of fisheries/aquaculture assistance in general.

- Networking intensively with international development partners to achieve information sharing, coordination as well as the undertaking of complementary or joint activities.

Aquaculture Centers in Asia-Pacific (NACA); the South East Asia Fisheries Development Centers (SEAFDEC); and The Worldfish Centre (WFC).

- Rely extensively on local partnership with government specialized agencies, NGOs, and professional/community organization for planning and implementation of specific national projects.
- In rehabilitating the means of fisheries/aquaculture production, rely essentially on inputs and skills used previously - especially inputs locally produced in the past and still available in the affected areas or in the surrounding areas. This applies in particular to boats and gear, and implies that the rehabilitation effort should primarily concentrate on ensuring the restoration of capacity to produce such inputs and make them available. [This does not exclude certain 'reform' if more suitable inputs can be provided – e.g. provision of nets with more appropriate mesh size; however, these new inputs should be truly pertinent, i.e. technically and otherwise].
- Nesting fisheries/aquaculture rehabilitation efforts within a multi-sectoral approach. Recognizing in particular that the livelihoods of fishers/aquaculturists are not only multi-dimensional but also related to that of other communities living close by and dependant on socio-economic linkages with other sectors or geographic areas.
- With regard to the rehabilitation projects that will be developed on this basis of the aforementioned, these should also pursue a flexible and adaptive approach (adapted to the complexity and therefore the uncertainty of rehabilitation work). Synergies would also be sought to ensure appropriate linkages with other initiatives.

2. Immediate Response

2.1 Scope

Activities undertaken or to be carried out by the FAO Fisheries Department in the forthcoming weeks to address immediate needs cover the following areas listed hereafter:

- Immediate damage and needs assessments. FAO acted promptly to undertake such assessments, often jointly with other specialized organizations or development partners. Such assessments need to be regularly updated and the information needs to be shared and made available.
- Information sharing through a special FAO Fisheries department web site. The site is established and operational: http://www.fao.org/tsunami/fisheries/index.htm. It complements the FAO website: http://www.fao.org/tsunami/.
- Short-term posting of FAO Fisheries/Aquaculture advisors in affected countries. This activity is now in process and needs to be expended to all affected countries, upon request from the government of affected countries. The duration of these advisors' appointments will be extended as required.
- Recruitment of international and local fisheries/aquaculture experts to assist, on request, with in-country planning of fisheries/aquaculture medium term rehabilitation programmes. Such a team may provide further support for initial implementation.
- Development of collaborative arrangements with recipient countries, regional fisheries/aquaculture institutions and donors for undertaking medium rehabilitation,

starting with joint need assessments and the development of a common vision and harmonized strategies for long term reconstruction.

- Design/implement projects aimed at emergency rehabilitation work - e.g. assisting local boat builders or gear suppliers with the equipment and means required to resume production and/or to cope with a much larger demand.
- Identify extra-budgetary funding for immediate and longer term responses to be provided by the FAO Fisheries Department.

2.2 Financial requirements for immediate response

The FAO Fisheries Department is seeking additional funds in order to: (i) supplement its Regular Programme contribution to normative work associated with the disaster and resulting crisis, e.g. in the area of dedicated information system and need assessments; and (ii) develop an appropriate field response through the provision of advisory services and specific programmes and projects for rehabilitation. The latter is being progressively defined as needs are more precisely assessed and identified. Present needs for further financial support to actions to be undertaken over the next six months are estimated at about US$ 10 million and would cover the following:

- Short- to medium-term posting of fisheries/aquaculture international and local experts in affected countries for assessment, planning and advisory work

- The further development of the capacity of the FAO Fisheries Department to provide technical and other support to these experts for the planning of fisheries and aquaculture rehabilitation work in affected countries.

- Funds for emergency rehabilitation work in specific countries and sites – e.g. replacement of equipment and re-building of capacity.

3. Medium- to Long-Term Response

3.1 Scope

At this preliminary stage, the Fisheries Department has initially identified the following activities to address the medium- and long-term responses:

- Continuing the gathering and analysis of information related to the Tsunami, its impact and implications for fisheries/aquaculture. This work should be conducted on an 'Indian-Ocean wide' basis and serve to exchange information and to undertake for comprehensive assessments, including in terms of lessons learned.

- Facilitation of government efforts to coordinate work on fisheries/aquaculture rehabilitation and reconstruction – inter alia, through information sharing and the provision of advisory services.

- Contribution to joint overall need assessments for fisheries/aquaculture rehabilitation and reconstruction.
- Undertaking of other more specific need assessments (site specific or fisheries-aquaculture specific).
- Conducting participatory need assessments for rehabilitation of local institutions and processes relevant to fisheries/aquaculture, e.g. local NGOs, fishers organization and providers of cooperative services.
- Assisting with the rehabilitation of these institutions and related processes.
- Assisting the fisheries authorities of affected countries to elaborate a strategic framework for fisheries/aquaculture rehabilitation/reconstruction (in collaboration with other donors and development partners, as required).
- Leading or contributing to a number of experts and decision-level meetings aimed at integrating specific considerations for 'better' rehabilitation and reconstruction (better in the sense of sustainable development or food security, for example).
- Contributing to the preparation of specific rehabilitation programmes and projects dealing with fisheries and aquaculture.
- Executing selected projects (designed along the key guiding principles described in Section 1 and implemented with all the flexibility that the situation may require).
- Initiating work on lessons learned for disaster prevention and relief/rehabilitation relevant to fisheries/aquaculture communities and their environment.
- Contributing, as required, to the development of an early warning system (for Tsunami as well as storms, floods and cyclones), particularly on the socio-economic and environmental aspects of the issue.

3.2 Provision as appropriate guidance for coupling rehabilitation and reconstruction with reforms

In close collaboration with specialized international fisheries institutions (especially those based or most active in the area affected by the Tsunami), several topics need to be addressed in order to provide guidance to planning and implementing fisheries/aquaculture rehabilitation and reconstruction work. There is some urgency in undertaking this work so as to ensure a common vision among specialists and to provide guiding principle to governments and development partners on the matter of coupling rehabilitation/reconstruction with sustainable development. This will involve in particular the following measures:

- To review and advise on the scope of reforms that could be envisaged in the context of fisheries/aquaculture rehabilitation and reconstruction efforts in relation to factors of vulnerability that affects the livelihoods of fisherfolk communities (e.g. with respect to access to coastal land and renewable natural resources; to poverty reduction or the promotion of increased food security in the long term).

- To review and advise on the scope of reforms that could be envisaged similarly in rehabilitation and reconstruction efforts aimed at promoting a more sustainable utilisation of resources (e.g. in relation to rebuilding fishing capacity in line with sustainable fisheries resource use; using more suitable gear or mesh size; rebuilding aquaculture production capacities according to more environmentally appropriate systems; or building community processes that would involve better strategic approaches to natural resource management and conservation).

- To assess the extent of environmental destruction in fisheries/aquaculture habitats and sites and its effect on production potentials, and advise on actions that may be required to rehabilitate these habitat/sites and their productivity.

3.3 Financial requirements for medium- to long-term response

The financial requirements in support of FAO's expected contribution to the medium- and long- term rehabilitation and reconstruction in fisheries and aquaculture substantially exceed the limited regular programme resources and extra-budgetary resources that are presently available for such activities.

Additional financial support is therefore urgently required to undertake the various assessments and planning activities stipulated in 3.1 and to provide the required advisory assistance to institutional stakeholders on the issues described in 3.2. Over the next 12 months an additional amount of US$ 10 to 15 million may be required to conduct these specific tasks.

Planning for rehabilitation and reconstruction would progressively lead, over the next 6 to 12 months, to a range of proposals for specific programmes and projects to be executed at least in part by the FAO Fisheries Department. These proposals will be presented to donors as they become available. The amount of financial support required for the implementation of these programmes and projects is difficult to estimate at this time.

A more comprehensive strategic framework will be elaborated over the next few weeks. Meanwhile this document will serve as a basis for the preparation of programmes and projects for medium to long term fisheries and aquaculture rehabilitation and reconstruction.

This note is the first of a serie of 5 that will cover the following topics:

1. *Framework for Reclamation Action Plan (FRAP) for Affected Soils*
2. *Salt measurements simple devices: how to monitor salt status in water bodies and soils.*
3. *Set of agro-bioclimatic data for the main affected agro-ecozones in the region*
4. *Specific farming recovery strategies for crop and animal production*
5. *Costing estimation for remediation and rehabilitation works.*

A Framework for Reclamation Action Plan for Affected Soils

[Version L1]

Summary:

Agricultural affected lands need to be quickly rehabilitated to restore the production capacity of farmers and ensure food security in rural areas. A framework of intervention is proposed to ensure that the next cropping season can start in fairly good conditions for medium to low damaged areas and that for badly affected areas rehabilitation works or plans for reorientation of production are carried out soon.

Reclaiming field/soils affected by the tsunami will depend on the severity of the damage and the resilience of the system. FAO proposes to confront this crisis with an approach developed in three steps:

1. **Classifying and zoning the damages and the resilience of the system.**
2. **Identifying the capacity of farmers and local communities in restoring progressively their production capability.**
3. **Designing and scheduling a consistent set of targeted interventions for the short and long term, for each zone, considering the above as well as the agro-climatic constraints (rainfall, agricultural calendar and usual practices)**

Given the extreme dispersion of sites to be investigated and rehabilitated, it is critical that local expertise is engaged and strengthened to deal with the diagnosis and remediation.

Therefore FAO aims to help governments and regional authorities in increasing the local capacity through:

- **a massive consistent training program of local staff;**
- **by making available cheap salinometers (at least 100 per country for a start); and**
- **assist farmers in reaching their pre-disaster agricultural production capacity or reorient them towards diversified production activities.**

1. Assessing the needs

Damages differ **by nature**:

- Direct crop destruction by uprooting, salt poisoning, flood, etc...
- Erosion and scouring that modifies the topography, land levelling and the elimination of bunds (for paddy fields)
- Soil fertility losses when upper layer is washed away
- Deposition of salted sediment
- Salt infiltration
- Trash and debris accumulation.

or by **intensity** which depends on three main characteristics of the particular location:

- the energy of the flood,
- the type of soil coverage and vegetation, and
- the soil hydraulic properties including drainage capacity*.

FAO proposes a simple classification for assessing the damages based on 3 main subsets:

- **Field level**
- **Infrastructure**
- **Farming capacity**

Methodology

Rationale: The level of support and the specific set of interventions required to return to normal situation in affected areas depend on damages intensity, capacity of main infrastructure to allow remediation, the farming capacity both human and material to reengage in agricultural activities and reclamation works when required.

It is proposed to quantify the damages through ranked indicators for each subset using the following tables.

FIELD DAMAGES **characterises the gravity of damages at field level (see table 1)**

INFRASTRUCTURE CAPACITY **indicates the constraints faced at system levels that may impede carried out civil works and field works (land levelling and watering) and returning to a normal situation (see Table 2).**

Physical damages preventing from recovering the field production capacity are related to irrigation and drainage infrastructures, but also to transportation infrastructure. Drainage networks can be destroyed, silted or plugged, while irrigation structures may have been damaged or destroyed. Irrigation networks may be silted up; no longer able to feed by gravity; or fields may be un serviceable due to a significant increase of their elevation as a result of sedimentation.

Table 1.

* The presence of high, and/or saline, ground water tables will negatively affect the hydraulic and drainage properties.

FIELD DAMAGES	Low	Medium	High	Suggested ranking
Trash and debris	1	2	3	*1 low or nil* *2 medium scattered* *3 massive impeding restart of field works*
Erosion	1	4	6	*1 small erosion here and there* *2 medium erosion that needs some resurfacing light works* *3 major erosion problems such as erased bunds, land levelling disturbances and/or soil top layer washed out that requires major intervention for restoring capacity/fertility*
Sedimentation	1	4	6	*1 several centimetres* *4 more than 10 centimetres* *6 more than 20 centimetres*
Flood duration	1	4	6	*1 limited to several hours,* *4 flood lasted more than one day* *6 flood lasted more than one week*
Infiltration(*)	1	2	3	*(**)* *1 Clay soil* *2 medium* *3 high vertical hydraulic characteristic (well drained soil)*
Total	Between 5 and 24			***below 8 = Low damaged area*** ***between 8 and 16 =Medium damaged area*** ***above 16 = High damaged area***

(*) Infiltration rate of upper soil layer influences the quantity of salt that contaminates the soil profile. Of course this aspect also influences the ability for remediation, highly infiltrating soil such as the sandy soils in Maldives are likely to be quickly leached and cleaned with fresh water.

(**) The ranking given here is considering the damages resulting from a small duration flood which makes sandy soils more damaged than clay soils and more impacting the shallow fresh water aquifers. For long duration floods, the damage intensity on soil is the reverse and so should be the ranking: clay soil will store much more salted water and fix much more salt than sandy soils which can be easily leached out by fresh water. [Reverse ranking for long duration floods: 1 sandy (high drainage); 2 medium (medium drainage); 3 clay-silt (low drainage)].

Table 2.

INFRASTRUCTURE CAPACITY	Low	Medium	High	Suggested ranking
Irrigation network	1	4	6	*1 supply from irrigation network is operational* *2 supply is interrupted but can be restore with minor interventions* *3 supply is stopped and needs major interventions*
Drainage network	1	4	6	*1 surface drainage capacity is operational* *2 surface drainage is not functional but can be restore with minor interventions* *3 surface drainage is stopped and needs major interventions*
Transport and access to fields	1	2	3	*Access to fields and irrigation and drainage infrastructures for farming equipment and machinery is:* *1 operational* *2 non operational and requires short term rehabilitation works to be re-established* *3 non operational and requires major long term rehabilitation works to be re-established*

FARMING CAPACITY indicates the ability of farmers to re-engage in cultivation (see Table 3).

Farmers, extension workers, staff of agricultural services may have suffered a lot from the tsunami. Some are among the many that lost their lives, while many of survivors are in a state of chock and trauma. In the worse stricken areas it might take some time for farmers to go back to normal life and affected fields.

Furthermore draught animals, equipments and tools may be lost or damaged by the tsunami as well and need to be quickly replaced.

The program of reclamation should give full consideration to this aspect and favour as much as possible guidance to farmers with a set of practical actions on the fields, aiming at restoring the full capacity wherever it is possible. The time horizon for attaining full capacity will differ from one category to the other.

Table 3.

FARMING CAPACITY ***Production means***	Low	Medium	High	Suggested ranking
Household labour capacity (as fraction of pre-disaster capacity)	1	2	3	*1 Capacity unchanged or slightly decreased (greater than 90 % of pre-disaster)* *2 Capacity is significantly reduced to 75-90 %* *3 Capacity is highly reduced to below 75%*
Drought animals, equipment and tools for farming	1	2	3	*1 Capacity unchanged or slightly decreased* *2 Capacity is significantly reduced constraining the cropping calendar* *3 Capacity is highly reduced impeding cultivation*
Agricultural inputs availability	1	2	3	*1 Availability is unchanged* *2 Availability is decreased* *3 Availability is significantly decreased or nil*
Local/regional labour and equipment capacity for rehabilitation	1	2	3	*1 Capacity is sufficient* *2 Capacity is insufficient but rehabilitation works can be carried out with minor external inputs* *3** Capacity is nil and requires strong external inputs to complete rehabilitation works.*

**** or the capacity is already over-deployed in other reconstruction activities and not available for agriculture.**

2. Zoning the field damages

2.1 The zoning is made firstly with consideration on the Field Damages indicators.

Important: *there is no a priori methodology to give the right weighting factors of the criteria used in previous tables. The ranking of indicators and the weighting should be revised after preliminary tests on the ground.*

This note provides a preliminary guesstimate about the ranking and the weights each aspect should be given. Officers in the field should revise them and report to AGLW for further refinement and possibly homogenisation, if needed.

Class A "Low damaged area = below 8 ". In this category there is no major obstacle to a rapid reclamation and salt leaching either through rainfall or through some special allocation of surface water. The restoration of capacity in this category should be monitored carefully but obtained without major intervention before the beginning of the next cropping season in April and May 2005.

Class B "Medium damaged area = between 8 and 16". This category requires specific and significant interventions to reclaim soil, to restore land surface properties (land levelling, trash, sediment). Salt leaching would require high quantities of water either through rainfall or through some special allocation of surface water. Farmers can do most if not all the rehabilitation works themselves possibly on a "work for food program" provided that the farming capacity has not been too much reduced.

Class C "Highly damaged area = above 16". For this category there are major obstacles to a rapid reclamation and probably the next cropping season is out of reach. In some cases, the return to cultivation might even be discussed and alternative production activities from natural resources use and management (eco-systems) may be sought for these coastal lands, while compensating current landowners and helping them reorienting/diversifying their activities on other land or other productive activities.

3. Remediation work plans

3.1. Water leaching

Leaching of salt in the upper soil profile is obtained from excess water on surface that provoke percolation below the top soil layers, flushing out of the profile salt water. This excess water results from a positive balance of [Rainfall+ irrigation- Evaporation].

In monsoon areas the rainfall is regularly greater than evaporation and the excess is thus positive. But this is not true everywhere and all the time. For instance, in the East part of Sri Lanka the Yala season from April till September is mostly dry and the balance is negative.

Heavy rainfall has occurred immediately after the tsunami in at least two countries; Sri Lanka and Indonesia. This has to be considered when it comes to discuss remediation. Thus as a

special attenuation factor of damages, rainfall between the 26th December and the day of assessment should be monitored.

The **net water balance [Rainfall+ irrigation- Evaporation]** should be roughly assessed for affected areas in order to estimate the leaching occurred.

A significant positive net water balance decreases the FIELD damages and for instance can pull field from Class B to Class A (but not from C to B).

3.2. Determining a set of actions

3.2.1. Class A fields

It is expected that for this situation recovery is likely to be obtained without major intervention. More likely net water balance between January and April, will be enough to flush out the salt and cultivation with normal crops can resume for the next cropping season in March and April. The existing farming system and production are able to recover quickly and no specific precaution for crops are required.

It will still be required to monitor upper soil salinity, to ensure that good conditions are met for the next cropping season and convince farmers to return to normal cultivation.

3.2. Class B fields.

For this type of situation recovery will take some more time and more specific interventions, at least one full cropping season and/or a full monsoon season will be required to recover. We cannot expect to restore full capacity before the start of the next cropping season, but farmers should be able, and encouraged, to crop at least partly their lands.

In this situation we may have to consider:

- Salt tolerant varieties of usual crops to allow cropping in not fully cleaned soils
- Delayed start of the season with varieties having shorter period of growth
- Temporary changes in the production system to compensate for the expected losses of food production and incomes in the coming seasons.

For the coming campaign and possibly the following one, farmers should receive support for seeds, inputs and advice. Their food security should also be assured by compensating them for expected reduced yields, and by providing them easier access to credit.

3.3. Class C fields

To reclaim these fields major works of rehabilitation/reclamation are required either within the field or in the near-by infrastructures.

For some of these fields, mostly very close to the sea shore, alternatives land use and production services might be sought within the context of a comprehensive agro-eco-systems rehabilitation. Abandoning land cultivation can then be a viable option if affected farmers and landowners are well compensated with alternatives productions means.

For the major part of these fields return to cultivation cannot be reached immediately and solutions must be found to allow farmers to temporary cultivate in other un/less affected lands; and to diversify land and natural resources management in order to provide them with alternative means of production and food security.

In the coming weeks specific prototypes for cropping pattern plans and production diversification will be suggested for the last two categories by FAO-AG department.

It is likely that this C class will be further subdivided into two classes:

- **C1 Agriculture vocation is maintained**
- **C2 Ecosystem services are preferable.**

Table 4. Summary of rehabilitation plans.

	Situation	CROPS/farming	Agronomic support required
Class A "Low damaged area".	Return to normal expected for the next season starting in APRIL 2005	Usual crops	Monitoring salinity Seeds and inputs supply, equipment supply if needed
Class B "Medium damaged area".	Delayed return to normal to allow enough time for specific interventions	Cultivation of salt tolerant rice varieties recommended.	Support for seeds and inputs Compensation for reduced yields Support for diversification.
Class C "Highly damaged area".	No return to normal this year. Major rehabilitation works needed Possible reorientation of land uses	Major temporary or permanent diversification of farming system	Compensation for land abandon [C2] Support to diversification

4. Guesstimate Needs Assessment

For the moment estimation of the classification of the damages suffered are made for the 3 badly hit countries for which preliminary information is available.

Indonesia: out of the 30,000 ha affected, FAO guesstimates that 30 % belongs to Class A (9,000 ha), 30 % to Class B (9,000 ha) and 40 % to lass C (12,000ha).

Sri Lanka: out of the 5,500 ha affected, FAO guesstimates that 30 % belongs to Class A (1,650 ha), 70 % to Class B (3,850 ha) and no area belongs to class C.

Maldives: 60 % of the affected area belongs to Class A, 40 % to Class B (where top soil has been washed away).

5. Work plan for rehabilitation of agricultural lands in affected areas

The affected areas are stretching along several thousands km of coast or disseminated among numerous islands. This will not be therefore a massive project with large compact areas under rehabilitation but numerous microsurgeries.

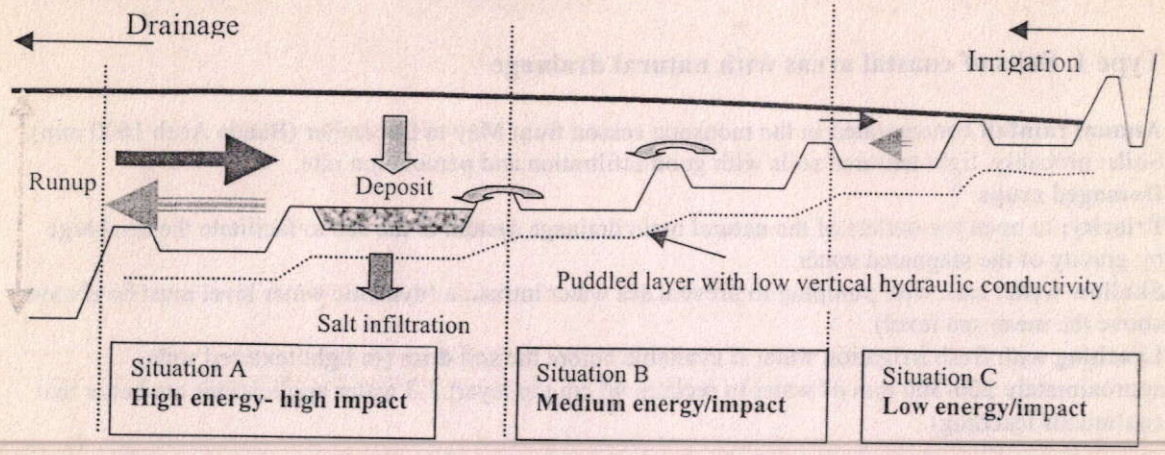
To achieve success in this endeavour we should rely on decentralized technical staff from Government of from Civil Society. These staff should be properly trained to allow them carrying out diagnosis and reclamation interventions with farmers when needed.

Monitoring of salinity will be crucial at local level to better control the efficiency of reclamation measures and allow return to cropping whenever measurements shows that the soil has been cleaned.

Therefore the FAO proposed work plan is based on several tracks:

- **Training of local staff**
- **Monitoring of salinity**
- **Development of main rehabilitation projects**
- **Development and support to temporary farming/production scenario for medium to high affected areas.**

6. Example of classification, limited to field impacts, on a typical transect of paddyfield



	Situation A	Situation B	Situation C
Stream Velocity	High velocity of the front wave and recession front provoking erosion and scouring. Possible destruction of bunds	Medium velocity	Low velocity
Duration of flood	Several hours for well drained lands to several days and weeks for poorly drained fields.	Intermediate	Minimum drainage to nearby field
Salinization due to infiltration	Limited to only few millimetres of salted water for well drained areas.		
	High for long duration of inundation (A value of 5 to 10 mm of infiltration per day might be consider for paddyfield considering the usual values of deep percolation below the puddled layer)		
Sediment deposit	Salted deposit thickness can reach up to 30 cm. Part of the initial deposit can also be eroded during rapid recession flows if the area is well drained.	Salted deposit thickness can reach up to 30 cm.	Low deposit due to low water depth.
	High deposit where inundation lasts.		

7. Preliminary analysis and recommendations based on Aceh-Indonesia

Type 1. Soils of coastal areas with natural drainage

Annual rainfall concentrated in the monsoon season from May to December (Banda Aceh 1600 mm).
Soils: probably, light textured soils with good infiltration and percolation rate.
Damaged crops: ?
Priority: to open the outlets of the natural main drainage system to the sea to facilitate the discharge by gravity of the stagnated water.
Shallow wells: care with pumping to prevent sea water intrusion (dynamic water level must be always above the mean sea level).
Leaching with fresh irrigation water if available before the soil dries (in light textured soils approximately 200-300 mm of water to reclaim 40 cm top layer; 2-3 water applications are better that continuous leaching).

Accordingly to soil salinity levels crops can be grown: the threshold soil salinity (EC_e) for salt tolerant crops (80% of relative crop yield) is approximately 10 dS/m)[1]. For moderately sensitive crops is approximately 6 dS/m.

If soil sodification occurs by the effect of soil salinity (pH>8.5); dispersion of surface soil particles), gypsum applications will be required to promote water infiltration and leaching (about 5t/ha mixed with the top 5 cm).

If not irrigation water is available, land smoothing, rehabilitation of field bunds and to wait for natural leaching with rainfall when the monsoon season starts.

Type 2. Soils of backswamps with stagnating water

Annual rainfall concentrated in the monsoon season from May to December (Banda Aceh 1600 mm).
Soils: probably, agricultural lands with loamy and fine textured (clay) soils (levees with light textured soils covered by slightly affected natural vegetation).
Priority: to open the outlets of the main drainage system to the river to facilitate the discharge by gravity of the stagnated water. If this is not feasible, pumping.
Second step: rehabilitation of the field drainage system if available. If not, opening of a basic system of parallel ditches (first approach: ditch depth 1 m and 50-100 m spaced according to the soil permeability[2]).
Leaching with fresh irrigation water if available before the soil dries (in fine textured soils approximately 500 mm of water to reclaim the 40 cm top layer; 5-6 water applications are better that continuous leaching).

Accordingly to soil salinity levels crops can be grown: the threshold soil salinity (EC_e) for salt tolerant crops (80% of relative crop yield) is approximately 10 dS/m)[3]. For moderately sensitive crops is approximately 6 dS/m.

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[1] $EC_e \approx 12\ EC_{1:5}$ for loamy soils (see synthesized information).
[2] This soil characteristic can be estimated from the soil texture (see table in synthesized information).
[3] $EC_e \approx 8EC_{1:5}$ for clay soils (see synthesized information).

If soil sodification occurs by the effect of soil salinity ($pH>8$); dispersion of surface soil particles), gypsum applications will be required to promote water infiltration and leaching (about 5t/ha mixed with the top 5 cm). Better put gypsum on the soil surface and avoid disturbing the soil as much as possible, at least for non-rice crops.

If not irrigation water is available, land smoothing, rehabilitation of field bunds and to wait for natural leaching with rainfall when the monsoon season starts.

Type 3. Soils of paddy fields

Annual rainfall concentrated in the monsoon season from May to December (Banda Aceh 1600 mm).
Priority: to open the outlets of the main drainage system to the river systems to facilitate the discharge by gravity of the stagnated water.
Second step: rehabilitation of the main drainage systems starting from downstream.
Third step: rehabilitation of surface drainage systems, starting by the relatively high-lying fields. If not, opening of a basic system of shallow ditches (depth 30-40 cm).

Flushing of saline water with fresh irrigation water if available before the soil dries. The purpose is to replace the saline water layer by a fresh water layer to permit planting of salt tolerant rice varieties ($EC_i \approx 1$dS/m). A thin salt-free layer is enough for paddy rice to give reasonable yields, but it is needed to refresh the water, because if stagnant it becomes brackish by diffusion.

Sodification may not be a great problem in rice fields, which are kept under water and are often "puddled" to become watertight.

If not fresh water is available, land smoothing, rehabilitation of field bunds and wait for replenishment of paddy fields with rainfall when the monsoon season starts.

European Commission accelerates preferential trade measures to benefit tsunami-hit countries

In response to the Tsunami disaster, the European Commission has today proposed to accelerate the entry into force of the new EU preferential trade regime for developing countries. The new Generalized System of Preferences (GSP) will now come into effect on April 1. The focus of the new regime is on developing countries most in need such as the Maldives, Sri Lanka, Thailand and Indonesia. The EU GSP, already by far the most generous in the world, provides for further tariff concessions, in particular in the clothing and the fishery sectors. Its benefits will extend to all the countries affected by the recent Tsunami.

In parallel, the European Commission is working on simplifying and, where appropriate, relaxing the rules of origin to allow countries to take fuller advantage of the benefits of GSP.

European Commissioner for Trade Peter Mandelson said: "By accelerating this boost to developing countries' market access, the European Union has acted quickly to provide relief for countries affected by the recent tsunami. By lowering tariffs for poorer countries, we are extending benefits to all developing countries."

Background

The EU GSP is the preferential trade regime the EU has been granting to developing countries for the last 30 years. It is worth more than €52 billion in trade flows, and is by far the most important preferential trading regime in the world, providing more market access for developing countries than the preferential access schemes of the US, Japan and Canada combined. Following the Tsunami of December 2004, the European Commission identified the rapid entry into force of the new EU GSP as a way to aid countries affected by the disaster. The Commission is proposing to bring forward its entry into force by three months, to 1 April 2005. The acceleration has already been welcomed by EU Member States and the European Parliament.

Through tariff concessions the new regime will open about € 3 billion worth of new trade flows for countries affected by the tsunami. In the new GSP, all fishery products will benefit from tariff cuts. In the case of Sri Lanka, which will benefit from the special incentive scheme aimed at encouraging sustainable development and good governance (GSP Plus), this implies that about 90 per cent of exports, including clothing items, will enter the EU at zero duty. In the case of Thailand, the new concessions will apply to extremely sensitive products such as shrimps. Indonesia and India will benefit from new tariff cuts for their textile and shoes sectors respectively.

Tariffs for Thai shrimp will fall from 12% (Most Favoured Nation rate) to 4.2%. Tariffs for Indian textiles and clothing will be set at 9.5% instead of 12% under MFN. Tariffs for shoes from Indonesia and Thailand will drop from 17% to 13.5%.

Customs: Commission proposes strategy for simplified rules of origin

The Commission has adopted a strategy to establish new simplified rules of origin for the purposes of the EU's preferential trade arrangements with certain third countries. The rules of origin, which determine which goods can benefit from the lower rates of customs duty under the preferential trade arrangements, are currently too complicated, as well as being susceptible to abuse. The Commission suggests replacing the current rules with a single value-added method for determining origin which would make them clearer as well as more development-friendly. The Commission also envisages improving the management of the system and introducing a monitoring programme. The changes would be made via legislative measures. Work on the first measure will commence immediately.

"I am very pleased that the Commission has adopted this framework for simplifying the complex customs rules of origin and making them more development-friendly" said Taxation and Customs Commissioner László Kovács. Under these proposed new rules, developing countries would be better able to benefit from the tariff preferences the EU offers them. The proposed new rules would also be of benefit both to traders and to customs administrations".

Preferential trade arrangements are aimed at increasing reciprocal trade in goods and access to the Community market for products from developing countries by eliminating or reducing customs duties. The rules of origin, that are designed to ensure that the customs preferences apply to products that originate (i.e. are wholly obtained or are substantially processed) in the country granted the preference, are currently too numerous, complex and inflexible as well as being open to abuse. The Commission's Communication therefore sets out the following plans for simplifying and relaxing appropriately the present rules:

- a single, across-the-board criterion for determining the origin of non-wholly-obtained goods based, subject to further impact assessment, on a certain threshold of value added in the beneficiary country (or, where appropriate, regional group) concerned;
- a rebalancing of the rights and obligations of operators and administrations. In particular, the current system of proving origin by means of a certificate signed by the exporter and stamped by the competent authorities of the country concerned would be replaced by a statement of origin by registered exporters;
- the development of instruments to ensure that the beneficiary countries comply with their obligations. This would include measures to improve evaluation, information flows, training and technical assistance so as to assist co-operation between the Community and its preferential partners, as well as a system for the periodic monitoring of compliance.

Stakeholders who responded to a public consultation held in 2004 supported the need for simplification of the origin rules – se

Source: http://europa.eu.int/comm/world/tsunami/

INDIAN OCEAN EARTHQUAKE & TSUNAMI

UNICEF RESPONSE AT 90 DAYS

For every child
Health, Education, Equality, Protection
ADVANCE HUMANITY

unicef

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INTRODUCTION

The earthquake and tsunami of 26 December 2004 combined to produce a natural disaster of unprecedented scale. With a quarter-million dead and hundreds of thousands more displaced, an energetic, all-out response was required from the world community. This included authoritative leadership on the part of the United Nations, with UNICEF leading the response for children.

This report marks three months since the disaster struck and provides a country-by-country summary of the UNICEF-related activities. It also underscores a transition already underway, as UNICEF and our partners shift activities from emergency relief to recovery and rehabilitation.

On 30 December, as the enormity of the tsunami disaster become clear, UNICEF declared an organization-wide emergency. This gave the crisis first priority for emergency fundraising, supply delivery, and deployment of staff. The fact that UNICEF had existing offices in or near the major disaster areas proved a tremendous advantage, allowing the organization to field teams within hours to assess and respond to the needs of the population. By the fourth week some 350 people had been deployed, 300 from within the affected countries themselves.

Working closely with our national, UN and NGO partners, UNICEF identified four key priorities:

- keeping children alive;
- caring for those separated from their families;
- protecting children from exploitation and abuse;
- getting children back to school as quickly as possible.

These goals have largely been achieved. Very few children have died from preventable disease -- probably the most important indicator of an effective immediate response. In the most heavily affected communities, up to 90 percent of children have returned to school, most within the first month. Most vulnerable communities now have reliable systems for accessing clean water. Almost all separated or vulnerable children are receiving protection, such as shelter, food and clothing, family tracing and psycho-social counselling.

These achievements can be ascribed to the dedication and hard work of the local and international partnership that delivered the relief. But this response would not have been as swift or effective without the generous financial support from around the world. UNICEF was one of the primary recipients of these donations. The immediate and unprecedented flow of electronic donations from the public allowed us to plan the immediate emergency response without the usual financial uncertainty. Later, as part of the official inter-agency appeal on January 8, 2005, we requested US$144 million to support the initial six-month relief phase.

As of March 15, UNICEF received US $442 million (two-thirds from private donors through our national committees), an overwhelming response that has allowed us to move beyond emergency relief and start rehabilitation and reconstruction efforts. Consequently, under the mid-term review of the inter-agency flash appeal, UNICEF was able to present its plans until 2006 without requesting any additional funds. Moreover, this support has allowed UNICEF to be better prepared for other potential emergencies in the affected countries, like the March 28, 2005 earthquake near Sumatra, Indonesia that killed more than 1,300.

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KEY FACTS AND FIGURES

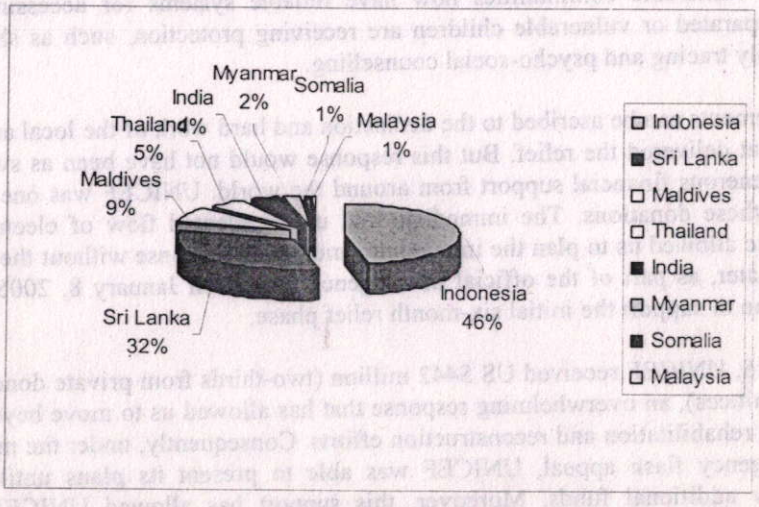
Below are some of the broad indicators for the Indian Ocean earthquake and tsunami relief effort related the actions of UNICEF and our partners on behalf of children. All figures are dated to 15 March 2005.

- People with access to emergency latrines: 290,000
- People with access to clean water (at least 15 litres/day): 160,000
- Children provided oral re-hydration salts: 1,120,000
- People served with health kits: 770,000
- Children provided Vitamin A supplements: 384,000
- Children immunized: 360,000
- Children who received school supplies: 690,000
- Children who received recreation kits: 290,000

Below are overall funding totals as of 15 March 2005 in US dollar amounts.

- Total funding pledged: $442 million
- Government funding: $146 million
- Private funding, primarily via national committees: $296million
- Total allocated to UNICEF offices in affected countries: $362 million
- Total spent so far in first three months: $70 million

UNICEF FUNDING ALLOCATION BY COUNTRY OFFICE



total: US$442 million

UNICEF'S ROLE IN EMERGENCIES

UNICEF has always worked in emergencies. Originally called the United Nations Children's Emergency Fund, it was created in 1946 to provide lifesaving assistance to children in countries shattered by the Second World War. Almost 60 years on, UNICEF has diversified; while it remains the world's foremost advocate for children, it is also one of the world's largest development agencies. Yet disasters, both natural and manmade, remain a constant and deadly threat to children. Thus emergencies still account for 40 percent of UNICEF's activities.

With operations in 158 countries, UNICEF is on the ground before, during and after crises, providing the long-term commitment critical for effective recovery efforts. When the tsunami hit on December 26, UNICEF had staff in every affected country, which ensured a rapid response by experienced and skilled personnel familiar with the culture and environment.

In emergencies, UNICEF's priority is to ensure the care and protection of vulnerable children. To do this, we work closely with a wide range of partners. Donor governments provide financial assistance and policy advice. Local and international non-governmental organizations often implement a wide range of UNICEF-funded programmes. But above all we work with national governments and their social service structures, supporting their efforts to help affected populations.

UNICEF has defined six clear organizational responsibilities for the immediate care and protection of children in emergencies. These are:

- Conducting rapid assessments of the situation;
- Protecting health;
- Ensuring proper nutrition;
- Providing safe drinking water, sanitation and hygiene;
- Protecting children from separation and abuse and supporting their needs;
- Getting children back in school.

THE KEY RESPONSE SECTORS

Health and nutrition interventions must start immediately after the onset of a crisis, when children are extremely vulnerable. As the old adage goes, an ounce of prevention is worth a pound of cure. It is far more effective to keep children healthy and ensure their proper nutrition than to treat them once they are sick. Around 50 to 90 percent of deaths in emergencies are caused by four communicable diseases: diarrhoeal diseases, acute respiratory infections, measles and malaria. Malnutrition only aggravates these health problems.

In the initial stages of an emergency, providing safe *water and sanitation* services is critical. People in emergency situations are generally much more susceptible to illness and death from disease caused by lack of sanitation, inadequate water supplies and poor hygiene. Displacement camps and temporary shelters are particularly vulnerable to this problem. Over-crowding allows measles and respiratory tract infections to spread rapidly; insufficient supplies of safe water and sanitation facilities lead to cholera, dysentery and other diarrhoeal diseases; standing water creates breeding grounds for vector-borne diseases like malaria and dengue fever.

Re-establishing *education* is a vital part of the relief process. Getting children back to school provides some physical protection, and allows them to continue learning. Schools also provide a

focal point for the other responses – especially protection and psychosocial support. During crises, governments and families are often unable to cover the costs of education. UNICEF and its partners can help ensure children's education continues and the system can be rebuilt.

Emergencies severely disrupt children's lives, removing them from the routines upon which they rely to feel safe and secure. In the confusion, children are often separated from their families. Without the guidance and protection of their primary caregivers, children risk becoming victims of violence, exploitation, trafficking, discrimination or other abuses. *Child protection and psychosocial support* strive to restore children's sense of security and guard against those who would exploit their vulnerability.

INTEGRATION, CO-ORDINATION AND COLLABORATION

UNICEF's involvement in emergencies is continuous, starting with the initial response planning through to recovery and rehabilitation. But it never works alone. Under the overall leadership of national authorities, UNICEF provides technical and coordination support to the relief effort. As part of an inter-agency team under the direction of the UN's Office for the Coordination of Humanitarian Affairs, UNICEF often takes the lead in the areas most critical for children, including protection, water and sanitation, and education.

The first step in such coordination is to identify and prioritize the most urgent needs of the population. The next step is mapping out a response to minimize overlap and duplication, and to identify possible gaps. Various relief organizations address specific technical issues, develop and follow minimum standards for provision of supplies and services, and monitor the evolving needs and response. UNICEF tries to ensure that the sector responses reinforce one another, for example providing supplementary feeding in schools.

This integrated approach is particularly valuable in the long and difficult transition from relief to rehabilitation and recovery. This is a continuum that must be carefully nurtured; because UNICEF is both a relief and development agency, we are uniquely positioned to ensure sustainability. Strengthening local institutions to provide social services, some of which may not have existed pre-crisis, is crucial for allowing affected populations to take ownership over their futures.

UNICEF works closely with a large number of partners in all emergencies. We collaborate with national and local governments departments to ensure that short-term relief efforts also strengthen local capacity and avoid creating dependency. In health, UNICEF's key partner is WHO; in nutrition it is WFP; in refugee situations UNICEF collaborates closely with UNHCR. We also depend on thousands of non-governmental implementing partners, who work directly at field level to deliver services and supplies to children and their families.

SUPPLY

Drawing upon its experience over the years, UNICEF has identified certain key relief supplies that are necessary in any emergency to provide for immediate needs in food and shelter and to guard against disease. We have also developed mechanisms to ensure rapid delivery of these supplies.

There are three components to UNICEF's supply system. Pre-positioned stocks are located in warehouses and field offices around the world as part of preparedness planning. UNICEF's growing network of regional hubs purchase, warehouse and ship around the world. Long-standing relationships with suppliers and shippers allows UNICEF to marshal and distribute supplies

rapidly, helping avoid bottlenecks and other logistical obstacles. UNICEF also procures a large proportion of supplies in-country, supporting local economies and helping ensure relevance.

UNICEF specializes in developing kits that can be assembled, shipped and distributed within 48 hours of receiving an order, making them ideal for emergency situations, when speed can save lives. Each kit contains a complete set of supplies and instructions for use, so that they can be distributed to outlying schools, health posts or camps and be ready for immediate use. Our central warehouse in Copenhagen stocks components for 30 different kits. The most common are the emergency health kit, which contains essential drugs and medical supplies serving 10,000 persons per kit, and the school-in-a-box, containing school supplies for up to 80 children (see Annex for details).

FUNDING

UNICEF's emergency response draws upon three sources of funding: bilateral (government) donors, the public (via our national committees), and financial and in-kind assistance from corporations. When an emergency strikes, UNICEF issues a donor appeal outlining the financial requirements of its planned response. Typically, this is done as part of a larger inter-agency effort, such as a Consolidated Appeal (CAP) or a Flash Appeal. In exceptional cases, UNICEF may issue a stand-alone appeal. In the tsunami emergency, public sector response was vital for our immediate relief efforts.

Regardless of the source, funds received by UNICEF are set against the target stipulated in its appeal. UNICEF then issues periodic donor reports and financial tracking information to show where the money was spent, and how it has contributed to results for children and women.

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INDONESIA RESPONSE

Indonesia bore the brunt of the disaster, particularly the province of Aceh which, at 160 kilometres away, was the closest inhabitable point to the earthquake's Indian Ocean epicentre. Nearly a quarter of a million people are dead or missing in Indonesia, including around five percent of Aceh's pre-tsunami population of 4.4 million. The Government of Indonesia released the following damage estimates in the affected areas:

- 25 percent of schools damaged or destroyed (1,582);
- At least 13 percent of teachers/school staff missing or dead (2,245);
- At least 11 percent of students missing or dead (38,683);
- All remaining students (including 540,000 primary school students) have been affected by factors such as: loss of their school, the deaths of friends and teachers, or the accommodation of other children in their classes, leading to multi-grade or multi-shift schools;
- 20 percent of hospitals damaged or destroyed (6);
- 7 percent of community health centres damaged or destroyed (65);
- 635 health workers missing or dead.

UNICEF requested US$45 million in emergency funds for the first six months, with water and sanitation, health and education the top three priorities. So far, 50 percent of that total has been spent. To date, UNICEF's Indonesia office has received $144 million in funding, significantly more than requested, which will allow the office to complete its emergency operations and spend the rest of the funding on longer-term rehabilitation and reconstruction projects in the next three to five years.

HEALTH AND NUTRITION

UNICEF has helped coordinate and lead a wide array of actions, including reaching nearly 100,000 people with emergency health supplies, strengthening immunization systems (including quelling possible outbreaks of measles), ensuring that local health services are equipped for treating around a quarter million diarrhoea cases, providing vital nutritional supplements to women and children, and protecting against malaria. There have been no major epidemics or events requiring urgent medical-related interventions from the Government and its partners. This has allowed resources to be devoted to rebuilding infrastructure and protecting against disease and poor nutrition.

Specific UNICEF Actions

- 95,000 people reached with essential health supplies, such as essential drugs to treat infections and other medical conditions, basic and essential medical and surgical supplies and equipment;
- Midwifery kits to provide for 9,520 pregnant women delivered to 476 midwives;
- 909,000 sachets of oral rehydration salts distributed, for treating around a quarter of a million diarrhoea cases (another 291,000 are in the distribution pipeline);
- More than 202,000 children vaccinated against measles (individual measles cases were identified and ring vaccination[1] conducted to avert epidemics);
- 131 health centres and 15 district health offices reached with new cold chain equipment

[1] A process by which an outer perimeter is vaccinated to prevent further spread of disease, followed by progressively smaller 'rings' until the entire target population has been reached.

and supplies (including 161 refrigerators, cold boxes, vaccine carriers and cold room), which will benefit a target population of around 750,000 children and 60,000 pregnant women;

- More than 150,000 women and children have been provided with bednets to protect against malaria;
- 5,700 mothers counselled on breastfeeding by 570 health workers;
- More than 202,000 children reached with vitamin A supplementation;
- Half a million iron tablets for 4,830 pregnant women distributed (another 2.2 million in the pipeline);
- Also in the distribution pipeline: 14 ambulances; 1.3 million de-worming tablets.

Ongoing Activities

A nutrition and health survey supported by UNICEF was completed in 13 districts. This large GoI-UN-NGO survey will help with longer-term planning and activities. The immunization systems will be further strengthened, with measles vaccines in particular continuing. UNICEF will continue to support programmes to control and prevent malaria. In nutrition, the survey data will be used to help agencies target health and nutrition activities appropriately. Support will continue for the provision of supplies and equipment for nutrition surveillance, and the training required with this. In cooperation with UNFPA and WHO, UNICEF will support reproductive health posts in IDP settlements and in health facilities.

WATER AND SANITATION

In the first weeks of the relief response, controlling the spread of disease was the top priority. A critical step in this was securing access to clean water and sanitation facilities for 1.5 million Indonesians. With its long experience in water and sanitation, UNICEF helped lead the effort. There were no major outbreaks of disease in Indonesia, which in part can be attributed to the fact that the international relief effort largely met these goals, including:

- Providing safe water and adequate sanitation for all displaced communities, temporary location centres and host communities;
- Assuring safe water and adequate sanitation facilities and hygiene education for all affected schools and child centres;
- Ensuring that government departments and community-based organizations can effectively deliver, operate and manage water and sanitation services.

Specific UNICEF Actions

- Direct provision of around 24,000 people with 120,000 litres a day of safe water through six tanker trucks;
- Support to a major municipal water treatment plant in Banda Aceh that accounts for 85 per cent of treated water delivered to IDP camps and host communities;[2]
- More than 754,000 water purification tablets distributed to approximately 9,000 families. Another 245,600 water purification tablets are in the supply pipeline;
- Construction and rehabilitation of 350 separate pour/flush toilets and washing/bath facilities serving 17,500 people;
- Provision of on-site sanitation services (de-sludging and solid waste management) in 60 sites serving 25,000 people;
- Distribution of 32,706 hygiene kits to families; each kit contains bath soaps,

[2] This includes payment of salaries and mobilisation of staff, restoration of working premises and capacity building for the management of water tankering operations serving IDP populations in Banda Aceh and Aceh Besar districts.

toothbrushes, toothpaste, a bucket, towels, sarong and sanitary napkins;

- Supporting the Public Works Ministry and Municipal Sanitation to re-establish essential service management functions, by providing capital equipment and machinery (trucks, backhoe), and funds to support direct operation costs;
- Initiation of a hygiene promotion campaign in the 15 largest IDP camps in Banda Aceh (30,000 people), including training 15 sanitation agents and 75 youth volunteers to conduct the campaign;
- In partnership with the Indonesian Red Cross, 64 trainers instructed in hygiene and sanitation promotion.

Ongoing Activities

Water and sanitation efforts will remain a top priority in the coming months, with many challenges remaining. The staffing capacity of Public Works district offices has been significantly reduced. Another challenge is filling gaps in service to IDP camps and temporary relocation camps and ensuring more regular coverage by humanitarian organizations in spontaneous settlements, schools and host communities. A smooth supply chain needs to be established and maintained within major municipal centres to meet the large supply needs for water treatment and solid waste management.

For its part, UNICEF will continue to provide support to integrated water supply, sanitation services and hygiene promotion. It will also continue to play a lead role in coordination while strengthening the capacity of government partners to take over coordination of sector activities among humanitarian organizations. Technical support will be provided to reconstruction and rehabilitation of water and sanitation infrastructure, notably for new schools, and for the restoration of services of key public institutions. And monitoring of water quality and of water and sanitation related diseases will be supported at community and school levels.

EDUCATION

The education system in Indonesia's affected areas was devastated by the disaster; re-establishing the minimum standards for children's education will take time. Thousands of teachers and other education professionals were killed or injured, and many more are homeless and suffering from severe psychological distress. School records have been destroyed, hampering planning and supervisory support. Combined with the sheer number of schools damaged or destroyed, assuring quality education for children will remain a difficult but crucial task. Key UNICEF priorities include:

- Assuring that all school-age children have the opportunity to learn and play in a stimulating, safe and child-friendly environment;
- Ensuring sufficient numbers of trained teachers;
- Providing policy makers with relevant and timely information on students, schools and learning spaces;
- Assuring continuation and availability of quality early childhood development services for pre-school aged children;
- Identifying children who are not currently attending school, and facilitating access.

Specific UNICEF Actions

UNICEF's initial relief efforts focused on a "back to school" drive through providing spaces and material for learning and ensuring trained teachers are in the classrooms. Education authorities estimate that 90 percent (486,000) of primary school-age children are back in "school", whether

in existing schools or temporary structures such as tents.[3] Many were back in the classroom by the formal re-opening of schools on January 26. Others returned in the subsequent weeks as the relief effort provided learning facilities, school supplies and materials.

UNICEF helped supply school and recreation materials to 373,000 children, or 69 percent of the target population for 2005 (540,000). Of these, 77,600 have access to textbooks, or 14 percent of the target population. In addition, at least 2,400 children under age six are receiving early childhood development services. Key statistics include:

- "school-in-a-box" kits: 4,667 current; 2,572 in pipeline
- recreation kits: 4,667
- textbooks: 38,800 sets (two students per set); 4,400 in pipeline
- tents: 120 large, 20 small

To immediately address the destruction and damage of school buildings, UNICEF worked closely with the Government to create temporary learning spaces. Currently, there is enough class room space in tents for more than 6,000 students. UNICEF has also helped its government partners complete assessments for determining medium and long term infrastructure needs. A detailed primary school census of 13 districts is underway, with two districts containing 27,000 students already complete. School mapping using Geographic Information Systems (GIS) has been completed in seven districts for use in education planning and reconstruction.

Ongoing Activities

Programmes to address the shortage of teachers in Aceh are under way. In the short-term, UNICEF is supporting the Ministry of National Education's recruitment of 200 temporary teachers for six month assignments. To address longer-term needs, UNICEF and Save the Children are helping the Government build a training infrastructure for teaching-learning practice and good classroom management. Eighty master trainers have completed courses so far, allowing them in turn to train future teachers in districts throughout the province. And 160 volunteers have been trained as early childhood development facilitators.

To cover the needs of all primary school aged children, UNICEF will finalize the distribution of education supplies and basic learning materials to the remaining affected areas and schools. It will assist the Government in bridging emergency education with the rehabilitation of primary schools. It will also continue the planning initiated with the Government and other partners on the construction of new primary schools. Support will be provided to the Government for recruiting, training and deploying 1,000 temporary contract teachers. The Rapid Assessment of Learning Spaces will be continued in eleven more districts in Aceh. UNICEF will also continue to support a further 70 ECD centres.

PROTECTION AND PSYCHOSOCIAL SUPPORT

The tsunami separated thousands of children from their parents and put almost every child through trauma and stress. UNICEF worked closely with local authorities in the affected districts to immediately reinforce or rebuild child protection and counselling networks. A top priority was and remains to protect all children from violence, abuse and exploitation. This was especially critical for the many children separated from their parents. The first priority for these children is reunification with family members and provision of family-based care.

[3] UNICEF-supported field assessments in two districts show around 72 per cent of children in school, compared to pre-tsunami levels.

UNICEF coordinated the development of appropriate policies and strategies for child protection and psychosocial support. They focus on strengthening the resiliency of local networks and are being implemented by a range of local and international partners. This includes mobilising communities, monitoring and reporting, and strengthening the ability of law enforcement and military personnel to protect children. UNICEF has also coordinated sector efforts leading to a common system for registering separated children, tracing and family reunification.

Specific UNICEF Actions

While protection issues are not easily quantifiable, the multi-lateral effort has achieved measurable results from the first 90 days. In the six most affected districts, 17 Children's Centres have been established to provide psychosocial support and trace separated children and reunite them with their families. Orientation was provided for 340 Children's Centre workers; 170 of them received on-the-job training. More than 11,000 children used these centres in the first ten weeks of operation.

The Centres provide recreational and expressional activities for children, as well as structured counselling and group support for parents and children experiencing more serious problems. Most separated children are being cared for by extended family members or community members known to them; a small percentage are living with strangers or in institutions. At least 1,069 separated children have been registered and 29 reunited with their families. The Centres also support families hosting separated children through counselling and provision of some supplies.

UNICEF advocated and supported government partners in developing and adopting policies such as: a six month ban by the government on the adoption of Acehnese children and the movement of children outside Aceh without their families; a government policy to promote family-based care for separated children, with institutionalization only as a last resort; government guidelines for psychosocial assistance for children and protection of women and children in settlements. Also, Children's Centres have been declared weapon-free, with children allowed to move freely in and out of camps.

Ongoing Activities

UNICEF will continue to support the Government in capacity building and coordination. Mechanisms for monitoring child protection in settlements will be established. The registration and family reunification of separated children will be expanded, and steps taken to support families hosting separated children and develop long-term solutions for family-based care of separated children. Psychosocial activities will be expanded and increased involvement of communities and schools will be sought. Assessments on child abuse and exploitation as well as juvenile justice will be conducted and awareness raising campaigns supported.

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SRI LANKA RESPONSE

The tsunami hit 14 of Sri Lanka's 28 districts, killing more than 31,000 people and injuring at least 23,000, with nearly 5,000 missing. Nearly 100,000 houses were destroyed and many others damaged, leaving almost 575,000 people homeless. The tsunami damaged water supply networks, contaminated water sources, and demolished sanitation facilities, leaving survivors vulnerable to disease.

Immediate emergency humanitarian needs have been met, with the major government and international operations preventing further death. UNICEF played a central role in the delivery of emergency relief supplies in water and sanitation, health and nutrition and education. Direct food aid by WFP and others and emergency health responses to more than 600 displaced person camps stemmed hunger and the spread of disease.

UNICEF helped coordinate the national and local level response in education, water and sanitation, and protection. As part of this coordination, UNICEF drew on established partnerships with government departments and other UN agencies to produce essential surveys and foster policy dialogue on:

- care for unaccompanied and separated children;
- standards and guidelines for child-friendly schools;
- post-tsunami nutrition response;
- standards for latrine construction and water quality.

Over the next three months, UNICEF will focus on remaining relief requirements in the various sectors, including the initiation of recovery and reconstruction projects scheduled for completion this year. It will support government counterparts dealing with tsunami-affected children and provide coordination for the large number of humanitarian/development actors working in the areas of water and sanitation, education, and psychosocial support.

HEALTH AND NUTRITION

The tsunami caused considerable damage to the health infrastructure, with many health clinics and hospitals completely or partially damaged. The initial priority was to stabilize the health of affected populations, with essential medical supplies distributed within 72 hours of the tsunami. Nearly all affected people received essential drugs in the immediate phase of the emergency and now have access to primary health care facilities.

Because of the early focus on providing clean water, adequate sanitation, basic nutrition and routine medical care, disease outbreak has been averted. No child in Sri Lanka has died of disease epidemic, there have been no major outbreaks of disease and only a handful of cases of dysentery, viral fever, diarrhoea, skin disease and respiratory infections.

Key UNICEF Actions

- Within 72 hours, provided emergency health kits containing essential drugs and supplies good for 150,000 persons for three months;
- Delivered more than 75,000 mosquito nets, 90 infant scales, and 30 delivery beds;
- Distributed 200,000 leaflets promoting breastfeeding;
- Printed 100,000 replacement copies of Child Health Development Record Cards and distributed of 200,000 Pregnancy Record Cards to health workers;

- Developed a public health campaign that included the distribution of 200,000 leaflets in both Tamil and Sinhala with disease control messages;
- Provided additional batches of essential drugs, including 150,000 sachets of oral re-hydration salts, intravenous fluids, essential antibiotics and antiseptics to the MoH in early January.

Ongoing Activities

Key challenges in the health sector include the rehabilitation of health and cold chain facilities, the continued nutritional surveillance of children, and the availability of trained health personnel, particularly for the northeast. Recently, UNICEF signed a Memorandum of Understanding with the Ministry of Health for the rehabilitation of 34 damaged hospitals, health clinics and drug stores. Cold chain equipment has been procured for distribution over the coming months.

UNICEF also participated in two important assessments for response planning. A Medical Research Institute/WFP/UNICEF joint nutritional survey in IDP camps of affected districts revealed a rate of wasting among children at 34.9 percent -- compared to a national average of 29 percent -- and highlighted diarrhoea and respiratory infections as risk factors. A Pfizer/WHO/UNICEF joint assessment revealed that a significant number of district storage facilities were inadequate and that the inventory of supplies required computerization.

UNICEF plans to start surveying and planning for the reconstruction/ rehabilitation of 34 health facilities by the end of the year. As part of this process, UNICEF will procure equipment for paediatric and maternity wards, special baby care units, regional medical supply divisions, and government health centres. An assessment of national cold chain systems will also be undertaken and work initiated on a computerized inventory of control systems for vaccine logistics. UNICEF will work to facilitate policy development in nutrition and the establishment of nutritional surveillance. Specific plans for the next three months include:

- Vitamin A supplementation campaign targeting 463,000 children;
- Distribution of micronutrients and de-worming tablets for 10,000 pregnant and lactating women;
- Support for the restoration of cold chain facilities (including the provision of 196 vaccine carriers, 59 coolers, 72 refrigerators, 28 deep freezers, 250 thermometers, ten generators, three vaccine lorries and five additional vaccine transport vehicles);
- Provision of obstetric care equipment to hospitals and government health centres as well as the provision of six ambulances, nineteen vehicles, 124 motorbikes and 400 bicycles for the restoration of referral and outreach services in the districts.

WATER AND SANITATION

The tsunami damaged water supply networks, contaminated water sources, and demolished sanitation facilities, leaving survivors vulnerable to disease. From the outset, UNICEF has played a central role in coordinating the different agencies working in the water and sanitation sector (currently at 45), supported by the completion of a survey internally displaced camps country-wide to assess gaps in the response.

The minimum daily personal requirement of 15 litres/day has been met for displaced peoples in camps in all but two of the affected districts (Batticaloa and Trincomalee where efforts are underway to reach the benchmark.) Fifty percent of camps now have a minimum of one toilet per 20 persons and half of all contaminated wells have already been cleaned. Most affected families have received soap and washing buckets, and 75 percent of IDPs have been reached with hygiene promotion messages.

Key UNICEF Actions

- Delivered emergency water supplies, latrine equipment and hygiene provisions to nearly 400,000 people in displaced person camps;[4]
- In first 72 hours, six water trucks purchased and six rented to distribute water to 370,000 persons in 200 IDP camps.
- In first 72 hours, 75 water storage tanks and 471,000 water purification tablets distributed,
- Provision of six "gully suckers" and 60 pumps to clean wells,
- Constructed bathing facilities in the transit camps of Killinochchi and Mullativu.

Ongoing Activities

Coordination and monitoring will remain the prime focus. During the upcoming hot, dry season it will be critical to provide equipment and materials including water storage facilities to ensure adequate access to safe drinking. UNICEF will work to provide safe drinking water (20ltr/person/day) for 40 percent of the IDP camp population, or approximately 48,000 people. For sanitation, an additional twenty locally-designed "gully suckers" will be provided and some 700 temporary toilets constructed in IDP camps.

UNICEF will support hygiene promotion through the distribution of materials, the training of camp managers and other partners in hygiene practices as well as through improving waste management and wastewater disposal. UNICEF will assist in the provision of water and sanitation in home communities and, in particular, will provide equipment and material for the construction of thousands of household toilets.

Equipment and training will be provided to local authorities to construct water systems, toilets, and hand washing facilities. During this period, UNICEF will assist local agencies to rehabilitate existing wells and household, communal and institutional sanitation facilities, establish water quality surveillance systems, and improve water and sanitation facilities in schools and health centres.

EDUCATION

The tsunami severely damaged the education infrastructure, with nearly all furniture, equipment and supplies swept away from the affected areas. The immediate priority was getting nearly 200,000 children back to school. Because more than 200 schools were used as temporary housing for displaced persons, they had to be re-opened on a staggered schedule. Three months after the disaster, school attendance is estimated at 85 percent.

UNICEF has played a lead role in the coordination of the education sector and will continue to do so through the relief and reconstruction phases. We have provided education supplies to more than 200,000 students, and helped repair schools and construct temporary classrooms.

Key UNICEF Actions

- Within days of the disaster, 100 school-in-a-box kits provided to an estimated 6,000 students in hard-hit districts. Another 3,109 school-in-a-box kits for over 200,000 children were delivered in January;
- School furniture for some 45,250 students, exercise books for over 153,000 children, uniforms

[4] **Water:** 16 water trucks and 285 water tanks; 100,000 bottles of water; 50 tons of water treatment chemicals ; 25,000 water purification kits. **Sanitation:** 3,000 squatting plates for toilet construction; 1,000 temporary toilets constructed.; 109,000 tablets of soap and 5,000 buckets, 16,000 hygiene kits and 200,000 hygiene promotion leaflets.

for 107,000.;

- In the first week in March, over 114,000 school bags dispatched to the districts, and additional furniture, supplies and uniforms procured;
- Over 160 schools cleared of rubble, cleaned and repaired, including water and sanitation;
- Support for the construction of an estimated 227 temporary schools shelters, a number of which are already built;
- Local initiatives to encourage children and parents to increase school attendance.

Ongoing Activities

UNICEF is now focusing on the 20 percent of children who are reportedly still not back in school, many of whom are living in IDP camps or temporarily housed with friends or relatives. We have signed a Memorandum of Understanding with the Ministry of Education for the reconstruction/ rehabilitation of 19 schools before the end of the year. UNICEF has also helped the MoE to develop standards and building specifications for "child-friendly" schools[5] in the reconstruction/rehabilitation of all 184 schools destroyed and damaged by the tsunami.

Other scheduled activities supported by UNCEF include:

- Furniture for 10,000 students, a second set of uniforms for 120,000 and stationery for 2,000;
- Reprinting and distribution of over two million textbooks;
- Cleaning of schools as displaced people depart (as of 15 March, there were over 40 schools still housing IDPs);
- Continuing construction of temporary school structures where necessary.

UNICEF will also support efforts to provide students with strong psychosocial support in their learning environments. This includes the training of teachers and the establishment of teacher support groups to help them identify and understand normal stress reactions of children. Other priorities include developing of a rapid A-level student support programme and working with WFP to support a school feeding programme. UNICEF will continue planning and implementing the reconstruction/rehabilitation of 22 child-friendly schools scheduled for completion within a year.

PROTECTION AND PSYCHOSOCIAL SUPPORT

Providing appropriate care and assistance to child survivors has posed a huge challenge to the country. The four key priorities in Sri Lanka have been:

- Identification and support of unaccompanied and separated children;
- Psychosocial support to children;
- Protection of children from trafficking, abuse and exploitation;
- Mine-risk awareness.

The National Child Protection Agency and the Department of Probation and Child Care (with the support of UNICEF, ILO and Save the Children) did a joint tracking assessment to determine the number of unaccompanied and separated children. As of 10 March there were 28 unaccompanied children, 1,169 separated children, and 3,725 children who have lost one parent.

The assessment was followed by support for identified children through the application and processing of foster arrangements, and in the development and implementation of local child sponsorship schemes. Follow-up assessments were completed for nearly all unaccompanied

[5] Child-friendly school design is aimed at promoting a more engaging learning experience for the child, including visually stimulating décor and a more interactive layout than standard design.

children, for 70 percent of registered separated children, and for over one-third of children who have lost one parent.

Women's and children's desks have been established at police stations to prevent abuse, exploitation and neglect of children. Existing psychosocial programmes have been reinforced, and children have been provided with access to recreational items and child-friendly play areas.

Key UNICEF Actions

- Distribution of 1,350 recreation kits, which serve an estimated 81,000 children;
- Dispatch of 3,850 family kits for separated children and their caregivers;
- Inclusion of 100,000 mine-risk awareness sheets in the school-in-a-box kits;
- Trained over 150 psychosocial support workers now working in camps, schools and communities in the south.

Ongoing Activities

With many different actors working in this sector, a key challenge is ensure common standards are used. UNICEF will closely follow developments relating to the new Tsunami Law. If passed by Parliament, this legislation would establish new provincial panels for fostering and adoption. UNICEF will remain closely involved in efforts to standardize child sponsorship schemes within existing government frameworks.

UNICEF will continue to provide assistance for the protection and support of unaccompanied and separated children and children with one parent. Assistance will be provided to government counterparts for the facilitation of foster arrangements and follow-up as well as to advocate for legal provisions that are in the best interest of these children. UNICEF will work with the National Child Protection Agency and the District Child Protection Committees that prevent child abuse, exploitation and neglect.

In addition, UNICEF will focus on psychosocial and protection support to children through:

- The provision of recreational materials;
- Training and support to teachers and other community leaders;
- The establishment and facilitation of children's clubs, including child-friendly spaces in IDP camps and youth centres in communities of return;
- The launching of a tsunami-awareness campaign aimed at getting children to discuss their fears and questions.
- Conducting preparatory work for the development and construction of district-level social development centres.

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THE MALDIVES RESPONSE

In the Maldives, the tsunami destroyed the livelihoods of approximately one-third of the island group's 300,000 people. Of the country's 1,190 islands, all but nine were flooded and 13 were totally evacuated. The disaster claimed around 100 lives and displaced over 29,000 people, of whom 11,500 remain in temporary shelters. Much of the country's infrastructure was destroyed, including homes and businesses, hospitals and schools, and transport and communications infrastructure.

The main industries of fishing and tourism were badly hit, wiping out two decades of investment and economic growth in what had been a rapidly developing country. A February 2005 World Bank/Asian Development Bank/UN assessment report puts total asset loss at 62 percent of GNP.

Relief and reconstruction in the Maldives is relatively costly because of highly dispersed and uneven population patterns. Of the 199 inhabited islands, only two percent have a population over 5,000 people while half have less than 1,000 people. The difficulties of access and the inherent fragility of the environment combine to create some of the most vulnerable populations in the world.

Because UNICEF has a country office in the Maldives, it was present from the outset of the disaster and helped lead the international relief effort, particularly in helping to secure water supplies for tens of thousands. With the relief phase over, UNICEF will also be central to the country's recovery plans. As part of this, six additional international experts will soon join the UNICEF-Maldives team (programme coordination and planning, operations, health/nutrition; water and environmental sanitation, monitoring and evaluation/communication, supply/logistics).

HEALTH AND NUTRITION

Over the past decade, the Maldives made significant investments to improve the health of the population, particularly maternal and child health, reproductive health and immunization (pre-tsunami coverage was 95 per cent.) However, the destruction of health facilities, equipment and supplies reduced service delivery to a minimum. To address this, UNICEF focused on re-establishing immunization programmes, ensuring that immunisation levels should not fall below their pre-crisis levels. Resumption of these programmes started in early February.

Malnutrition was already a common problem in the Maldives. Approximately 25 percent of children under five are stunted and wasting affects one in eight children. Anaemia affects half of all women and is considered an indirect cause of maternal mortality. Immediately after the tsunami, which damaged home gardens on the islands, the government started food aid to affected families. The findings of a WFP assessment confirmed a need for assistance for displaced families. No significant deterioration in the nutritional status of children has been registered during regular spot checks at health centres. A more thorough survey is required, however, in order to substantiate this on-site reporting.

Key UNICEF Actions

- Provided vaccines (BCG, TT, DPT, DT, measles, Hep B, polio) for routine immunization, since no emergency vaccination campaign was required;
- Provided cold chain equipment and supplies including freezers (40), thermometers, coldboxes (108), vaccine carriers (150), refrigerators (30), generators (9), and three walk-in cold rooms;

- Provided immediate food relief (cereal-based baby food, biscuits, juice and milk power) to 500 children evacuated from the capital and the most affected islands;
- Provided a six month supply of food relief to 1,750 children, aged 6-24 months, along with 5,000 cooking sets to families;
- Equipped health providers with anthropomorphic equipment (5,000 growth charts and child health cards, 500 weighing scales);
- Disseminated food ration guidelines that also address the dangers of infant formula use;
- Procured supplies to implement the regular nationwide de-worming campaign coupled with Vitamin A supplements for 35,000 children 6-59 months.

Ongoing UNICEF Activities

- Reconstruction and rehabilitation of health facilities;
- Support for nutritional activities including de-worming and Vitamin A campaigns;
- Ministry of Health capacity building for health and nutrition information management systems.

WATER AND SANITATION

The Maldives' principal sources of potable water comes from a combination of well extraction from fresh groundwater supplies and from rain fall harvesting during the monsoon, with water tanks normally used for storage. The tsunami damaged an estimated 30-40 percent of rainwater harvesting equipment, and contaminated groundwater wells with sea water. It also exacerbated existing sanitation problems by severely damaging and destroying latrines as well as solid waste and garbage collection facilities.

In the immediate period following the tsunami, only 15 affected islands had more than one or two weeks' drinking water supply. Assistance from UNICEF and our partners, combined with private sector and bilateral contributions, ensured that adequate levels of potable water were restored on each island within a few weeks. That assistance included bottled water, water bladders, disinfection tablets, and water and hygiene kits to 69 islands.

Key UNICEF Actions

- Provided supplies to facilitate the clean up of household waste and debris: wheelbarrows, rakes, dustbins, garbage bags, disinfectant and gloves were distributed.
- Distributed 8,200 family kits (water and hygiene) for 41,000 people on 64 islands and provided 116,000 litres of water on 45 islands, including bottled water and water bladders.

Ongoing UNICEF Activities

UNICEF and its partners are developing systems to provide a stable supply of potable water to the island communities. As part of this, UNICEF is procuring 2,500 high-density polyethylene (HDPE) tanks as well as 23 reverse osmosis (RO) desalination units.

The HDPE tanks initially will be installed in schools, health centres and other community centres. The RO's require specialized management and maintenance. Each recipient community must agree to specific guidelines and training before receiving the desalination units. Installation and training sessions are ongoing, with two completed to date.

The units have a daily minimum output of 10m3 (10,000 litres). For all 23 provided, UNICEF will collaborate with the Maldivian Water and Sanitation Company to assist island communities

with unit operation, maintenance monitoring and technical backstopping. UNICEF is covering 50 percent of total projected costs.

UNICEF has procured 30 de-sludging pumps and 30 de-watering pumps with generators and will procure 1,552 plastic septic tanks for community and households. In addition, UNICEF has initiated planning with the United Nations Environment Programme (UNEP) and the Maldivian authorities for the development and implementation of a waste management programme. Future plans include:

- Extension of the current phase of distribution of 23 desalination units;
- Installation of guttering in schools, mosques and medical facilities to harvest rainfall;
- Hygiene promotion activities within the overall effort to rehabilitate and reconstruct schooling facilities;
- Planning for post-tsunami situation analysis, particularly related to the development and implementation of a waste management programme;
- Testing and monitoring water quality.

EDUCATION

The Maldives has more than 105,000 children in 315 schools. At least 116 of these schools were affected, with nine destroyed, at least 26 declared unsafe for use and approximately 80 damaged but usable. Almost 30 percent of the students lost books, school uniforms and other supplies that their families could not replace. Schools were closed for vacation when the tsunami struck, with 9 January the scheduled day for returning to class. On 25 January, all primary and secondary level students returned to school. This was a major accomplishment for the Government of the Maldives and UNICEF.

Based on a rapid assessment of the physical, material, and human resources available, UNICEF determined requirements and mobilised over $3.7 million to help with relief efforts for education in the Maldives. UNICEF channelled 100 percent of the funding donated to the United Nations system for emergency education assistance. Some priorities included providing teaching materials, rehabilitating schools and temporarily replacing at least 200 expatriate teachers who did not return after the holidays.

Key UNICEF Actions

- Funded construction of 39 temporary classrooms, eight toilet blocks and 15 teachers' quarters;
- Provided basic school equipment, supplies and consumables to replace damaged or lost items in 116 primary and secondary schools;
- Initiated work to establish drinking water and sanitation facilities in affected island schools, by providing water tanks and repairing/replacing toilets;
- Funded replacement of students' uniforms, footwear and textbooks;
- Delivered 200 school-in-box and 89 recreational and early childhood kits;
- Financial support for the MOE in temporarily fielding teacher trainees for one month while the Ministry undertook an urgent recruitment campaign of expatriate teachers.

Ongoing UNICEF Activities

The insufficient number of teachers remains a concern. UNICEF and the Ministry of Education intend to establish training facilities as a long-term solution, especially on atolls. Discussions are also underway with the MOE/Educational Development Centre to plan implementation of child-friendly methodology in schools. UNICEF will emphasize on community/parent participation in

the process. An initial training programme for implementers is planned for March in partnership with UNESCO, which will provide technical support for the training on child-friendly learning environments. Other future actions will include:

- Providing furniture and basic equipment for schools, including teaching and administrative staff;
- Supporting the reconstruction and rehabilitation of damaged school buildings;
- Extending the child-friendly school model from 22 establishments identified prior to the tsunami to other affected schools.

CHILD PROTECTION

The tsunami affected the entire country, creating significant psychological trauma among children and adolescents, even on unscathed islands. Behavioural patterns could be traced to a prevailing sense of anxiety and insecurity. Many adults are suffering from severe forms of depression. The number of experts for addressing such trauma is extremely limited in the Maldives; most schools do not have counsellors, and the teaching corps is not trained to provide psychological support.

To address this, an international partnership (UNICEF, UNFPA, the IFRC) is working with the government to train more than 300 teachers in counselling. The training equips teachers so they can assist children to deal with trauma and to identify children for referral to trained professionals. The methods mainly focus on creative arts and recreational activities, which makes use of UNICEF-supplied recreational kits and drawing materials.

Ongoing UNICEF Activities

UNICEF and the government are currently conducting a survey to assess the psychosocial needs of children and their families, the capacity of service providers to address these needs, and the impact of the tsunami on existing child protection and care systems. UNICEF also assisted in the registration of internally displaced persons through the provision of computers and office equipment.

UNICEF will continue to play an active role to ensure the overall wellbeing of displaced children is monitored and adequately addressed. This will entail: regular on-site monitoring with the government and UN partners; conducting education workshops for parents as well as children; policy formulation with key ministries to ensure implementation of activities based on international norms displaced children. Other plans for the coming phase include extending counsellor training for schools and communities and the monitoring of sexual and other forms of violence, especially among IDP communities.

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INDIA RESPONSE

The tsunami devastated long stretches of India's southern and eastern coast, as well as nearby islands. An estimated 2.7 million people were affected, with 730,000 displaced and more than 400,000 people taking shelter in makeshift relief centres. More than 10,000 people were killed. In some villages of Tamil Nadu, the hardest hit mainland state, up to three quarters of children died.

Throughout the area, water supplies were severely damaged, and the destruction of sanitation facilities combined with poor hygiene conditions posed serious threats to public health. At least 669 schools and 170 health facilities were destroyed. The entire social service infrastructure of the remote islands of the Andaman and Nicobar group was gravely affected.

UNICEF was asked to lead the UN's emergency relief efforts. Within a few hours of the tsunami, the UNICEF office in Chennai, supporting Tamil Nadu, Kerala and Pondicherry, became a 24-hour operations base. It was the hub for UN agencies (UNDP, WHO, FAO, WFP, UNFPA) to share information and assessments. UNICEF also participated in a Joint Assessment Mission of the World Bank, ADB and UN agencies.

An emergency response plan with clearly defined roles for government and relief agencies was immediately implemented. The UNICEF office in Hyderabad, Andhra Pradesh offered assistance to district officials and NGOs working in affected areas. UNICEF teams prepared rapid assessments in devastated villages and initiated coordination with other international agencies to share information and to organize the response.

In the early stages, UNICEF was the only humanitarian agency which was allowed access by the government to the restricted Car Nicobar and Nancowry group of islands (Nancowry, Kamorta, Teressa and Katchal) to carry out immunisation and water and sanitation interventions. In the Andaman and Nicobar Islands, UNICEF launched a measles immunisation and Vitamin A supplementation campaign covering children in relief camps on eight islands. UNICEF also carried out a rapid assessment of water, sanitation and hygiene conditions in relief camps and tsunami affected villages.

Nine doctors on UNICEF staff were deployed to the islands to support the medical teams from the Government of India and the Directorate of Health Services, and to step up surveillance for malaria cases. They coordinated with the local administration to: ensure that the drinking water supplied in the relief camps is chlorinated at the source; clear and drain stagnant pools of water; carry out larva control in stagnant water bodies using fogging and fumigation devices; and procure and distribute treated anti-malarial bednets. UNICEF will be deploying a new team of five doctors to the islands in the first week of April.

HEALTH AND NUTRITION

UNICEF sought to preventing disease outbreaks by supporting primary and secondary health systems in tsunami-affected areas. In particular we focused on re-establishing basic health services in the worst affected areas, and strengthening the capacity of the government in health crisis management. This included preventing a worsening of the nutritional status of children and pregnant women through support of the Integrated Child Development Services (ICDS);

Key UNICEF Actions

- Deployed six UNICEF staff doctors in the Andaman and Nicobar Islands to closely monitor malaria surveillance and primary health care in the remote islands;
- Helped restore early child care services in 351 anganwadi (early child care) centres and

180 mini-anganwadi centres in Tamil Nadu.[6] Fifteen were operational by 15 March.

- Together with partners, completed an accelerated training plan for 2,115 anganwadi workers and community volunteers;
- Restored the 70 Integrated Child Development Services (ICDS) Centres[7] destroyed in Andaman and Nicobar Islands by pitching tents and by providing essential supplies like weighing scales and growth charts;
- Purchased and supplied essential health inputs to support the central and state governments to accelerate health relief measures in 18 affected districts; [8]
- Facilitated the collection, transport and distribution in the island relief camps of 50 metric tons of fortified biscuits for children under five and pregnant women;
- Rapid measles immunization and Vitamin A supplementation for 32,000 children between 6 – 59 months on the islands, achieving 92 percent coverage;
- Advocated and assisted local authorities to ensure effective distribution of medical supplies (cold chain equipment, auto-disable syringes) logistical support and food for infants and young children.

Ongoing UNICEF Activities

UNICEF will continue to monitor and help improve the nutritional status of children and prevent the outbreak of diseases. It will promote and maintain healthy childcare behaviours through capacity building of government offices; infant and young child feeding and growth monitoring and promotion; supplying information, education and communication materials to households to promote exclusive breast feeding, infant feeding, and hand washing; and deploying community field workers to work with households on these practices.

UNICEF will support the re-establishment, strengthening and modernization of primary and secondary health care systems. It will provide medical equipment to the Nagapattinam district hospital and primary health centres on Andaman and Nicobar Islands, including five ambulances. Routine immunization will be strengthened and the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) plan implemented.

Malaria is a particular concern in the Andaman and Nicobar islands. UNICEF will work closely with the government and community leaders to prevent an epidemic in the monsoons. This includes supply of additional 10,000 bed nets, 40,000 mosquito repellents, and 15 de-watering pumps with 18 kilometres of high density polyurethane pipes.

Other actions include:

- Providing equipment for nine hospitals and 111 primary health care institutions in Tamil Nadu and Kerala;
- Various types of support for integrated child care centres, including:
  - Provision of essential supplies, training and capacity building of child care workers and government officials in 639 integrated child care centres in Tamil Nadu and 527 in Andaman and Nicobar Islands;

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[6] By providing essential supplies such as growth charts, weighing scales, play materials, kitchen utensils for supplementary nutrition, and furniture.

[7] ICDS programme is a flagship community-based programme of the Government of India to address health and nutrition challenges among infants, young children and mothers.

[8] Inputs include: Vitamin A, vaccines against polio and measles, ORS sachets, impregnated mosquito nets, antibiotics and other essential medicines, cold boxes, IV kits, weighing scales.

- Training for 1,200 newly recruited child care workers in Tamil Nadu;
- Restoration of 70 child care centres which were destroyed or damaged in Andaman and Nicobar Islands.

- Training of government officials and other child care professionals in infant and young child feeding and growth monitoring and promotion, including the supply of information, education, and material for promoting exclusive breastfeeding, infant feeding promotion and hand washing.

WATER AND SANITATION

UNICEF's response focused on three main priorities. First, improving access for communities to information on safe water, sanitation and hygiene. This effort focused on relief centres, schools and childhood development centres. Second, ensuring water borne diseases, particularly diarrhoea, among young children was kept to the lowest possible level. Third, improving coordination between government, NGO and international organizations for ongoing actions related to water supply, sanitation and hygiene.

Key UNCEF Actions

- Led water safety assessments in Tamil Nadu, Andaman and Nicobar;
- In the two worst affected districts in Tamil Nadu, placed two field officers to provide technical and management support in the relief effort;
- Tested water quality at distribution points in Tamil Nadu and Kerala, and delivered over 2,300 water tanks to relief centres;
- Installed 500 water tanks in Andaman and Nicobar;
- Procured bleaching powder, chlorine tablets, soap, pitchers, buckets and other essentials to ensure and maintain safe water supplies;
- Selected and trained 450 volunteers in Tamil Nadu and Kerala to clean up relief centres, construct latrines, and promote hygiene and sanitation messages, including the how to use oral re-hydration salts.

Ongoing Activities

UNICEF will continue to support local efforts to stabilize water and sanitation facilities in the affected areas. In Tamil Nadu this includes coordinating a network of water and sanitation NGOs so that all partners use newly developed guidelines on water quality monitoring and surveillance, hygiene and sanitation.

In Andaman and Nicobar, this focuses on overseeing the construction of toilets in shelters before the onset of the April monsoons. UNICEF has deployed six water and sanitation engineers and 44 master masons and provided 11,000 toilet sets. Part of this effort involves training the engineers and masons of the Andaman Public Works Department (APWD), and ensuring quality control and supervision in the construction of toilets by NGO partners. Also, UNICEF and the local administration are ensuring that the islands are cleared of standing water so malaria and other diseases can be controlled.

EDUCATION

Resuming education in the affected areas was the top priority. All schools on the mainland reopened by 15 January. To assist in this effort, UNICEF provided the Government of Tamil Nadu resource packs to organise recreational activities. UNICEF also organised a rapid assessment of damage to infrastructure and helped mobilise NGOs to conduct co-curricular and

recreational activities. Schools on the Islands were heavily damaged and are still undergoing repair, with UNICEF playing a central role.

Ongoing UNICEF Activities

In Andaman and Nicobar, UNICEF is restoring education for students from 91 schools that were damaged or destroyed. We are collaborating with local authorities to plan/establish learning spaces wherever necessary. This will include supplying classrooms in 455 tents with education and recreation material and delivering 9,000 school bags, 500 teacher kits and 760 sports kits to schools.

Ongoing programmes will rehabilitation the affected education systems in Tamil Nadu and Kerala. This includes: developing a school improvement plan with all stakeholders designed to achieve national quality standards during the current programme cycle (2003-7); providing furniture to schools in three districts in Tamil Nadu; delivering 54,000 student kits in Tamil Nadu and 8,400 in Kerala; and printing a series of 3,700 readers for elementary schools in Tamil Nadu.

PROTECTION AND PSYCHOSOCIAL SUPPORT

Hundreds of thousand of children were affected by the tsunami in India, with facing trauma and stress. To address this, UNICEF has worked with national and local authorities to strengthen local capabilities to provide psychosocial support. We also working with the government authorities on anti-trafficking measures.

Key UNICEF Actions

- In Tamil Nadu, completed assessments in 13 districts and initiated projects to help families and children deal trauma by training 3,500 teachers and 350 volunteers;
- Facilitated work to prevent trafficking in three districts by providing technical assistance, mobilizing NGOs/civil society and advocating for organized responses;
- Provided financial assistance and technical support to the government of Tamil Nadu to help prevent trafficking;[9]
- Supported the psychosocial care training for medical staff, teachers, and early child care workers in Andaman and Nicobar, including a planning workshop with district officials.

Ongoing UNICEF Activities

UNICEF continues to gather and assess information from community and health workers, psychiatrists, and agencies working with children. To expand the psychosocial support capacity in Tamil Nadu and Kerala, UNICEF will train ten master trainers in psychosocial care and support, who will in turn train 875 district level trainers, teachers and community youth volunteers. Training programmes for 160 teachers in Andaman and Nicobar are also set to begin. UNICEF will also work with government officials to develop of an action plan for tracking orphaned children, prevention of trafficking and follow up.

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[9] For printing a handbook on trafficking, posters on anti-trafficking and setting up a telephone help line.

THAILAND RESPONSE

In Thailand, around 150,000 people were directly affected by the tsunami. Over 5,300 people died, including 1,900 non-Thais. An estimated 35,000 families lost their income and more than 8,000 who lost their homes are living in temporary shelters while their homes are rebuilt or repaired. Thailand's emergency relief for affected families was swift and largely comprehensive. UNICEF played a supporting role in the government's successful response, particularly in child protection, education and water and sanitation.

With the emergency relief phase ending, UNICEF's priority in Thailand will be to strengthen the protective environment for vulnerable children. We will advocate for urgent support to restore family incomes to enable a rapid return to family and community normalcy. Following the overall situation assessment, action in HIV/AIDS and in analysis of social policies have been added as new sectors.

UNICEF Thailand appealed for US$ 4,760,000 to support its emergency programme for children and women in the country over the six months period January to July. By mid February, 96 percent of the received funds were fully utilised. In March, the UN tsunami flash appeal was extended to 31st December 2005 and the total funding requirements for UNICEF action revised upwards to US$ 11,960,000 for the year.

CHILD PROTECTION

The tsunami weakened local family and community structures that protect children, leaving around 50,000 children in the six affected provinces more vulnerable. This includes more than 1,100 children who have lost parents and 2,000 children living in temporary shelters. The loss of incomes for around 35,000 families has increased the risk of children dropping out of school and exposed to the risk of trafficking, abuse or sexual exploitation.

In response, a local and international partnership has developed a strong psychosocial recovery programme for 150,000 children among whom 50,000 have been particularly affected by the traumatic tsunami events. Expert teams of child psychologists and social workers are providing training for teachers and families in affected areas to help children cope with grief. Key priorities for this effort include:

- Strengthen capacities for psychosocial care and support to children and their families;
- Provide psychosocial support to teachers and health and community workers, as well as training on child care and support;
- Identify separated and/or unaccompanied children and ensure that systems are in place to reunite them with their immediate or extended families;
- Ensure that all children return to school.

Key UNICEF Actions

- Trained 500 Government social workers, teachers and early childhood caregivers in psychosocial recovery activities for children;
- Disseminated 16,000 printed materials to families, teachers and social workers to improve knowledge on "helping children cope with grief";
- Supplied 50,000 children with essential psychosocial reading materials (back-pack kits);
- Provided sports equipment and reading books to 141,000 children in 800 schools and young child development centres.

Ongoing UNICEF Activities

Although the immediate national response was swift, further strengthening of family and community protective mechanisms is needed. To improve the tracking of the most vulnerable children, monitoring activities will expand in remote communities and temporary shelters, and include tracking school attendance (especially for girls) and a registration system and follow up for orphaned and vulnerable children.

EDUCATION

Over 200 schools were directly affected by the tsunami in some way and 26 were damaged or destroyed. Some lost students or teachers. Children in non-impacted schools were also affected psychologically by the events. Around 50,000 children in total were affected. As a result only around 50-75 percent of children attended school in the first week after the tsunami. The key objective to ensure that all children were back to school for the 4 January re-opening of schools has been met: almost all of the 300,000 children in tsunami affected areas are back in the classroom.

To achieve this success, the government and its partners quickly made arrangements to ensure that learning continued without interruption. Damaged school buildings were repaired and school materials purchased or borrowed. Temporary classrooms were erected, some using tarpaulins. Some children initially attended nearby schools. Temporary teachers have been hired pending longer term re-assignments and cleaning staff have deployed to damaged schools to minimise the risk of injury to school children.

Key UNICEF Actions

- Emergency grants to ensure school attendance for 700 children who lost parents;
- Rehabilitated tsunami damaged schools through hiring of 15 temporary teachers and 12 temporary school cleaners;
- Restored water and sanitation and electricity in 12 temporary schools;
- Paid transport costs for 200 children living in temporary shelters;
- Co-funded sports and reading for the schools.

Ongoing UNICEF Activities

UNICEF will continue to work with the government and local authorities to ensure that all children have access to education and the psychosocial programmes located in the schools. But challenges remain. "Fear" appears to be the most important reason children stay away from school; families want to stay together after their traumatic experiences. On some islands, children of ethnic minority families have never attended school. There are few, if any, learning opportunities for children of migrant workers, who make up a large proportion of the local work force in the tsunami affected provinces. Future activities will focus on these disparities.

WATER AND SANITATION

The tsunami interrupted water supply and sanitation for an estimated 50,000 people. In most cases this was caused by sea-water contamination of some 500 shallow wells, the source of drinking water for most villagers in tsunami affected areas. In other cases, piped water and sanitation systems were damaged.

The immediate priority was to ensure adequate drinking water and sanitation to prevent outbreaks of diarrhoea or other infectious diseases that can be life-threatening for children. UNICEF helped to truck emergency water to villages and temporary camps, with private donations of drinking

water and water purification equipment a vital part of this immediate response. Within six weeks, teams of government workers and community members had cleaned around 500 contaminated wells. Deep wells were drilled and temporary sanitation facilities set up to supply families living in temporary camps. The result of this strong national response: no major outbreak of disease among the affected population.

Key UNICEF Actions

- Water supply and sanitation for 2,000 families in 18 temporary shelters;
- Water supply and sanitation for 12 temporary schools;
- Water tanks, purification equipment for shelters.

MULTI-SECTORAL SUPPORT

Thailand prepared an integrated multi-sectoral approach to the relief than enabled them to cover the initial emergency needs before the specialized sector authorities acted. The main priority was ensuring adequate food, shelter and water for all temporarily displaced families. Thanks in part to this effort, no major issues in health and nutrition subsequently emerged. In close collaboration with local districts, UNICEF monitored the response, and provided cash, supplies, and technical and logistics, primarily to support the needs of displaced families and children living in temporary camps. This emergency multi-sectoral support included:[10]

- *Assessment*: Financial support for 15 district assessment teams; stipends for government staff in data collection and data entry;
- *Education*: Hiring four temporary teachers for ethnic minority children living on islands; classroom equipment replaced, school uniforms provided and emergency lunch support for 30 schools; school clean-up campaigns in 12 schools; education grants for 500 vulnerable families and orphaned children.

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[10] Other activities included: Facts for life printed materials for families, schools - 300,000 people, 50,000 children; emergency food supply for 1,000 under five years children; temporary housing and repair for 1,200 displaced and ethnic minority families; small scale funding for restoration of livelihoods in seven districts.

RESPONSES FOR OTHER AFFECTED COUNTRIES

SOMALIA

Around 150 people were killed by the tsunami in Somalia, and 8,000 affected by damage and loss of property. Nearly US$2.6 million was allocated to help with relief efforts.

UNICEF trucked water to the hardest hit village of Hafun, provided water storage for 4,500 people, rehabilitated ten wells, and provided water and sanitation for four temporary classrooms. In the first week, UNICEF and partners vaccinated 1,728 children in and around the town of Hafun, and gave them a Vitamin A boost, followed by a tetanus campaign for women of child bearing age. UNICEF supported mobile health services, and carried out a rapid nutrition assessment. In all, UNICEF organized distribution of 1,050 family relief kits, as well as additional mosquito nets, blankets, plastic sheeting and jerry cans for more than 10,000 people.

Key ongoing challenges include the prevention of water borne diseases due to the effects of extended displacement. In the coming months, UNICEF will rehabilitate existing or construct new health centres, train health workers, and start a hygiene campaign along with latrine construction. Ongoing nutritional surveillance will be required in coming months. Four new primary schools with 12 classrooms will be built, with access to safe water and sanitation facilities for boys and girls. Education support will include teacher training and support to community education committees in ten locations.

MYANMAR

In Myanmar, 59 people were killed by the tsunami and 15,000 people were affected by the fallout, of whom a quarter were children. Nearly US$8.9 million has been allocated for UNICEF's relief efforts.

In the immediate aftermath, UNICEF provided 9,000 people with clean water, 800 people with blankets and tarpaulins, and 550 families with access to latrines, in addition to rehabilitating wells. Enough essential drug and family kits were given to cover 15,000 people, as well as anti-malaria drugs and bed nets. UNICEF and partners repaired 400 damaged schools, including essential water and sanitation facilities. Since the children affected live in areas with much larger populations, UNICEF provided school supplies for 30,000 children, rather than solely to those immediately affected.

In the next phase, UNICEF will focus on rehabilitating existing water systems, including in schools and health centres, and will train communities to care for these systems. UNICEF will continue to provide additional essential drugs, anti-malaria drugs and bed nets. UNICEF is training key community workers to identify children at risk of trafficking (in areas along the border with Thailand), is training national trainers in psychosocial support and will provide recreation kits for affected children.

MALAYSIA

In Malaysia, 69 people were killed and 8,000 displaced. No schools were destroyed and only one health clinic slightly damaged. The immediate physical needs of shelter, clothing and food were quickly met, but the tsunami revealed a limited capacity within communities to provide a protective environment for children and adults, especially women. Around US$2.2 million was allocated for UNICEF's relief efforts.

At a request from the State Ministry of Health, UNICEF sent two teams of mental health professionals to tsunami affected sites to assist local mental health practitioners and also provided supplementary food for infants, anti-bacterial soap, and bottled water. Two assessments were conducted in January and February, in collaboration with UNFPA and a local NGO, to determine the impact of the tsunami on children, women and youths. Training was held for mental health professionals on the management of critical incidence stress.

In the next phase, life skills based education will be introduced into the school curriculum to equip youths with appropriate skills to manage stress and the psychosocial effects of an emergency situation such as the recent tsunami, and will simplify psychosocial indicators for child survivors of the tsunami to account for cultural and developmental differences.

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GUIDING PRINCIPLES FOR POST-TSUNAMI REHABILITATION AND RECONSTRUCTION

Having participated in the UNEP organized meeting on Coastal Zone Rehabilitation and Management in Regions Affected by Tsunami held in Cairo, 17 February 2005, we[1] endorse the following Guiding Principles for affected nations and supporting international institutions for post-tsunami rehabilitation and reconstruction.

Overarching Principle 1 - Reduce the vulnerability of coastal communities to natural hazards by establishing a regional early warning system, and applying construction setbacks, greenbelts and other no-build areas in each nation, founded on a science-based mapped 'reference line'.

Using concepts of Integrated Coastal Management, including public engagement in local decision-making, employ a rapid assessment, zoning and planning process to:

Principle 2 – Promote early resettlement with provision for safe housing; debris clearance; potable water, sanitation and drainage services and access to sustainable livelihood options.

Principle 3 – Enhance the ability of the natural system to act as a bioshield to protect people and their livelihoods by conserving, managing and restoring wetlands, mangroves, spawning areas, seagrass beds and coral reefs; and by seeking alternative sustainable sources of building materials, with the aim of keeping coastal sand, coral, mangroves and rock in place.

Principle 4 – Promote design that is cost-effective, appropriate and consistent with best practice and placement of infrastructure away from hazard and resource areas, favoring innovative and soft engineering solutions to coastal erosion control.

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[1] The participants to the meeting included Senior Government Officials for Indonesia, Malaysia, Thailand, Myanmar, Bangladesh, India, Maldives, Sri Lanka, Kenya, Seychelles, Tanzania, Yemen; representatives of Regional Seas Programmes, South Asian Seas, East Asian Seas, PERSGA, ROPME, Mediterranean Action Plan, Caspian Environment Programme, Wider Caribbean; representatives of countries and international organizations and institutions, DEFRA/UK, DFID/UK, FAO, UNESCO, World Bank, Islamic Development Bank, League of Arab States, IUCN, WWF and UNEP.

Principle 5 – Respect traditional public access and uses of the shoreline, and protect religious and cultural sites.

Principle 6 – Adopt ecosystem-based management measures; promote sustainable fishery management in overfished areas, and encourage low impact aquaculture.

Principle 7 – Promote sustainable tourism that respects setback lines and carrying capacity, benefits local communities and applies adequate management practices.

Process Measures: **How** things are done is often as important as **what** is done. Local knowledge and insights are important to successful planning and decision-making, and local citizens must be engaged in the planning and decision-making process at each stage. National governments must be able to measure progress and disseminate results.

Principle 8 – Secure commitments from governments and international organizations to abide by these Principles and build on and strengthen existing institutional arrangements where possible.

Principle 9 – Ensure public participation through capacity building and the effective utilization of all means of communication to achieve outcomes that meet the needs and realities of each situation.

Principle 10 – Make full use of tools such as Strategic Environmental Assessment, spatial planning and Environmental Impact Assessment, to identify trade offs and options for a sustainable future.

Principle 11 – Develop mechanisms and tools to monitor and periodically communicate the outcomes of the reconstruction through indicators that reflect socio-economic change and ecosystem health.

Principle 12 – Widely disseminate good practices and lessons learned as they emerge.

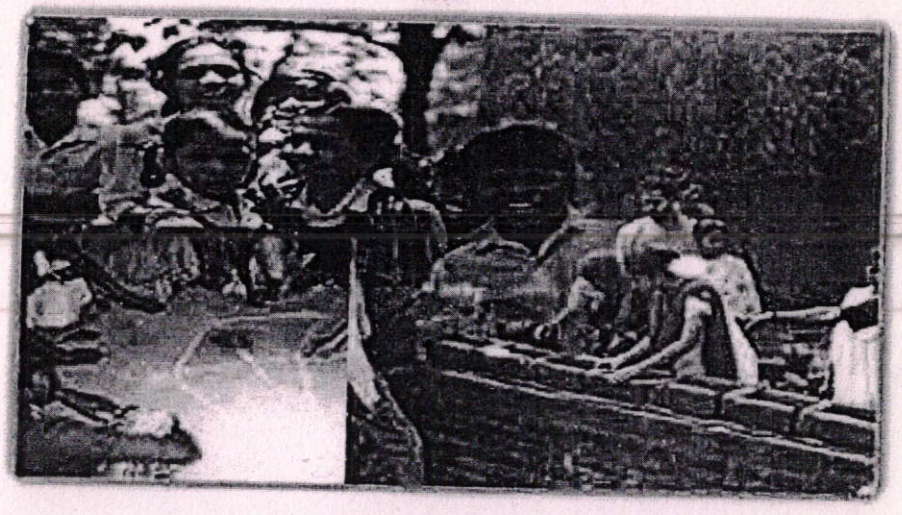
INDIAN OCEAN TSUNAMI: A DOSSIER
Reports on Damage Assessment and Rehabilitation

PART C

REHABILITATION REPORTS

NATIONAL LEVEL
INDIA
INDONESIA
MALDIVES
SRI LANKA
THAILAND

United Nations Country Team
India



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

March 2005

United Nations Country Team
India

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

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Contents

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.

INDIA
TSUNAMI REHABILITATION & RECONSTRUCTION PROGRAM

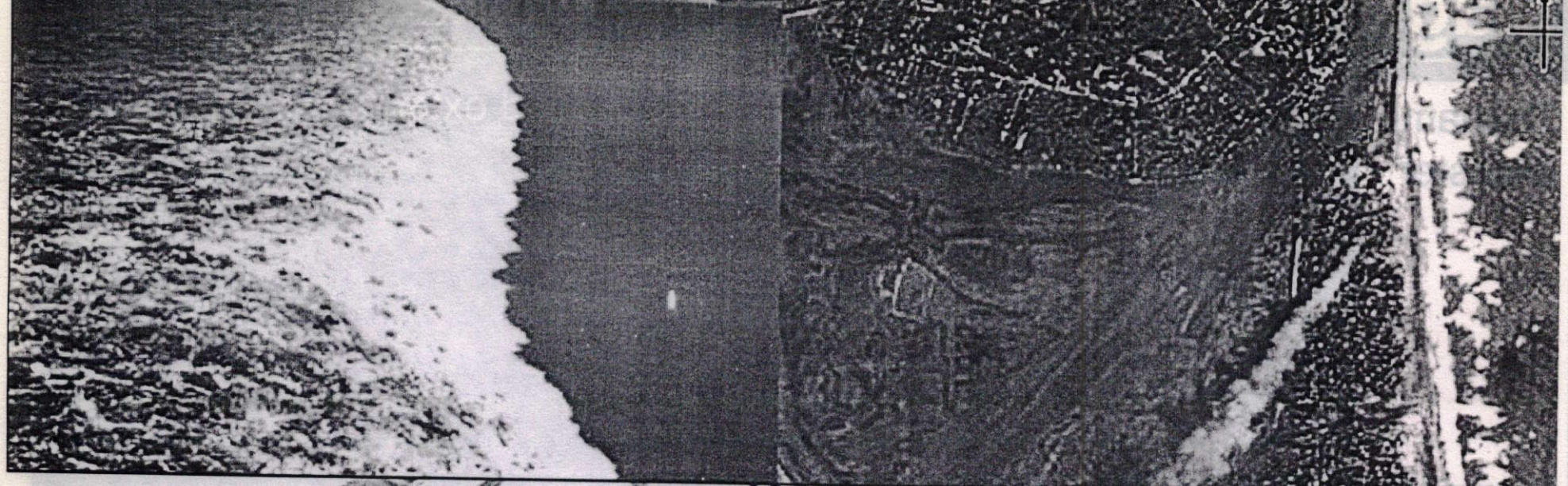
Presentation to
High Level Coordination Meeting

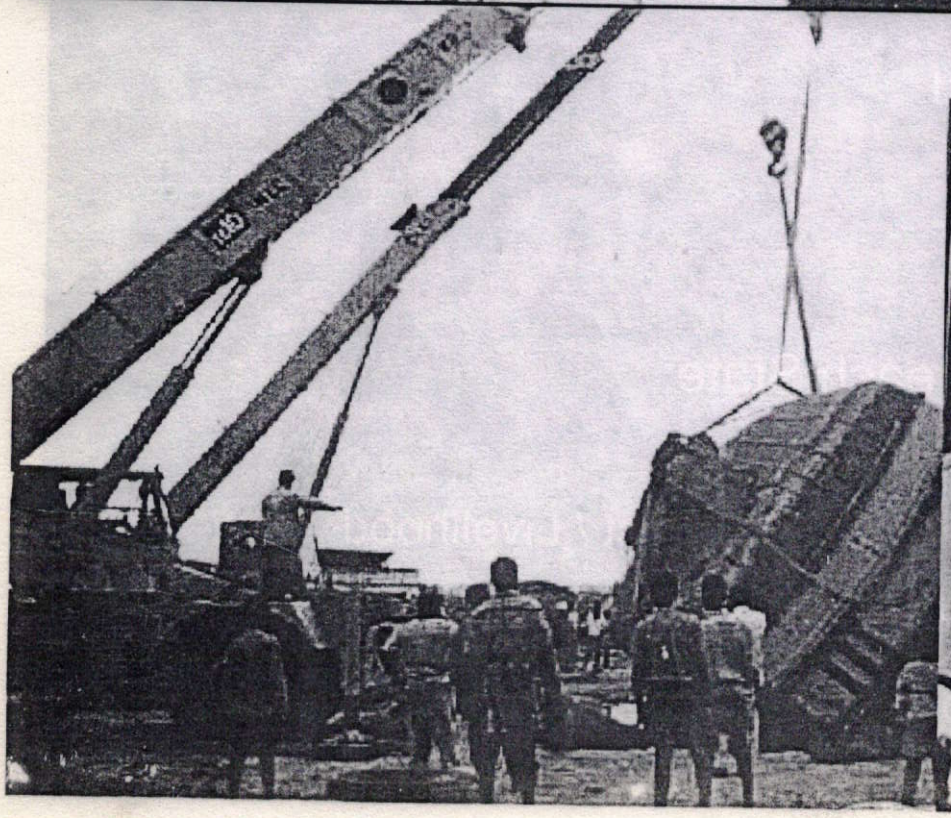
K.S. Sidhu
Chief Coordinator
Tsunami Rehabilitation Program
Planning Commission
Government of India

Manila, March 18, 2005

Presentation Overview

- Overview
  - Magnitude of Disaster
  - Rescue and Relief Response
  - Govt. Support
- Guiding Principles for Rehabilitation
  - Adopting good past practices
  - Vision, Goals and Guiding Principles
- Implementation Plan
  - Organizational Structure
  - Key Deliverables
  - Time schedule
- Financing the Program
  - Program Need
  - External Assistance and Financing Gap





Magnitude of Disaster

Tsunami Disaster

- December 26, 2004 the tsunami caused extensive damage in 897 villages in five States/UTs in India
  - Andaman & Nicobar (A&N) Islands
  - Pondicherry
  - Andhra Pradesh (AP)
  - Tamil Nadu (TN)
  - Kerala

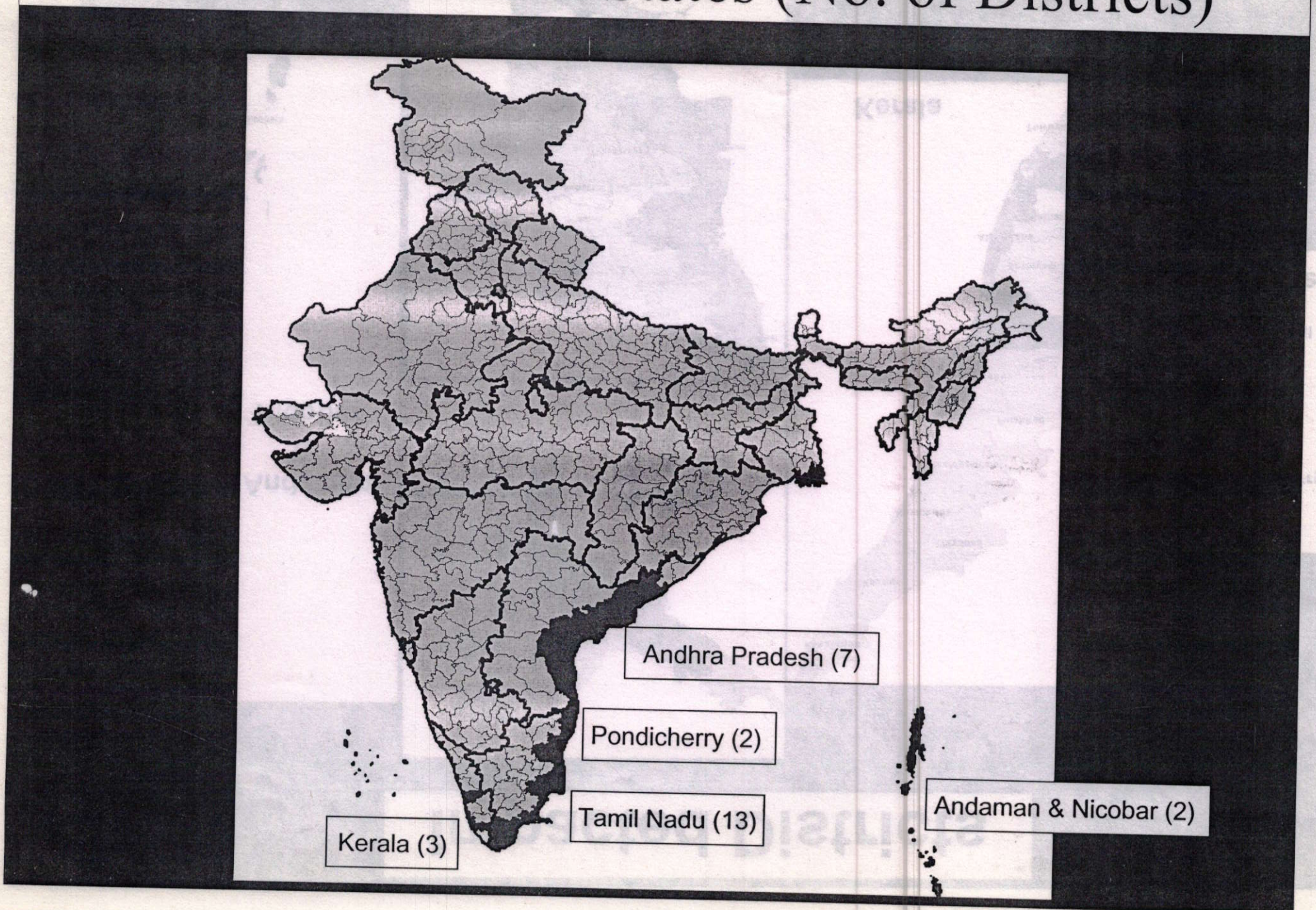
Loss

- Injured, Missing and Dead
  - 4,259 people injured
  - 5,555 people missing
  - 10,749 people dead

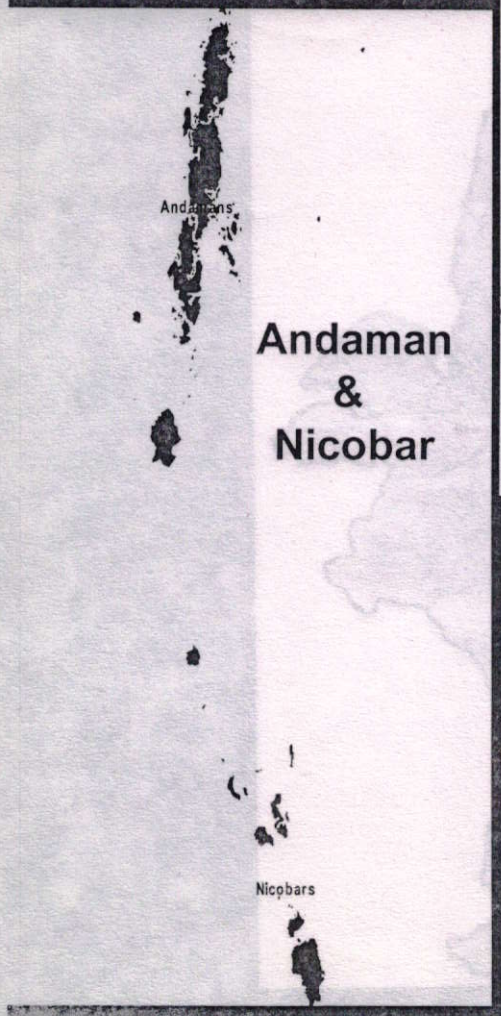
Impacted Sectors

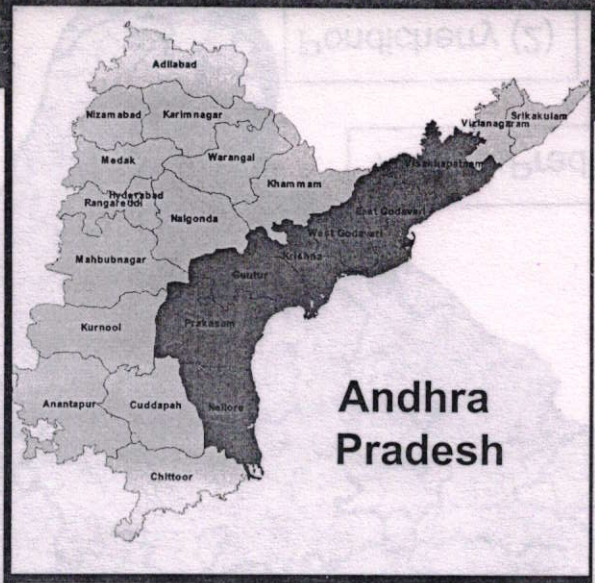
- Major Sectors Affected in each State:
  - Fisheries & Boats
  - Housing
  - Ports & Jetties
  - Agriculture/ Forest / Livelihood
  - Roads & Bridges
  - Water Supply & Sewerage
  - Power & ICT
  - Social Infrastructure

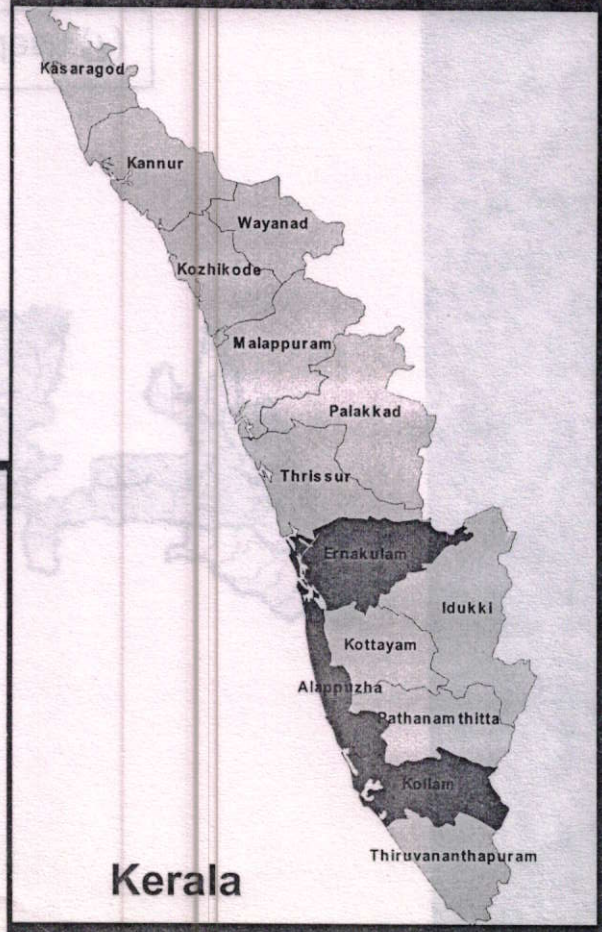
Tsunami Affected States (No. of Districts)

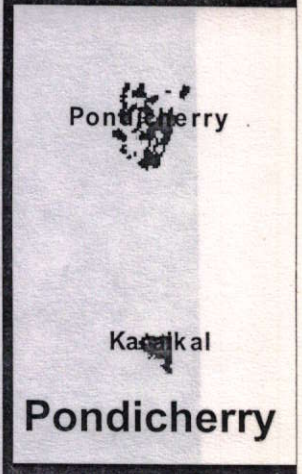


Impacted Districts









Rescue and Relief Response

Rescue and Relief

- Rescue and relief operations were adjudged to be speedy, efficient and timely by the external agencies

Govt. of India Response Mechanism

National Crisis Management Group
Head Cabinet Secretary

Secretaries of all relevant departments

Ministry of Home Affairs
National Disaster Management Division

IDS OPS Room (24x7)

MHA Control Room (24x7)

Directors-Response,Logistics & Coordination

Affected Site
- Relief & Rescue
- Estb. Comm. network
- Drinking Water
- Restoration of power
- Prevention of epidemic

State Control Room (S-EOC)

State Crisis Management Group
Chairman: Chief Secretary

Department of Relief & Disaster Mgt

District Control Room
(D-EOC)

Relief Activities

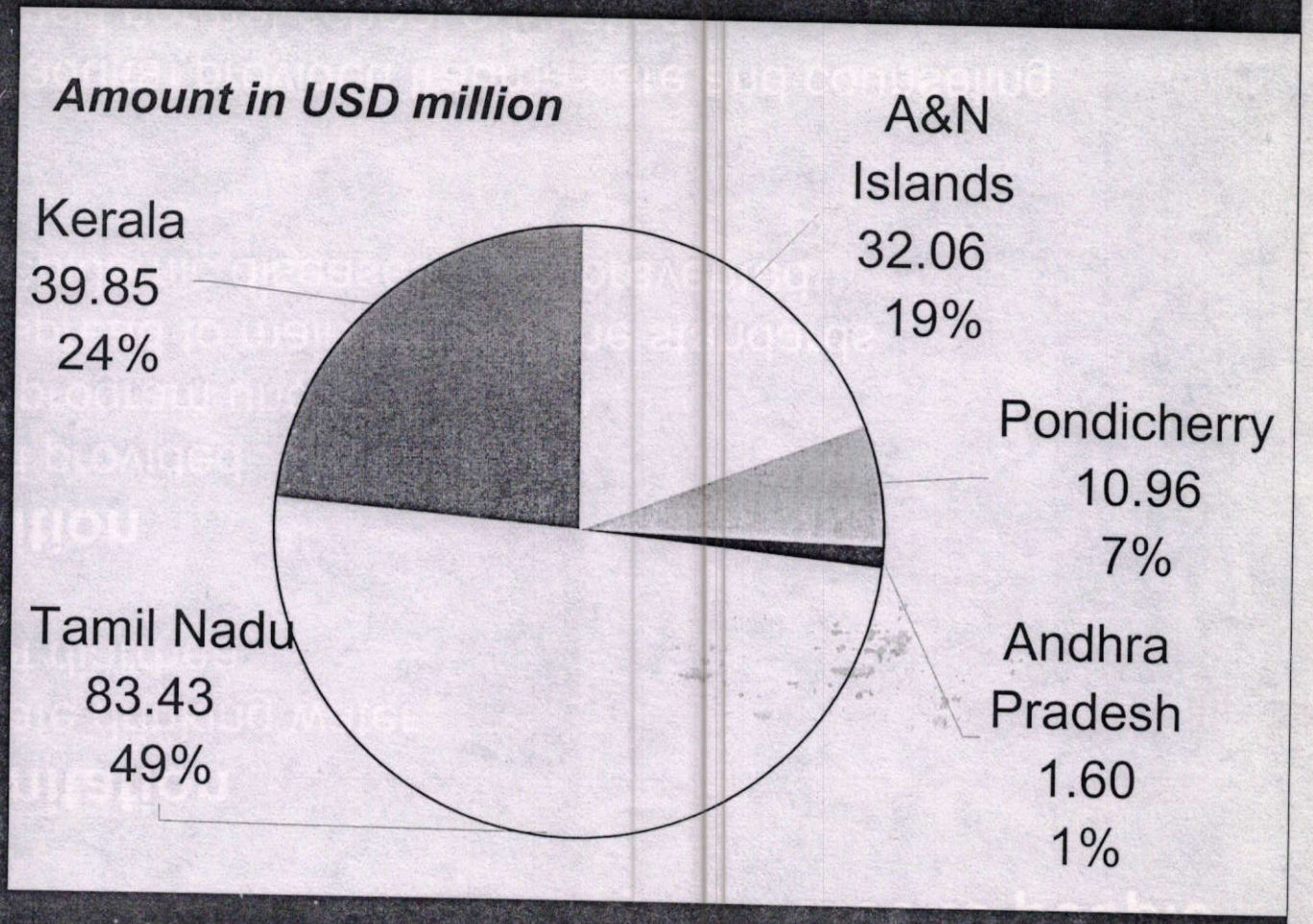
Govt. of India Response

- Activities undertaken included:
  - Rescue and evacuation of 696,392 people
  - Undertaking debris removal and disposal of dead bodies
  - Setting up 783 relief camps
  - Coordinating procurement processes and dispatching relief material
  - Providing food, water, clothing, medical assistance and other essential items
  - Providing gratuitous relief and restoring essential services like power, water supply and communications

Gratuitous & Temporary Relief

Compensation for

- loss of life/limb/ injury
- allowances for food/sustenance
- household articles
- temporary relief
- running relief camps



Total USD 167.90 million (Rs. 7,303.7 million)

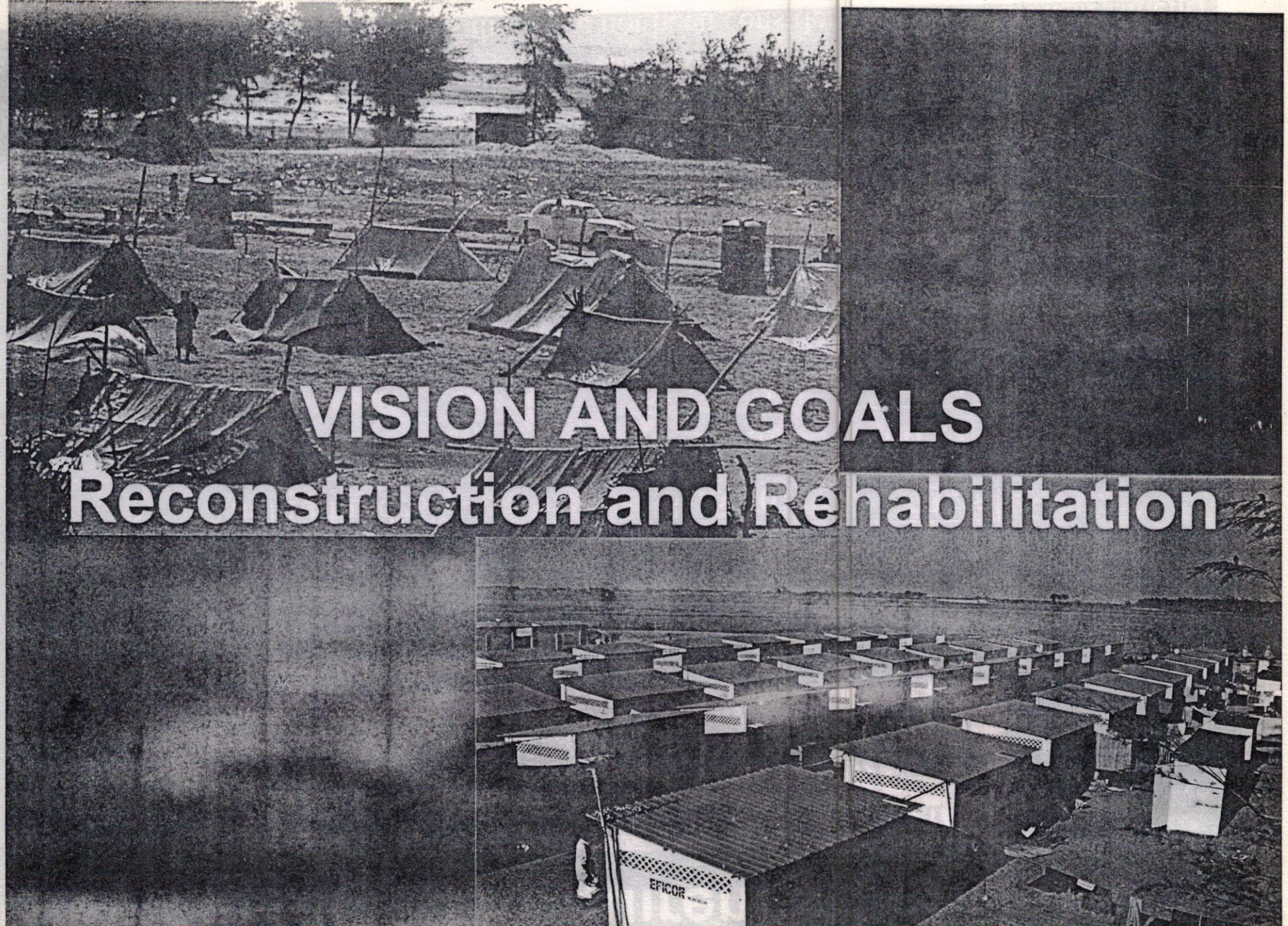
Some Visible Social Impacts

- **Gratuitous relief given immediately – solace to people**
- **Water and Sanitation**
  - Provision of safe drinking water
  - No outbreak of diarrhea
- **Health & Nutrition**
  - Nutritious food provided
  - Immunization program undertaken
  - Disinfectants spread to maintain hygiene standards
  - Outbreaks of epidemic diseases were prevented
- **Education**
  - Children (and adults) provided trauma care and counseling
  - Children resumed normal school education

Total Financing Requirement of GoI

Sr. No.	UT / State	Total *(Rs. million)*	Total *(USD million)*
1	Andaman & Nicobar Islands	36,971.0	849.91
2	Pondicherry	4,183.3	96.17
3	Andhra Pradesh	3,151.6	72.45
4	Tamil Nadu	43,727.8	1,005.24
5	Kerala	21,976.2	505.20
6	Ministry of Shipping (Major Ports)	9,337.4	214.65
	Total	**119,347.3**	**2,743.62**

Damage Assessment done by Joint Assessment Mission (*WB, ADB, UN*) at USD 1,213 million (*short & medium, excludes A&N and MoS*) based on actual damages. GoI assessment at USD 1,679 million includes relocation of households from vulnerable areas as well as some long term provisions that have not been considered by the JAM assessment)


VISION AND GOALS
Reconstruction and Rehabilitation
EFICOR

Adopting Good Past Practices

Earlier disaster management programs, done successfully, were revisited to carry forward the learnings:

- Encourage ownership of solutions by potential beneficiaries to ensure sustainability
- Encourage partnerships of government, beneficiaries, community-based women's organizations and NGOs to ensure sustainable development
- Demonstrate that project implementation can be assured through a fully empowered Project Management Unit with competent leadership
- Address need for a long term approach to O&M funding

Lessons learnt factored in the
developing Vision, Goals and Guiding Principles

Vision and Goals

Vision:

"Convert the disaster into an opportunity to create upgraded modern infrastructure – both physical and social – to improve quality of life"

Goals:

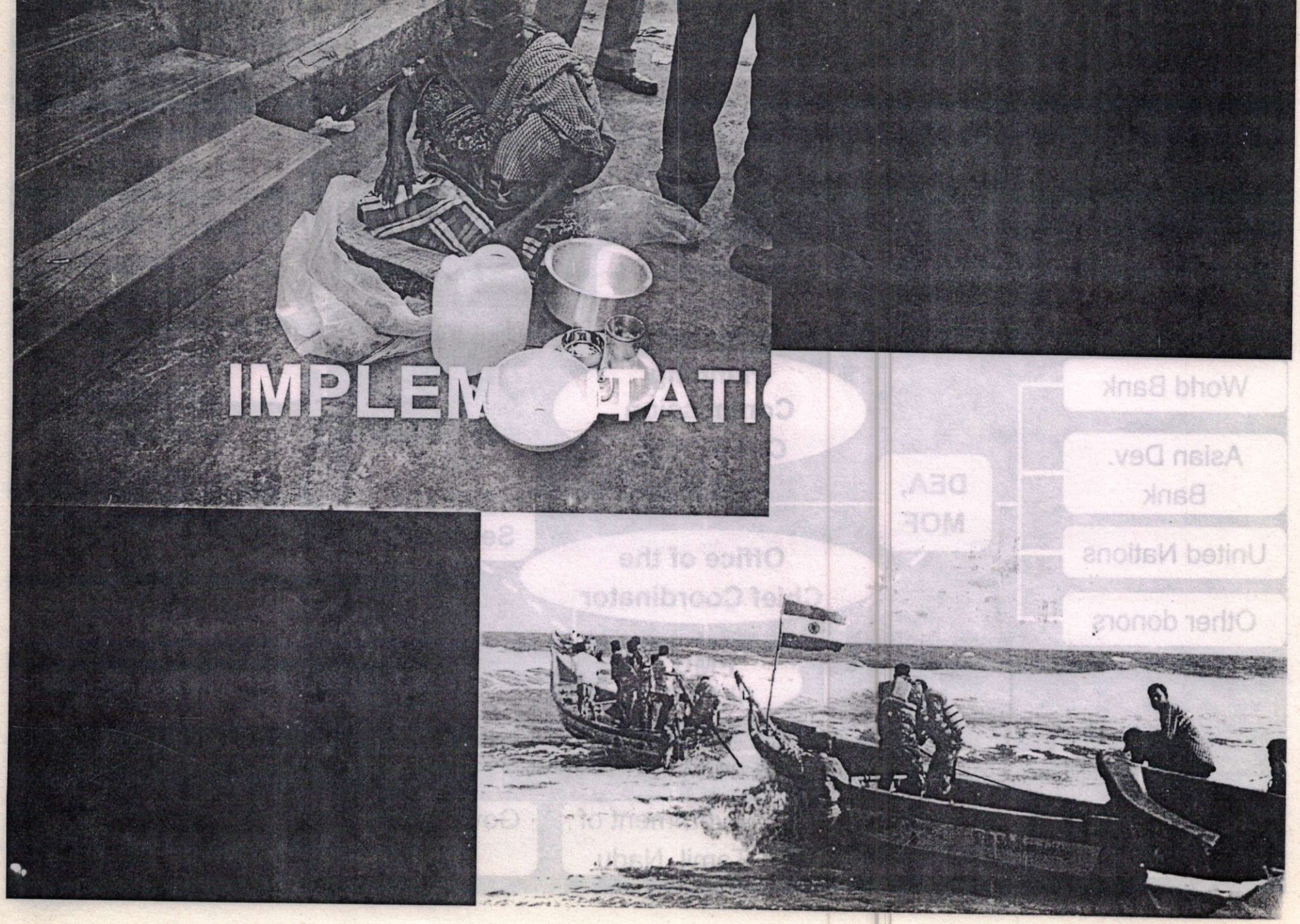
- Adopt community participative approach for ownership of Program deliverables
- Meet specific requirements of tribal and coastal communities and interface with State government and local authorities
- Ensure asset creation is supported by capacity building and sustainable arrangement for O&M
- Focus Short Term (upto 12 months) rehabilitation towards livelihood restoration and repair of infrastructure
- Develop Medium Term (13-36 months) measures for innovative upgradation and sustainability

Guiding Principles...1

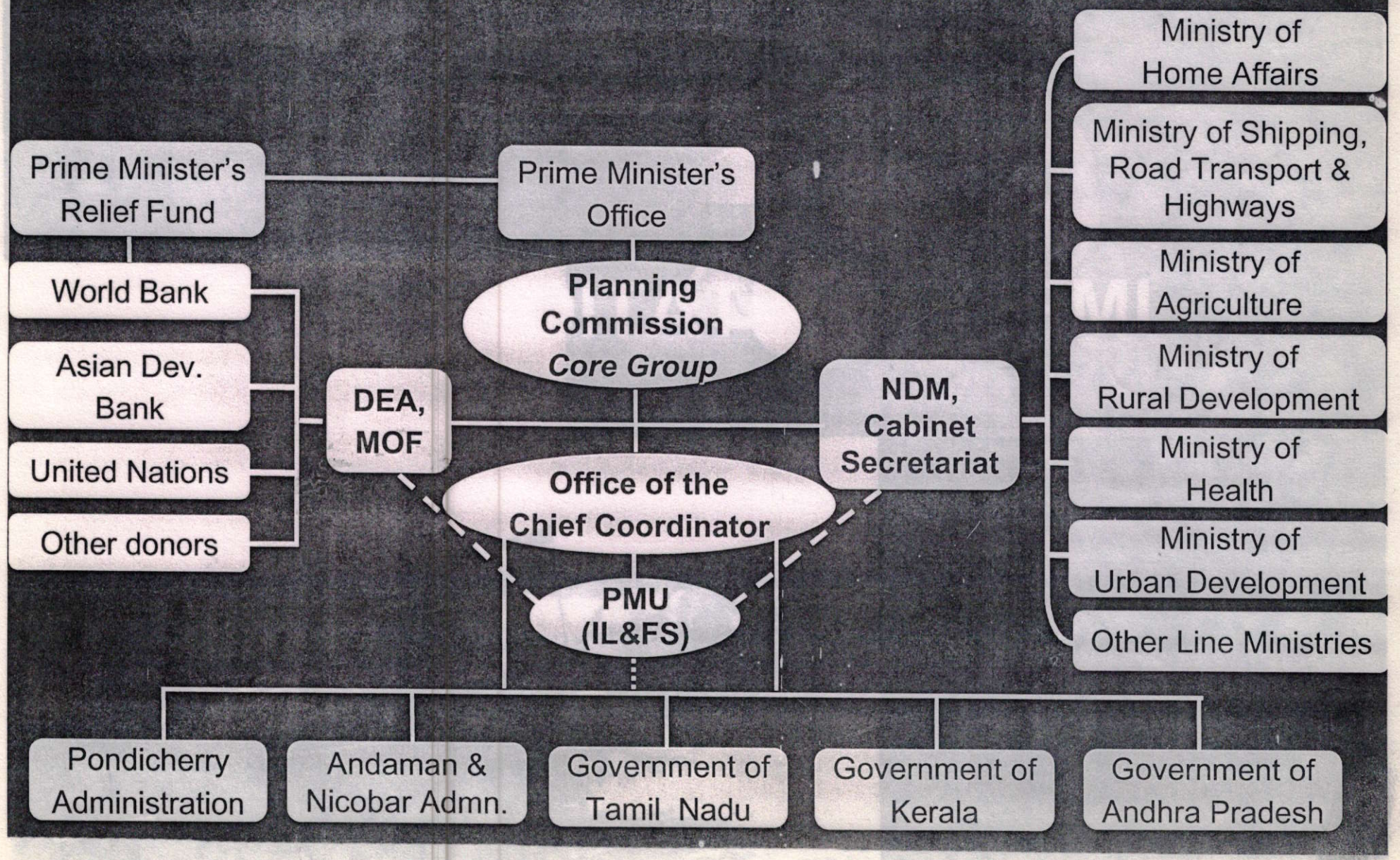
- Environmental Friendly
  - Special attention to Coastal Regulation Zone issues
- Egalitarian Approach
  - involve people and representative institutions in the decision-making process
  - reflect their priorities and aspirations
  - apply principles of equity and empowerment
- Participation of Private Sector and NGOs
  - expand the ownership and knowledge base of the program
- Gender Empowerment
  - involve women in program implementation
  - special care to develop packages for widows & orphans

Guiding Principles...2

- Child Welfare
  - provide health support on a long-term basis
  - psychological counseling
  - alleviate social deprivation through an integrated nutrition and education strategy
- Structural and Non-Structural Rehabilitation Measures
  - merge with the culture, climate and life-style of communities by creating an appropriate definition of norms for provision of civic amenities and services
- Transparency and Accountability


IMPLEM TATI
World Bank
Asian Dev. Bank
United Nations
Other donors

Institutional Structure for Implementation



Program Implementation Aspects

- Program implementation responsibility lies at two levels:
  - Centre: fund allocation, part implementation and monitoring responsibility
  - States/UTs: implementation responsibility

- Success of Program implementation depends on:
  - Careful design and preparation
  - Coordinated roll out
  - Monitoring and oversight mechanism

- Activities identified accordingly for the Office of the Chief Coordinator and Project Management Unit (PMU)

Office of Chief Coordinator-Central Level

- Design and prepare guidelines / toolkit
- Implementation Framework
- Monitoring Mechanism
  - Environmental
  - Social and Community
  - Financial Controls and Audit
  - Engineering Audit of Assets Created
- Integrated software, MIS and Reporting System
- Service the Planning Commission in roll out of Program implementation and setting up of institutional arrangements

Office of Chief Coordinator-State Level

- In collaboration with the State / UT:
  - Provide Technical Assistance to develop, implement, monitor individual project components
  - Front end select Projects demonstrative of guiding principles

- PMU would deploy personnel at State/UT levels at Chennai, Andaman & Nicobar and Thiruvnanathapuram in order to integrate with State/UT level initiatives and facilitate speedy implementation

PMU Functions

- Provide organizational support to the Office of the Chief Coordinator / Core Group, Tsunami Rehabilitation Program in the following activities:
  - Develop Information and Management Systems
  - Resource Planning
  - Implementation Strategy
  - Resolve hurdles in Program implementation in collaboration with all Agencies
  - Monitoring, Evaluation and Reporting
  - Quality Assurance
  - Dovetail NGO and Community Participation
  - Facilitate Core Group decision-making in Program implementation

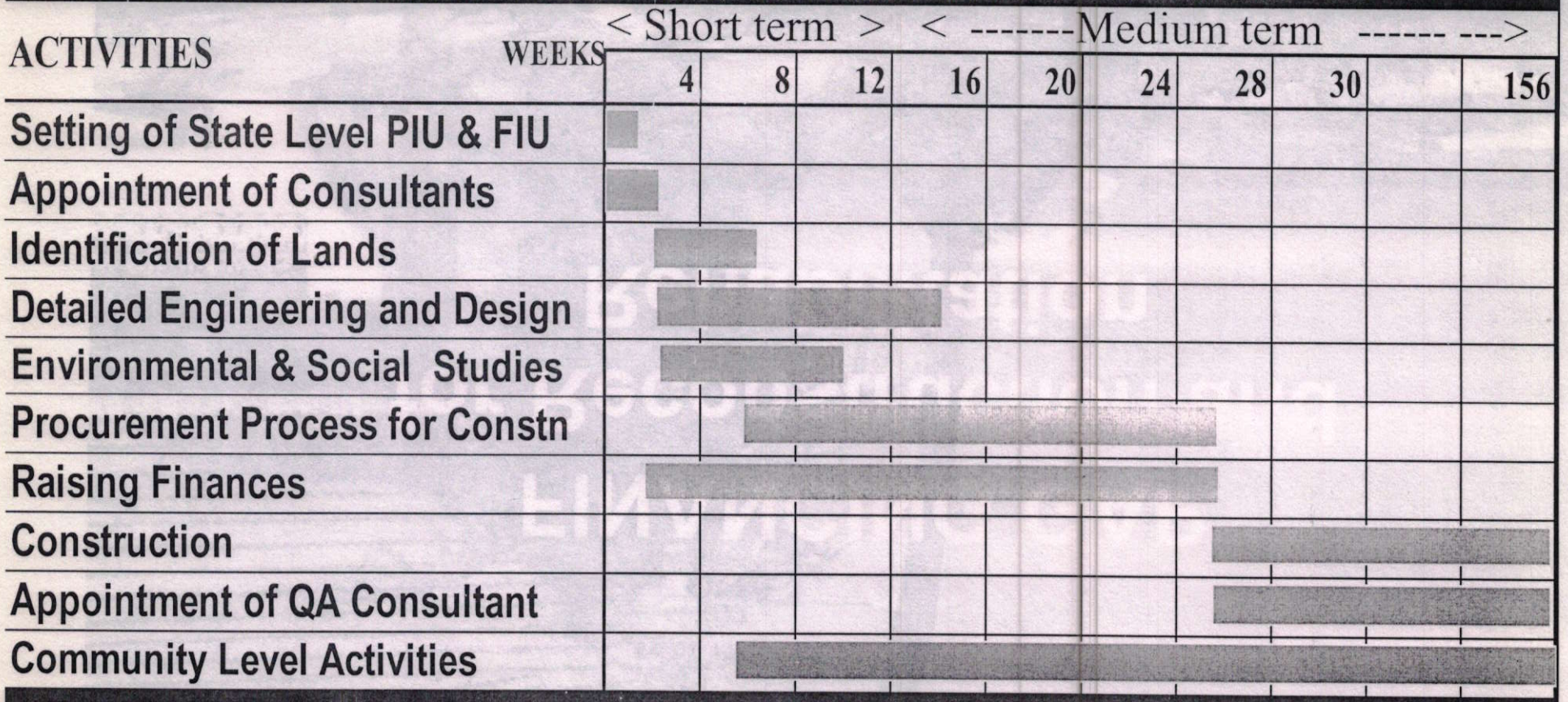
Role of Developmental Partners

- Funding Technical Assistance for Program/Project preparation
- Funding Reconstruction and Rehabilitation components
  - Possibility of enhanced funding?
- Bringing in learnings and best practices
- Coordinating through the Office of Chief Coordinator for Program implementation and fund flow to States
  - ADB focus on the States of Kerala and Tamil Nadu
  - Procurement as per ADB norms
  - PMU could provide technical assistance in kind to State Governments in preparation of design and procurement documentation for the Project components
- Capacity Building at State level

Summary of Key Annual Deliverables

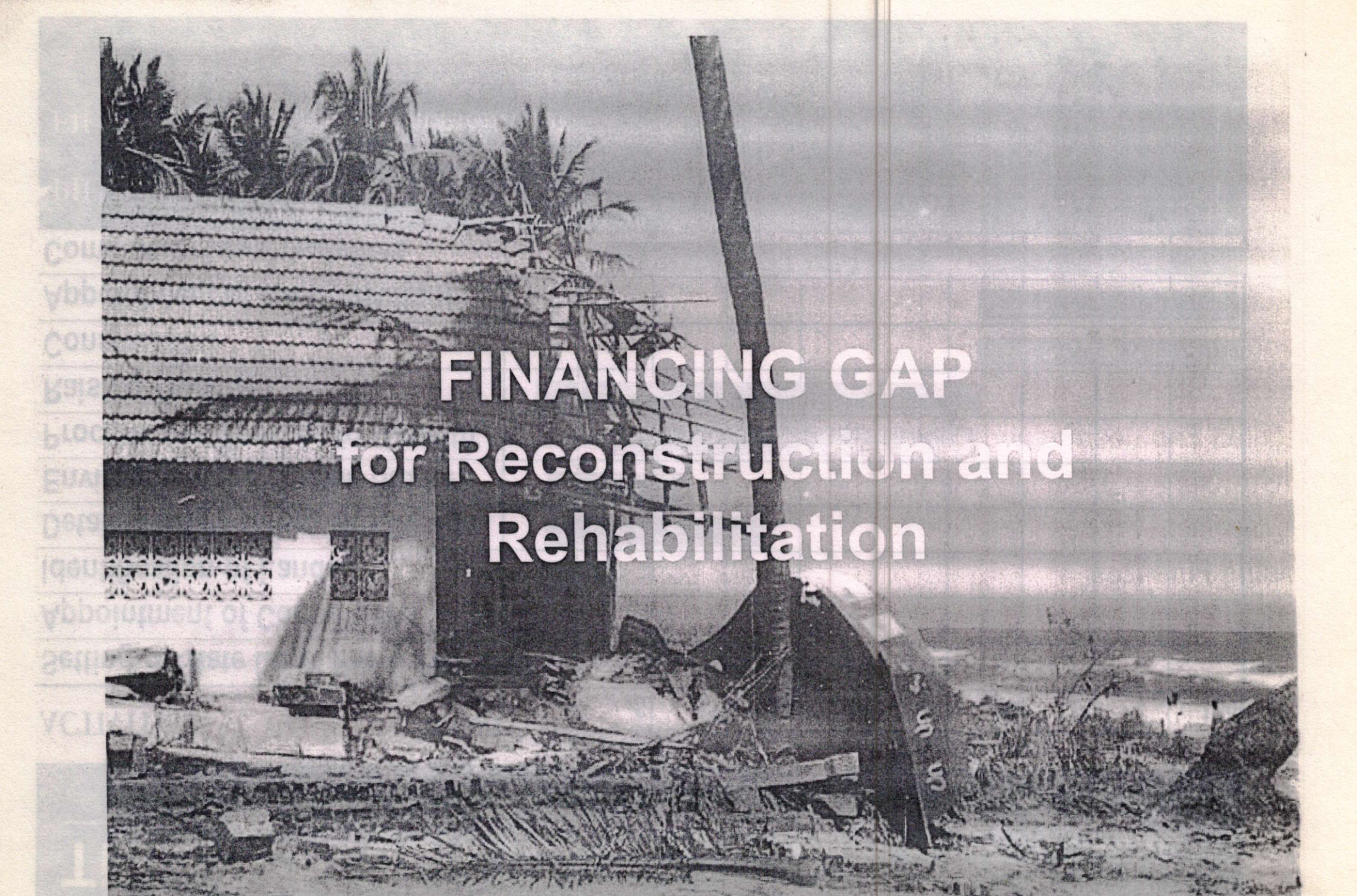
KEY DELIVERABLES	YEAR 1	2	3
Repair/construction of houses	10044	10050	133613
Repair and replacement of boats	56166		
Restoration of agriculture lands		13000 ha	12853
Restoration of livestock	36530		
Restoration of poultry	11971		
Restoration of Aqua Farms & Hatcheries	452 ha		
Restoration of Roads		481kms	
Restoration of Ports and Jetties		6 nos.	
Repair/Cons of anti-erosion sea wall	97	109	

Time Schedule



PIU- State Project Implementation Unit

FIU - State Field Implementation Unit

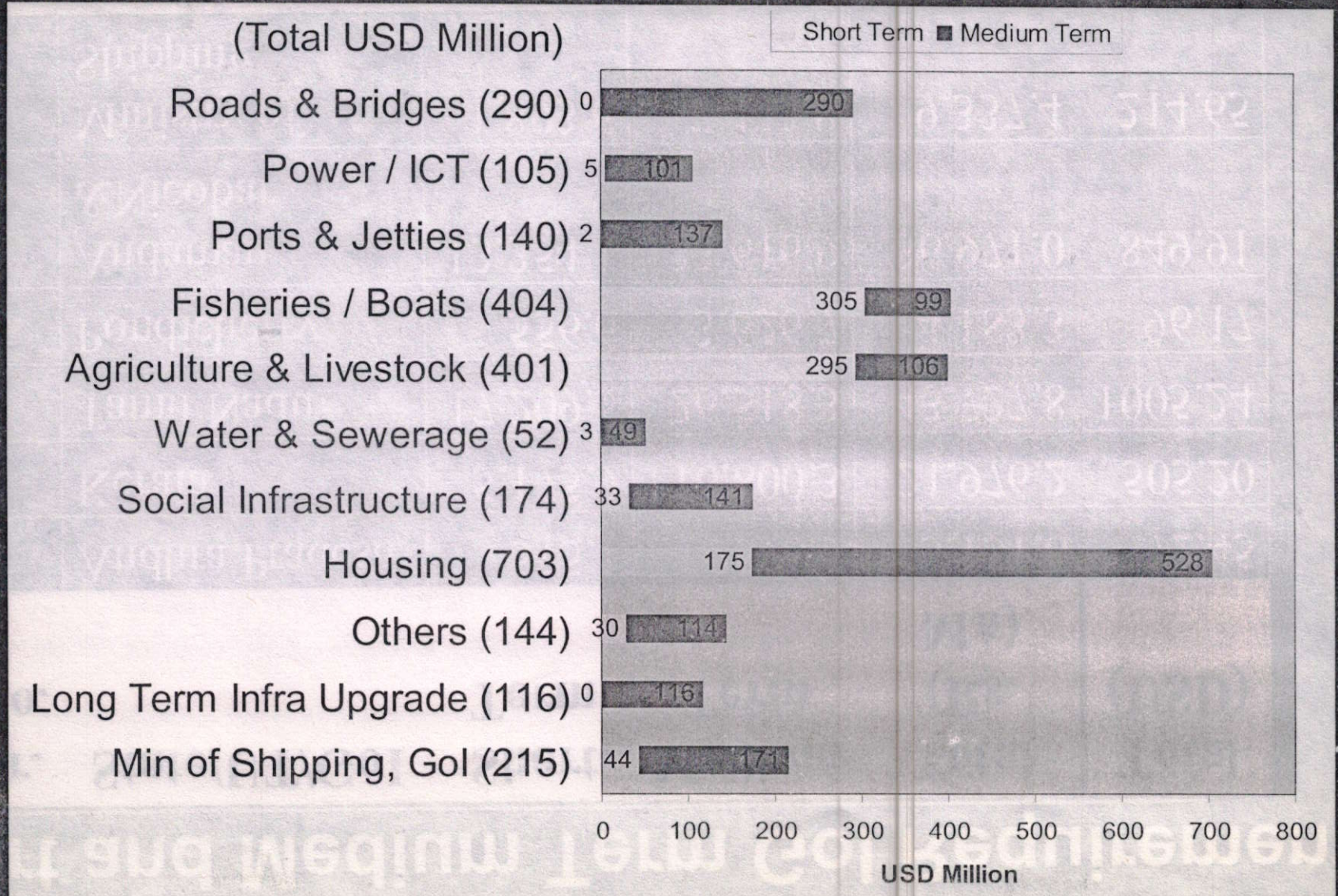

FINANCING GAP
for Reconstruction and
Rehabilitation

Short and Medium Term GoI Requirement

Sr. No.	State/UT/GoI	Short Term	Medium Term	Total (Rs. Mn)	Total (USD)
1	Andhra Pradesh	575.1	2576.5	3,151.6	72.45
2	Kerala	5,175.9	16,800.3	21,976.2	505.20
3	Tamil Nadu	17,209.5	26,518.3	43,727.8	1005.24
4	Pondicherry	556.6	3,626.7	4,183.3	96.17
5	Andaman &Nicobar	13,354.1	23,616.9	36,971.0	849.91
6	Ministry of Shipping	1,893.6	7,443.8	9,337.4	214.65
7	Total in Rs. Million	38,764.8	80,582.5	119,347.3	**2743.62**

Short term: <12 months; Medium term; 12-36 months

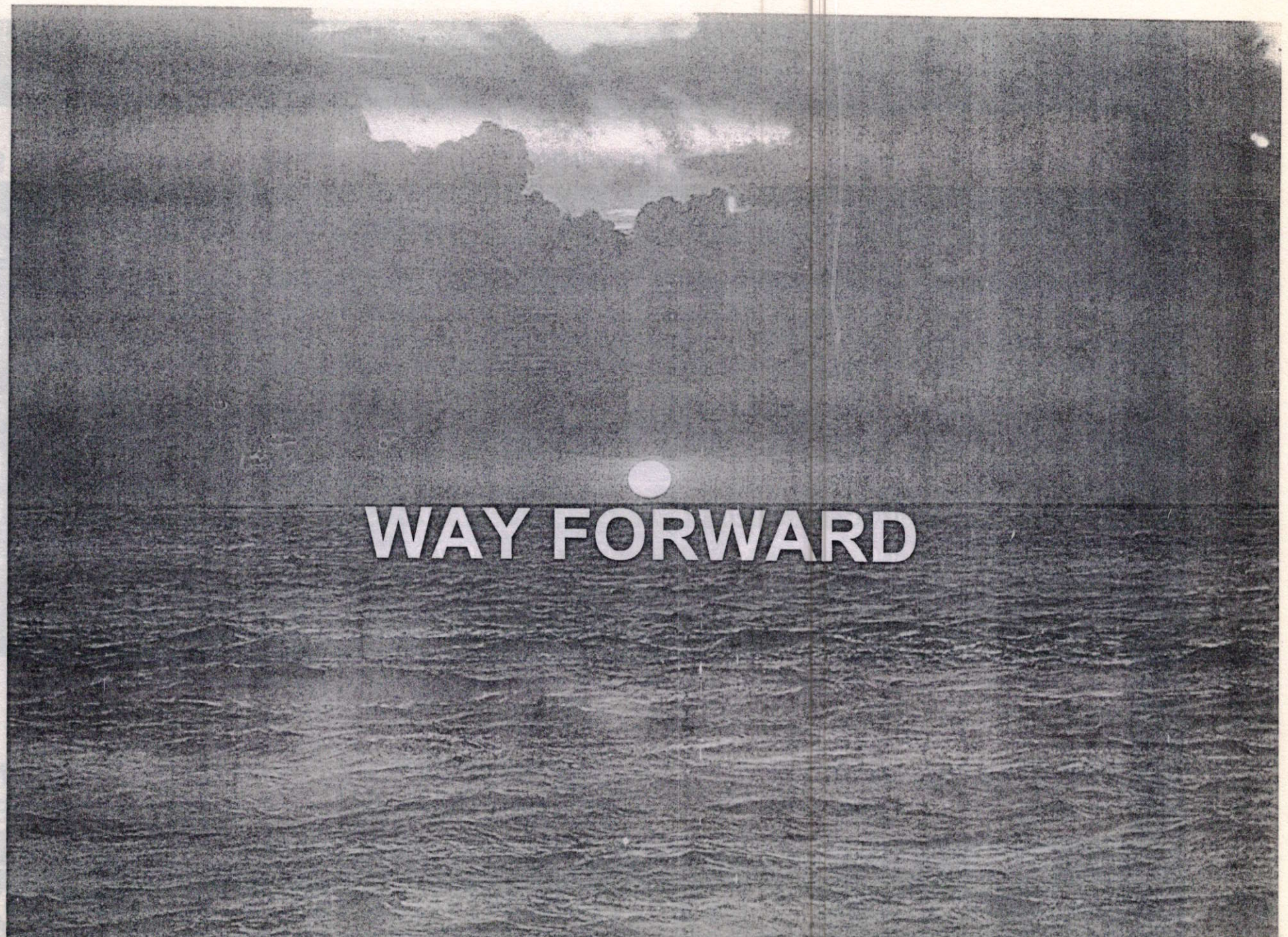
Sector-wise Short & Medium Financing



External Assistance and Gap

Sr. No.	State/UT/GoI	External Assistance (USD mn)				GoI Requirement (USD mn)	Gap (USD mn)
		WB	ADB	UN	Total		
1	Andhra Pradesh	40.00	0.00	5.49	45.61	72.45	(26.84)
2	Kerala	10.00	57.00	8.18	75.38	505.20	(429.82)
3	Tamil Nadu	456.00	143.00	19.38	618.86	1005.24	(386.38)
4	Pondicherry	47.00	0.00	4.94	51.94	96.17	(44.23)
5	Andaman &Nicobar	0.00	0.00	0.00	0.00	849.91	(849.91)
6	Ministry of Shipping	0.00	0.00	0.00	0.00	214.65	(214.65)
7	Total in USD Million	553.00	200.00	38.79	791.79	2743.62	(1951.83)
8	Total in Rs. Million	24,055.5	8,700	1,687.4	34,442.9	119,347.3	(84904.40)

External assistance is 29% of requirement.
State wise breakup is tentative


WAY FORWARD

Action Points

- ADB Board approval by March 31, 2005
- Department of Economic Affairs
  - Enter into an agreement with ADB on terms of funding in April 2005
- Office of the Chief Coordinator
  - Design the Program Implementation guidelines and framework in April 2005
  - Lay down a collaboration framework with the States/UTs for project preparation and seamless delivery – March 31, 2005

Comments on Tracking Matrix

- We understand the matrix is to find the funding gap between required funding needs and the pledged assistance
- The column 'Actual' will indicate the draw downs from time to time from the pledged amount. This will be useful to track draw downs only
- However funding gap will not be addressed by this matrix

Concluding Remarks

Government of India appreciates the ADB initiative of setting up the Asian Tsunami Fund (ATF)

The provisioning of $200 million from ATF for India will be useful and timely not just for the financial purposes but also the best practices and technology that it would bring with it during the implementation

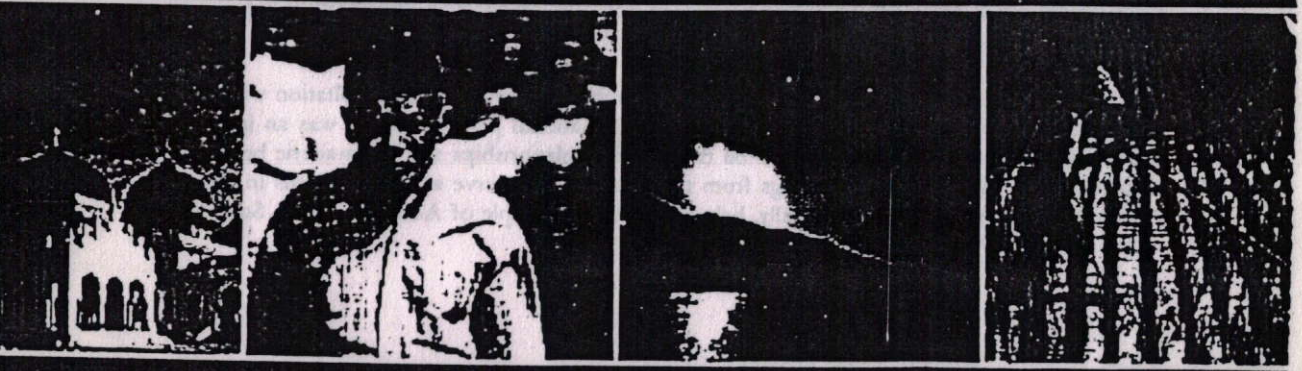
Conclusions and Recommendations

The Government of Malawi has made considerable progress in addressing the problem of HIV/AIDS and has established a broad framework for action. However, the epidemic is still growing rapidly and will have a devastating impact on the country's development. Urgent action is needed to strengthen the multisectoral response to the epidemic.

The Government of Malawi has made considerable progress in addressing the problem of HIV/AIDS and has established a broad framework for action. However, the epidemic is still growing rapidly and will have a devastating impact on the country's development. Urgent action is needed to strengthen the multisectoral response to the epidemic.

The Consultative Group on Indonesia
January 19-20, 2005

INDONESIA:
Notes on Reconstruction
The December 26, 2004 Natural Disaster



BAPPENAS

A Technical Report Prepared by BAPPENAS
and The International Donor Community

FOREWORD

The December 26 earthquake and tsunami devastated the lives of millions of people, leaving a wake of destruction from Asia to Africa. This was the worst natural disaster in Indonesia's history, and Aceh and North Sumatra suffered the most. Over 110,000 people lost their lives, an estimated 700,000 people were displaced, and many orphaned. The scale of the damages to the local economy, infrastructure, and administration were unprecedented. In an instant, the livelihoods and security of hundreds of thousands of the survivors were ruined.

But this tragedy has galvanized the humanitarian spirit in Indonesia and throughout the world. While it is impossible to replace the loses from this truly horrific event – the Government of Indonesia, along with the support of the international community, is prepared to take on the challenges of reconstruction. Ultimately this task is less about replacing physical assets than it is about rebuilding livelihoods and communities. This can only happen by developing a credible and inclusive recovery plan, relying on a bottom-up participatory approach that truly captures the aspirations and vision of the people of Aceh and North Sumatra.

The Government of Indonesia's response to the immediate needs of the relief efforts has been swift and effective. As this critical work makes the transition to reconstruction, and the communities begin to recover from the initial shock and face the future, a comprehensive strategy is needed to help guide the reconstruction process. This report, *Indonesia: Preliminary Notes on Reconstruction* sets the groundwork by highlighting a range of possible responses based on existing domestic programs and borrowing from global best practices. In the next few months the government will develop the reconstruction strategy for Aceh and North Sumatra – one that is crafted in close consultation with the affected communities.

Indonesia's leaders have already expressed their guiding principles for reconstruction, and they can count on the full support of the international community. If adhered to, they will ensure reconstruction will be as equitable and efficient as possible – while also offering new hope and stability for Aceh, a province that has experienced its share of hardships.

The reports were prepared under the guidance of Bappenas, and in close consultation with the Government of Indonesia's line agencies and its international partners. This was an intense collaborative effort, one that strengthened the working relationships and camaraderie between all participants. We hope the findings from these reports will serve as a sound basis to make informed decisions and, more critically, help empower the people of Aceh and North Sumatra to rebuild their lives and determine their own future.

Sri Mulyani Indrawati

State Minister for National Planning
Development Agency / BAPPENAS

Andrew Steer

World Bank Country Director, Indonesia
on behalf of the contributors from donor agencies

ACKNOWLEDGEMENT

This report was a collaborative effort between the Government of Indonesia and the international donor community. The magnitude of the tragedy was an added motivation for all of those involved.

This effort was guided by Bappenas, with invaluable contributions from many government line agencies. The Government's quick mobilization in the field, its organization in Jakarta, and its rapid dissemination and analysis of data were key foundations for the preliminary assessment of damages.

The donor community, together with its partners in government, rallied its collective resources to respond to the urgent reconstruction efforts. Many bilateral and multilateral agencies participated in a two-week effort, working together with Bappenas to complete these reports. The following organizations were key contributors: ADB, AusAID, Danida, DFID, ECLAC, EU, FAO, GTZ, IFAD, IFC, ILO, IMF, JBIC, KfW Development Bank, Perpamsi, The Asia Foundation, UN Habitat, UNHCR, UNDP, UNEP, UNESCO, UNFPA, UNICEF, UNISDR, USAID, WHO, WSP and the World Bank.

We also acknowledge the dedication of all of the local and international NGOs, relief organizations, volunteers, universities, trade unions, and the residents of Aceh – who provided invaluable information for the content of this report. We would also like to thank Jez O'hare for donating his photographs of Aceh, and to Perry Mandeville, for working around the clock to provide satellite imagery for our analysis.

Any follow-up questions, or request for additional information should be directed to Sujana Royat of Bappenas (sudjana@bappenas.go.id), or to Ani Dasgupta (adasgupta@worldbank.org) of the World Bank.

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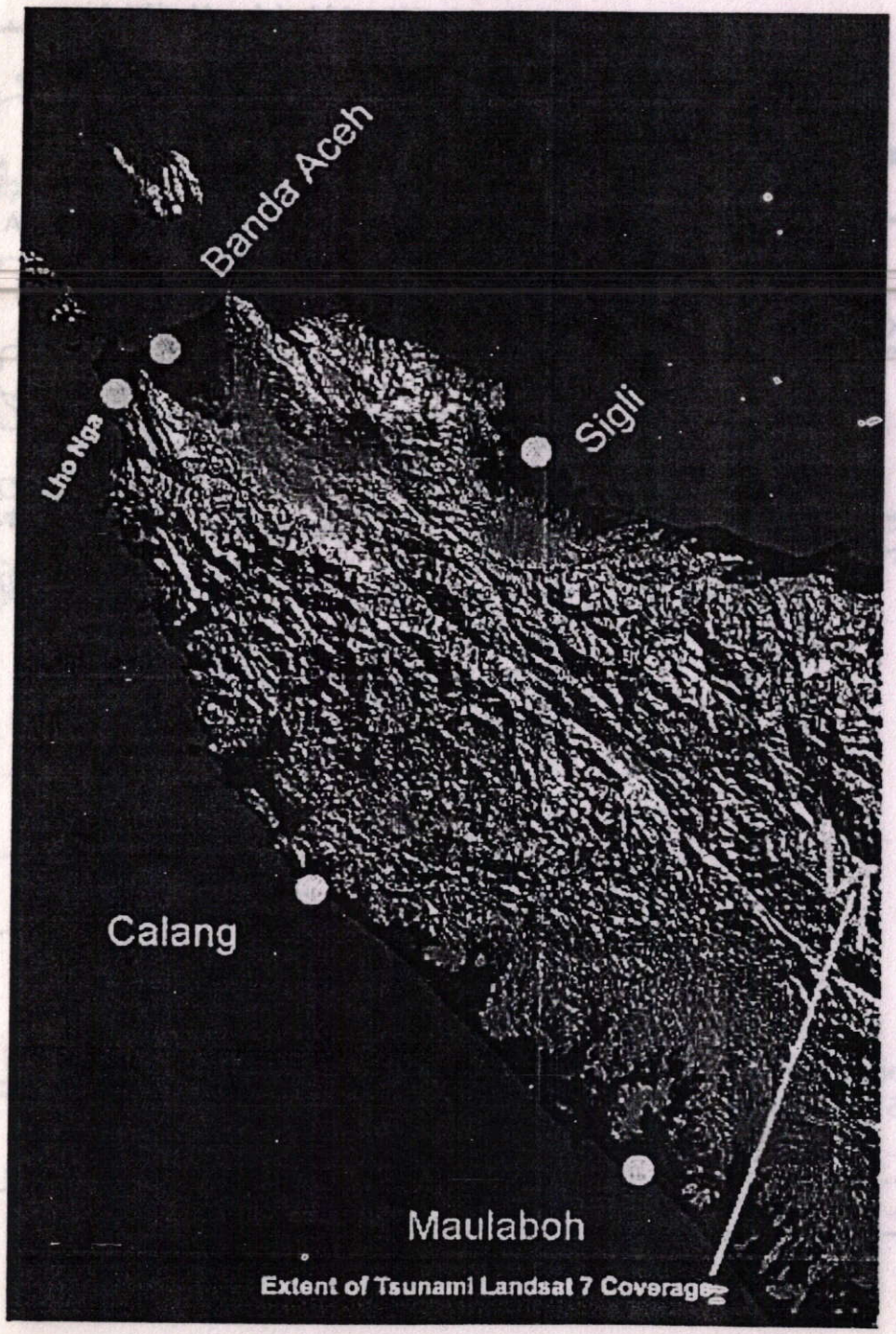
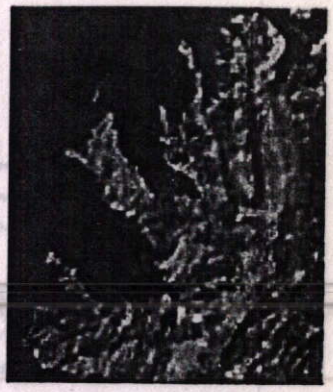
Aceh Tsunami Impact Zone





This map estimates the impacted areas on the coast of Aceh. The areas marked in red illustrate the water line and extent of penetration from the tsunami on December 26th, 2004.

The areas were defined using multispectral analysis (bands 5,4,2) of Landsat Imagery to capture the extent of water damage/loss of vegetation.

Collection date: December 29, 2004

THE WORLD BANK

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Contact: Andre A. Bald

Source:
QuickBird (60cm), Landsat 7, ETM+, and SRTM (90m DEM)

Imagery and Mapping by:

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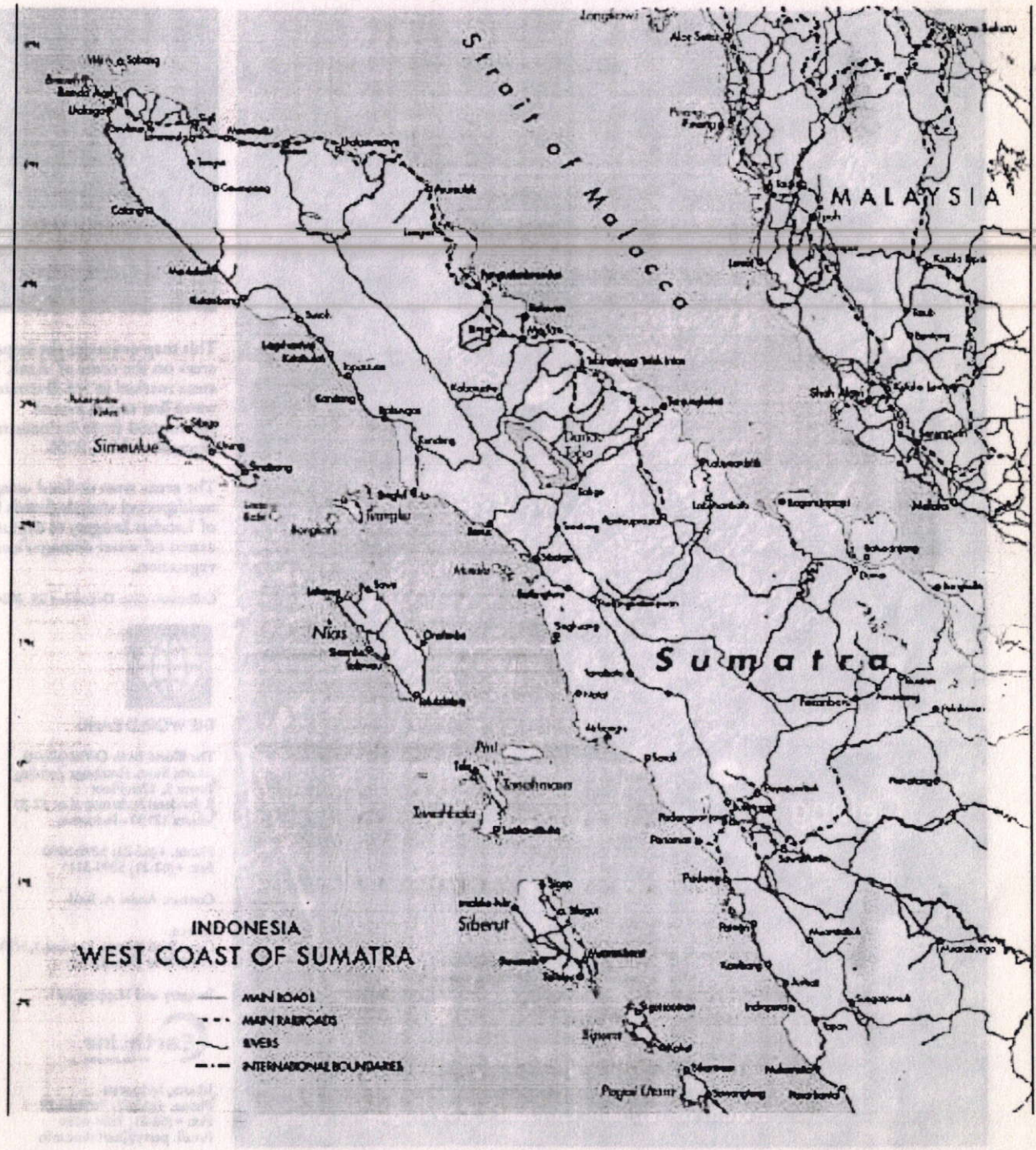
Region Map

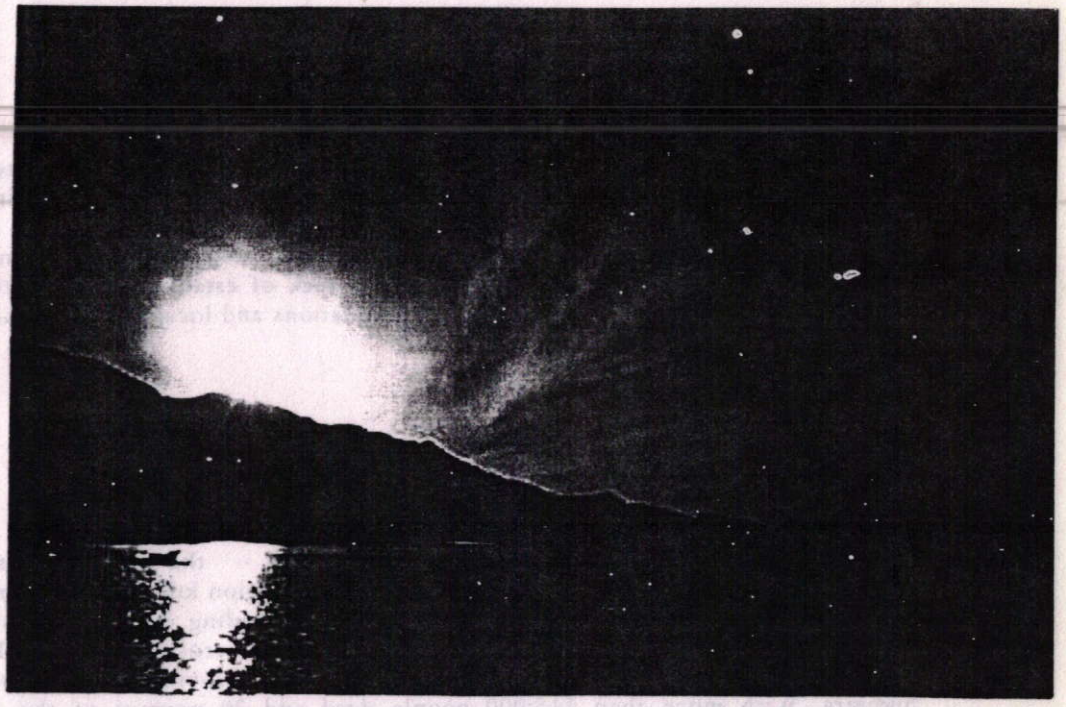


GLOSSARY

ADB	Asian Development Bank
ATM	Automated Teller Machine
BAPPENAS	National Development Planning Agency
BI	Bank Indonesia
BMG	Badan Meteorologi dan Geofisika
BPD	Regional Development Bank
BPDs	Village Councils
BPS	Central Statistics Bureau
BRI	Bank Rakyat Indonesia
CAMP	Coordination of Aid and Monitoring of Projects System
CBO	Community Based Organization
CCLC	Creating Learning Communities for Children Program
CDD	Community Driven Development
CHARM	Community Hazard and Risk Management Program
COFISH	Coastal Community and Fisheries Resource Management Project
CZMP	Coastal Zone Management Plan
DAK	Special Local Government Grant
DAU	Consolidated Block Grant
DGLC	Directorate-General of Land Communications
DGSC	Directorate-General of Sea Communications
DGWR	Directorate-General of Water Resources
DIP	Budget Warrents
DMI	Disaster Mitigation Institute
DPRD	Local Council
DPUP	Provincial Office of Ministry of Public Works
DRM	Disaster Risk Management
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
EIA	Environment Impact Assessment
EIII	Employment-intensive Infrastructure Investment
FAO	Food and Agriculture Organization
FIRP	Financial Intermediation Revival Program
GAM	Free Aceh Movement, Gerakan Aceh Merdeka
GoI	Government of Indonesia
HCC	Housing Coordinating Committee
IDP	Internally Displaced Person
IFMS	Integrated Financial Management Systems
IPLT	Septage Treatment Plants
Kabupaten	District Government
KDP	Kecematan Development Program
Kelurahan	Administrative Sub-district (lower level of government administrative unit in a Kota)
Kota	City District
KPKN	Central Treasury Office
MCK	Communal Sanitation Facilities

MCRMP	Marine and Coastal Resources Management Project
MMAF	Ministry of Marine Affairs and Fisheries
MOC	Ministry of Communication
MOC	Ministry of Communication
MoHa	Ministry of Home Affairs
MORA	Ministry of Religious Affairs
MP-SEI	Management Plans for Strategic Environmental Impacts
MPW	Ministry of Public Works
MUI	Indonesia Ulamas Council
NAD	Nanggroe Aceh Darussalam
NGO	Non-governmental Organization
NSC	National Steering Committee
PDAM	Government-owned water enterprises
PERPAMSI	Association of Indonesian Water Supply Enterprises
pesantren	religious boarding schools
PLN	State-owned electricity company
PME	Participatory Monitoring and Evaluation
PODES	Village survey
PSRP	Payment System Restoration Program
PT PLN	the National Electricity Company
PUP	PU Pengaiaran, or Water Resources Service Office
RRSP	Rural Roads Sumatra Project
Satkorlak	Provincial level co-ordinating unit of Bakornas
Satlak	District or municipal level co-ordinating unit of Bakornas
SGP	National Scholarships and Grants Program
SIGP	School Improvement Grants Program
SPBU	Road Side Fuel Stations
SRRP	Sumatra Region Roads Project
SSWP	Small-scale Water Providers
SUMUT	North Sumatra
Susenas	National Household Expenditure Survey
SUSI	Survei Terintegrasi
TA	Technical Assistance
TNI	Indonesian Army
UN	United Nations
UNHCR	United Nations High Commission for Refugees
UPP	Community-driven development project
USB	Unit Sekolah Baru
USO	Universal Service Obligation
USO	Universal Service Obligation
warungs	roadside stalls
WFP	World Food Program
WHO	World Health Organization

Framework for Recovery Strategy



Aceh Photos donated by: Jez O'hare

I. BUILDING THE NEW ACEH AND NORTH SUMATRA: A FRAMEWORK FOR RECOVERY AND RECONSTRUCTION

SUMMARY OF LOSSES AND DAMAGES

The 26 December 2004 disaster has focused national and international attention on the lack of early warning and appropriate immediate response mechanisms in the face of the tsunami. While in the case of Indonesia, a minimal amount of time was available to warn communities (less than 15 minutes) between the occurrence of the earthquake and the arrival of the tidal surges, lack of established international and national communication channels to alert populations and locations in harms way has gathered much attention.

FRAMEWORK FOR RECOVERY AND RECONSTRUCTION

On December 26, 2004, an earthquake and tsunami -- the world's worst natural disaster in living memory – struck the Indian Ocean region killing more than 150,000 people, making almost a million homeless, and sending a wave of shock, an outpouring of sympathy and offers of assistance from across the globe. Indonesia bore the worst brunt of the disaster, concentrated in the provinces of Aceh and North Sumatra. With more than 115,000 people dead and 20 percent of the Acehnese population homeless, no family in the region is untouched by the disaster. Hundreds of communities have been washed away. Local governments have collapsed. In many cities and villages, the tsunami painted a line of destruction across the landscape. On one side of the line, nearly all the infrastructure must be rebuilt or rehabilitated. But the wounds on the other side are devastating as well, as the people of Aceh and North Sumatra have been severely traumatized by the scale of the tragedy. Rebuilding the region will require far more than rebuilding roads and bridges; it will entail reviving lives and livelihoods and resurrecting entire communities.

The first priority has been to provide immediate humanitarian relief to ease the suffering of those who survived and restore their basic needs. But as needs shift from immediate relief to longer term recovery, a coherent, credible and comprehensive strategy is needed that addresses the considerable challenges raised by the scale and scope of the disaster. This paper provides recommendations based on international experience for the development of a reconstruction strategy for Aceh and North Sumatra. It offers a set of broad lessons and principles for designing and managing

the reconstruction efforts. It also brings together a series of sectoral notes that make recommendations on core principles, areas of short- and medium term interventions, and examples on how to carry them out. But this is only a first step in building a credible and effective strategy which will require the full participation of the people from the affected communities. Only these people, who have suffered so much, can define their needs and determine the priorities for rebuilding their communities.

TOWARDS A COMPREHENSIVE AND CREDIBLE RECOVERY STRATEGY

Indonesia's leaders have already expressed a broad vision for a National Recovery and Reconstruction Strategy. The six key principles outlined by the Government include:

- A people-centered and participative process, where the administration listens to and understands the feelings and aspirations of the people;
- A holistic approach – rebuilding based on a comprehensive strategy;
- Effective coordination for consistency and effectiveness among sectoral and regional programs at national and local levels;
- Drawing a distinction between rehabilitation – achieving minimum standards – and reconstruction, with a clear strategy for each;
- Focusing on services and institutions rather than projects;
- Incorporating fiscal transparency and effective monitoring into the rehabilitation and reconstruction programs.

The recovery plan needs to be effective in coordinating the stakeholders of the recovery process. Given the scale and scope of the disaster, recovery and reconstruction efforts will involve nearly all of the key ministries and state agencies, working across all levels of government – central, provincial, kabupaten, kecamatan and desa. Moreover, the unprecedented outpouring of domestic and international support for the reconstruction phase has brought literally hundreds of local and international NGOs, private sector actors, official donor agencies, and multilateral institutions to the affected regions and Jakarta to provide generous assistance, often on the basis of their own internal standards and guidelines. The challenge will be to translate these resources into results on the ground and to coordinate this multitude of actors around a common vision for the recovery of the people in Aceh and North Sumatra.

A CHALLENGING ENVIRONMENT

The reconstruction of the Tsunami-affected areas will take place in a challenging environment. First, the disaster struck an area of Indonesia already affected by on-going conflict. To help foster a sustainable peace, the recovery program can contribute through explicit efforts to improve governance and avoid replanting the seeds which helped to generate conflict. A conflict-sensitive approach will need to pay particular attention to equitable targeting of geographical areas and beneficiaries, the composition of reconstituted administrative and coordinating structures, and transparency in decision-making and financial flows.

Second, the scale of human losses and population displacement has radically affected the composition of communities in many locations. Rebuilding local infrastructure in the most severely-affected areas will need to await a process of consultation with remaining community members on the timing and choice of destination for their return and reintegration. Land disputes may be a risk in some areas. Many communities have been widely dispersed in the aftermath of the disaster, and local leadership may have been lost – complicating the consultation process. Even in the areas which were not directly affected, the composition of some communities has been radically altered by the influx of IDPs, not all of whom will necessarily choose to return to their communities of origin. These changes to community composition, identities and structures have the potential to cause social tensions unless they are sensitively managed, and sufficient time is allowed for careful consultation with communities.

Third, the provincial recovery process will take place in the context of a relatively new decentralization process. Due to the virtual collapse of the provincial administration and several district and local administration structures, it will be difficult in the short-term for provincial institutions to fully contribute to the recovery effort. This will require over time a strong and rapid program of capacity-building to the provincial administration and district and local governments in the affected areas. NGOs and donor agencies need to avoid undermining local institution-building by paying high salaries to local staff or bypassing government coordination and decision-making mechanisms.

Fourth, the unprecedented outpouring of generosity from private citizens around the world is already drawing a large number of NGOs, agencies and institutions into the tsunami-affected areas. Coordination is always a challenge in complex emergencies: in this case the task will be complicated by the large number of actors involved and the volume of funds transferred, not only off-budget but outside official development assistance flows. Government efforts to establish a unified planning and budgetary framework and effective information and coordination structures will need to be respected by all the international actors engaged.

RAPID RESPONSE AND BROAD PARTICIPATION – A PHASING STRATEGY

The recovery strategy needs to find a balance between responding rapidly and broad participation. People need to get back to work, get money in their pockets and put their children back in school. Some of these programs, supported by the government and the UN, have already started. At the same time, the people will need time to determine where and how to rebuild their homes and businesses. And whole communities will need time to rethink the design of their towns and villages and rebuild their healthcare and school systems. Programs to address immediate reconstruction needs, while planning for longer term reconstruction need to be carried out in tandem. Finding the right balance, building on a needs assessments and specific sector strategies, will be crucial for the success and sustainability of the recovery process.

Some programs can and should be implemented immediately. These include support for those with trauma, labor intensive work programs, and getting children back to school. Large infrastructure rehabilitation could also start immediately, particularly with respect to telecommunications, electricity, ports, and airports. These sectors are dominated by state-owned enterprises, and consultation with the affected population and the private sector should support the most cost-effective rehabilitation.

For longer term participation in the planning process, it is necessary to reconstitute communities through restoring community organizations. This will require extending those networks of community-based organizations that are still functioning in the affected areas. It will also require working within the temporary shelters of displaced persons to try to preserve and restore community ties.

Re-establishing local governments to provide core local services should be among the highest priorities. The Aceh and North Sumatra public administration, justice and security systems have been paralyzed. In Aceh, two thirds of the local governments are not yet operational and it will take time for effective participation through local elections and fully functioning institutions to be re-established. In the interim, significant assistance from national ministries and agencies from Jakarta will be crucial to quickly restore services, but such arrangements should have clear "sunset" provisions and transition strategies to move back to local control over provision of public services as soon as possible.

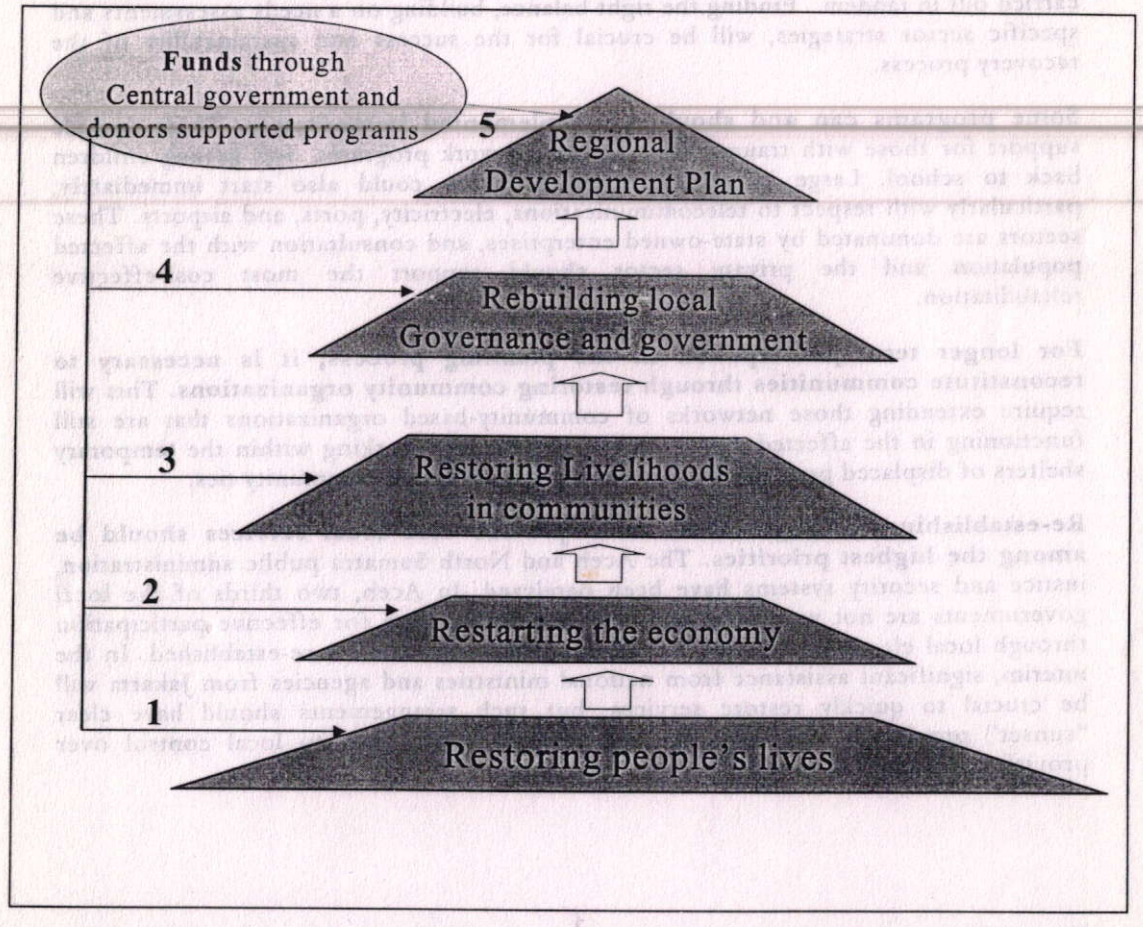
FIVE OBJECTIVES

A successful recovery strategy should have five basic goals:

- To restore people's lives – clean water to drink, roads to take their children to clinics, roofs over their head, a source of income to support their families.
- To restore the economy – jobs, markets for people to sell and buy daily necessities, banks that lend to small-scale enterprises.

- To rebuild communities to give them social stability, a sense of orientation and local solidarity.
- To restore the system of local governance – local governments that represent people's aspirations and guide development towards that goal.
- To re-establish the province as politically stable and economically vibrant, a growth pole of Indonesia that attracts investment from the whole region and is resilient and protected against new disasters (see also chart 1).

CHART 1 - FIVE OBJECTIVES AND A BOTTOM-UP PROCESS



A. RESTORING PEOPLE'S LIVES

Labor intensive public works. Cleanup and preliminary reconstruction should begin with a simple system of paid, labor-intensive public works. Wages need to be set at an appropriate level to avoid drawing people out of other jobs. All villagers would be eligible, not only those directly affected by the disaster. Such a program will provide early cash in the hands of the poor and will also help distract them from the traumatic experience. This system should be used only for simple clean-up and very minor repairs since it will usually not have sufficient technical oversight or tools to take on more difficult public works, which can be tackled during the reconstruction phase.

Recapitalizing household micro-enterprises with grants. Reconstruction will bring with it many opportunities to re-start small businesses that were ruined by the crisis. To re-start these household businesses, the choice is between providing communities with micro-credit versus providing them with grants. However, experience in rural areas elsewhere suggests that start-up grants, even for private goods such as small businesses, are a better instrument than micro-credit would be. The reason is that initial repayment rates are likely to be low. Provided that community planning processes are functioning, simple criteria for assigning the start-up grants can be presented to communities.

Community aid education. Experience from reconstruction efforts elsewhere shows that communities often do not know what aid may already be available. Encouraging communities to approach service providers requires sufficient information and, often, facilitation and training in local advocacy. A particularly effective mechanism for disseminating information about what aid programs are available is radio programming. Developing a network of local-language radio programming should be a priority. Community-level training programs in "aid advocacy" are particularly important for highly vulnerable groups since they are less likely to participate in normal group meetings, particularly with outside donors. Indonesian NGOs such as PPSW, and YAPPIKA have already piloted such programs in Aceh and Nias. Radio Suara Muhammadiyah has also established a radio network in some IDP camps across Aceh.

B. RESTARTING THE ECONOMY

Credit and microfinance. As commercial banks reestablish operations the demand from SMEs and large firms for new credit to rebuild and purchase working capital will be high. A credit facility through commercial banks to business should be established to promote investment and accelerate rebuilding. A large number of small businesses which may not have access to the formal banking sector will try to access credit through non-commercial bank sources such as

cooperatives, credit unions, development banks and microfinance institutions. Smaller business credit programs should be channeled through these organizations.

Rehabilitate transport infrastructure. The reconstruction program needs to restore the structural integrity of heavily-damaged or destroyed roads, ports or airports. This could include new construction where this would improve the resilience of the transport network against disasters and improve capacity for future growth. The reconstruction work should include upgrading of construction standards where necessary to ensure capacity, loadings and resilience of the structure.

Employment-intensive investment in infrastructure. In the rehabilitation phase, the main priority is to focus on infrastructure that is fundamental to improving access to markets, which provide productive inputs and basic living necessities. Labor-based methods should be used to the extent that is economically and technically feasible. The infrastructure should therefore be both asset-creating and employment-creating.

Encourage entrepreneurship. In parallel, a local economic revival strategy should focus on local entrepreneurship and the promotion of micro/small enterprises, enhancing their capacity to respond to emerging market opportunities and encouraging new initiatives. During the rehabilitation phase many people will turn to micro-enterprise activities to generate an income. These re-emerging entrepreneurs will need access to micro-finance and know-how. Special attention must be given to women entrepreneurs as they commonly constitute the largest number of micro-entrepreneurs, yet are the most disadvantaged in terms of access to productive resources.

C. Restoring Livelihoods in Communities

Manage temporary shelters carefully. Repairing or reconstructing houses is among the victims' highest concerns. Land needs to be cleared, spatial plans developed, titles re-assigned, and compensation provided. Temporary shelter is thus unavoidable. However, based upon lessons learned from other disasters, temporary shelters have a tendency to become permanent if they are not properly managed. To the degree possible, efforts should be made to encourage affected residents to remain on-site or as close to their original property as possible so that they are in familiar surroundings, their unease at being away from their remaining assets is reduced, they are better able to work at rehabilitating and reconstructing their homes and they create less demand for new service facilities and large-scale temporary investments. Large settlements

carry some benefits in terms of economies of scale, but for health and social reasons, small temporary settlements are preferable.

Managing housing reconstruction. Community-built housing nearly always works better than contractor or government-built housing does. It costs less, achieves higher rates of satisfaction, and it provides a cornerstone for successful community reconstruction. It is also among the best ways to inject cash into local economies. Given the nature of the disaster and anticipated reconstruction, local housing programs need to be backed by certain types of public planning actions. First, in the more urban areas, basic design standards are needed for construction quality and sanitation. This needs to start soon. Second, if large numbers of households start rebuilding all at once, there will be significant shortages of materials and house-building specialists, so advance procurement planning will be needed. Third, highly vulnerable households will not be able to reconstruct their houses without additional help.

Re-establish coastal communities. The tsunami has uprooted many poor fishing and coastal communities. To assist poor communities and individuals whose livelihoods were dependent on natural resources that are now damaged or destroyed, start-up grants, micro-credit and technical assistance can be made available to develop sustainable livelihood options. With respect to the fisheries, the activities should focus on the rehabilitation of infrastructure, provision of fishing gear, and reviving fisheries-related craftsmanship. The immediate activities in agriculture should focus on rehabilitation of farms, and provision of relevant tools, equipment and inputs. Timing is critical because delays may lead to farmers' missing the planting for the next season.

Support host communities that have taken in displaced people. It is already clear that across Aceh and Nias, neighboring communities have taken in large numbers of displaced people. They will require support. This should be provided through open community discussions so that villagers are all aware that their contribution to the reconstruction effort is acknowledged. It should also distinguish between short-term shelter, and permanent relocation since the latter will require entering new numbers into district service provision plans.

D. REBUILDING LOCAL GOVERNANCE AND GOVERNMENT

Restoring the decentralized representative institutions of governance. As key representative institutions, bodies such as the DPRDs and BPDs could coordinate and lead the next stage of local needs assessments and local reconstruction plans. They could also establish local rehabilitation and reconstruction centers to coordinate

with the provincial and national recovery effort to help coordinate incoming aid. In areas where local administrations do not function at all, it is essential to re-build representative institutions of governance from below. As people start coming back to their villages, elections to Village Councils (BPDs) would represent an important first step in the rebuilding of local governance.

Re-establishing basic public administration and security functions. The system of law and order needs to be able to provide stability and security during the recovery and rehabilitation process. The structure of the police force and its command hierarchy are fragmented. Investigatory, prosecutorial and adjudicatory services have collapsed and many judges seem to have fled to other parts of the country. Many detention facilities seem to be dysfunctional, as well. It is critical that standing procedures are established to assist the police and other justice institutions to maintain law and order.

Public awareness of financial information. Aid agencies should develop a standard operating procedure for sharing financial information with communities, local governments, the province and central government institutions. Three minimum steps are: (a) public signboards that provide basic information on total budgets, wage rates, and allowable overheads; (b) village-level public readings of all bids from suppliers and findings by audit agencies (BPKP has developed a good methodology for this); and (c) recording all entering funds and programs into village financial records.

E. Developing a Regional Development Program

Reorienting Aceh. With the disaster, Aceh's demography, economy, ecology and even geography has significantly changed. Some of the impacts, such as an outflow of people to other parts of Indonesia or the impact on the conflict in Aceh cannot be foreseen yet. A lot will also depend on the success of the recovery which in turn will depend on the inclusiveness of the process.

A development strategy for the province. Once the recovery effort is under way and the social and economic conditions have stabilized, a province-wide regional development plan could focus on institutional challenges for long term growth and post-conflict recovery. This would include scenarios and a diversification strategy after the gas field in Arun has been depleted by 2015 and with it the revenue windfall from natural resource sharing.

IMPLEMENTATION

Indonesia's reputation for good governance, both domestically and abroad, will rise or fall on the basis of how the tremendous outpouring of public and private sector support for the recovery and reconstruction of Aceh and North Sumatra is managed and governed. The challenge is to develop an efficient, transparent and equitable mechanism for transforming the billions of dollars pledged around the world into the hundreds of dollars needed by each individual in the affected areas to rebuild lives, livelihoods and communities. As these funds have been pledged "in trust" for the people in the affected communities, it is essential that the Government of Indonesia embed the funds in a framework that meets and even exceeds the international standards of other high profile trust funds (such as oil revenue funds in Alaska, Alberta and Norway). To do this will require clear and well-designed mechanisms for channeling multiple financing sources, for managing the vast array of reconstruction activities, and for governing the use of funds. The main principles for each of these areas are outlined in the sections below.

A. FINANCING

It is too early to make any aggregate assessment of the financing picture for the Aceh reconstruction. The international response has been unprecedented, and official and private donors have already pledged several billion USD for Aceh and North Sumatra. The detailed amount and composition of external flows, however, is difficult to project because several donors will wait for the results of the needs assessment, before finalizing their pledges. In addition, the very large private contributions still need to be clarified.

There are three broad options for channeling official donor funds

(i) through direct bilateral programs. This is likely to be most suitable for the largest bilateral donors, which already have substantial programs in Indonesia;

(ii) through co-financing with multilateral institutions (ADB, UN agencies, World Bank). This could include co-financing loans, providing grants attached to existing and new projects, or creating trust funds executed by multilateral institutions. This option can be attractive to the donors because: they can leverage their funds against a larger pool of resources from the multilaterals; they make use of existing aid delivery mechanisms, and they can take advantage of the fiduciary framework of the multilaterals to ensure adequate safeguards on the use of their own funds;

(iii) through a multi-Donor Trust Fund or multi-donor programmatic grant. For MDTFs, international experience suggests many different management and governance arrangements in terms of how they are administered on a day-to-day basis, the allocation of responsibility for project approval and program coordination, and the extent of earmarking of donor funds. Multi-donor programmatic grants are a new instrument through which donors can directly support the Government's own reconstruction program through a quick-disbursing, multi-tranche grant program linked to a clear framework of results, indicating achievement of the Government's own goals. Both MDTFs and multi-donor programmatic grants have the advantage of

strong country ownership, simple arrangements for flow of funds and greater coordination among donors in line with a unified recovery plan and budget.

Recognizing the considerable diversity among donors in Indonesia, some combination of the above financing channels is the most realistic option for reconstruction aid to Indonesia that maximizes assistance and responds to donor concerns. However, to ensure effective coordination and clear country ownership, it is essential to develop an overarching Government-led management and governance structure that can cut across the different financing channels. Bilateral programs, co-financed multilateral programs and MDTFs can all be filtered through a Government management structure that reviews each program for consistency with Indonesia's own recovery plan and evolving priorities.

Regardless of the specific means by which donor resources are channeled, it is important that significant funds are provided through the government budget. Bringing donor funds on budget can help coordination and effective implementation of the recovery strategy. Lessons from other countries that experienced significant aid inflows highlight the importance of ensuring coordination, country ownership and measures that reinforce the government's budget and accounting system. Experiences with off-budget support have been problematic because each project had its own accounting, financial management, and procurement arrangements, resulting in fragmented recovery efforts.

B. Management Structure

Managing recovery and reconstruction from Aceh. If the people in the affected communities are to take the lead both in planning and participating in the reconstruction of their livelihoods and communities, it is essential that the main management functions of these efforts be based in Aceh. Although the capacity of sub-national institutions in the affected areas, especially at the province level, has been severely damaged in the aftermath of the disaster, the management structure should be designed to revitalize that capacity and, ultimately, to transfer these management functions back to the appropriate sub-national institutions. Over time, the regional office of BAPPENAS – the BAPPEDA of Aceh – could spearhead the reconstruction effort with some additional support from the center and from donor technical assistance programs. BAPPEDA/Aceh is well connected with local institutions in Aceh and could serve as the bridge to BAPPENAS, which has been charged by the President to coordinate the overall reconstruction effort.

Until the BAPPEDA is ready to assume this role, an institution to coordinate the reconstruction efforts will be needed. This institution could take the form of a coordinating body with a clear terms of reference and limited lifespan. Alternatively,

the management functions could be provided by some combination of the existing state institutions (Coordinating Ministry of the Economy, BAPPENAS, and Ministry of Finance) with additional staff capacity and training as needed. It is important not to underestimate the considerable time and transaction costs needed to manage such a large and diverse range of additional assistance funds. Adding these burdens to the existing workloads of already overstretched ministries and agencies is likely to result in serious managerial lapses, with considerable fiduciary and reputational risks.

Given the scale and scope of the recovery and reconstruction efforts, it is not realistic that one agency executes the totality of the recovery program. Rather, the agency charged with the recovery effort should be a clearinghouse or "one-stop shop" of information on projects and programs derived from the reconstruction strategy as well as on the available financing sources and their terms and conditions. The register of financing sources should include on-budget financing options (such as dedicated APBN/APBD reconstruction funds, bilateral and multi-donor trust funds, concessional financing from bilateral and multilateral sources, overseas development financing, and commercial loans) and off-budget financing options (including bilateral off-budget trust funds, NGOs, charitable contributions and private sector donations). All donor and charitable agencies and organizations should be required to report their assistance offers. The clearinghouse would then be able to match needs identified in the Recovery and Reconstruction Strategy with the appropriate financing source in a tiered approach that would give preference to the "least cost" and "most flexible" financing option within the terms if reference set out by the relevant donors.

The clearinghouse should be based on an ICT-enabled aid management, coordination and tracking system. Such a system will promote information sharing on aid activities from conceptualization to implementation, and facilitate collaboration between government and donors. In addition, the system should track and report on the delivery of aid for better planning and service delivery.

In addition to these clearinghouse and matching functions, **the management structure designed to coordinate reconstruction efforts should, in conjunction with the relevant line ministries and agencies, set out the overall fiduciary guidelines for reconstruction projects.** This would include developing special guidelines to promote the timely implementation of projects in such areas as (i) Procurement; (ii) Supervision of projects; (iii) Funds flows and payment validation procedures, (iv) Accounting and reporting standards; and (v) Audit guidelines.

C. GOVERNANCE STRUCTURE

Regardless of the number of roads repaved and bridges rebuilt, the success of the reconstruction efforts will largely depend on the strength of the governance arrangements over the substantial funds pledged. The governance arrangements refer not only to the fiduciary safeguards preventing corruption, fraud, and misuse of

reconstruction funds, but also the mechanisms by which the interests and concerns of the people in affected communities are represented in the planning and implementation of reconstruction activities. Indonesia's own experience with community-driven development programs has clearly demonstrated that broad community participation in decision-making and oversight can be one of the most effective methods to prevent corruption and detect problems if they do occur. But in the context of a post-disaster reconstruction where people have been traumatized by the extent of the destruction, such participation can also be one of the best forms of healing and personal recovery.

At the very center of any effective governance framework should be an independent board of overseers with a membership drawn largely from the affected communities to ensure transparency and accountability over the use of reconstruction funds. The board should be clearly distinguished from the management structure of the recovery and reconstruction operations and would have four basic responsibilities:

- to **represent the concerns of the affected communities** in the use of reconstruction funds;
- to provide **public oversight** regarding the fiduciary implementation of the fund;
- to give **guidance to the management on overall strategy and priorities** as the recovery evolves;
- to perform regular and comprehensive **monitoring and evaluation** functions over the recovery and reconstruction effort.

To carry out these responsibilities, the board could take on the following specific functions.

- **Hold regular public consultations with representatives of the affected communities.** These meetings would be conducted to solicit citizen feedback on the ongoing recovery and reconstruction efforts and to gather recommendations for changes to the recovery and reconstruction program. These meetings should be based on a regular schedule published in advance, be open to the general public, and be held in easily accessible venues.
- **Approve and publish independent audit reports on all financial transactions.** Joint audits should be performed by the Supreme Audit Agency and an internationally recognized private audit firm appointed by and reporting directly to the board. The terms of reference for the audit should include certification of quarterly financial statements, verification of physical implementation of work documented and value-for-money analysis of work completed.
- **Approve and oversee the procurement guidelines for recovery and reconstruction operations.** Given the need for fast-disbursing assistance for key elements of the recovery operation, special procurement procedures will be necessary for efficient processing of projects and programs. Management should submit to the board for approval a semi-annual procurement plan that sets out the conditions on implementing agencies for direct contracting of goods and services and sole-source appointment of individual consultants where required. The

procurement plan would also specify the types of transactions that would require an independent Procurement Agent that would be given complete authority to execute procurement transactions based on specifications agreed to ex-ante.

- **Manage a Public Complaints Bureau for receiving allegations of corruption, fraud or misuse of recovery and reconstruction funds.** The Public Complaints Bureau should report directly to the board. Its functions are to provide an easy-to-use format for soliciting complaints from the public, such as easily identifiable, self-addressed postcards, telephone/sms hotlines, and a complaints website.

- **Appoint, in consultation with the Corruption Eradication Commission and the Attorney General's Office, a Special Prosecutor for the investigation of corruption allegations involving recovery and reconstruction funds.** The Special Prosecutor should be granted the authority by special decree for expedited investigation and prosecution of such corruption allegations to be adjudicated by the Anti-Corruption Court.

- **Oversee the performance of the recovery and reconstruction operations.** The board would be responsible for Monitoring & Evaluation functions in order to report to the President, to the donors, and to the public on the quality and timeliness of the implemented operations and their consistency with the National Recovery and Reconstruction Strategy. M&E activities should employ participatory methods to involve, as much as possible, individuals and groups directly from the affected communities.

The credibility of the board will depend critically on the credibility of its members and the quality of the selection process. Board members should be nominated by independent constituencies and appointed by the President for a single, fixed term, following an independently implemented fit-and-proper test. At least two-thirds of the board members should be from the affected communities. The potential nominating organizations in the affected communities could include: (i) Recognized civil society organizations; (ii) Religious organizations; (iii) The private sector or relevant trade associations; (iv) Professional associations of accountants, auditors or lawyers; (v) Transparency International or other recognized anti-corruption organizations; (vi) Media organizations; and (vii) Donor contributors to the recovery and reconstruction efforts. The board could also have *ex officio* members, including the Governors of NAD and North Sumatra, chairmen of the provincial legislatures, and nominated members of the DPD representing the affected communities.

To function effectively and to prevent conflicts of interest, the board would need to be financed separately from the budget. Funding could be provided by pooled donor funds. The budget should be sufficient to provide adequate compensation for board members, program support to carry out the functions listed above, a full-time secretariat to assist in those functions, and adequately provisioned headquarters in Banda Aceh with smaller representative offices as required in the affected communities.

Even if implemented well, this governance structure will not completely eliminate corruption and misuse of reconstruction funds. In fact, such a structure, by uncovering corruption when it occurs, is likely to raise the profile of corruption, especially in the media. Nevertheless, a strong governance structure with independent representation from the affected communities should build confidence, both domestically and internationally, in the reconstruction efforts and, by so doing, promote further investment to ensure that the recovery program is sustainable over the long term.

REPUBLIC OF INDONESIA

MASTER PLAN FOR THE REHABILITATION AND RECONSTRUCTION OF THE REGIONS AND COMMUNITIES OF THE PROVINCE OF NANGGROE ACEH DARUSSALAM AND THE ISLANDS OF NIAS, PROVINCE OF NORTH SUMATERA

APRIL 2005

Preface

The earthquake and tsunami that devastated most coastal areas of Nanggroe Aceh Darussalam and Nias Islands in North Sumatra on 26 December 2004, took its toll on lives and left the area severely damaged. As a nation, this huge disaster is unprecedented. We mourn and we grieve. But at the same time, we as a nation share a very high solidarity to give our hands and alleviate the burdens of our brothers in Aceh and Nias.

In the first three months after the disaster, we exerted ourselves fully to respond to the emergency in order to rescue the people so they can survive despite having only minimum life necessities.

We have gone through that stage, and now we are in the rehabilitation stage, to be followed by reconstruction stage. Rehabilitation aims to restore the functions of public service, a process that needs one or two years, and is expected to be completed by the end of December 2006. Reconstruction aims to rebuild the public system, economic system, infrastructure, and governance functions, which is predicted to take two to five years until the end of 2009.

In order to implement the rehabilitation and reconstruction, we need a holistic and comprehensive planning, which takes into account the uniqueness of Aceh and Nias, in the form of a Master Plan for the Rehabilitation and Reconstruction of Aceh and Nias, North Sumatra.

This document is completed in a very short time, during the stage of emergency relief efforts, since it is developed collaboratively by the stakeholders, both at the central and regional levels, which comprise government agencies and non-government organizations. Once more, we have shown our solidarity and togetherness in making the plan, and at the same time in taking preventive measures to avoid severe aftermath caused by similar disaster.

Subsequently, this document will be used as a foundation for Regional Governments concerned and the Implementing Agency for the Rehabilitation and Reconstruction of the Region and People of Nanggroe Aceh Darussalam Province and Nias Islands, North Sumatra Province, in preparing the action plan and the implementation thereof.

Jakarta, April 2005

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Chapter 1
Introduction

1.1. Background

On 26 December 2004, an extremely strong earthquake (8,9 on the Richter scale) occurred below the Indian Ocean, northwest of Sumatra Island. This earthquake, that later caused a tsunami wave, ravaged the most part of Aceh and Nias in Indonesia, a part of Thailand, Sri Lanka, Maldives, Bangladesh, Myanmar, even Somalia's coast in East Africa.

In Aceh and Nias, the earthquake and tsunami wave damaged the most part of Aceh's coastal areas, claiming heavy casualties, destroyed infrastructure, settlements, social facilities such as schools, health centers, security, social and public economic, and government buildings. This disaster also affected the social and economic condition of the people, including their psychological condition and welfare level.

Based on recent information obtained from the National Coordination Agency for Disaster Mitigation and Refugee Management (Bakornas PBP) on March 21, 2005, the fatalities in 20 *kabupatens* in the Province of Nanggroe Aceh Darussalam (NAD)[1] are estimated to reach 126,602 people killed and interned, and 93,638 people missing. The number of fatalities in the Province of North Sumatra is estimated to reach 130 people killed and 24 people missing.[2] Based on the same source of information, the number of scattered refugees is 514,150 people in 21 *kabupaten/kota* the Province of Nanggroe Aceh Darussalam.

Based on calculations, total damage and losses of the two regions are estimated to reach Rp.41.4 trillion; most of them (78 percent) affecting non-public assets, with the remaining affecting government assets.

Given the aforementioned facts, the Indonesian Government, together with a sympathetic international community concerned with the disaster and its aftermath, has taken immediate emergency relief efforts mainly to help the survivors, to immediately intern the bodies in order to prevent further impacts, and to provide quick relief to save the socio-economic life of the affected people.

In turn, emergency relief efforts are to be followed by efforts to rehabilitate all aspects of life of the people of Aceh and Nias, and then to continually reconstruct and restore the regions into their initial, and even to a more advanced condition.

All future medium-term rehabilitation and reconstruction efforts for Aceh and Nias Islands should be based on a Rehabilitation and Reconstruction Master Plan founded on

[1] Data from the Department of Home Affairs on 9 March 2005 at 06:00 a.m.
[2] Data from Bakornas PBP, 14 March 2005.

various philosophies, norms, laws and regulations, and the aspirations of the affected people, in a comprehensive and holistic framework. The policies and strategies for the rehabilitation and reconstruction of NAD and Nias Islands, however, should be implemented within the context of the Unitary State of the Republic of Indonesia (NKRI) through the implementation of Special Autonomy in the Province of Nanggroe Aceh Darussalam as set forth in Law Number 18 year 2001. The aforementioned Special Autonomy has been intended to give freedom to the region in the governance, development and social aspects in line with the local values and cultures that are based on Islamic law. Meanwhile, the rehabilitation and reconstruction activities in Kabupaten Nias are implemented by utilizing the capacity of the Regional Governments of the Province of North Sumatra and *Kabupaten* Nias relatively unaffected by the tsunami, and by rebuilding damaged infrastructure and facilities.

1.2. Objectives

The Main Book of the master plan for the rehabilitation and reconstruction of Aceh and Nias Islands is to serve as guidelines for the following:

1. Create understanding and commitment of the central government, provincial, *kabupaten/kota* governments, the business community, the communities concerned, universities and academicians, NGOs, donor agencies and the international community for the future reconstruction of Aceh and Nias;
2. Prepare a post-earthquake-and-tsunami action plan for the Rehabilitation and Reconstruction of Aceh and Nias Islands that can be immediately implemented by related parties.
3. Coordinate, synchronize and integrate plans of various sectors, the business community and the community (stakeholders) for formulating the Action Plan for the Rehabilitation and Reconstruction of Aceh and Nias Islands based on timeframes, locations, funding sources and the parties in charge;
4. Disseminate and distribute data as well as information to local, national and international communities with respect to the disaster, disaster aftermath, damage and loss assessment, need assessment, as well as early warning system in anticipation of any exposure to disaster;
5. Promote solidarity, participation, and involvement of civil society in the plans and efforts for the rehabilitation and reconstruction of Aceh and Nias Islands through dialogue and public consultations;
6. Design a system and mechanism for the mobilization of funds originating from the State Budget (APBN), Regional Budgets (APBD), the communities concerned and the international community in an efficient, effective, transparent, participatory and accountable manner based on good governance principles.

1.3. Legal Basis

Formally, the legal basis underlying the preparation of the Master Plan for the Rehabilitation and Reconstruction for the Region and People of the Provinces of Nanggroe Aceh Darussalam and Nias Islands—North Sumatra is Presidential Instruction Number 1 Year 2005 concerning Emergency Relief Efforts and the Planning and Preparation of the Rehabilitation and Reconstruction for the Regions and People of the Provinces of Nanggroe Aceh Darussalam and Nias Islands, North Sumatra, in the Aftermath of the Earthquake and Tsunami, issued on 2 March 2005.

This Master Plan has been prepared by the Ministry of National Development Planning/BAPPENAS in cooperation with various related parties, such as ministries/institutions at the central level, as well as with the Regional Governments of the Province of Nanggroe Aceh Darussalam and all *kabupaten/kota* throughout Aceh and Kabupaten Nias, the Province of North Sumatra, and by involving various universities coordinated by Universitas Syiah Kuala, international donor communities, NGOs, and other related parties. Data and Information gathered include various related aspects, such as physical, economic, social, cultural, religious, demographic, institutional and territorial aspects.

This Master Plan has also been prepared based on a holistic, comprehensive and integrated analysis. Particularly for the Aceh region, 4 (four) values underlying the reconstruction of Aceh were taken into account, namely universalism, Indonesian values, Acehnese values, and Islamic values. This Master Plan has also been prepared by taking into account the 2004-2009 National Medium-Term Development Plan (RPJM), as well as the Regional RPJM of Nanggroe Aceh Darussalam and affected *Kabupaten/Kota* in Aceh and Kabupaten Nias, North Sumatra Province.

Particularly in the case of Aceh, several laws and regulations related to governance and development aspects in Nanggroe Aceh Darussalam, especially Law Number 44 Year 1999 concerning the Special Characteristics of Aceh, and Law Number 18 year 2001 concerning the Special Autonomy of the Province of NAD, as well as the Presidential Decree that underlies the implementation of Civil Emergency (*Darurat Sipil)* and Civil Order (*Tertib Sipil)* in Aceh, have served as special considerations in the preparation of the Master Plan for the rehabilitation and reconstruction of Aceh and Nias Islands.

1.4. Timeframe

The Master Plan for the Rehabilitation and Reconstruction for the Region and People of the Provinces of NAD and Nias Islands—North Sumatra covers a period of five years, that is 2004-2009, in line with the implementation period of the RPJM. Upon the expiration of the 2004-2009 RPJM, this rehabilitation and reconstruction master plan document will serve as a reference for the preparation of Aceh and Nias restoration and reconstruction follow-up plans in the longer run, as well as a reference for the preparation of the Regional Medium-term Development Plan (RPJMD) of the Province of Nanggroe Aceh Darussalam and *Kabupaten/Kota* in Aceh and Nias Regency in the Province of North Sumatra.

1.5. Systematics of the Master Plan Book

Overall, the Master Plan for the rehabilitation and reconstruction of NAD and Nias—North Sumatra consists of twelve books; one Main Book and eleven Detailed Books, namely:

1. Main Book : MASTER PLAN FOR THE REHABILITATION AND RECONSTRUCTION FOR THE REGION AND PEOPLE OF THE PROVINCES OF NANGGROE ACEH DARUSSALAM AND NIAS ISLANDS—NORTH SUMATRA
2. Detailed Plan Books
   - Book I : THE SPATIAL LAYOUT AND LAND AFFAIRS SECTOR PLAN
   - Book II : THE NATURAL RESOURCES AND ENVIRONMENT SECTOR PLAN
   - Book III : THE INFRASTRUCTURE AND HOUSING SECTOR PLAN
   - Book IV : THE ECONOMIC AND MANPOWER SECTOR PLAN
   - Book V : THE REGIONAL INSTITUTION SYSTEM PLAN
   - Book VI : THE EDUCATION AND HEALTH SECTOR PLAN
   - Book VII : THE RELIGIOUS, SOCIAL, CULTURAL AND HUMAN RESOURCES SECTOR PLAN
   - Book VIII : THE LEGAL SECTOR PLAN
   - Book IX : THE PUBLIC ORDER, SECURITY, AND RESILIENCE SECTOR PLAN
   - Book X : IMPLEMENTATION OF GOOD GOVERNANCE PRINCIPLES AND SUPERVISION
   - Book XI : FUNDING

The main book of the Master Plan for the rehabilitation and reconstruction of Aceh and Nias Islands—North Sumatra contains the description of the disaster aftermath and relief endeavors; as well as some fundamental principles, policies and general strategies for the implementation of rehabilitation and reconstruction. Furthermore, it also describes, in particular, spatial layout policies and strategies, and several cross-cutting issues that are related to the assistance to restore non-public productive assets, land ownership right, the handling of women and children disaster victims, and also security issues in managing rehabilitation and reconstruction.

This Master Plan has been formulated through various public consultation forums involving a broad range of stakeholders. The communities concerned and the business community need to be involved in the further management of rehabilitation and reconstruction in order to make it participatory and reflecting the aspirations of the communities concerned. The main book of this Master Plan also particularly highlights rehabilitation and reconstruction institutions.

The main book of the Master Plan also includes funding and accountability aspects as well as the supervision of the implementation of rehabilitation and reconstruction. It serves as general guidelines for the funding and supervision of the implementation of rehabilitation and reconstruction activities in general.

Each detailed plan book contains damage and loss inventory; efforts that have been and that are being made in the emergency response phase; targets, policy direction, and rehabilitation and reconstruction strategy; as well as detailed plans for rehabilitation and reconstruction activities in each sector described in terms of *Kabupaten/Kota*, cross-

Kabupaten/Kota, and other generally applicable activities that are not related to spatial utilization (aspatial).

For each of the above purposes, the detailed plan for each sector contains: the name of the program referring to the functions, sub-functions, and State Budget programs; the name of the activity concerned; targets (quantitative); target groups; scope of the activity concerned; success indicators; timetable; correlation with other programs/activities; implementing agency and person in charge; cost estimate and funding sources.

Chapter 2
Disaster Impacts and Mitigation Efforts

2.1 Depiction of Disaster and Estimated Impact of Disaster

The scale of the disaster can be seen from the large number of human victims and damage it incurred. 16 (sixteen) *kabupatens/kotas* were devastated. *Kota* Banda Aceh, *Kabupaten* Aceh Jaya and *Kabupaten* Aceh Besar are the kabupatens or kotas severely affected by the tsunami disaster. 654 villages (11.4 percent) and 63,977 underprivileged families (about 15.16 percent of the entire underprivileged families)[1] are affected by the tsunami.

To date, the number of discovered victims and the damage successfully inventoried keep increasing. The number of victims in 15 *kabupatens* in the Province of NAD[2] is estimated to have reached 126,602 dead and buried, while 93,638 people lost (from this number it is estimated that some have died/are in resettlement areas/outside Aceh). The number of refugees up to March 21, 2005 is 514,150 persons in 21 *kabupatens/kotas*[3]. In the meantime, the number of victims in the Province of North Sumatra is estimated to have reached 130 dead and 24 lost[4].

As a whole, the earthquake disaster and tsunami tragedy in Aceh and North Sumatra is estimated to have resulted in a loss of about 2.7% of the National GDP or more than 97% of the Aceh Province's GRDP.

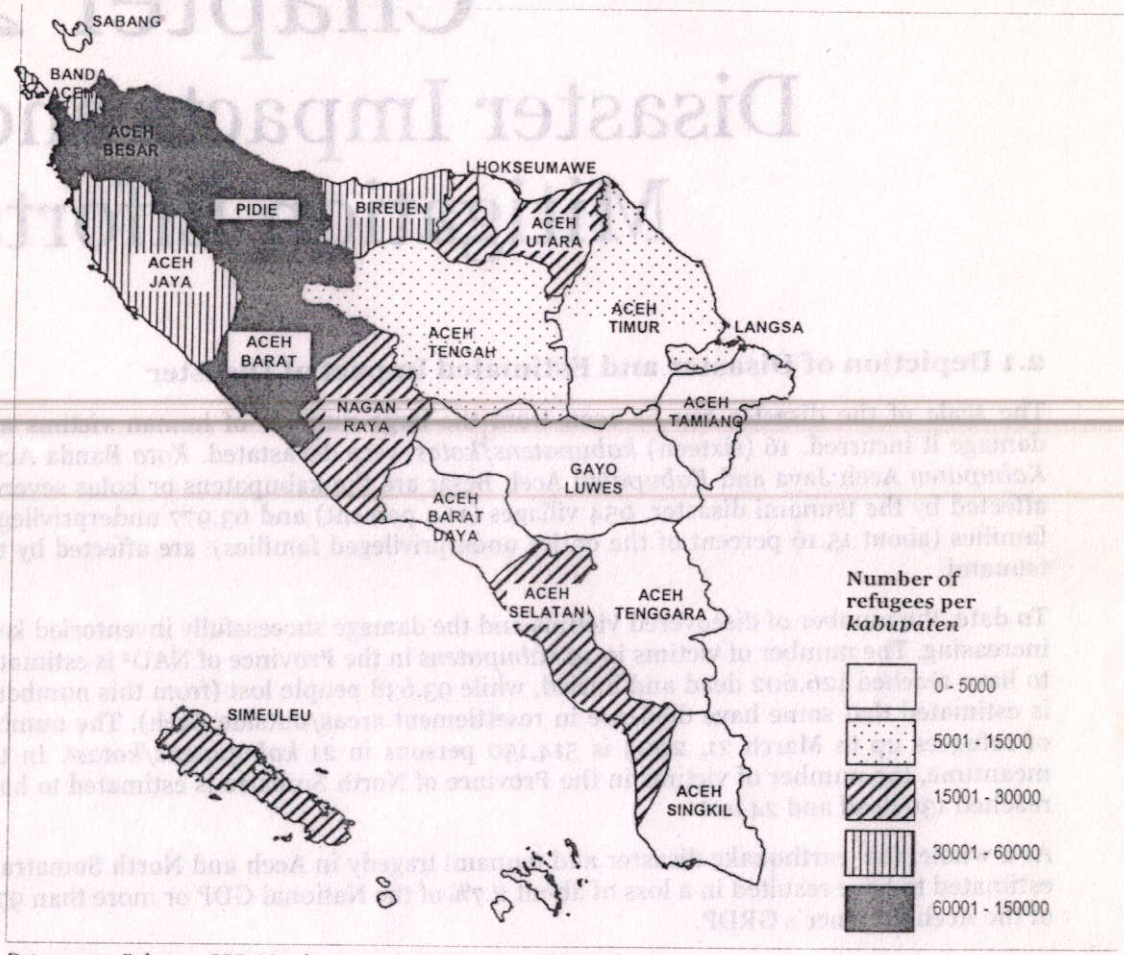
Table 2.1. Summary Result of Evaluation of Damage and Loss

Sector	Damage	Loss	Total
Social sector, including: housing, education, health, religion and culture	13,657	532	16,186
Infrastructure Sector , including: transportation, communication, energy, water and sanitation, dam	5,915	2,239	8,154
Production Sector, including: agribusiness, fishery, industry and trade	3,273	7,721	8,154
Cross-Sector, including: environment, Government Administration, banking and Finance	2,346	3,718	6,064
Total (Trillion of Rp)	**27,191**	**14,210**	**41,401**

Source: Damage and Loss Assessment, Bappenas and World Bank, January 18, 2004.

[1] Data from UNSYIAH for Aceh Reconstruction, March 7, 2005.
[2] Data from Bakornas PBP, March 21, 2005, at 17:00 West Indonesia Time
[3] Collected Reports from Executing Units I, II, and III
[4] Data from Bakornas PBP, March 21, 2005, at 17:00 West Indonesia Time

Figure 2.1: Number of Refugees per March 21, 2005



Data source: Bakornas PBP, March 21, 2005, at 17:00, West Indonesia Time

Table 2.2. Number of Refugees per *Kabupaten/Kota*

No.	*Kabupaten/Kota*	People's Houses / Temporary Tents	Barracks/ Temporary dwelling	Total
1.	Banda Aceh	48,360	1,561	49,921
2.	Aceh Besar	91,157	6,328	97,485
3.	Sabang	3,712	-	3,712
4.	Pidie	74,404	11,456	85,860
5.	Bireuen	46,768	3,035	49,803
6.	Aceh Utara	26,662	450	27,112
7.	Lhokseumawe	952	1,542	2,494
8.	Aceh Timur	13,182	527	13,709
9.	Langsa	6,156	-	6,156
10.	Aceh Tamiang	3,224	-	3,224
11.	Aceh Jaya	38,217	2,205	40,422
12.	Aceh Barat	70,804	1,885	72,689
13.	Nagan Raya	16,560	480	17,040
14.	Aceh Barat Daya	3,480	-	3,480
15.	Aceh Selatan	16,148	-	16,148
16.	Aceh Singkil	-	105	105
17.	Simeulue	18,009	-	18,009
18.	Bener Meriah	648	-	648
19.	Aceh Tengah	5,288	-	5,288
20.	Gayo Lues	234	-	234
21.	Aceh Tenggara	611	-	611
	TOTAL	**484,576**	**29,574**	**514,150**

Source: Report from Lhokseumawe Executing Unit I on March 18, 2005, revision to number of refugees in temporary dwelling

2.1.1 Social and Public Aspect

Other than casualties, the earthquake and tsunami disasters have also caused damage to various sectors and to the life sector. In **social and public** aspect, the damage occurs, among other things, to educational, health and religious sectors. In the educational sector, it is estimated that 1,168 schools experience the impact including minor damage, major damage or destruction, equal to 16.1% of the number of schools existing before the disaster. For each education level, 100 kindergartens/RA, 735 Primary Schools/MI, 201 Junior High Schools/MTs, 109 Senior High Schools/Vocational Secondary Schools/MA, 18 Universities/ Religious Universities and 5 Special Schools were identified as damaged. The total damage and loss in the education sector is estimated at Rp.1.0 Trillion.

In health sector, 6 hospitals were damaged namely: Dr. Zainoel Abidin Hospital, Banda Aceh Psychiatric Hospital, Meuraksa Temporary Hospital, Calang Temporary Hospital and Malahayati Hospital and Permata Hati Hospital. The following were also damaged, among other things, to 6 polyclinic units, 41 community health center units, 390 village polyclinic units, 59 sub-community health center units, 6 health polytechnic units, 3 health service offices units, health laboratory, 3 harbor health office units, 3

pharmacy warehouse units, center for supervision of medicine and food, and mobile community health center, ambulance. The total damage is estimated to be worth Rp.765.9 billion, while the loss is Rp.87 billion[5].

In the religious sector, various places of worship and facilities of the Ministry of Religion Office including the Regional Office of the Ministry of Religion of Nangroe Aceh Darussalam Province, Hajj Accommodation of the Banda Aceh Embarkation, Ministry of Religion Office of the *Kabupaten/kota* and the Religious Affairs Office (KUA) were damaged. Damaged places of worship in Aceh comprised 1,069 mosques and musholla praying rooms, 8 churches, 2 shrines/Buddhist monasteries[6]. Whereas damaged places of worship in Kabupaten Nias comprised 8 churches, 2 mosques, 2 official housings of clergymen, and 2 houses of Christianity education teachers.

Viewed from the **aspect of women's empowerment and child protection**, it is estimated that the number of women in resettlement areas is about 37.1%; the pregnant 0.3% and nursing mothers 1%; many women must become family heads or breadwinners; the proportion of children among the refugee populations is around 15-25%; women and children in the resettlement areas have specific needs; the entire victims experienced physical and psychic traumas because many parents lost their children and children lost their families; the refugees have been scattered to some regions outside the Province of NAD, so that women and children become susceptible to trafficking.

2.1.2 Economic Aspect

Viewed from the aspect of economy, the disaster caused damage to the sectors of industry and trade, cooperatives, small and medium enterprises, farming and forestry, fishery and maritime as well as manpower affairs.

Estimate in the economic sector shows the number of Commercial Banks and Rural Banks affected by the tsunami is up to 17.61 percent (25 units) and 8.89 percent (4 units) respectively. About Rp.2 trillion of the total Rp.3.9 trillion in credits/loans extended by the banks , is estimated to become bad credits (IDB, January 2005)[7].

In the industrial sector, the extent of damage to Small and Medium Industry (IKM) is estimated at an average of 65%, large industry at 60%. The infrastructure of the Ministry of Industry was also damaged. PT. Semen Andalas Indonesia was severely damaged. Another damaged state-owned enterprise (SOE), is PT. Fertilizer Iskandar Muda and PT. ASEAN Aceh Fertilizer. Damaged asset of manufacturing industry on a medium scale is estimated at Rp.84 billion. In addition, there are 92,000 small/home industries in Aceh and around 12,500 small home industries in Nias Islands were damaged. With the assumption that the average value of asset of small home industries is Rp.30 million, the total value of damage to small industry is estimated at Rp.3.1 trillion[8]. More specifically, the UMKM affected by the tsunami reached 20.88 percent (5,176 units), hotels 30.41 percent (59 units), restaurants 17.20 percent (1,119 units), markets 1.29 percent (195 units), and small shops up to 16.71 percent (7,529 units)[9].

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[5] Data from the World Bank.
[6] Data from the Ministry of Religion
[7] Quoted from the book UNSYIAH for Aceh Reconstruction, March 7, 2005.
[8] Data from the Ministry of Industry and the World Bank
[9] Based on data from UNSYIAH for Aceh Reconstruction, March 7, 2005

Damaged **trade** facilities in Aceh estimated to comprise 65 shopping complex groups, 54 permanent markets, 69 non-permanent markets, 69 supermarkets, 1 animal market, 19 fish markets, 25 commercial banks and 4 rural banks. 59 hotels and places of accommodation and small enterprises engaging in the sectors of timber business, leather, iron, ceramics, clothing and food processing[10] were also damaged.

In the agricultural and forestry sectors, 23,330 ha of rice field and 22,785 ha of cultivated land dependent on rainfall were damaged. In that area there were food crops and horticulture exploited by the local farmers. The tertiary and fourth irrigation network in 31 *kecamatans* (8 *kabupatens*) with an irrigation area of 8,275 ha was damaged. Damaged plants in the people's plantation covered an area of 43,500 ha comprising 23,533 ha of coconut, 5,395 ha of rubber, 6,242 ha of coffee, 6,931 ha of cashew, 1,600 ha of oil palm, 2,761 ha of areca nut, 2,768 ha of cacao, 710 ha of patchouli, 4,600 ha of clove, 1,808 ha of nutmeg, and 218 ha of ginger. In addition to the above, various equipment like hand tractor, water pump, large tractor, processing devices for patchouli, rubber, coconut oil, jerked meat processing device and so forth were damaged. Farming land lost its fertility due to mud, salting, sand, erosion, and so forth, with an estimated area of 5000-7000 ha of soil being lost permanently[11]. The recapitulation of the agricultural and forestry sectors based on the data from the Ministry of Agriculture is as follows:

Table 2.3 Recapitulation of Damage in the Agricultural Sector[12]

No.	*Kabupaten* and *Kota*	Rice field (ha)	Garden (tree)	Field (ha)	Lost Livestock (animal)
1	Sabang		4,147		32,061
2	Banda Aceh	75		50	332,505
3	Aceh Besar	5,611	7,048	9,465	500,000
4	Pidie	1,859	11,304	3,072	238,301
5	Bireeuen	2,118	9,575	567	153,961
6	Aceh Utara	1,224		612	74,460
7	Kota Lhokseumawe				27,292
8	Aceh Timur	2,119			
14	Aceh Barat	1,432	14,950	1,114	251,962
15	Nagan Raya	757	14,895	1,560	137,765
16	Aceh Jaya	1,645	12,240	3,068	156,280
17	Simeulue	3,410	14,937	79	
18	Aceh Selatan		9,636		
19	Aceh Barat Daya	3,080	3,729	4,758	
20	Aceh Singkil				
	Total	**23,330**	**102,461**	**24,345**	**1,904,587**

In the sector of fishery and maritime. Particularly in the fishery sector, there are 19 units (0.37 percent) of TPI (places of fish auction) damaged[13], and 32 out of 72 units of Fish Landing Base (PPI) scattered in 8 *kabupaten*, experienced the impact of tsunami,

[10] Data from Mapframe ADB
[11] Data from the Ministry of Agriculture and the World Bank
[12] Team for Coping With National Disaster, the Ministry of Agriculture, 2005.
[13] Data from UNSYIAH for Aceh Reconstruction, March 7, 2005.

namely 5 in Kabupaten Aceh Besar, 6 in Kabupaten Pidie, 10 in Kabupaten Aceh Utara, and 8 in Kabupaten Aceh Barat. Whereas in Nias Islands, North Sumatra, there is 1 Fish Landing Base (PPI) in the Market of Sirombu experiencing the impact of tsunami.

9,563 of 16,070 units of catching fishery fleet in Aceh, experienced the impact of tsunami, including 3,969 units (41.5%) of boats without motor, 2,369 units (24.8%) of boat with outboard motor, and 3,225 units (33.7%) of motor boats sized between < 5 GT and 50 GT.

In the meantime, most fishpond farms in the Province of NAD scattered in 11 coastal *kabupaten/kota* experienced a direct impact of the earthquake disaster and tsunami, with a total area before the disaster being 36,614 ha[14].

In the **sector of manpower**, an estimated 25% of 2,254,155 labor force in Aceh, lost their work due to the natural disaster, 30% in agricultural sector lost their work due to damaged soil and around 170 thousand people in the SME sector lost their work. In addition, it is estimated that 60,000 job opportunities lost because of the worker's death, and assumed that 130,000 fishermen lost their work at least temporarily. The total unemployment rate is estimated to have reached 30% in the disaster area[15].

2.1.3 Infrastructure Aspect

The impact of disaster on the **infrastructure sector** includes the damage suffered by the sectors of housing, transportation, energy and electricity, postal and telecommunications service, drinking water and sanitation, water resources, as well as infrastructure and other facilities.

In the housing sector, the total number of modern, semi-modern and traditional houses that are totally or partially damaged is estimated to have reached 252,223 houses[16]. Along the West and North Coasts covering Banda Aceh, Aceh Besar, Aceh Jaya, Aceh Barat, Nagan Raya, Pidie, Bireuen, and Aceh Utara also suffered serious damage. The total loss is worth Rp.13 trillion including the value of the damaged housing, basic infrastructure and household appliances[17]. The recent earthquake on March 28, 2005 also affected Kabupaten Nias and Kabupaten Nias Selatan in North Sumatra and Aceh Singkil in NAD.

The transportation sector comprises land, sea, and air transportation. For land transportation, the condition of national and provincial roads before the earthquake and tsunami disaster could be classified as 32.7 percent in good condition, 35.8 percent with minor damage, and 31.5 percent major damage. In the aftermath of the earthquake and tsunami disaster, the condition worsened to only around 28.4 percent in good situation, whereas the remaining 71.6 percent was in damaged condition (35.7 percent with minor damage and 35.9 percent major damage). For bridges, the damage is estimated to have reached 25 percent of the total national bridges (21,340 m) and the provincial bridge (14,015 m)[18]. In the West Crossing (Banda Aceh-Lamno-Calang-Meulaboh-Tapak Tuan-Bakongan), the minor and major damage suffered by roads is around 280.36 km, along

[14] Data from the World Bank
[15] Data from the Ministry of Manpower and Transmigration and the World Bank
[16] Data from the Ministry of People's Housing
[17] Data from the World Bank
[18] Data from the Province of NAD's Service for Regional Infrastructure

with damaged bridge of around 3,781 m; In the East Crossing (Banda Aceh-Sigli-Bireuen-Lhokseumawe-Langsa), the damaged road is around 243.86 km and bridges up to 1,703 m; damaged roads in the Central Crossing and Connector of the East-West Crossing were around 337.54 km and bridges as far as 150 m; and damage suffered by another road segment is around 763.35 km and bridges 340 m. In the meantime, in the province of North Sumatra particularly in Nias, the Route of Lolowau-Sirombu and Tuhemberua-Lahewa was damaged as far as around 5 km, as well as damaged floor and *oprit* in some bridges.

Besides, most of bus stations in three large cities namely Banda Aceh, Meulaboh, Lhokseumawe, were seriously damaged, whereas the bus stations in Sigli, Langsa, Bireuen, Gunung Sitoli, and Perum Damri Banda Aceh were damaged at varied levels between minor and medium. Weighbridge, Motor Vehicle Inspection Unit (PKB), and traffic signs and road markings were also damaged.

Sea and ASDP (River/Lake Crossing Transportation) ports are in a condition of varied damage, while some harbors are in an operation-worthy condition. Harbors along the West Coast and North Coast were damaged at various levels. The seriously damaged harbors include Malahayati, Ulee Lhue, Calang, and Meulaboh, whereas Harbors of Sabang, Lhokseumawe, Susoh, Tapak Tuan, Singkil, Sinabang, Balohan, Labuhan Haji, Lamteng, Pulau Banyak, and Singkil were lightly damaged.

Some of the airport infrastructure was seriously and lightly damaged, whereas some are in an operation-worthy condition. Cut Nyak Dien Airport in Meulaboh is in such a condition that the runway is broken and cracked; Maimun Saleh Airport in Sabang Cityhas a good runway condition but the communication system is damaged; Sultan Iskandar Muda Airport - Banda Aceh has a good runway condition but its tower was damaged; Cut Ali Airport - Tapak Tuan is in an operation-worthy condition; the runaway of Lasikin Airport - Sinabung sank; Malikul Saleh Airport - Lhok Seumawe is in an operation-worthy condition; and Rembele Airport - Tekengon is in an operation-worthy condition.

The energy and electricity sector is in a damaged condition and had a varied level of decline in the operation. In general, the system of all working territories of the electricity branch unit was damaged, including the Generation (PLTD), Distribution System, and other supporting facilities. The most seriously damaged regions are the working territory of Banda Aceh Branch of State Electric Company covering Banda Aceh Municipality and Kabupaten Aceh Besar, and the working territory of Meulaboh Branch covering Kabupaten Aceh Jaya, Aceh Barat and Nagan Raya. The damaged distribution network includes: (i) The isolated m-system Voltage Network particularly in the central and west parts of NAD territory. The Medium Voltage Network (JTM) as far as 1,046 km (11.76 percent); (ii) Low Voltage Network (JTR) as far as 2,394 km (21.61 percent); (iii) Distribution relay station as many as 736 units (16.24 percent); (iv) House Connections (SR) for as many as 119,253 customers (18 percent); and (v) Connecting Relay Stations (GH) as many as 6 units (7.44 percent). Damaged power stations includes 16 units of diesel powered electric generators (PLTD) or 7.44 percent; whereas other damages includes electronic meters as many as 246 units (41.48 percent) and office buildings as many as 6 units.

In the **energy sector**, Kreung Raya and Meulaboh suffered losses due to the tsunami disaster. In addition, there are some lightly damaged Depots namely in Lhokseumawe,

Gunung Sitoli and Sabang. The Pertamina Office in Banda Aceh was seriously damaged. The following are damaged fuel filling-up networks in some places, particularly in Banda Aceh namely up to 3 SPBU service stations; 3 SPBN service stations in Lamputo, Sigli and Meulaboh; 3 SPDN service stations in some KUDs lost 17 kerosene tank trucks, and more or less 12,500 LPG gas cylinders @ 12 kg and hundreds of lubricant cartons.

In the **post and telecommunications service sector**, 19 post offices were seriously damaged even some of them were razed to the ground. Many of cellular telecommunications facilities owned by PT. Indosat, PT. Telkomsel, PT.Telkom, and PT. PSN were damaged, particularly in the BTS stands in the west coast areas and the fix-phone network in the disaster area. The rural telephone facilities with PFS technology in the Province of Nangroe Aceh Darussalam were damaged up to 66 Telephone Line Units, in Nias Islands-North Sumatra up to 6 Telephone Line Units. Whereas damaged telecommunications facilities using the radio technology were 62 Telephone Line Units in the Province of NAD and 9 Telephone Line Units in Nias Islands-North Sumatra.

In the **drinking water and sanitation sector**, the following drinking water supply network, facilities for handling wastewater, garbage disposal, and drainage, were damaged at the damage levels of between 10% to 90%. The following were also damaged, among other things, the intake structure, installation (the unit of Water Processing Installation/IPA), drinking water distribution-piping network, facilities for Faecal Matter Processing Installation (IPLT), and facilities for Final Place of Disposal (TPA). In addition, almost the entire networks of macro and micro drainage do not function as sand, mud, and ruins of buildings cover them.

In the **water resources sector**, irrigated land of around 33,142 ha comprising 13,698 ha in the coastal area and 19,444 ha in the non-coastal area were damaged; river infrastructure 46.20 km in length, the large, medium and small rivers was damaged; and the coast protection structure 35.06 km in length was damaged, too. Most of the damaged water resource infrastructure and facilities were in the West and Northeast coastal region of the Province of Nanggroe Aceh Darussalam. Flood controlling structures and the wave breaker system were seriously damaged. As seen from the satellite sensing, the flood protection structure, whose construction has just been underway at the estuaries of Krueng Aceh was seriously damaged, namely more than 2 kilometers in length towards the dry land.

2.1.4 Governmental Aspect

Viewed from the **governmental aspect**, the damage/loss includes: (a) the local and central apparatuses, head of the local government and member of the Regional People's Legislative Assembly (DPRD); (b) government facilities /infrastructure at the levels of Province, *Kabupaten/Kota, Kecamatan, Mukim* up to *Kelurahan*/Village level; and (c) administrative border.

(a) Local and central apparatuses, region heads and DPRD members: based on the data collected in the field, the total number of local government apparatuses throughout the Province of NAD (Province, *Kabupaten/Kota*) is 76,655 persons. 2,992 of this number, died, while the number of those reported missing is 2,274 persons. The dead head of the local government was the Mayor of Banda Aceh, and the missing official was the Regent of Southwest Aceh. In the meantime, 3

Members of the Provincial DPRD and 1 Member of the Kabupaten Aceh Barat's DPRD died. The central apparatuses with data on record include: National Land Agency: 40 persons died; the Office of Attorney General: 105 person died; Indonesian National Army: 63 persons died and 302 persons missing; and Police of the Republic of Indonesia: 170 persons died and 952 persons missing.

(b) Seriously damaged facilities and infrastructure of office buildings in the territory of Nanggroe Aceh Darussalam after the disaster are found in 4 *kabupaten* and at provincial level: (1) the Provincial Government of NAD, (2) Banda Aceh City, (3) Kabupaten Aceh Barat, (4) Kabupaten Aceh Besar and (5) Kabupaten Aceh Jaya. At *kecamatan* level, 24 of 241 *kecamatan* are not functioning. The *Kabupaten/Kota* with more than 50% of the number of *kecamatan* still being not functioning is Kabupaten Aceh Jaya. At desa/*kelurahan* level, 640 of 5,947 desa/*kelurahan* are not functioning. Based on the recent data, the earthquake on March 28, 2005 also damaged the Simeuleu Regent Office. The Regent Office and the offices of 4 kecamatan heads were damaged in Kabupaten Nias.

(c) *Regional administration.* The disaster has caused changes to the regional administrative borders. Quite a large change to the area of the territory occurred in Banda Aceh, namely including up to 67% of the initial area. Whereas rural areas on average were changed due to the sinking villages from around 10% to 20%, with the largest change being on Ule Lhee village (from 67 ha to 54 ha) and Alue Naga village(from 242 ha to 194 ha).

Estimated loss in the government sector amounts to Rp. 338,835 Billion due to damage to the government buildings at the levels of province, *kabupaten/kota*, *kecamatan*, *kelurahan*/desa, and the damaged equipment and documents as well as the missing and dead apparatuses of the local government.

2.1.5 The Environmental Aspect

Viewed from the **environmental** aspect, the damage includes damage to the mangrove, coral reef, and seaweed cultivation, rice field, loss of livestock, water pollution, air pollution, and solid waste. The damage is estimated to occur to 90% of the 525 ha of mangrove, 30% of the 97,250 ha of coral reef and 20% of the 600 ha of seaweed farming. Based on the result of monitoring on the water quality, the water is blackish brown, muddy and smelly. Another parameter in excess of the standard quality is the concentration of Ammonia, the Total Coliform and distribution of E. coli. The air pollution level in the disaster area is quite high particularly for particulate/dust coming from the dry mud. Pollution of solid waste takes place due to the waste of ruins of building, waste of things and materials owned by the community, sea materials, decaying human corpses, animal carcasses, and mud from the tsunami. In some places, the content of heavy metals of Cd, Cu, and Pb in the mud of tsunami has exceeded the set limit.

654 of 5,736 villages in 17 *kabupaten/kota* are estimated to have been affected by the disaster, and in regard to land use, the entire land experiencing the impact of disaster is estimated to have reached 667,066 ha from around 4 million ha of land in 17 *kabupatens/kotas*. The community's damaged rice field has reached 20,101 ha. The non-agricultural land, which also experienced the disaster impact, includes 113,929 ha of

plantation, 91,517 ha of state-owned land, 44,312 ha of housing, and 1,714 ha of industrial complexes. There are regions sinking in 4 *kecamatans* namely in *Kecamatan* Meuraya, Syiah Kuala, Kuta Raja and Jaya Baru. In the meantime, the number of pieces of registered land in the disaster area is 405,755 out of an estimated 1,498,200 pieces of existing land in the Province of NAD.

The damaged west coast can be divided into three areas with the following characteristics:

1. Coast with thin dry land and steeply sloping hills. The distance of the hills from the coast is more or less 0-1.5 km, so that the existing settlements are generally lost, and many populations (victims being around 90%) could not escape because generally the steeply sloping hills/mounts are nearly 90 degree, and have sandstone (cannot be climbed). Only few areas have access to sloping high dry lands. Such areas include: Lho'nga, Leupung, Jeumpa, Lhong.
2. Coast with dry land with some small hills in the middle. This area includes Lamno, Lhok Krut, Calang, Panga.
3. Coast with marshy dry land. This area includes: Suak Timah, Meulaboh, Coastal Areas of Kabupaten Abdya.

2.2 Disaster Impact Mitigation Efforts

The disaster impacts are mitigated through emergency response and recovery of the condition of the Aceh and Nias community and territory. The mitigation efforts are made systematically, comprehensively, efficiently in the use of resources, and effectively in providing aid for the groups of victims. The mitigation and recovery efforts use a comprehensive and integrated approach made in three stages, namely emergency response, rehabilitation and reconstruction to be going on simultaneously in the implementation of the disaster impact mitigation, namely:

1. **Emergency Response Stage (January 2005 - March 2005)**
   This is aimed at rescuing the surviving community members and to immediately fulfill their minimum basic needs. The main goal of this response stage is humanitarian rescue and aid. At this response stage, it is also endeavored to complete decent temporary places for refuge, and quick logistic arrangement and distribution that can reach the intended target namely the disaster survivors. At the outset of the disaster, the Stage of Emergency Response was set for 6 months since the disaster. Nevertheless, after the stipulation of Presidential Instruction Number 1 Year 2005, this Response Stage was shortened to 3 months and it will end on March 26, 2005.

2. **Rehabilitation Stage (April 2005 - December 2006)**
   This is aimed at urgently recovering and restoring the functions of structures and infrastructures to follow up the stage of emergency response, such as the rehabilitation of mosques, hospitals, basic social infrastructures, as well as economic infrastructure and facilities that are badly needed. The main goal of this rehabilitation stage is to enhance public services up to an acceptable level. At this rehabilitation stage, it is also endeavored to solve various issues related to the legal aspectthrough settlement of rights on land, and to the psychological aspects through the handling of disaster victims' trauma.

3. **Reconstruction Stage (July 2006 - December 2009)**
This is aimed at reconstructing the areas of city, village and agglomeration of areas by involving all communities of disaster victims, the experts, representatives of non-government organizations, and the business community. Once the adjustment to spatial structure plan has been completed at provincial level and particularly at *kabupaten and kota* levels, particularly in coastal areas, infrastructure and facility construction must start. The main goal of this reconstruction stage is to reconstruct the areas and communities affected by the disaster directly or indirectly.

Since the earthquake and tsunami natural disasters took place on December 26, 2004, the Government has made the following mitigation efforts:

1. **Declaring the disaster in Aceh and North Sumatra a national disaster.**
The Indonesian President issued a Presidential Decree dated 27 December 2004 declaring the earthquake and tsunami wave natural disasters in Aceh and Nias Islands, North Sumatra a national disaster, and furthermore issued 12 directives to the entire United Indonesian Cabinet, NAD Governor and Nias Regent to act immediately and comprehensively in the emergency response handling of the natural disaster.

   As a follow-up to the directives, the President has issued Instruction Number 1 Year 2005 regarding the Emergency Response and Rehabilitation and Reconstruction Planning and Preparation in the post- Earthquake and Tsunami disaster in Nanggroe Aceh Darussalam and Nias Islands, North Sumatra.

2. **Mobilizing national and regional resources for emergency handling efforts**
At the initial stage, the Deputy Governor of Nanggroe Aceh Darussalam directly coordinated and controlled the mitigation efforts and emergency handling efforts until the establishment of the Special Coordinating Unit for Aceh by the issuance of Decree Number 1 Year 2004 dated 30 December by Chairperson of Bakornas PBP chaired directly by the Vice President and the Coordinating Minister for People's Welfare as the executive Chairperson and the Deputy Governor of NAD as the Implementer at Provincial level, having the Command Post in the Audience Hall of NAD's Governor. The members of the team also include officials of ministries/related agencies.
Considering the very wide impact of the disaster, in order to strengthen the PBP Satkorlak in the NAD Province, furthermore the Central Government issued Decree Number 3 Year 2005 dated January 18, 2005, assigning the Coordinating Minister for People's Welfare as Chairperson of the Special Satkorlak, the Army Deputy Chief of Staff as Vice Chairperson I and NAD Deputy Governor as Vice Chairperson II, to specially coordinate the recovery of governmental functions.
Operationally, the activities of emergency response are focused on the following:
   a) evacuation and burial of the victims' dead bodies
   b) handling of refugees
   c) provision of emergency aid
   d) healthcare, sanitation and water supply
   e) city cleaning up
   f) preparation of temporary dwelling

International support is very helpful to accelerate the effort of emergency response, namely through the rescue team, medical team, and transportation facilities in the form of ships and helicopters.

3. Recovering local government functions

The emergency response activities are coordinated through the Command Post (*Posko*) mechanism comprising:

a) PBP National *Posko Bakornas* at the Vice President's Office
b) Special Main *Posko Satkorlak* in Banda Aceh, Logistic Supporting *Posko* in Medan, Batam and Sabang;
c) Special *Satlak Posko* (*Satlaksus*) in three areas, namely: Satlaksus I in Lhokseumawe, Satlaksus II in Banda Aceh, and Satlaksus III in Meulaboh.

Since there were many Local Government apparatuses affected and becoming the victims of the disaster, and to ensure the service continuity of the Local Government Administration, the Ministry of Home Affairs has dispatched Assistance Teams with 156 members to 20 *kabupaten/kota* and provinces, comprising officials of echelon I to IV, as well as the STPDN lecturers and students. These assistance teams are directly under the coordination of the NAD Deputy Governor as the person in charge of the recovery of the functions of local government administration.

2.2.1 Emergency Response

At the stage of emergency response, the National Coordinating Agency for Disaster Mitigation and Refugee Management (Bakornas PBP) presided over by the Vice President has coordinated these following emergency efforts:

(a) Immediately helping the disaster survivors;
(b) Immediately burying the victims' dead bodies;
(c) Immediately enhancing basic facilities and infrastructure to be able to provide adequate services for the victims.

The international community also pays great attention, as shown by the great willingness (commitment) of the multilateral and bilateral donors, and world communities' readiness to provide assistance. For the emergency response efforts alone, it is recorded that approximately more than 700 million US dollars have been granted by various donors to the Government of Indonesia on different occasions.

On January 6, 2005, at the initiative of Singaporean Prime Minister Lee Hsien Long, an international meeting was held in Jakarta namely the Asean Leader's Meeting on Aftermath of Tsunami Disaster, opened by the President of the Republic of Indonesia, attended by Secretary General of the United Nation Kofi Annan, the United States Secretary, Australian Prime Minister John Howard, Malaysian Prime Minister H.M. Abdullah Badawi, Presidents of Laos, Thailand, Sri Lanka, India, and other countries affected by the disaster as well as representatives from multilateral donor agencies (the WB, ADB, UN, etc) and bilateral donor agencies (United States, Japan, Netherlands, etc).

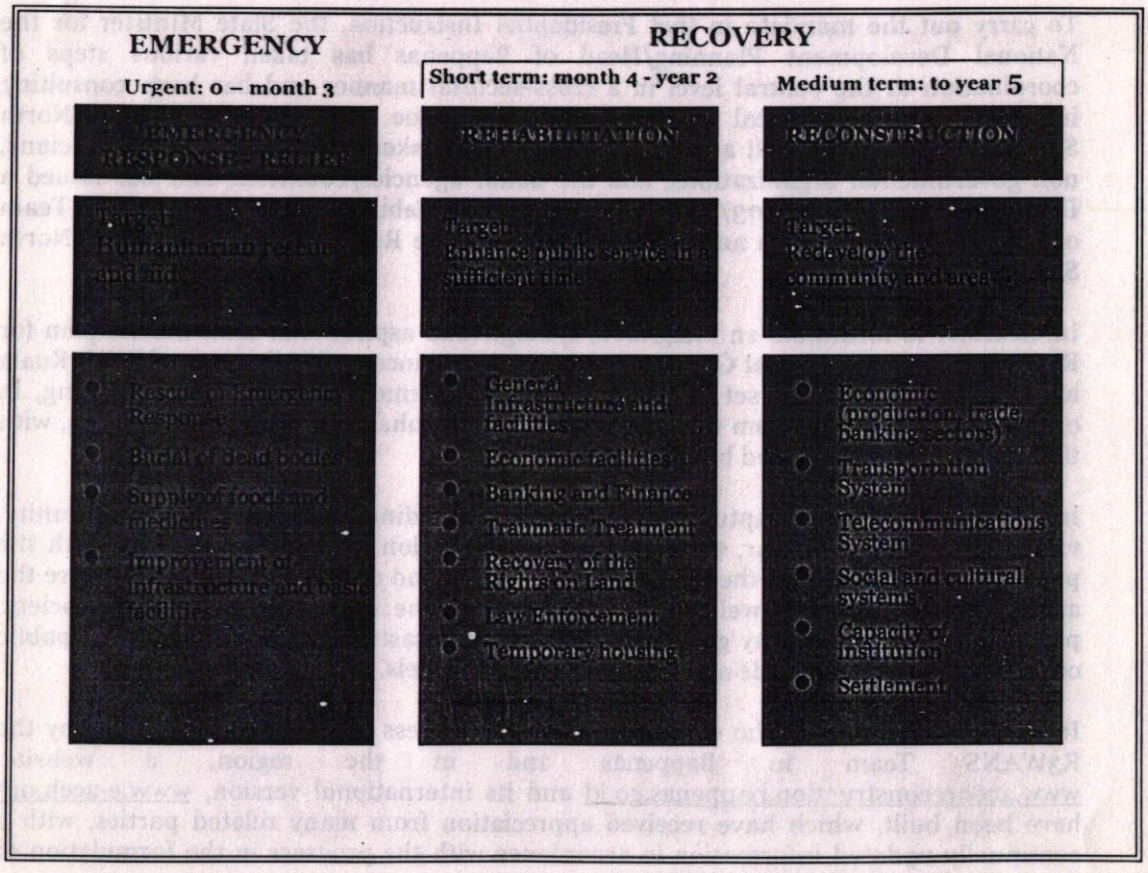
In the context of implementing systematic and comprehensive emergency response, rehabilitation, and reconstruction efforts in Aceh and Nias Islands in North Sumatra, the government has coordinated the handling process as follows:

(a) Coordinating the implementation of aid and rescue efforts as well as enhancement of the emergency response stage carried out by *PBP Bakornas* by forming the National Aceh Disaster Posko, Regional Posko in Banda Aceh, and Satkorlaks.

(b) Coordinating the post-disaster rehabilitation and reconstruction planning carried out by the Office of State Minister for the National Development Planning/Bappenas by mobilizing various potentials and teams in different ministries/LPND, universities and communities.

(c) Coordinating the implementation at the rehabilitation and reconstruction stage carried out by the Coordinating Minister for Economic Affairs along with related government agencies.

Figure 2.3. Earthquake and Tsunami Disaster Mitigation Efforts Stages and Plan for Rehabilitation and Reconstruction of NAD and Nias Islands North Sumatra Provinces



2.2.2 Rehabilitation and Reconstruction

The rehabilitation and reconstruction stage is a continuation stage of the emergency response stage with the purpose of restoring public services in a sufficient time and redevelop the community of Aceh and Nias in the context of social, economic, cultural and political life in accordance with the aspiration and the community's demand.

The rehabilitation and reconstruction efforts are preceded by preparation of the master plan for rehabilitation and reconstruction of Aceh and Nias Islands, North Sumatra. For that purpose, the Government has issued a Presidential Instruction Number 1 Year 2005 concerning the Emergency Response, and Rehabilitation and Reconstruction Planning and Preparation in the Post- Earthquake and Tsunami Disaster in Nanggroe Aceh Darussalam and Nias Islands North Sumatra Provinces.

Through the Presidential Instruction, the State Minister for the National Development Planning/Head of National Development Planning Agency is instructed to prepare a master plan for the rehabilitation and reconstruction of Aceh and Nias Islands, North Sumatra, translated in the directions of policy, strategy, as well as its main activity and period of implementation.

To carry out the mandate in that Presidential Instruction, the State Minister for the National Development Planning/Head of Bappenas has taken various steps of coordination at the central level in a cross-sectoral manner and has been consulting intensively with the Local Government of Nanggroe Aceh Darussalam and North Sumatra Provinces as well as with various related stakeholders, such as academicians, non governmental organizations, and the donor agencies/countries, and has issued a Decree No. 174B/MPPN/03/2005 concerning the Establishment of Coordinating Team of Plan for Rehabilitation and Reconstruction for the Region of Aceh and Nias, North Sumatra (R3WANS).

In an effort to formulate an integrated, synergic and aspirational draft master plan for R3WANS, Bappenas, Local Government of NAD Province and University of Syiah Kuala has made an agreement set forth in the form of Memorandum of Understanding, in order to receive inputs from the local community to enhance the draft master plan, with the initial concept prepared by Bappenas.

In addition, in order to capture a dynamic and expanding aspiration in the community, various forums of seminar, workshop, and consultation have been organized with the purpose of disseminating the initial draft blueprint, and at the same time to capture the aspiration and hope as well as the real need of the entire components of society, particularly the community groups affected by the disaster. The arrangement for public consultation has been made at central and regional levels.

In order to disseminate the entire process and progress of activities carried out by the R3WANS Team in Bappenas and in the region, a website, www.acehreconstruction.bappenas.go.id and its international version, www.e-aceh.org have been built, which have received appreciation from many related parties, with a continually updated information in accordance with the progress in the formulation of the master plan by the R3WANS Team.

In strengthening the prepared draft master plan, particularly as related to the aspect of funding, various coordination meetings have been held with the donor community, designed to receive substantive inputs and at the same time to solicit continued commitment from each of the donors to help the Government plan and further implement the R3WANS activities. Effort to solicit the commitment of the donor community has been made by tracking the information on the 'pledge' and commitment they conveyed at the session of Consultative Group on Indonesia (CGI) held last January 2005 to monitor the consistency of the commitment to become one of the sources of funding for further implementation R3WANS activities. To date, the Government of Indonesia has signed Memoranda of Understanding (MoU) with the Government of Australia, ADB and World Bank.

Viewed from the institutional aspect of R3WANS implementation, the Bappenas R3WANS Team together with the Ministry of Home Affairs under the coordination of the Vice President have also formulated various drafts for the establishment of an Implementing Agency (Bapel) for the Rehabilitation and Reconstruction of Aceh and Nias Islands, North Sumatra.

The master plan formulated by the Government will be set forth in a law product, to be made as general guidelines and operational reference for the R2WANS Implementing Agency and for the NAD Local Government and the Kabupaten Nias Government in managing and conducting the Aceh and Nias islands rehabilitation and reconstruction activities in a period of three up to five years to come, according to the need.

Chapter 3
Basic Principles and General Policy

The main points of this chapter describe the vision and mission, basic principles and general strategy to be applied in the implementation of the master plan for the rehabilitation and reconstruction of Nanggroe Aceh Darussalam and Nias Islands, North Sumatra. The description is formulated based on the policy and strategy set out in the detailed plan books, with the objective of emphasizing policies to be considered in the implementation of rehabilitation and reconstruction.

3.1 Vision and Mission

The agreed vision and mission of the rehabilitation and reconstruction of **Aceh** are as follows:

The vision of the reconstruction of the Future Aceh is to realize an Acehnese community that is advanced, fair, safe, peaceful, and prosperous based on Islamic values and take into account Aceh's dignity in the context of the Unitary State of the Republic of Indonesia and in the universal perspective.

To realize this vision, the mission is to:

1. Totally apply Islamic Law in all aspects of life.
2. Enhance human resource quality that is prominent and competitive in the mastery of science and technology as well as in faith and devotion.
3. Develop and manage natural resources wisely and in accordance with their supportability.
4. Develop a prominent, competitive and fair regional economic system based on social economy.
5. Develop a reliable and efficient infrastructure system.
6. Develop and preserve Aceh's cultural and traditional values that support sustainable development.
7. Enhance the bureaucratic competence of the local governments concerned to achieve professional, dignified and trustworthy qualities.
8. Enhance the community's understanding of solidarity as a nation and a state in the context of the Unitary State of the Republic of Indonesia and in the context of the global community.
9. Strengthen the implementation of local government's authority in accordance with Law No. 18 year 2001 regarding the Special Autonomy of the Province of Nanggroe Aceh Darussalam.

The agreed vision and mission of the rehabilitation and reconstruction of Nias Islands are as follows:

The vision of the reconstruction of the Future Nias is to realize a community of Nias that is advanced, fair, safe, peaceful, and prosperous based on the cultural values in the context of the Unitary State of the Republic of Indonesia.

To realize this vision, the mission is the following:

1. Enhance human resources quality that is prominent in the mastery of science and technology.
2. Develop and manage natural resources wisely and in accordance with its supportability.
3. Develop a regional economic system that is prominent, competitive and fair based on social economy.
4. Develop a reliable and efficient infrastructure system.
5. Develop and preserve Aceh's cultural and customary values supporting sustainable development.
6. Enhance the bureaucratic competence of the local governments concerned to achieve professional, dignified and trustworthy qualities.

3.2. Basic Principles for Rehabilitation and Reconstruction

To realize the above vision and mission, the rehabilitation and reconstruction for the region and people in the Provinces of NAD and Nias Islands, North Sumatra, are to be implemented based on the following principles:

1. **Community-oriented** and **participatory.**

2. **Sustainable development,** giving priority to the balance of economically viable, socially acceptable, and environmentally sound aspects.

3. **Holistic;** the reconstruction of Aceh and Nias Islands must take into account all aspects of life and need to be based on a comprehensive strategy.

4. **Integrated;** effective coordination and strategy to guarantee the consistency and effectiveness of sectoral and regional programs both at the national and regional levels.

5. **Efficient, transparent, and accountable.**

6. Effective **monitoring** and **evaluation.**

7. In accordance with Law Number 18 year 2001 regarding the Special Autonomy of the Province of Nanggroe Aceh Darussalam and Law Number 44 year 1999 regarding the special characteristics of Aceh.

8. Priority will be given to the protection and assistance of the most vulnerable community members affected by the disaster, particularly children and widows, disabled persons, people who lost their houses and property, underprivileged communities, and those who lost their families' breadwinners.

9. Regions affected by the disaster will be prioritized in the implementation of The Rehabilitation and Reconstruction Plan for the regional and People of the Provinces of NAD and Nias Islands, North Sumatra.

3.3 General Policy

1. **Reconstruction of community** by restoring the aspects of religious and social-cultural lives, and community resilience, including the education, health, science, legal sectors and religious as well as traditional institutions.

2. **Reconstruction of the economy** by creating employment opportunities, providing financial aid and loans for the development of small-and medium-scale businesses, rebuilding productive sectors (fishery, agriculture, industry, trade, and services) along with the reconstruction of economic facilities (markets, fish auction markets, warehouses).

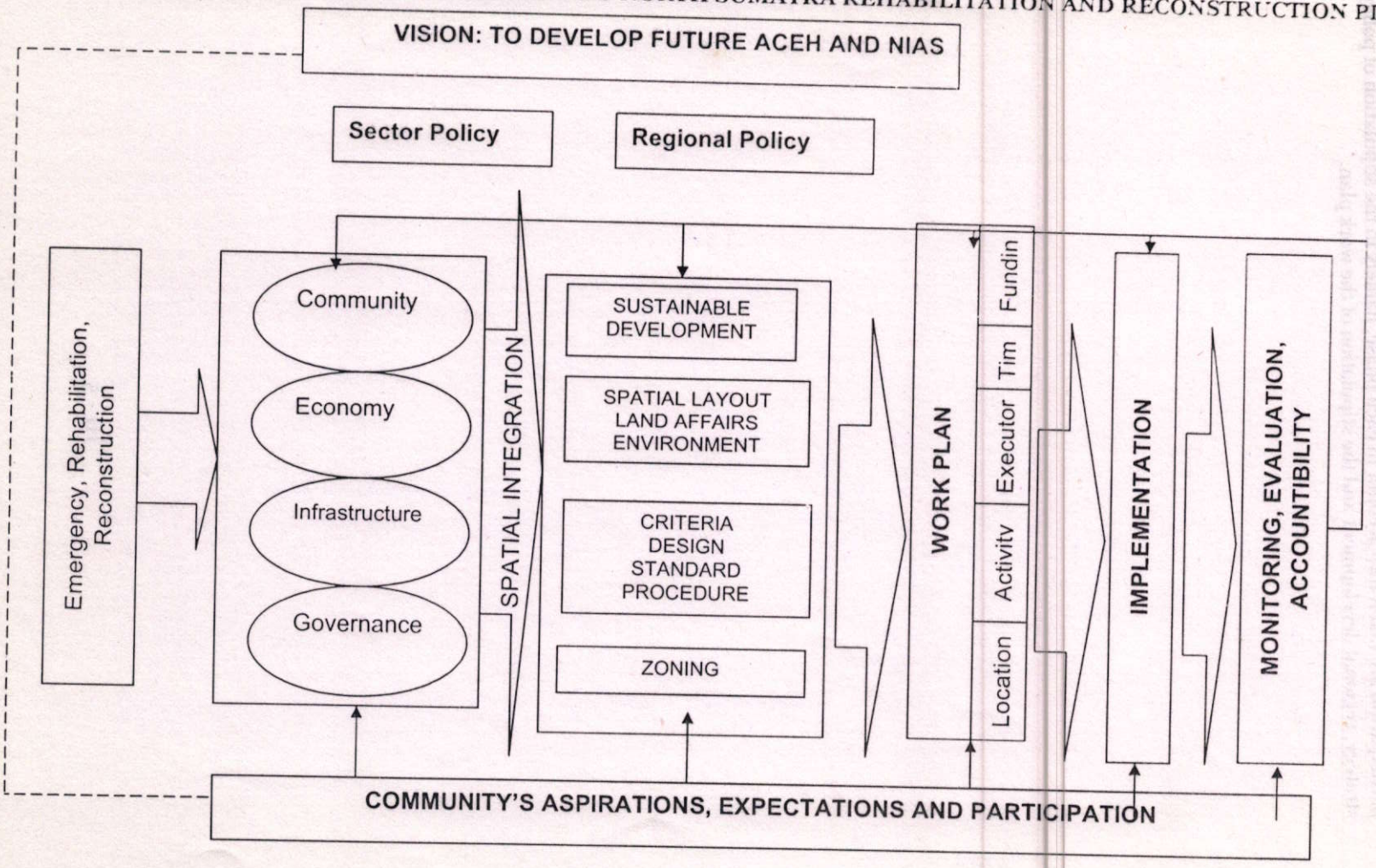
3. **Reconstruction of Infrastructure and Housing** by giving priority to the restoring of basic infrastructure functions such as roads, airports and seaports, telecommunications infrastructure and facilities, the restoring electricity, water supply and housing.

4. **Reconstruction of Governance** by re-creating the system and service of provincial, *kabupaten/kota* regional governments and by redesigning cities and new activity centers.

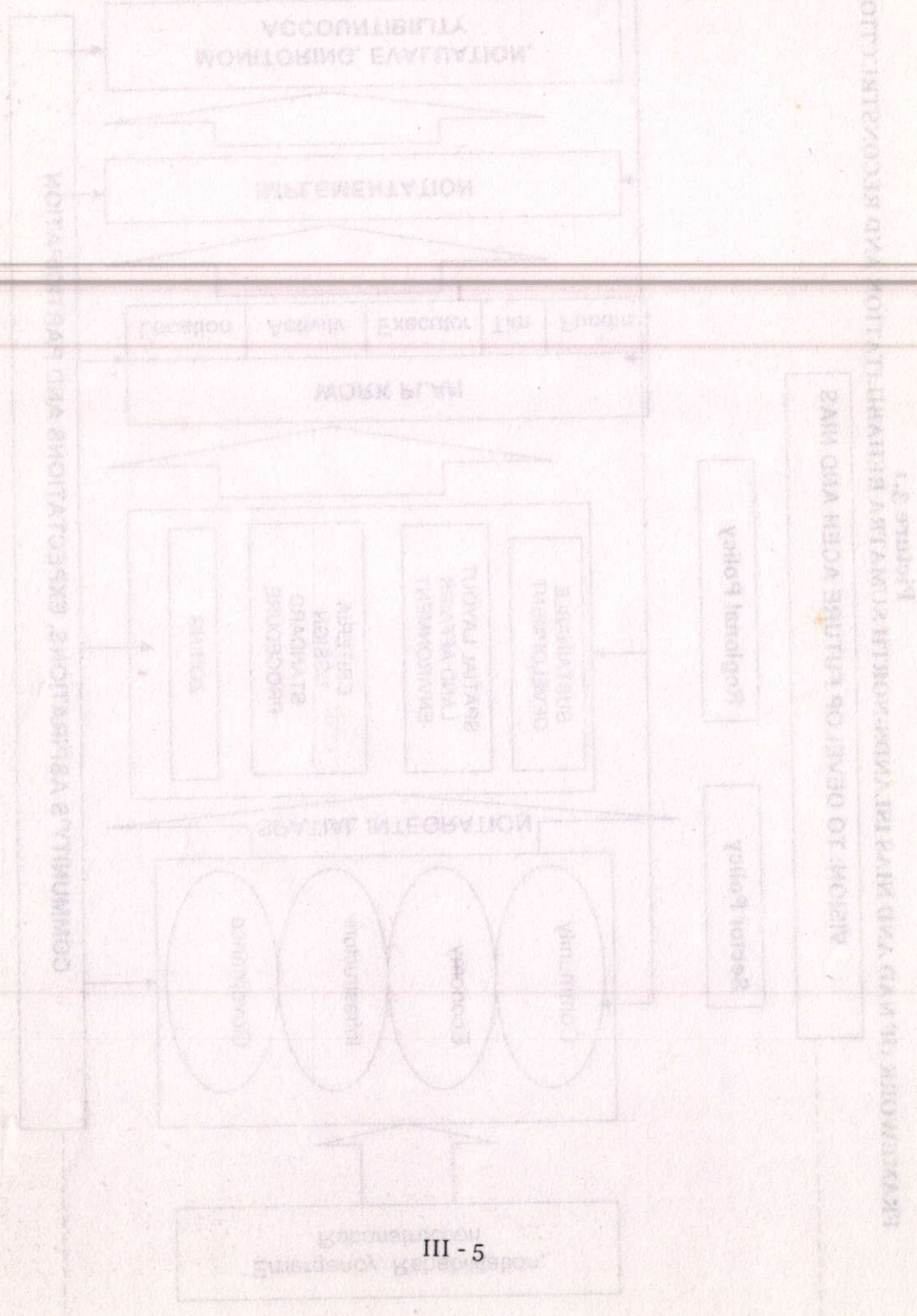
The aforementioned general policy is to be translated into activities in the emergency response, rehabilitation, and reconstruction phases by taking into account spatial layout directives in Aceh and Nias Islands, North Sumatra, based on the principle of sustainable development.

Picture 3.1

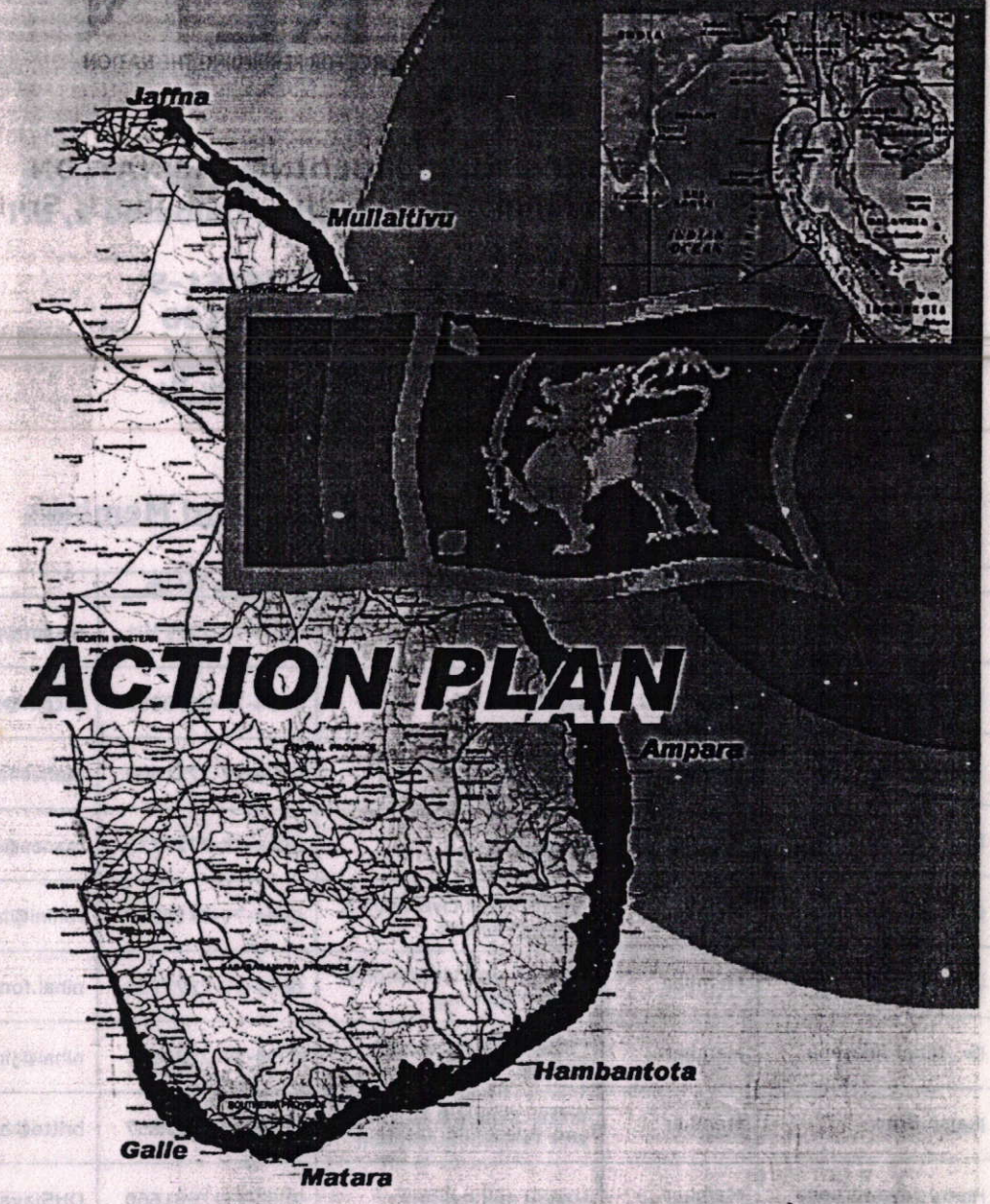
FRAMEWORK OF NAD AND NIAS ISLANDS-NORTH SUMATRA REHABILITATION AND RECONSTRUCTION PLANNING



The integration of the sectoral and regional policies is described in a work plan based on the location, activity conducted, party performing the activity concerned, time of implementation, and funding source. The community's aspirations, expectation and participation are taken into account in each phase, namely in the stipulation of policy, strategy, regional development and the stipulation of the work plan.



REBUILDING SRI LANKA



ACTION PLAN

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February 2005

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Contents

Summary of Preliminary Assessment of Damage and Needs

DAMAGE

- The coastal belt covering the Districts of Jaffna, Mullaitivu, Trincomalee, Batticaloa, Amparai, Hambantota, Matara, Galle, Kalutara, Colombo, and Putalum were severely damaged by a Tsunami on Sunday December 26th, 2004.
- The giant Tsunami waves caused the loss of precious lives in excess of 30,959 people and also made 552,601people homeless.
- Around 113,625 houses were destroyed, including 40,000 fishermen's houses.
- Tourism infrastructure was severely affected: at least twenty-five (25) beach hotels sustained serious damaged while six (6) in the Eastern Province were washed away.
- There has been severe loss economic infrastructure, with many fishery harbours and anchorages, access roads, ice and cold room facilities, community centres, and electricity, drinking water and sanitary facilities destroyed or damaged.
- Extensive damage has been caused to the coastal railway line, while 20 railway stations, 15 railway bridges, a large number of culverts and the signaling system have been severely affected. Three (3) power sets and four (4) locomotives have been completely washed away.
- Telecommunications networks in the Districts of Hambantota, Matara and Galle have been damaged.
- Drinking water supply and purifying plants have been damaged in Trincomalee, Batticaloa, Tangalle, Ampara, Ambalantota, Maggona and Hambantota causing the areas to experience severe shortages of fresh water. The distribution network of fresh water (pipelines) in the coastal area has been partially damaged and even completely destroyed in some places. Tube wells and the common wells that are used for fresh water in absence of pipe-borne water have been destroyed or polluted.
- Electricity distribution lines, including 600 km of low voltage lines, 50 km of medium voltage lines and 6500 km of service lines, as well as substations were destroyed by the Tsunami in the coastal areas of the country.
- Damage has been caused to the regional storage facilities and offices of the Ceylon Petroleum Corporation in Galle and Kankesanturai, as well as to fourteen filling stations in the affected areas.
- Education infrastructure along the coastal belt has been seriously disrupted: 240 schools (primary and secondary) were destroyed or sustained serious damage, including loss of human resources; many school going children have been left with no basic education facilities; in addition, the Tsunami has damaged several National Colleges of Education, Teachers Colleges and Teacher Centres in the coastal areas as well as three universities in the North and East (Eastern, South Eastern and Jaffna).

- Health services in the Northern, Eastern and Southern coastal areas have been severely affected: at least one Teaching Hospital, one General Hospital, seven District Hospitals and large number of clinics, drug stores and administrative offices have been damaged, and, in some cases, completely washed away; there has also been loss of human resources.
- Environmental impacts vary considerably in different areas affected by the Tsunami. In the Southern areas, the tsunami has affected a narrow strip of about 500 metres along the coastline, while in the Northern and Eastern areas, its effect has been for up to 2 – 3 kilometers. A section of the Yala National Park has been severely affected. The effect on other protected areas as well as coral reefs and marine ecosystems and surface and groundwater systems is being assessed.

RECONSTRUCTION AND RECOVERY NEEDS

- It is impossible to put a monetary value on the scale of human destruction that was wrought by the Tsunami. For the immediate survivors, and indeed for the affected areas and the whole country, an inevitable need is that of reconciliation, closure, overcoming the trauma and moving forward. This will largely come from the unmonetizable ways in which persons, families and communities (including the international community) share goodwill, work with and support each other.

- The monetary costs of rehabilitation, reconstruction, counseling and so other expenditures has to be over and above goodwill and mutual support we need in rebuilding Sri Lanka. Rebuilding of the damaged infrastructure and replacement of the destroyed assets will cost about Rupees 180 billion (U.S.$ 1.8 billion).

1. Proposed Reconstruction Plan

Emergency Assistance for Rehabilitation and Reconstruction in the Aftermath of Tsunami Disaster

Sri Lanka is one of the two countries that were hardest hit by the Tsunami tidal waves that ravaged several countries in the Indian Ocean Rim on December 26, 2004. The Tsunami caused extensive damage and disruption to human life, livelihood, infrastructure, private and public property and economic and social activities in Sri Lanka. The death toll has risen to over 30,900 persons, the second highest after Indonesia. 21,441 people injured and over 5000 are still missing, and nearly one million have been displaced. While it is too early to have a full assessment of the overall cost of this disaster, the total cost of the required relief, rehabilitation and reconstruction effort is provisionally estimated to be around US$ 1.8 billion.

The financial need started with the immediate period when rescue and relief activities were paramount. The need will continue to rise through the medium and long-term when a combination of relief, rehabilitation and reconstruction activities will be required. In addition to the contributions by people, communities and domestic public and private institutions in Sri Lanka, much of the need will have to be met through external donor support. The Tsunami hit at a time when the country's domestic and foreign resources were under severe strain due to the recent oil price shock, the drought in early part of the year, and the critical demands of the rehabilitation, reconstruction, reconciliation, peace-building and poverty reduction effort in the whole country. The country is also facing with additional risks due to phasing out of textiles and apparel quotas in the US.

The direct foreign exchange cost of the relief, rehabilitation and reconstruction requirements would be in the region of US$ 900 million in the aftermath of the Tsunami disaster. The country also has to allocate about US$ 550-600 million for annual official foreign debt service payments. This means that the entirety of the additional resource requirement will need to be foreign financed, in the form of grants and concessional aid. The Government of Sri Lanka appreciates the support that it is already receiving from friendly countries and international organizations to meet some of the urgent needs of relief work. Enhanced concessional foreign aid in the form of budgetary and balance of payments support is needed to make a faster recovery and to undertake the necessary economic reforms that are required reduce poverty.

In this regard, the government wishes to stress its commitment to the medium-term fiscal targets that were laid down in the 2005 Budget. The anticipated additional expenditures to be met out of donor support will amount to about 3.0 per cent of GDP. Such expenditures can be accommodated in the 2005 fiscal program without compromising macro-economic stability only if concessional funding and debt relief measures are available during the reconstruction period.

The macroeconomic indicators for 2004 are unlikely to have been seriously affected by the Tsunami as the disruption was felt only during the last week of the year. The anticipated GDP growth rate of 5 - 5.5 per cent for 2004 is expected to be achieved. However, the macroeconomic impact in 2005 could be significant. It is estimated that the anticipated growth rate of GDP in 2005 will have to be revised downward by about 1% (from 6.5% to 5.5%). The limited impact on the macro economy is due to the fact that, together, the most affected sectors of the economy (fisheries and tourism and related services) contribute only 3% of GDP. The rehabilitation and rebuilding of economic and social infrastructure,

hotels and houses is likely to offset the losses in fisheries, tourism and services. The construction sector is expected to grow at more than 8% per annum as opposed to around 5% before the Tsunami. While the sectors affected by the Tsunami do not constitute a large portion of GDP, the most affected Provinces (Northern, Eastern and Southern) constitute about 18% of national GDP and about 25% of the population of Sri Lanka. Between 25% and 33% of the population in the affected Districts live below the poverty line. Thus the Tsunami has increased the vulnerability of a large proportion of the very people (fishermen, farmers, and small enterprises and service providers in the tourism sector) whose incomes were to be uplifted under the government's poverty reduction programme. The fisheries assets, residential houses, schools, hotels, railways, roads, electricity, ports, health institutions, private commercial buildings on which so many of the vulnerable people depend were severely affected.

By itself, the fisheries sector, along two thirds of the Sri Lankan coastline, has suffered enormous loss. The number of deaths in the fishing communities (including fishermen and their families) has been estimated at more than 25,000. Rehabilitation and resettlement of the remaining families needs to be done with utmost urgency. There may also be a need to voluntarily relocate families from the costal belt to nearby safer places. This involves compensation payments for land acquisition, which was not provided for in the 2005 budget. About 113,000 – 115,000 houses and private commercial buildings have been fully or partly damaged. They too need immediate assistance to get back to their normal livelihood.

There has been considerable damage to the hotels sector with an immediate impact on tourism. The industry is hopeful that the recovery would be faster with timely assistance. Nevertheless, a with a reduction in the number of tourists, a net foreign exchange loss of about US$ 50 million cannot be avoided in 2005, which is critical given the present balance of payments situation.

Both the formal and informal financial sectors were affected by the Tsunami. Several commercial bank branches in the coastal areas were directly affected by the Tsunami disaster. The affected banks are committed to commence operation as soon as possible. The micro finance sector is likely to have been strongly and adversely affected by the Tsunami with the disruption of many micro enterprises. The Central Bank in addition adopting a more accommodative monetary policy stance, has also announced a refinance mechanism to help in the recovery from the Tsunami disaster.

The Damage

The Tsunami has led to an unprecedented loss of life and severe damage has been caused to the private and commercial property as well as productive assets and livelihoods people in 13 districts. These losses include:

- Fishing boats, fishing gear, and cold room facilities in fishing industry. ($125 mn)
- Tourist hotels, restaurants and shops etc. ($ 65 mn)
- Cottage industry such as coir, clothing and handicrafts ($30 mn)
- Industry and Enterprises & Finance ($170 mn)
- Houses, furniture and house hold assets. ($500 mn)
- Economic and social infrastructure. ($ 350 mn)

Tsunami Disaster, 26th December 2004

Situation Report as at 31st January 2005

Province	District	Affected Families	Displaced Families	Displaced Person			Deaths	Injured	Missing	Damaged Houses		No. of Camps
				In Welfare Centres	With Relatives and Friends	Total				Completely	Partially	
Northern	Jaffna	13,482	10,637	10,198	29,919	40,117	2,640	1,647	540	6,084	1,114	**17
	Killinochchi	2,295	318	305	1,298	1,603	560	670	1	1,250	400	2
	Mullaitivu		6,007	11,993	10,564	22,557	3,000	2,590	433	5,033	400	23
Eastern	Trincomalee	30,102	27,746	19,515	64,055	83,570	1,078		337	5,974	10,394	42
	Baticaloa	63,717	12,494	26,827	35,409	62,236	2,840	2,375	952	15,477	5,541	47
	Ampara	38,624	32,385	62,727	61,059	123,786	10,436	6,365	876	14,403	6,940	71
Southern	Hambantota	16,994	3,334	574	17,168	17,742	4,500	361	963	2,303	1,744	5
	Matara	20,675	2,766	2,623	8,996	11,619	1,342	6,652	612	2,362	5,659	25
	Galle	24,583	1,472	2,805	123,247	126,052	4,218	313	554	5,970	6,529	30
Western	Kalutara	6,905	6,905	2,953	27,240	30,193	256	400	155	2,780	3,116	16
	Colombo	9,647	5,290	5,565	26,086	31,651	79	64	12	3,398	2,210	27
	Gampaha	6,827	308	876	573	1,449	6	3	5	292	307	2
North Western	Puttlam	232	18	66		66	4	1	3	23	72	2
	Total	**234,083**	**109,680**	**147,027**	**405,614**	**552,641**	**30,959**	**21,441**	**5,443**	**65,349**	**48,272**	**309**

Immediate Relief and Rehabilitation Phase

There were around 109,680 reported displaced families. Until the relocation in permanent houses is completed and livelihoods are restored, these families have been provided with basic needs such as food, shelter, clothing, water and medical facilities. Immediate measures have been taken to restore normalcy by providing them with following facilities.

- Livelihood support and compensation for victims.
- Housing
- Restoration of electricity, water supply, transport, road access etc.
- Restoration of education and health facilities.
- School textbooks and uniforms.
- Compensation for victims
- Counseling and mental therapy programmes
- Safe and healthy environment for women and children.
- Creation of opportunities for employment.

The Government has already implemented several measures in this regard.

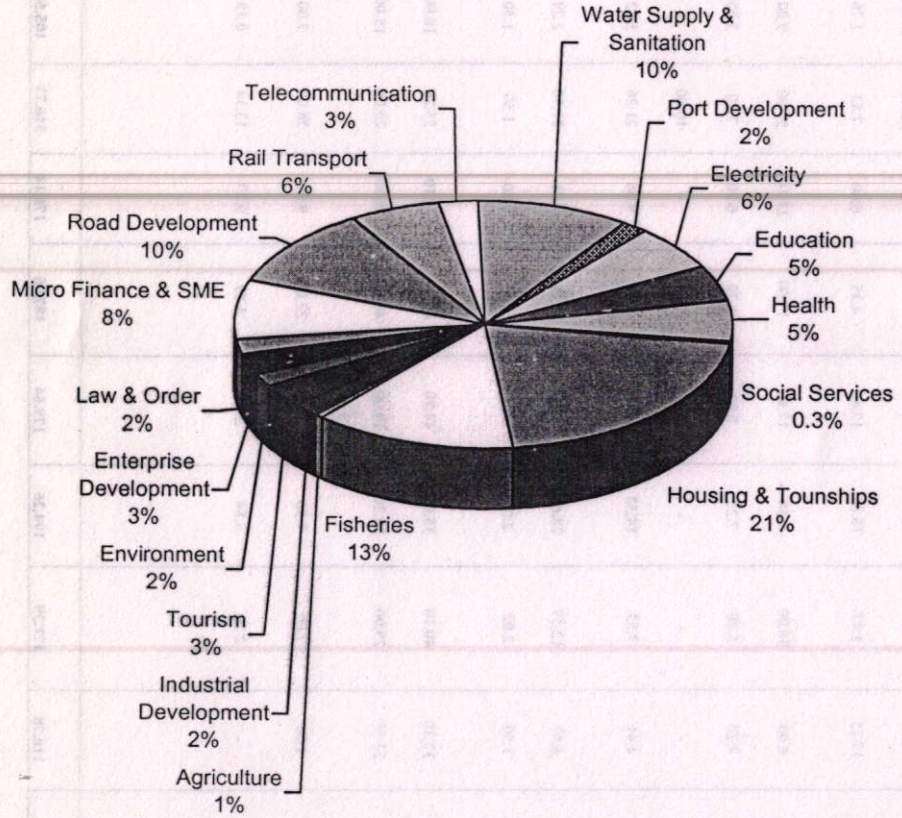
- Payment of Rs. 15,000 for death persons and Rs. 5,000 per family.
- Start up allowance for about 3-4 months.
- Cash grant and food basket worth Rs. 4,000 per person for about 6 months.
- Rs. 2500 for utensils.
- Concession on electricity, water and telephone bills.
- Micro and SME credit on concessional terms.
- Temporary housing and grants for individual house construction.

This programme is the initial phase of 3 – 4 months is estimated to cost US 150 – 200 million.

Need Assessment on Reconstruction and Rebuilding Phase

A provisional estimate of the overall cost of the Reconstruction and Rebuilding Plan in the affected areas is as follows:

Sector	Cost (US$ million)
Road Development	210
Rail Transport	77
Telecommunication (Fishing & Rural)	60
Water Supply and Sanitation	190
Port Development	32
Electricity	115
Education	90
Health	100
Social Services & welfare	20
Housing and Townships	400
Agriculture	10
Fisheries	250
Industrial Development	34
Tourism	58
Environment	30
Enterprise Development	55
Regulatory and Admin Infrastructure	38
Micro Finance SME Credit	(150)
Grand Total	1769


Water Supply & Sanitation 10%
Telecommunication 3%
Port Development 2%
Rail Transport 6%
Electricity 6%
Road Development 10%
Education 5%
Micro Finance & SME 8%
Health 5%
Law & Order 2%
Social Services 0.3%
Enterprise Development 3%
Housing & Tounships 21%
Fisheries 13%
Environment 2%
Tourism 3%
Industrial Development 2%
Agriculture 1%

Summary of the District Investment Programme (US$ mn)

No.	Sector	Total	Jaffna	Kilinochchi/ Vavuniya	Mullaitivu	Trincomalee	Baticaloa	Ampara	Hambantota	Matara	Galle	Kalutara	Colombo	Gampha	Puttalam	National
1																
2	Roads	**210.00**	23.30	2	15.00	26.00	30.90	23.80	28.40	12.80	32.80	15	-	-	-	-
3	Railway	**77.00**		-	-	-	-	-	-	15	35.00	27.00	-	-	-	-
4	Electricity	**115.00**	37.37	1	17.25	1.47	18.81	17.40	4.35	6.40	7.83	1.76	1.05	0.26	0.05	-
5	Water Supply and Sanitation	**190.00**	15.00	-	6.00	38.00	4.50	17.80	17.00	25.20	56.00	9.00	1.50	-	-	-
6	Telecommunication	**60.00**	7.50	-	4.20	5.20	7.20	7.50	9.20	6.20	7.20	3.20	2.60	-	-	-
7	Ports	**32.00**	22.00	-	-	-	-	-	-	-	10.00	-	-	-	-	-
8	Education	**90.49**	4.11	-	4.41	7.53	14.53	18.01	3.76	9.06	21.36	5.62	-	2.1	-	-
9	Health/ Indigenous Medicine	**100.75**	2.17	2.06	5.62	12.59	28.68	18.83	2.50	4.31	21.70	2.29	-	-	-	-
10	Social Service	**20.00**	1.50	1.00	1.50	2.00	2.00	3.00	1.80	1.80	1.50	1.50	1.20	1.20	-	-
11	Housing and Townships Development	**400.00**	37.00	19.00	32.30	40.10	35.00	44.20	49.10	49.10	55.20	18.00	20.50	0.50	-	-
12	Fisheries & Agriculture	**260.00**	22.00	0.70	23.50	29.00	39.30	19.00	44.00	28.00	29.00	15.00	6.00	4.50	-	-
13	Industries, Tourism and Environment Regulatory & Admin	**122.00**	3.50	2.00	1.00	7.00	9.50	7.50	22.00	9.00	26.00	7.00	-	1.00	5.00	21.50
14	Infrastructure	**36.37**	-	-	-	2.50	3.84	2.60	4.89	9.27	13.14	0.13	-	-	-	-
15	Private Enterprise Development	**55.00**														55.00
	Micro Finance & SME Credit	**(150)**														(150)
	Total	**1768.61**	**175.45**	**27.76**	**110.78**	**171.39**	**194.26**	**179.64**	**187.00**	**176.14**	**316.73**	**105.50**	**32.85**	**9.56**	**5.05**	**76.50**
	Percentage to the total	**100.00**	9.9	1.6	6.3	9.7	11.0	10.2	10.6	10.0	17.9	6.0	1.9	0.5	0.3	4.3

The short-term and the medium-term relief, rehabilitation and reconstruction program will involve a large foreign exchange component, mainly in the form of capital goods imports. The ability to procure such imports could be seriously constrained at a time when the additional cost of oil imports is exerting severe pressure on the balance of payments. The added cost of oil imports alone in 2004 and 2005 would be US$ 550 million.

The government has decided to declare the damaged coastal belt as a development zone within which reconstruction and rehabilitation will be implemented in a coordinated manner. Wherever possible, this would be done through active and effective participation of stakeholders. To facilitate the work programme, a high level coordinating committee has been set up under the leadership of Her Excellency the President.

Implementation Structure

The rebuilding programme consists of some components that are service-orientated while others are product-orientated. The programme has been designed not only to ensure the restoration of services and livelihoods to the affected people, but also to provide a means for achievement of standards that are significantly higher than those prior to the disaster.

The planning and implementation of the reconstruction and rebuilding phase will involve all of Government, the private sector, civil society and non-government organizations, with the active participation of the affected people and the support of the international partners.

A three tier structure will be used for the implementation of public investments in the reconstruction and rebuilding programme. Projects at the national level will include large scale connective infrastructure such as national highways, railways, harbours and the national electricity grid. The Provincial level, including Districts, Divisions and local authorities, will be entrusted with mandated sub-national programmes such as schools, hospitals, agricultural and fisheries rehabilitation, and Class C, D and E road networks. Communities will be entrusted with implementation of programmes such as housing, enterprise development and microfinance. Communities will be supported to establish skills development and self-employment initiatives.

Special programmes will be supported to ensure the welfare and social security aspects of the affected children, women, and those that are differently abled.

The programme is rooted in and will strive to promote the principles of good governance. Immediately after the disaster, at the national level, the Centre for National Operations (NCO) was formed under the President's Secretariat to oversee and monitor emergency programmes and liaise with relevant parties to ensure effective implementation of the relief and recovery phase. The NCO was instrumental in ensuring that the relief and recovery measures were implemented in a timely and transparent manner.

The rebuilding operation will be spearheaded by the Task Force on Rebuilding the Nation (TAFREN) and the Task Force for Logistics and Law and Order (TAFLOL), to ensure that the relief effort is successful and that social justice is done with respect to the affected people. At the District level, Disaster Management Authorities were appointed to coordinate local relief efforts. Government will

continue to maintain a transparent approach through interaction with the high level committee comprising leaders of all political parties, and by making information available in all aspects through mass media and regular briefing of development to donor, NGO and other partners. All operations will be subject to the scrutiny of an especially appointed team of independent auditors and as well as the Auditor General of Sri Lanka.

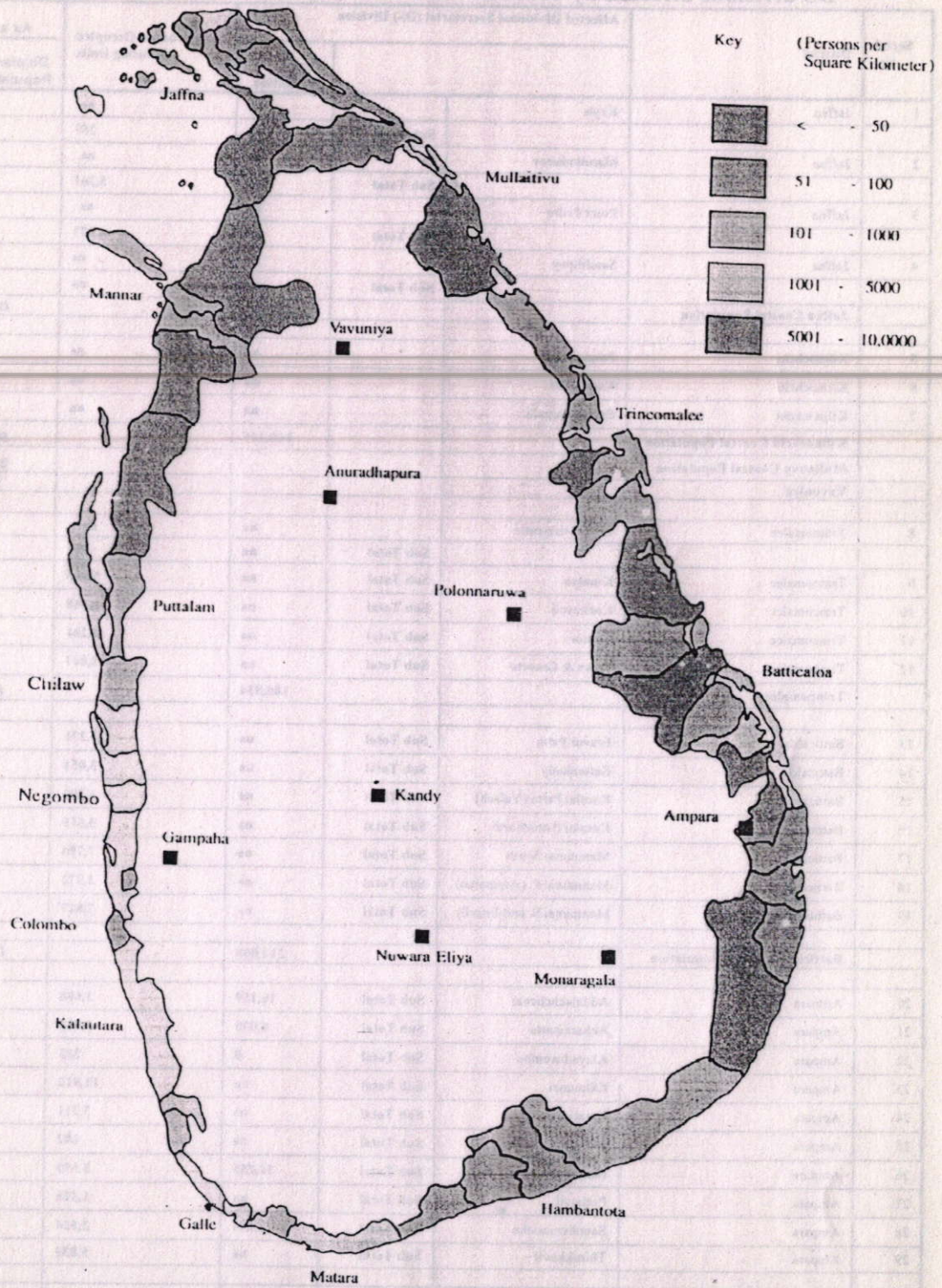
A monitoring system will be designed and implemented to ensure that the programme stays on course, is timely and results-oriented. A Political Committee as well as an Operational Committee will be entrusted to monitor the progress of the rebuilding programme. The monitoring system will be closely linked to the country's National Poverty Reduction Strategy and the drive to achieve the Millennium Development Goals (MDGs).

The Need for External Support

While giving high priority to the emergency relief, rehabilitation and reconstruction work, the government is also committed to take forward the economic development and reform process in the rest of the country. At this critical stage in Sri Lanka's development, the Government and people appreciate the understanding and support of the international community. The government of Sri Lanka reiterates its commitment to ensure effective utilization of all foreign assistance and the limited domestic resources in this effort.

The year 2004 ended with a balance of payments (BOP) deficit of US$ 212 million. This was primarily on account of the additional oil bill. However there were other adverse economic factors in 2004 including a drought during the first half, floods later in the year in some areas, and finally the Tsunami disaster. The official foreign reserves of the country were depleted from US$ 2.3 billion in 2003 to US$ 2.187 billion in 2004. The adverse impact of oil prices is likely to continue in 2005. Given the above resource constraints and the current balance of payments pressures, the massive task of rehabilitation and reconstruction of the Tsunami affected areas can only be undertake effectively with donor support on highly concessional terms. It is therefore, critical that the country receives urgent assistance to enable it to preserve its economic stability, and to be able to continue with the proposed rehabilitation and reconstruction program without dampening the other development work in other areas and sectors.

Population Density in Costal Belt



iscussion Draft: Summery of Final Report will be available mid March, 2005

Table 1
Population and number of occupied housing units as at 17th JUNE 2001 of DS divisions affected by Tsunami - 2004: Sri Lanka

Serial No.	District	Affected Divisional Secretariat (DS) Division		Total Population	Number of Occupied Housing Units	As at 2nd January 2005	
						Displaced Population	% to total
1	Jaffna	Kayts		na	na..		
			Sub Total	na	357		
2	Jaffna	Maruthnkerny		na	na..		
			Sub Total	na	3,261		
3	Jaffna	Point Pedro		na	na..		
			Sub Total	na	4,977		
4	Jaffna	Sandilipay		na	na		
			Sub Total	na	na		
	Jaffna Coastal Population			210,222		48,729	6.0
5	Kilinochchi	Poonakary		na	na		
6	Kilinochchi	Kandawali		na	na		
7	Kilinochchi	Pachchilaipalli		na	na		
	Kilinochchi Coastal Population			140,145		50,000	6.2
	Mullativu Coastal Population					24,557	3.0
	Vavuniya					2,944	0.4
8	Trincomalee	Eachchilampatta		na	na...		
			Sub Total	na	713		
9	Trincomalee	Kinniya	Sub Total	na	5,695		
10	Trincomalee	Kuchaveli	Sub Total	na	3,668		
11	Trincomalee	Muttur	Sub Total	na	2,201		
12	Trincomalee	Town & Gravets	Sub Total	na	13,047		
	Trincomalee			106,934		86,054	10.7
13	Batticaloa	Eravur Pattu	Sub Total	na	1,371		
14	Batticaloa	Kattankudy	Sub Total	na	3,051		
15	Batticaloa	Koralai Pattu (Valach)	Sub Total	na	4,592		
16	Batticaloa	Koralai Pattu North	Sub Total	na	3,515		
17	Batticaloa	Manmunai North	Sub Total	na	7,786		
18	Batticaloa	Manmunai P. (Araipattai)	Sub Total	na	3,372		
19	Batticaloa	Manmunai S. and Eruvil)	Sub Total	na	7,817		
	Batticaloa Coastal Population			314,088		185,637	23.0
20	Ampara	Addalachchenai	Sub Total	16,159	3,688		
21	Ampara	Akkaraipattu	Sub Total	8,075	1,904		
22	Ampara	Alayadiwembu	Sub Total	0	383		
23	Ampara	Kalmunai	Sub Total	na	11,912		
24	Ampara	Karativu	Sub Total	na	3,211		
25	Ampara	Lahugala	Sub Total	na	692		
26	Ampara	Ninthavur	Sub Total	14,255	3,583		
27	Ampara	Pothuvil	Sub Total	na	5,326		
28	Ampara	Sainthamarathu	Sub Total	13,244	2,824		
29	Ampara	Thirukkovil	Sub Total	na	5,839		
	Ampara Coastal Population			235,155		183,527	22.8

Continued..

Serial No.	District	Affected Divisional Secretariat (DS) Division		Total Population	Number of Occupied Housing Units	As at 2nd January 2005	
						Displaced Population	% to total
30	Hambantota	Ambalantota		6,045	1,532		
31	Hambantota	Hambantota		19,236	4,754		
32	Hambantota	Tangalle		25,976	6,614		
33	Hambantota	Tissamaharama		6,025	1,979		
	Hambantota		Sub Total	57,282		27,351	3.4
34	Matara	Devinuwara		18,791	4,130		
35	Matara	Dickwella		20,396	4,629		
36	Matara	Matara Four Gra		57,734	7,103		
37	Matara	Weligama		30,733	7,083		
	Matara		Sub Total	127,654		41,900	5.2
38	Galle	Balapitiya		35,359	8,217		
39	Galle	Bentota		12,792	3,058		
40	Galle	Galle Four Grav		101,832	19,450		
41	Galle	Habaraduwa		31,413	7,146		
42	Galle	Hikkaduwa		57,961	13,869		
	Galle		Sub Total	226,565		55,739	6.9
43	Kalutara	Beruwala		48,117	9,832		
44	Kalutara	Kaluthara		32,130	7,192		
45	Kalutara	Panadura		34,722	8,157		
	Kalutara		Sub Total	114,969		43,685	5.4
46	Colombo	Colombo		75,491	15,411		
47	Colombo	Dehiwala		12,675	2,802		
48	Colombo	Moratuwa		62,417	14,823		
49	Colombo	Rathmalana		33,546	8,111		
50	Colombo	Thimbirigasyaya		50,827	11,005		
	Colombo		Sub Total	159,465		23,005	2.9
51	Gampaha	Negombo		55,317	12,175		
52	Gampaha	Wattala		26,029	6,317		
53	Gampaha		Sub Total	81,346		32,000	4.0
54	Puttalam	Wennappuwa	Sub Total	7,056	1,933	850	0.1
	Country		Grand Total			805,978	100.0

na: Not available

Na...: Incomplete data

Source: Department of Census and Statistics

Ministry of Women Empowerment and Social welfare

Centre for National Operations

Table 2 - Population data for Coastal Districts

No.	Coastal Districts	Total-(2001)*		Coastal (2001)*			(2003) Fishing Household Population @	Fish Landings	Fishing harbours	Displaced Population#	Total Deaths#
		No. of D.S.D.	Population	No. of D.S.D.	Population D.S.D.	Population % to Total					
1	Puttalam*	16	705,342	8	498,506		46,390	58	1	4	
2	Gampaha (Negombo)	13	2,066,096	3	495,757	24.0	53,150	27		32,000	7
3	Colombo	13	2,234,289	3	764,373	34.2	8,860	11	1	24,500	65
4	Kalutara	14	1,066,800	3	448,644	42.1	15,080	34	2	33,794	170
5	Galle	18	990,539	6	434,532	43.9	21,280	60	2	44,582	3,724
6	Matara	16	761,236	4	254,741	33.5	27,440	31	1	40,500	1,061
7	Hambantotra (Tangalle)	12	525,370	4	234,452	44.6	23,930	24	4	28,785	4,500
8	Ampara(Kalmunai)	19	589,344	10	235,155	39.9	70,180	54		183,527	10,436
9	Batticaloa	14	486,447	12	314,088	64.6	76,540	116		285,408	2,222
10	Trimcomalee	10	340,158	6	106,934	31.4	40,860	53	1	93,408	925
11	Mullativu	4	121,667	2	na		14,620	29		24,557	1,700
12	Kilinochchi	3	127,263	2	na		18,580	40		49,286	560
13	Jaffna	15	490,621	5	na		48,580	103		48,729	2,076
14	Mannar*	5					27,780	32			
15	(Chilaw) Puttalum*						37,150	31			
16	Vavuniya	4	149,835	0						99	140
	Total	176	10,655,007	68	3,787,182	358	530,420	703	12	889,179	27,586
	Affected Total						**419,100**	**582**	**10**		
	Affected %						**79.0**	**82.8**	**83.3**	23.5	0.7

* Not affected na=not available

Sources: @ Ministry of Fisheriesand Ocean Resources

Dept. of Social Services (at 31st Dec.2004)

* Dept. of Census and Statistics

Table-3

Basic marine Fisheries Information - 2003

No.	Districts/Fisheries Divisions	Number of Fisheries Divisions	Number of fishing villages	Fishing Households	Active Fishermen	Fishing Household Population	Fish Landings
1	**Gampaha (Negombo)**	**13**	**82**	**11,660**	**16,700**	**53,150**	**27**
2	**Colombo**	**10**	**27**	**2,020**	**2,400**	**8,860**	**11**
3	**Kalutara**	**9**	**33**	**3,420**	**3,800**	**15,080**	**34**
4	**Galle**	**9**	**155**	**4,530**	**5,510**	**21,280**	**60**
5	**Matara**	**9**	**86**	**5,670**	**7,850**	**27,440**	**31**
6	**Hambantotra (Tangalle)**	**11**	**37**	**4,920**	**5,720**	**23,930**	**24**
7	**Ampara (Kalmunai)**	**12**	**258**	**15,150**	**15,500**	**70,180**	**54**
8	**Batticaloa**	**14**	**172**	**18,920**	**21,740**	**76,540**	**116**
9	**Trimcomalee**	**9**	**120**	**8,120**	**18,250**	**40,860**	**53**
10	**Mullativu**	**4**	**31**	**3,100**	**3,250**	**14,620**	**29**
11	**Kilinochchi**	**5**	**40**	**5,100**	**3,660**	**18,580**	**40**
12	**Jaffna**	**15**	**107**	**15,360**	**14,860**	**48,580**	**103**
13	**Mannar***	7	41	7,280	9,540	27,780	32
14	**Puttalam***	7	108	10,500	10,050	46,390	58
15	**Chilaw***	11	40	8,220	10,000	37,150	31
	Total	132	1,255	112,310	132,130	477,270	676
	Affected Total	**107**	**1,066**	**86,310**	**102,540**	**365,950**	**555**
	Affected %	**81.1**	**84.9**	**76.8**	**77.6**	**76.7**	**82.1**

* Not affected

Source:Ministry of Fisheries and Ocean Resources

The Recovery Programs on Tsunami Effect

Kingdom of Thailand

Presented by

Ms. Supa Piyajitti

Inspector General, Ministry of Finance

Introduction

On December 26, 2004, Tsunami waves attacked six provinces on the Andaman coast, southern part of Thailand. The disaster waves left 5,395 casualties (1,926 Thai citizen and 1,953 foreigner), 8,457 injuries, 2,932 people missing, 882 orphans and 19,210 unemployment. The disaster caused approximately more than 300 billion Thai Baht in total damage.

Currently, Thai government has set up a rehabilitation and reconstruction plan that consists of short-term or emergency plan and long-term plan.

1. The Emergency Plan

In a few day after the Tsunami, Thai government had to make advance payment approximately 203 million Thai Baht. These budgets were used to provide food, shelters, clothes, and others amenities to urgently help the victims.

Several government agencies involved in the rescue mission. For example, Royal Thai Army and Ministry of Transport (Department of Highways and Department of Rural Roads) cleared debris on major road for government and private rescue teams to access critical area. Moreover, other government agencies immediately repaired damaged roads and rehabilitated electricity system, piped water, and telecommunication system.

The rescue teams from both private and government sector jointly searched for survivors and dead bodies all day and all night. In order to provide medical assistance, Ministry of Public Health set up medical centers in 3 provinces, which were Krabi province, Phuket province, and Pang Nga province. These centers provided most of necessary medical assistance to victims and sent the serious patients that

needed further medical treatment to hospitals in Bangkok. Moreover, Ministry of Public Health sent psychologists and therapists to rehabilitate metal health of the victims and their families.

Every part of Thai society involved in assisting the Tsunami victims. Several foundations and television channels gathered money and clothes from all donors across the country and brought them to the critical areas. Students from high-schools and universities help packing all donated items into the bags for transportation. People from around country donated their blood to help injury people via Thai Red Cross. Moreover, His Majesty the King Buhmipol Adujadate gratefully donated 30 million Thai Baht to help the victims.

- Assistance to the foreign tourists

Thai government provided several measures to help foreign tourists. In case of injury, the government immediately sent them to the medical center. If the foreign tourists wanted to go back to their countries, the government would provide the airplanes to send them back. Furthermore, Ministry of Foreign Affair asked several foreign embassies in Thailand to send the officers to identify their citizens. The government also set up the tourist-helping centers in several areas to be temporary shelters before they went back to the country.

- Searching for Dead bodies

Rescue teams from private and government sector searched for survivors and dead bodies. The teams sent the dead bodies to the rescue centers. The rescue centers had to check DNA of dead bodies, take photograph, and collect every evident that could identify name of the dead bodies.

2. Medium and Long-term Rehabilitation Activities

The government has set the principal of a medium and long term rehabilitation activity as follow.

1. All participated public agencies need to cooperate with the participated private agencies for helping and giving supports to all victims who had been affected by the disaster. The urgent supports are helping the injuries and the casualties. Although international victims or Thai victims must be treated equally.

2. Thailand will not accept any financial support from international but we are appreciate to accept technical assistance, expert, and other advance technology that would be benefit and helpful.
3. Four deputy Prime Minister were authorized to set committees for overseeing different rehabilitation issues. The first committee is responsible for the consideration of financial supports , fund subsidize to all victims, building houses and reconstruction basic infrastructures. As such, there are 9 ministries involved in this issue such as Ministry of Labor is responsible for all labors and unemployed and Ministry of Finance is responsible for large scale entrepreneurs' rehabilitation and financial support. The second committee oversees the rehabilitation and planning natural resources and environment including all affected areas' Ecological system. The third committee oversees the assistance and relief to the unemployed. And the last committee was assigned to integrate and analyze how and why this disaster occurs and how to prevent it in the future.

In addition, the government has set up the 5.9 billion baht emergency fund to support the rehabilitation activities which could be highlight as follow.

- Fishery sector support: Department of Fishery has provided 140 million baht for fixing 4,028 fisherman boat and 116 million baht to 9,400 fishermen for fixing and purchasing fishery equipment.
- Labor and unemployment support: Ministry of Labor has implemented a 6 months job offering plan which up to present has created job opportunity to more than 19,200 people. For more sustainability, government has additionally provided a job training to 950 people and aimed for more than 10,000 soon.
- SME entrepreneur support: the Local Administration Support office has provided a 20,000 baht per individual to 4,239 SMEs entrepreneurs to reinvest in their working tools.
- Permanent housing support: The need for 2,745 permanent houses has been recorded. At present, more than 1,000 houses are finished and the rest are constructing under the coordination of the public sector (ie. Thai army, Treasury department) and private sector. However, while waiting for the permanent houses, the government already built the temporary shelters at the beginning of the disaster

- In addition, Ministry of Finance has introduced the public – private sector partnership for disaster recovery package. The Thai Government and the Thai Bankers' Association make available to the affected business consists of :

1) To ease short and medium term liquidity and debt services problem

- Bank of Thailand has provided soft loans to the commercial banks and specialized financial institutions to re-lend to affected businesses.
- The loans provide low interest and flexible repayment arrangements, reducing the financial burden.

At present (as of 9 March 2005), soft loan of 45,780 million baht has been approved by the Bank of Thailand with additional credit line support from

2) To encourage business people whose properties are damaged to submit the *reconstruction* and *rehabilitation* plans, with the banks. If the plans are considered feasible, new loan will be granted on

- *Normal* lending criteria and/or
- More flexible terms of payment

At present, specialized financial institutions have provided loans for the total amount of 3,373.89 million baht. Commercial Bank has provided loans for more than 35,500 million baht

3) To assist businesses, that are severely damaged, and whose capital structure need to be strengthened. The Thai bankers' Association, the Stock Exchange of Thailand and Government Saving Bank have set up a venture capital fund called *the Tsunami Recovery Fund* to assist in recapitalization of the affected businesses. In addition, Office of SME Promotion has also introduced a venture capital fund to assist in recapitalization of the SMEs. As of 9 March 2005, both venture capital funds have already approved 16 transactions which equivalent to approximately 1,600 million baht.

With a fully financial support and additional attempt to beautify the affected landscape especially at the most severely affected Pang Nga coast, Thai government aimed to complete a reconstruction of hotel business and all infrastructure in that area by December 26, 2005.

- At present, tourism industry in the affected area has gradually improved since the natural resources and tourism spots are systematically rehabilitated. Tourists have already come back to visit the

Andaman coastal area which are now having at least 30,000 rooms or 50% of the total rooms operated before the disaster, available for serving visitors.

Lessons Learned / Key success factors

During the past 3 months, the Government of Thailand and all participated public and private agencies have implemented both macro and micro level measures to reconstruct and rehabilitate the affected areas. The outcome may not be finalized yet since many issues need to be taking into account and will take a longer time frame to complete. However, it could be said that the emergency and medium term rehabilitation activities have a significant progress and provide a wide range of benefit to victims in every sectors. The main driven factors for the success that we have experienced during our operation are as follow.

1) His Majesty the King Buhmipol Adujadate, not only donated 30 million Thai Baht but he also the center of Thai people that bring public and private sector come together to help the victims.

2) A close coordination between public and private sector has begun since the disaster occurred. Individual people and private organization throughout the country have joined together for giving every kind of support to the victims. The government could collect the donation from the private sector for up to 1,050 million baht. This kind of effort has shown a unity in the nation which could improve a morale and self confidence of the victims.

3) Sufficient budget was provided and could be distributed to the affected area efficiently

4) Prime minister and all concerned ministers were informed directly from the affected people and agencies regarding the needs and progress of the relief. This led to an effective implementation and monitoring of measure taken by the government.

5) A clear designated authorities to be responsible in necessary rehabilitation issues. As mention before, 4 deputy Prime Ministers were authorized to oversee different issues and required to report the progress to the cabinet every week. A good management in each task force as well as a systematically information sharing among the task forces are also a key success factors.

6) A fully participation from the local communities to ensure social sustainability in the local communities by providing safety nets for vulnerable groups, building on both pre and post tsunami initiatives for greater transparency and accountability.

Remaining Issues need to be explored

1) A long term effect on the mentality of affected children especially the orphans is still the major concern for the government. Even though, many agencies have taken care of this issue, we need a further close monitor and evaluation.

2) A clarification of unidentified bodies and missing persons is in process but it may require more effort and time to complete this task.

3) A built up of tourists and local people confidence on the safety issues is necessary. An establishment of the disaster early warning system, infrastructure as well as a medical relief system are started and hope to complete by the time of other business can begin.

4) A development of long term regional plan

Currently, most of the rehabilitation plan are mainly focus on a short and medium term. Ministry of Finance believed that for a longer term sustainability in the Andaman coastal area, a long term regional plan may be necessary. As a result, we asked for technical assistance from ADB to assist the government to develop a master plan for the affected provinces and ADB, at the first stage, approved the provision of small-scale TA to Thailand for preparing such a plan. This plan will be an integration of works from public and private sectors and local people and communities will be the center of the plan's implementation and management. The proposed plan will be divided into 2 timeframes which are a medium - term plan from 2005 to 2009 and a long - term plan from 2006 to 2016. The nature of the plan composes of 3 parts : ***Structure Plan , Area Plans*** and ***Sectorial Strategies and Subject Plan***. Each plan includes the implementation framework, measures and detail on public participation.

OVERVIEW OF DAMAGES AND REHABILITATION

	(A) India	(B) Indonesia	(C) Maldives	(D) Malaysia	(E)Myanmar	(F) Somalia	(G) Sri Lanka	(H) Thailand
Regions affected								
No. of provinces / regions affected	3 states and 2 Union Territories [A1]	18 Kabupatens [B1]	190 islands (13 islands severely damaged; 56 islands major physical damages; 121 islands moderate damage due to flooding) [C1]	Northern states of west coast of Malaysia [D1]	7 townships [E2]	9 districts (north east zone of Somalia) [F2]	14 coastal districts G[1] 12 severely affected districts [G5]	6 provinces [H1]
Impact on Human lives								
No.of dead/ presumed dead	10,881 [A2]	1,70,000 [B8]	82 [C1]	68 [D1]	>86 (most of the dead are women and children who were collecting seaweed when the wave struck) [E2] 200 sea gypsies are thought to be dead but not confirmed [E1]	155 (with only 19 confirmed dead) [F2]	40,000 [G1]	5,395 (1,926 thai and 1,953 foreigners) [H1]
No. of people injured	6913 [A2]	NA	1,300 [C1]	NA	42 [E3]	NA	15,000 [G3]	8,457[H1]
No. of people missing	5,792 [A2]	93,638 [B4]	26 [C1]	NA	NA	136 [F2]	6,000 [G3]	2,932 [H1]
Total no. of people displaced	648,475 [A1]	450,000 [B1]	15,000 [C3]	6,296 [D1]	>4,810 [E2]	NA	1 mn [G3]	NA
No.of children orphaned by tsunami	237 [A3]	NA	NA	NA	NA	NA	1,000 [G1]	882 [H1]
Effect on livelihood	USD 421.7 mn worth of livelihoods lost [A2]	600,000 persons [B5] (of these 100,000 are fishers, 60,000 farmers, 80,000 small enterprises) [B9]	USD 30 mn worth of livelihoods lost [C1]	NA	NA	17,000 persons [F1]	800,000 persons. [G3] 90% of households, 97 % of fishermen and 70% of workers in agriculture, manufacturing, industrial sectors lost their livelihood[G6]	120,000 livelihoods lost. The main affected occupations are tourism and fisheries (sea gypsies are majorly affected in fisheries)[H7]
No. of women widowed in Tsunami	223 [A3]	NA	NA	NA	NA	NA	NA	NA

Overview of Damages to Different Sectors in the Region

	(A) India	(B) Indonesia	(C) Maldives	(D) Malaysia	(E)Myanmar	(F) Somalia	(G) Sri Lanka	(H) Thailand
Housing								
No. of houses destroyed by tsunami	153,585 [A2]	200,000 [B8]	1,847 - completely destroyed; 3,500 -partially destroyed [C1]	NA	>683 completely destroyed; >764 partially damaged [E2]	1,400 [F1]	113,625 [G3]	3,578 - completely destroyed; 2, 993 - partially destoryed [H2]
Loss in housing in terms of USD	USD 228.5 mn [A2]	USD 1,437.1 mn [B3]	USD 65 mn [C1]	NA	NA	NA	USD 306-341 mn [G2]	NA
Tourism								
Total loss to tourism	NA	NA	USD 230 mn [C1] (21/87 resorts shut down as a result of tsunami) [C5]	NA	NA	NA	USD 280 mn [G2] Total of 25 hotels were completely destroyed [G3]	USD 780 mn (30 bn Baht) [H8] 10 bn Baht/ month (approx. USD 253.1mn) loss of income [H7]
Fishing								
General	NA	NA	NA	NA	17 villages are heavily impacted and all are fishing villages [E3]	NA	40,000 fishermen houses destroyed [G3]	5 provinces and 74 sub-districts and 386 villages where fishing was affected) [H5]
Total no. of fishery household affected	272,215 [A3]	NA	NA	NA	NA	NA	NA	2,923 [H6]
No. of people affected	NA	580,000 fishermen affected [B1]	NA	7,721 fishermen affected [D1]	NA	NA	7, 573 fishers died [G4] 71,000 fishers are affected [G4]	A total of 120,000 people affected in fisheries [H9]
Number of fishing vessels lost/ damaged	88,035 [A3]	10,300 [B1]	120 totally damaged (100 medium sized boats, 20 artisanal boats); 50 partially damaged vessel [C2]	3,626 units (675 large boats; 2,951 small boats). A total loss of RM 28 mn (approx. USD 7.38mn) [D1]	131 lost and 144 small boats damaged [E3]	600 [F1]	22,289 (18,048 completely destroyed; 4,241 boats damaged) [G1]	4,529 (>10 m = 1,127 & < 10 m = 3,402) [H5]

	(A) India	(B) Indonesia	(C) Maldives	(D) Malaysia	(E)Myanmar	(F) Somalia	(G) Sri Lanka	(H) Thailand
Loss in aquaculture	5,753 aquafarms destroyed. (Rs. 577,600,000, approx USD 13.21 mn) [A3]	36-48,000 ha of aquaculture farms damaged [B1], 36,597 tambak (no. of fish/shrimp ponds) damaged [B6] Total of Rp 466 bn (approx USD 48.45 mn) lost in aquaculture [B11]	16 ocean cages lost [C1]	RM 27.1 mn loss (USD 7.15mn) A total of 232 farmers affected [D1]	NA	NA	Not much, as aquaculture was not practiced much in tsunami affected regions [G5]	41,439 cages lost (USD 92 mn) [H5] 7, 000 shrimp farms destroyed [H7]
Damages to fisheries	USD 567.8 mn [A2]	Capture fisheries =USD 52 mn; brackish water culture =USD 51 mn; hatcheries =USD 8 mn [B1] Total damage = USD 510.9 mn [B3]	USD 25 mn [C2]	RM 57 mn (approx USD 15.03 mn) [D1]	USD 250,000 [E3]	NA	USD 297 mn [G2]	USD 16.6 mn [H6]
Agriculture								
Total agricultural area affected	11,827 ha of crop damaged [A1]	irrigated land: 40, 000 ha; rice production: 30,981 ha; land lost due to mud deposit: 37, 500 ha; No. of farms affected: 92,000 [B1]	2,103 farms and 11,678 homestead units damaged [C2]	NA	NA	NA	5,938 ha of crops; 5,000 ha of cultivable land; 15,210 units of homegardens [G4]	1,300 ha (900 destroyed completely) [H6]
Total loss in agriculture	USD 37.5 mn (inclusive of livestock) [A2]	USD 224.8 mn (inclusive of livestock) [B3]	USD 11.10 mn [C1]	USD 6.3 mn [D1]	NA	NA	USD 3 mn (includes livestock) [G2]	NA
Environment								
Damages	NA	USD 675 mn [B4]; 97,250 ha coral reef loss; 25,000 ha mangrove loss; 600 ha sea grass bed loss; 48,925 ha forest loss. [B7]	NA	NA	NA	NA	USD 10 mn [G2]	1.5% of sea grass beds, 5% of corals, 1.6% of mangroves were lost to tsunami [H10]
Health	USD 23.6 mn (health and education) [A2]	USD 91.9 mn [B3]	USD 5.6 mn [C1]	NA	NA	NA	USD 100 mn [G2]	NA
Education		USD 128.4 mn [B3]	USD 15.5 mn [C1]	NA	NA	NA	USD 263.08 mn [G2]	NA

Estimated costs for rehabilitation and reconstruction (Draft based on available information)
(includes short term and long term needs)

in mn USD

Sectors	India [2]	Indonesia [3]	Maldives [4]	Sri Lanka [5]	Sri Lanka [6]	Thailand [7]
Housing	489	462	93.4	487	400	1
Health	17.4	NA	12.2	84	100	NA
Education	NA	NA	21.1	45	90	NA
Agriculture and livestock	21.7	NA	11.1	4	10	NA
Fisheries	284.1	260	14.22	118	250	NA
Fishers and farmers	NA	NA	NA	NA	NA	2.5
Livelihoods	178.7	NA	17.4	NA	NA	NA
Rural and muncipal infrastructure	97.5	NA	NA	NA	NA	NA
Transportation	69.2	NA	73[1]	NA	NA	NA
Roads	NA	NA	NA	200	210	NA
Railways	NA	NA	NA	130	77	NA
Coastal protection	38.1	NA	NA	NA	NA	NA
Hazard risk management	17.3	NA	NA	NA	NA	NA
Worship and culture	NA	2	NA	NA	NA	NA
Infrastructure	NA	195	NA	NA	NA	NA
Environment	NA	229.2	9.8	18	30	NA
Early warning systems	NA	28	NA	NA	NA	NA
Disaster management	NA	4.15	7.4	NA	NA	NA
Tsunami readiness	NA	8	NA	NA	NA	NA
Water and sanitation	NA	NA	45.6	117	190	NA
Tourism	NA	NA	100	130	58	NA
Power	NA	NA	4.7	77	NA	NA
Port development	NA	NA	NA	NA	32	NA
Industrial development	NA	NA	NA	NA	34	NA
Enterprise development	NA	NA	NA	NA	55	NA
Electricity	NA	NA	NA	NA	115	NA
Other costs	NA	NA	15	NA	NA	NA
Social welfare	NA	NA	NA	30	20	NA
Microfinance (SME)	NA	NA	NA	NA	150	NA
Administration costs	NA	NA	50	NA	38	NA
Total	***1,213***	4500 -5000	406.3	1440	1859	

(1) The government estimates an increase of 48.1 mn over and above 27 mn initially estimated by the Joint Assessment Report

Source

(2) Post Tsunami Recovery Program: Preliminary Damage and Needs Assessment by ADB/UN/WB (08/03/05)

(3) Preliminary Damage and Needs Assessment Report by Consultative Group of Indonesia 19/01/05

(4) National recovery and reconstruction plan programs and projects, by the Ministry of Planning and National Development, Government of Maldives, March 2005

(5) Sri Lanka 2005 Post Tsunami Recovery Program: Prelimary Damage and Needs Assessment. ADB/WB and JBIC report, dated 28/01/05

(6) Rebuilding Sri Lanka: Action Plan, Department of National Planning, Ministry of Finance and Planning and TAFREN, Sri Lanka, February 2005

References

A1 UNDMT Situation Report - India (11.02.05)

A2 Post Tsunami Recovery Program - Preliminary Damage and Needs Assessment by ADB/UN/WB (08/03/05)

A3 Impacts of the tsunami on fisheries, aquaculture and coastal livelihoods in India (16/03/05)

A4 Tsunami Rehabilitation and reconstruction program "Presentation to the high-level coordination meeting, Manila, 18 March 2005

A5 Government Orders of respective State Governments, Government of India

A6 Rajiv Gandhi Rehabilitation package for tsunami affected areas in Andaman and Nicobar Islands, Government of India

B1 FAO report dated 08/03/05 - Indonesia

B2 Preliminary Assessment of the Macroeconomic Impact of the tsunami disaster on affected countries and of associated financing needs, Prepared by the IMF in cooperation with the World Bank (04/02/05)

B3 Preliminary Damage and Needs Assessment Report by Consultative Group of Indonesia 19/01/05

B4 Current State of Affairs in Tsunami hit nations Reuters - 24/03/05

B5 Earthquake tsunami response - ILO Proposals for reconstruction and rehabilitation and recovery (18/01/05)

B6 Rapid Environmental Impact Assessment Banda Aceh, Sumatra Ministry of Environment, Government of Indonesia

B7 UNDAC Environmental Impact Assessment

B8 Rehabilitation and reconstruction of infrastructure in response to earthquake and Tsunami Disaster in Aceh Minister of Public works, Republic of Indonesia

B9 The consultative group on Indonesia: Notes on reconstruction, Jan 19, 05

B10 Indonesia Tsunami/ earthquake rehabilitation and reconstruction human settlement, rehabilitation/reconstruction strategy draft, April 20, 05

B11 Impact of the tsunami on fisheries, aquaculture, and coastal livelihoods in Indonesia (as of 21/03/05 APFIC)

C1 Republic of the Maldives : Impact and Recovery JAR WB/ADB/UN systems 08/02/05

C2 FAO report dated 08/03/05 - Maldives

C3 National recovery and reconstruction plan programs and projects, Ministry of Planning and National Development, Government of Maldives, March 2005

C4 Permanent housing concept and sample designs for tsunami disaster recovery, Government of Maldives (08.03.05)

C5 National recovery and reconstruction plan: Maldives presented at the ADB High-level Co-ordination Meeting on Rehabilitation and Reconstruction Assistance to Tsunami-Affected Countries, 18 March 2005, Manila

C6 Impacts of the tsunami on fisheries and aquaculture livelihood- Maldives (06/02/05)

D1 Impacts of the tsunami on fisheries, aquaculture and coastal livelihoods in Malaysia (10/03/05)

E1 Tsunami: did Burma escape the consequences? Reported by Democratic Voice of Burma, 06/01/05

E2 Impact of tsunami on the lives and livelihoods of People in Myanmar with focus on Labutta Township, Ayeyarwaddy Division, WFP - Jan, 05

E3	Impacts of the tsunami on fisheries, aquaculture and coastal livelihoods as on Mar 9, 05
F1	Tsunami - Inter Agency Assessment Mission; Hafus to Gara'ad, Northeast Somalia Coastline, 08/02/05
F2	WHO Health Action Response to the Tsunami Impact in Somalia, 28/01/05
G1	TAFREN - ADB Presentation: Rebuilding Sri Lanka Post Tsunami, Mano Tittawella, Chairman TAFREN" presented at the ADB High-level Co-ordination Meeting on Rehabilitation and Reconstruction Assistance to Tsunami-Affected Countries, 18 March 2005, Manila
G2	Sri Lanka 2005 Post Tsunami Recovery Program: Prelimary Damage and Needs Assessment. ADB/WB and JBIC report, dated 28/01/05
G3	Rebuilding the tsunami affected area implementation plan, TAFREN, Department of national planning, Ministry of Finance and Planning Feb 2005
G4	FAO fishery assessment 08/03/05
G5	Impacts of the tsunami on fisheries, aquaculture, and coastal livelihoods - Sri Lanka (NACA,FAO,SEAFDEC,APFIC) - 08/03/05
G6	Based on Rapid Livelihood Household Survey, ILO/WFP Jan, 05
G7	Earthquake tsunami response - ILO Proposals for reconstruction and rehabilitation and recovery (18/01/05)
H1	The recovery programs on tsunami effect, Kingdom of Thailand, Presented by Ms. Supa Piyajiti, Inspector General Ministry of Finance (Govt data)
H2	Project Brief # 7 Tsunami Recovery and Rehabilitation Thailand- UNHABITAT project
H3	UNICEF Assessment (16 Feb, 2005)
H4	Technical Assistance Mission Report IOM/UNHCR/UNIFEM/WB (20-25 Jan, 05) - Provinces of Krabi, Phang Nga, Phuket and Ranong
H5	Tsunami impact on fisheries and aquaculture and coastal livelihoods in Thailand (18 Jan, 05)
H6	FAO report 08/03/05 - Thailand
H7	UNDP/WB/FAO Joint Tsunami Disaster Assessment Mission: Livelihood Recovery and Environmental Rehabilitation, Thailand - 8 Jan, 05
H8	Current State of Affairs in Tsunami hit nations Reuters - 24/03/05
H9	Livelihoods Next Step to Tsunami Recovery in Thailand, UNDP Press Release, 2 March 2005
H10	Environment Assessment (Action Plan for Technical Cooperation on Coral Reefs and Coastal Habitats)

Conversion rates

1 USD = 39.5182 Thai Bahts
1 USD = 3.79956 Malaysian Ringgits
1 USD = 43.7182 Indian Rupees
1 USD = 12.8 Maldivian Rufiaya
1 USD = 99.8250 Sri Lankan Rupee
1 USD = 9,671.7 Indonesian Rupiahs